Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000
WEBSITE www1.nyc.gov/site/ddc/index.page

VOLUME 1 OF 4

LAW

BID BOOKLET

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

FOR THE DEPARTMENT OF TRANSPORTATION
PREPARED BY MATHEWS NIELSEN LANDSCAPE ARCHITECTS, P.C.

AUGUST 26, 2016

Revised on 10/12/2017

Bid Tab – REVISED*

Description	**RECONSTRUCTION OF EAST 25TH STREET PLAZA BETWEEN LEXINGTON AND 3RD AVENUE AT BARUCH COLLEGE - BOROUGH OF MANHATTAN**		
Bid Date	**08/04/2017**	**FMS ID**	**HWBARUCH**
Estimated Cost	**$5,598,695.00***	**Client Agency**	**DOT**
Bid Security	**Not less than 2% of Total Bid Price**	**PLA**	**NO**
		Federal Funded:	**NO**
Time Allowed	**730 CCD**		
Addendum	**1**	**Contract Manager**	**Nilofer Rajput**
PIN	**8502016HW0053C**	**Project Manager**	**Barbara Cato***
Selective Bidding	**☐Yes ☒No**	**E-PIN**	**85017B0017**

Bid Rank	Vendor	Bid Amount	Security Type
1	TRAC CONSTRUCTION GROUP, INC.	$4,330,476.00	Bond
2	PERFETTO CONTRACTING CO. INC.	$5,931,204.36*	Bond
3	J. ANTHONY ENTERPRISES, INC.	$6,650,217.70*	Bond
4	SAFECO CONSTRUCTION CORP.	$6,690,836.70*	Bond
5	JR CRUZ CORP	$6,839,411.24*	Bond
6	TRIUMPH CONSTRUCTION CORP.	$8,124,863.78*	Bond
7	AKELA CONTRACTING LLC	$8,679,203.50	Bond
8	PADILLA CONSTRUCTION SERVICES, INC	$8,967,819.00	Bond

Recorder: Brenda Barreiro Ext. 1041 **Approver:** Lorraine Holley

Department of Design and Construction

Ana Barrio
Acting Commissioner

Justin Walter
Chief Administrative Officer
Administration

April 16, 2018

CERTIFIED MAIL - RETURN RECEIPT REQUEST
PERFETTO CONTRACTING CO. INC.
152 41ST STREET
BROOKLYN, NY 11232

RE: FMS ID: HWBARUCH
E-PIN: 85017B0017001
DDC PIN: 8502016HW0053C
RECONSTRUCTION OF EAST 25TH STREET PLAZA BETWEEN LEXINGTON AND 3RD AVENUE AT BARUCH COLLEGE - BOROUGH OF MANHATTAN
NOTICE OF AWARD

Dear Contractor:

You are hereby awarded the above referenced contract based upon your bid in the amount of $5,931,204.36 submitted at the bid opening on August 04, 2017. Within ten (10) days of your receipt of this notice of award, you are required to take the actions set forth in Paragraphs (1) through (3) below. For your convenience, attached please find a copy of Schedule A of the General Conditions to the Contract, which sets forth the types and amounts of insurance coverage required for this contract.

(1) Execute two copies of the Agreement in the Contracts Unit, 30-30 Thomson Avenue, 1st Floor, Long Island City, New York (IDCNY Building). A Commissioner of Deeds will be available to witness and notarize your signature. The Agreement must be signed by an officer of the corporation or a partner of the firm.

(2) Submit to the Contracts Unit two properly executed performance and payment bonds. If required for this contract, copies of performance and payment bonds are attached.

(3) Submit to the Contracts Unit the following insurance documentation: (a) original certificate of insurance for general liability in the amount required by Schedule A, and (b) original certificates of insurance or other proof of coverage for workers' compensation and disability benefits, as required by New York State Law. The insurance documentation specified in this paragraph is required for registration of the contract with the Comptroller's Office.

Department of Design and Construction

On or before the contract commencement date, you are required to submit all other certificates of insurance and/or policies in the types and amounts required by Schedule A. Such certificates of Insurance and/or policies must be submitted to the Agency Chief Contracting Office, Attention: Risk Manager, Fourth Floor at the above indicated department address.

Your attention is directed to the section of the Information for Bidders entitled "Failure to Execute Contract". As indicated in this section, in the event you fail to execute the contract and furnish the required bonds within the (10) days of your receipt of this notice of award, your bid security will be retained by the City and you will be liable for the difference between your bid price and the price for which the contract is subsequently awarded, less the amount of the bid security retained.

Sincerely,

Michael Shipman
Director of Contracts

Department of Design and Construction

Ana Barrio
Acting Commissioner

Justin Walter
Chief Administrative Officer
Administration

Charlette Hamamgian, Esq.
Agency Chief
Contracting Officer

October 11, 2017

VIA OVERNIGHT MAIL

Anna Olivieri
Trac Construction
213 50th Street STE 2
Brooklyn NY 11220

Re: Project #: HWBARUCH
Job Description: Reconstruction of East 25th Street Plaza, between Lexington and 3rd Avenue at Baruch College, including Sewer, Watermain, Street Lighting, and Traffic Signal Work
PIN: 8502016HW0053C
EPIN: 85017B0017

Dear Anna Olivieri:

Bids for the above referenced project were opened on August 4th, 2017. Trac Construction Group, Inc. (Trac) submitted the apparent lowest bid in the amount of $4,330,476.00.

The New York City Procurement Policy Board Rules, Section 2-07(a), defines a responsive bid or proposal as one that complies with all material terms and conditions of the solicitation. In particular, Section 2-07(c)(2) mandates that a responsive bid or proposal be in compliance with all material terms and conditions of the solicitation, and Section 2-07(c)(3) requires that a responsive bid be submitted in the form specified in the solicitation.

The bid solicitation for the Reconstruction of East 25th Street Plaza project (the "Project") includes Special Experience Requirements, and compliance with such requirements constitutes a material component of the solicitation. The Special Experience Requirements applicable to the bidder are set forth below:

> The bidder must, within the last seven (7) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least one (1) project similar in scope and type to the required work.

Such previously completed projects are to be listed on the Qualification Form included in the Bid Booklet. In its submission, Trac provided two (2) projects, listed in the table below, in the Project References section in the Bid Booklet. A third reference was provided at a later date and listed below:

	Project and Location	Contract Type	Contract Amount	Date Completed
1	TEP Charter School, 153 Sherman Ave, New York, NY	New eight story building, including: excavation, piles, underpinning, cast-in-place concrete,	$1,650,000.00	6/2017
2	LPC Warehouses, 105 South 5th Street Brooklyn, NY	Excavation, concrete foundation, underpinning	$935,000.00	7/2017

Department of Design and Construction

Ana Barrio
Acting Commissioner

Justin Walter
Chief Administrative Officer
Administration

Charlette Hamamgian, Esq.
Agency Chief
Contracting Officer

3	PS 61 Crotona Park, Bronx, NY	New sixteen story building, including: demolition, excavation, piles, underpinning,	$500,000.00	5/2017

Of the three projects listed, none are similar in scope and type to the work required for the Project. The Project involves utility work in the City Right-of-Way. Although there are some similar items of work in these contracts, they are mainly building construction work with minimum work in the City Right-of-Way, this project mainly involves continuous underground utility work and surface work along the City Right-of-Way involving extensive coordination with the private utility companies, maintenance and protection of pedestrian and vehicular traffic, traffic detours, etc.

Trac failed to demonstrate that any of its previous projects included utility work in the City Right-of-Way. Because none of these projects are similar in scope and type to the work required for the Project, Trac has failed to satisfy the Special Experience Requirements set forth in the Bid Booklet.

It is, therefore, my determination that Trac's bid is non-responsive because it failed to demonstrate compliance with the Special Experience Requirements listed in the bid documents.

If you wish to appeal this determination, your appeal must be filed within five (5) calendar days from receipt of this determination. Receipt of this notice shall be deemed to be no later than five (5) calendar days from the date of mailing or upon delivery, if delivered. All appeals must be addressed and /or delivered to the following:

Ana Barrio – Acting Commissioner
NYC Department of Design & Construction
30-30 Thomson Avenue, 4th Floor
Long Island City, New York 11101

A copy of your appeal shall be sent to:

Charlette Hamamgian, ACCO
NYC Department of Design & Construction
30-30 Thompson Avenue, 4th floor
Long Island City, New Your 11101

You shall also send a copy of your appeal to the New York City Comptroller, for informational purposes, at the address below:

Office of the New York City Comptroller
Bureau of Contract Administration
One Centre Street, Room 727
New York, New York 10007

Your appeal must be in writing, and must briefly state all the facts or bases upon which you rely in contesting this determination of non-responsiveness. Supporting documentation shall be included. Please refer to the Project Identification Number (PIN) at the top of this letter on all correspondence.

Department of Design and Construction

Ana Barrio
Acting Commissioner

Justin Walter
Chief Administrative Officer
Administration

Charlette Hamamgian, Esq.
Agency Chief
Contracting Officer

In addition, I have deemed that award of this contract is necessary to protect substantial City interest, and as such I am proceeding with award of the subject contract.

Sincerely,

Charlette Hamamgian
Agency Chief Contracting Officer

TRAC CONSTRUCTION GROUP

October 13, 2017

Attn: Ana Barrio Acting Commissioner
NYC Department of Design & Construction
30-30 Thomson Avenue, 4th Floor
Long Island City, New York, 11101

2017 OCT 16 A 11:54
NYC D.C.

Re: Project # HWBARUCH: Non-Responsive APPEAL Letter

Job Description: Reconstruction of East 25th St Plaza, between Lexington and 3rd Ave. at **Baruch College**, including Sewer, Water-main, Street Lighting, and Traffic Signal Work
PIN: 8502016HW0053C
EPIN: 85017B0017

Dear Ms. Barrio,

In response to the non-responsive letter to TRAC Construction Group Inc. dated 10/11/17, we (TRAC) are appealing the determination from your office that TRAC is non-responsive.

I. **To APPEAL the notion that TRAC failed to demonstrate compliance with Special Experience Requirements listed in Bid Booklet:**

In the **Special Experience Requirements** (Revised 03/2014) Section of the Bid Booklet **Section (E) CONDITIONS,** it states as follows:

- Any Principal or other **employee** on whose prior experience the bidder is relying to demonstrate compliance with this special experience requirement must have held the following:
  (a) a significant **management role** in the **prior entity** with which he/she was affiliated, and
  (b) a significant **management role** in the entity submitting the bid for a period of **six (6) months or more** from the inception of the bidding entity.

(a) With regards to the Special Experience Requirements and compliance with such requirements, TRAC Construction Group Inc. had submitted all pertaining experience information. This included the experience and references for an EMPLOYEE of the firm, Mario Bocchino. We have attached the pertinent **Qualification Form** to this letter for your reference (please see **Exhibit A**). This information was also communicated and discussed during pre-award meeting(s).

Mario Bocchino had a significant **MANAGEMENT ROLE** as Project Manager and VP Civil for his PAST EMPLOYER. As you can see from the attached resume, he Managed and completed in a timely fashion *multiple* NYC DDC projects including utility work in the past 7 years. His experience is more than sufficient to meet the requirement for part (a) of the above Condition.

213 50TH STREET, STE 2
BROOKLYN, NY 11220
WWW.TRACCONSTRUCTIONGROUP.COM
P: 718-766-9288
F: 718-766-9298

TRAC CONSTRUCTION GROUP

Description of such a project **SUBMITTED** on the **QUALIFICATION FORM (Exhibit A):**

NYC DDC Contract P-USTA1 – New connector rd. construction and utility relocations (2014-2015)
Contract Value: $14 Million
Acted as full time Project manager for this project involving the relocation of connector rd. and meridian rd. Project involved removal, trucking and disposal of contaminated and hazardous soils, 20" water main relocation and installation, Storm sewers, concrete encased High voltage lines and relocation, de-energizing and re-energizing those existing lines onto new feeders. Project was accelerated to be completed by a specific date and we met the completion date.

This project was **Similar in Scope and Type of Work** required for the **Baruch Project:** describing work in Sewer, Water-Main, and Street Lighting. It involved continuous utility work along City Right of Way, extensive coordination with utility companies, and maintenance/protection of pedestrian and vehicular traffic, including detours.

Similar projects were Requested and then **Submitted** to LaShawn Wiggins September 21, 2017. This letter described the similarities between the Baruch Project requirements and Trac's completed projects. With this, the resume of Mario Bocchino was submitted and the same letter explains that he is an employee and has completed numerous NYC DDC projects such as a **PLAZA** project listed below: **(please see Exhibit B).**

NYC DDC HWPLZ009Q-Reconstruction of Myrtle Ave PLAZA Queens NY (2016-2017)
Contract Value: $2,800,000.00
Project involving utilities, water main replacements, pigmented sidewalk and limestone curb replacements, granite blocks and seating structures, full depth asphalt paving, milling and paving.

This project was **Similar in Scope and Type of Work** required for the **Baruch** Project: describing a **PLAZA** with work in Sewer, Water-main and Street Lighting. It involved continuous utility work along City Right of Way, extensive coordination with utility companies, and maintenance/protection of pedestrian and vehicular traffic, including detours.

(b) As for part (b) of the above condition, Mario Bocchino (current VP) is an **EMPLOYEE** of **TRAC Construction Group Inc.** for **more than the required time**. As of **January 1, 2017**, he is an EMPLOYEE with MANAGERIAL DUTIES preparing contracts, estimates, and directing operations for TRAC. His responsibilities included but not limited to: Procuring Additional Materials, Equipment, and Tools for the projects specifics. Subcontractors were also interviewed and agreements were created with local UNIONS. After Surety Bond approval and six (6) months grace period, we started to submit Public Bids. For example, TRAC had submitted NYC DDC Bid HWXS511 on July 25,2017 and Port Authority Bid JFK1040 on August 2, 2017.

His **MANAGEMENT ROLE** and direction prepared TRAC to bid on Public Projects before resigning from his previous entity. As of January 2017, with his management role and our legal counsel, we prepared

TRAC with necessary Financing, Bonding, Insurance and Capital knowing that we qualify to bid on such projects based on **Section (E) Conditions** for Special Requirements. After resigning from his previous employer, Mario Bocchino was **promoted to Vice President** of **TRAC** Construction Group Inc. on September 1, 2017 working **EXCLUSIVELY** for TRAC. In summary, Mario Bocchino's extensive preparation for TRAC to qualify this entity to bid in such capacity took months of managerial involvement, dedication, and employment.

As we have stated in the Pre-Award meeting dated August 31, 2017, we are using **Section (E) Conditions** to fulfill the required experience. In conclusion, we have fulfilled the requirements set forth in the Special Experience Requirements (Revised 03/2014) section of the Bid Booklet.

II. To APPEAL the notion that TRAC failed to demonstrate that any of its previous projects included utility work in City Right of Way:

A) In **Appeal (I.)** described above, TRAC demonstrated previous projects including utility work in City Right of Way in accordance with **Section (E) Conditions.**

B) As per the **QUALIFICATION FORM** sent on September 8, 2017 to LaShawn Wiggins, the following was transcribed on the form as previous projects:
NYC DDC Contract P-USTA1 ($14 million amount of Contract) and **JFK Rockaway Blvd Access ($3.2 million)** (please see **Exhibit A**). These projects involved utility work in City Right of Way.
TRAC Construction and Mario Bocchino names are *both* written on that form. The non-response letter fails to evaluate these projects.

C) The previous projects of TRAC actually mentioned in the non-responsive letter are Inaccurate (there is an error) and Incomplete.

- Project #3 (PS 61 Crotona Park, Bronx, NY) listed in the non-responsive letter was **NOT** a TRAC project, not a Mario Bocchino project, nor was it ever submitted by either party.

- Projects #1 and #2 referenced in the non-responsive letter, had been further explained and detailed in a letter to LaShawn Wiggins, dated September 21, 2017. As stated in our letter, these projects were in fact larger in quantities than the Baruch project; they were *not* minimum work in City Right of Way, as claimed in the non-responsive letter. In addition, TRAC's letter lists the utility work performed as well as traffic and pedestrian concerns. (please see **Exhibit B**)

- The non-responsive letter fails to mention the *additional* references that were requested and then provided to LaShawn Wiggins, dated September 25, 2017. These three additional projects described were Exclusively City Right of Way projects and included Utility Work. (please see **Exhibit C**)

TRAC
CONSTRUCTION GROUP

The references provided by TRAC as well as the extensive experience of TRAC's VP, Mario Bocchino, satisfies Special Experience Requirements. Also, attached to this APPEAL letter is a **Qualification Form** with the same projects and additional references in perhaps a preferred format (please see **Exhibit D**). Our company is fully capable of performing this project for the NYC DDC. We have supplied all the proper paperwork to date and have been in the process of obtaining all submittals and subcontractor/vendor buyouts. We supplied NYC DDC with a preliminary baseline schedule which completes the project prior to the substantial completion date allowed per CCD.

TRAC Construction Group Inc. has the required experience, resources, and financial capability to perform the work for HWBARUCH project.

TRAC Construction Group, Inc. appreciates your consideration and attention to this correspondence. We hope this information clears up any ambiguities and allows reconsideration.

Any further questions please contact Mario Bocchino at 848-459-7262 or myself the undersigned.

Sincerely,

Anna Olivieri
President

CC: Charlette Hamamgian, ACCO
Office of the New York City Comptroller

213 50TH STREET, STE 2
BROOKLYN, NY 11220

WWW.TRACCONSTRUCTIONGROUP.COM

P: 718-766-9288
F: 718-766-9298

Department of Design and Construction

Ana Barrio
Acting Commissioner

January 31, 2018

PRIORITY MAIL

Anna Olivieri, President
TRAC Construction Group, Inc.
213 50th Street, STE 2
Brooklyn, NY 11220

Re:	Project No.	HWBARUCH
	Job Description:	Reconstruction of East 25th Street Plaza, btwn Lexington and 3rd Ave at Baruch College, including Sewer, Watermain, Street Lighting, and Traffic Signal Work
	PIN:	**8502016HW0053C**

Dear Ms. Olivieri:

This is in response to the appeal letter dated October 13, 2017, in which TRAC Construction Group, Inc. ("TRAC") appeals the determination of non-responsiveness by Charlette Hamamgian, the New York City Department of Design and Construction ("DDC") Agency Chief Contracting Officer (the "ACCO"), dated October 11, 2017.

Section 2-07(a) of the New York City Procurement Policy Board Rules ("PPB Rules") defines a responsive bid as one that complies with all material terms and conditions of the solicitation. The solicitation for the Reconstruction of East 25th Street Plaza project (the "Project") includes Special Experience Requirements, and compliance with such requirements constitutes a material component of the solicitation. The Special Experience Requirements applicable to the bidder are set forth below:

> The bidder must, within the last seven (7) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least one (1) project similar in scope and type to the required work.

The instances where projects not performed by the bidder may be considered in determining compliance are described in Section (E), "CONDITIONS", of the Special Experience Requirements, the text of which is set forth below:

> (E) Conditions: In determining compliance with the Special Experience Requirements for the bidder set forth above, the City may consider prior projects completed by principal(s) or other employees of the bidder while affiliated with another entity, subject to the conditions set forth below.
>
> - Any principal or other employee on whose prior experience the bidder is relying to demonstrate compliance with this special experience requirement must have held the following: (a) a significant management role in the prior entity with which he/she was affiliated, and (b) a significant management role in the entity submitting the bid for a period of six (6) months or more from the inception of the bidding entity.

In her determination, the ACCO found that TRAC failed to demonstrate compliance with the above quoted Special Experience Requirements. With its bid, TRAC submitted to DDC a Qualification Form listing two (2) projects completed by TRAC as a subcontractor, referenced in the ACCO's determination as TEP Charter School and LPC Warehouses. TRAC also submitted references to a third project, titled "The Gilbert"[1], in the Pre-Award Process section of the Bid Booklet. A copy of the Qualification Form and Project References Form submitted by TRAC on August 4, 2017, is annexed as Exhibit A.

Although the ACCO was not required to analyze The Gilbert project for compliance with the Special Experience Requirements, the information was timely submitted and review of this project for compliance with the Special Experience Requirements could only have aided TRAC when the projects referenced on the Qualification Form were determined not to meet the requirements.[2] The agency's records indicate that none of the projects submitted included utility work in the City Right-of-Way, a defining characteristic of the Project.

Several weeks after the bid opening date and during the Pre-Award Process, TRAC attempted to submit additional projects performed by NY Asphalt, Inc., the former employer of Mario Bocchino, with a revised Qualification Form, claiming that Mr. Bocchino's experience could meet the Special Experience Requirements via Section (E). A copy of the later submitted Qualification Form is annexed here as Exhibit B.

The ACCO determined that TRAC failed to demonstrate that, within the last seven years, it timely completed a project similar in scope and type to the Project and, specifically, that none of the previous projects referenced in TRAC's bid submissions included utility work in the City Right-of-Way. The ACCO did not consider or reference projects submitted after the bid date that

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[1] The ACCO's October 11, 2017, determination incorrectly labeled this project "PS 61 Crotona Park, Bronx, NY", while correctly describing the project as a "New sixteen story building, including: demolition, excavation, piles, underpinning," as well as correctly stating the value of TRAC's sub-subcontract in the amount of $500,000, as listed in TRAC's letter dated September 21, 2017. Since the ACCO's determination is based upon the project scope of work and the work performed by TRAC, rather than the project's title, this typographical error does not affect the analysis herein.

[2] Bidders were instructed to provide the experience on the Qualification Form. Section B of the Special Experience Requirements is set forth below:

> (B) Qualification Form: For each project submitted to demonstrate compliance with the special experience requirements, the bidder must complete the Qualification Form included in the Bid Booklet. The City will only evaluate a project if the following criteria are met: (1) the project is described on the Qualification Form, and (2) all information on the Qualification Form is provided. The City will not evaluate any project which does not comply with the criteria set forth herein, including any project which is referred to only on the resume of an individual.

were performed by NY Asphalt, Inc. TRAC now appeals, arguing that (1) the projects submitted by TRAC in its bid submission and were of similar scope and type as they included utility work in the City Right-of-Way, and (2) the projects completed by NY Asphalt, Inc., fulfill the Special Experience Requirements pursuant to Section (E) of the Special Notice to Bidders.

I. Projects of Similar Type and Scope.

In the appeal, TRAC claims that the TEP Charter School project, listed on the Qualification Form submitted with its bid on August 4, 2017, and The Gilbert project, listed on the Project References form submitted with its bid, are like the Project in size, scope, and complexity.

The projects listed by TRAC in its August 4, 2017, submissions are not similar in size, scope, and complexity to the Project. DDC's review of the projects, which included speaking with the owner or owner's representatives listed by TRAC, revealed the following:

1. With regard to the TEP Charter School project:
    a. TRAC was a subcontractor whose work consisted mainly of concrete foundation work and concrete sidewalks;
    b. TRAC's work did not include hazmat soil excavation and removal or air monitoring; and
    c. TRAC did not do utility work in the City Right-of-Way; all utility work was on site.
2. With regard to The Gilbert project:
    a. TRAC was a subcontractor mainly doing concrete work, excavation, and piles;
    b. Although TRAC removed soil (unclear whether it was hazmat); there was no utility work done by TRAC for The Gilbert project.

In conducting its investigation, DDC representatives spoke to John DeGenova of Evans Heintges Architects, the listed owner's representative for the TEP Charter School project, and to John Balog of Dattner Architects, the listed architect/engineer for The Gilbert. (*See* Ex. A.) To rebut these findings, TRAC submits, again, a letter written by TRAC on TRAC letterhead, dated September 21, 2017. This letter was previously submitted to DDC. TRAC does not submit additional references or project documents from the projects in question that would provide support to contradict the information gathered from the project references previously submitted by TRAC.

The purpose of requesting the name and contact information of the owner or owner's representative for previous project experiences is to verify the accuracy of a bidder's statement of its past experience. It was therefore reasonable for the ACCO to rely on the project references provided, namely the architects charged with managing the projects, over the self-serving statements made by TRAC in its September 21 correspondence when evaluating whether the projects listed were of a similar scope and type to the Project.

TRAC does not submit any additional information with regard to the second project listed on the August 4, 2017, Qualification Form, "LPC Warehouses", or even reference this project in either the appeal or in any exhibits attached to the appeal. Vague, unsupported allegations are insufficient to overcome the ACCO's finding that this project is not similar in type or scope to the Project, which involves significant utility work in the City Right-of-Way.

Therefore, the ACCO's finding that the projects listed by TRAC in its August 4, 2017, bid submissions were not similar in scope or type to the work required by the Project was reasonable.

II. Qualifying experience pursuant to Section (E) of the Special Notice to Bidders.

On the day of the bid opening, August 4, 2017, TRAC submitted references for only three (3) projects: (1) TEP Charter School, and (2) LPC Warehouses, and (3) The Gilbert. On September 8, 2017, TRAC attempted to submit a new Qualification Form listing additional projects completed by NY Asphalt, Inc. ("NY Asphalt"), and claiming that these projects should be considered to meet the Special Experience Requirements based on Section (E) thereof. On this second Qualification Form, TRAC noted the name of the contractor as "NY Asphalt, Inc./Mario Bocchino (VP Civil) on behalf of NYA Mario now at TRAC as an officer completed this project." (Ex. B.) On September 22, 2017, TRAC provided a resume for Mario Bocchino, whom TRAC states was employed part-time by TRAC until September 1, 2017, when he became a full-time employee of TRAC with the title of Vice President. A copy of TRAC's letter, dated September 21, 2017, is annexed here as Exhibit C.

The ACCO did not reference the September 8th Qualification Form (Ex. B) or Mr. Bocchino in her determination, nor was the ACCO required to consider these untimely references. Not only did TRAC fail to submit the NY Asphalt projects with its bid, as required, but TRAC failed to show that Section (E) would have applied to allow projects completed by Mr. Bocchino while he was at NY Asphalt to be considered in determining compliance with the Special Experience Requirements because TRAC has not shown that Mr. Bocchino held a significant management role with TRAC for a period of at least six (6) months as of the bid date. To the contrary, the record reflects that Mr. Bocchino was not hired as a Vice President with TRAC until September 1, 2017 – four (4) weeks after the bid submission date.

When Projects Performed by Another Entity May Be Considered

Section (E) allows a bidder to rely on the experience of employees with significant management roles who have previously held significant management roles at other firms. Section (E) requires that the employee whose experience is relied upon have (a) held a significant management role in the prior entity and (b) held a significant management role with the bidder for a period of no less than six (6) months. The bidder must meet these requirements on the date of the bid.

Although TRAC vaguely alleges that Mr. Bocchino has been an employee of TRAC since January 2017, TRAC admits, at least, that Mr. Bocchino did not become a full-time employee of TRAC until September 1, 2017, when he was "promoted" to Vice President. That Mr. Bocchino was still with NY Asphalt until September 2017 is supported by the fact that the most recent

project listed on Mr. Bocchino's resume, DDC project HWPLZ009Q, did not reach completion until September 2017. TRAC's statements are called into question by the circumstances and by admissions made by TRAC to DDC when asked via email to confirm, point blank, "[t]he date when Mr. Bocchino was hired", to which Anna Olivieri, President of TRAC, responded: "September 1, 2017". September 1, 2017, was weeks after the bid submission date and far less than the minimum six (6) month period required by Section (E). A copy of this email exchange is annexed as Exhibit D.

While TRAC states that Mr. Bocchino is "current[ly] VP" and alleges that Mr. Bocchino had "managerial duties" prior to September 1st, neither his prior title for the period of January 1 to September 1, 2017, nor details about the hours worked for TRAC or particular projects or personnel managed by him are provided. Nor is any attempt made to explain why his experience was not included on August 4, 2017, why Ms. Olivieri previously provided September 1, 2017, as the start of his employment, or how a high-level employee who has a significant management role in an unrelated competitor firm could also hold a significant management role in TRAC. TRAC's appeal studiously avoids addressing these discrepancies.

It was reasonable for the ACCO to disregard TRAC's post-bid submissions and to base her decision entirely upon an examination of the projects included with its bid submissions. Further, even if TRAC's late submissions could be considered timely, the information submitted by TRAC regarding Mr. Bocchino is contradictory and does not support a finding that he held a significant managerial role in TRAC for a period of at least six (6) months as of August 4, 2017.

CONCLUSION

In light of the facts and circumstances set forth above, TRAC's appeal presents no basis upon which to reverse the ACCO's determination of non-responsiveness. Therefore, in accordance with Chapter 2, Section 2-07 of the PPB Rules, the determination of non-responsiveness is affirmed, and TRAC's appeal is formally denied. There is no further appeal from this determination. This denial is not a determination of non-responsibility, and shall in no way prejudice TRAC for consideration in future solicitations.

Sincerely,

Ana Barrio
Acting Commissioner

Attachments: Exhibits A-D

Exhibit A

Qualification Form

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: ABC Select NY Inc.

Name of Project: TEP Charter School

Location of Project: 153 Sherman Ave, Manhattan, NY

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: John DeGenova / Evans Heights Architects
Title: Project Manager / Architect Phone Number: 347-598-4288 / 212-652-2965

Brief description of the Project completed or the Project in progress: Rock excavation, soil remidiation, concrete foundations.

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Sub-Contractor

Amount of Contract, Subcontract or Sub-subcontract: $1,650,000.00

Start Date and Completion Date: 10/2016 - 7/2017

****

Name of Contractor: ABC Select NY Inc.

Name of Project: LPC Warehouses

Location of Project: 105 South 5 Street Brooklyn, NY

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: Raymond Bryant / Dattner Architects
Title: Project Manager / Architect Phone Number: 646-202-0817 / 212-247-2660

Brief description of the Project completed or the Project in progress: Soil Remidiation - excavation SOE, concrete foundation, underpinning

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Sub-contractor

Amount of Contract, Subcontract or Sub-subcontract: $935,000.00

Start Date and Completion Date: 11/2016 - 7/2017

A. PROJECT REFERENCES – CONTRACTS COMPLETED BY THE BIDDER

List all contracts substantially completed within the last 4 years, up to a maximum of 10, in descending order of date of substantial completion.

Project & Location	Contract Type	Contract Amount ($000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
The Gilbert 1938 1st Ave Manhattan, NY	Lump Sum	$450,000.00	5/2017		John Balog 917-434-6481

Exhibit B

Qualification Form

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: NYASPHALT, INC. / MARIO BOCCHINO (VP CIVIL) ON BEHALF OF NYA

Name of Project: NYC DOC USTA UN AVENUE CONNECTOR RD. PUSTA-1

Location of Project: QUEENS NY

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: HARRY GORDON
Title: RE **Phone Number:** 917-605-0999

Brief description of the Project completed or the Project in progress: SEWER ON PILES, CATCH BASINS, WATER MAIN 20" + BELOW, ELECTRICAL, EXCAVATION, CONTAMINATED SOIL AND WATER, CURBS + SIDEWALKS, ASPHALT, LANDSCAPING

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: PRIME

Amount of Contract, Subcontract or Sub-subcontract: $14,000,000

Start Date and Completion Date: JANUARY 2014 – JUNE 2015

****

Name of Contractor: NYASPHALT, INC. / MARIO BOCCHINO (VP CIVIL) ON BEHALF OF NYA MARIO NOW AT TRAC AS AN OFFICER COMPLETED THIS PROJECT

Name of Project: JFK ROCKAWAY BLVD ACCESS → JFK [redacted] 134.016

Location of Project: QUEENS NY

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: DOUGLAS MYHRE
Title: ENGINEER IN CHARGE (PA) **Phone Number:** 347-392-1699

Brief description of the Project completed or the Project in progress: MARIO BOCCHINO NOW AN OFFICER AT TRAC CONSTRUCTION GROUP COMPLETED THIS PROJECT ON BEHALF OF NYA. CATCH BASINS, ELECTRICAL, EXCAVATION, ASPHALT, CONCRETE, LANDSCAPING

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: PRIME

Amount of Contract, Subcontract or Sub-subcontract: $3,200,000

Start Date and Completion Date: JULY 2014 – JULY 2015

Exhibit C

TRAC
CONSTRUCTION GROUP

September 21, 2017

RE: HWBARUCH Special Experience requirements

Special requirement states that our firm should have successfully completed in a timely fashion at least one project similar in scope and type to the required work. Majority scope of work to be self-performed for the project in reference is as follows:

1. Concrete demolition of sidewalks and other minor structures.
2. Soil excavation for utilities such as electric conduits, water lines, and sewer lines.
3. Support of excavation(SOE), if necessary.
4. 30 Tons of Handling, Transporting and Disposal of Hazardous Soil
5. Continuous Real-Time Monitoring for Vibrations and Movements
6. Installation of electric, water, and sewer lines.
7. Reinforce sidewalk vaults
8. 120 YDS Cast in Place concrete structure for monumental stairs
9. Install concrete sidewalks and curbs
10. Install asphalt pavement
11. Maintenance of Traffic

Our firm completed similar phases and larger quantities for the Scope of Work referenced. Two projects that were completed successfully and on schedule consisted of the following phases:

A. TEP CHARTER SCHOOL

1. 2,062 Tons of Hazmat soil excavation and removal with air monitoring
2. 700 YDS of rock excavation
3. Installed underpinning under existing neighboring structures while monitoring for vibration and movements
4. Installed drilled piles and lagging for deep Support of Excavation while monitoring for vibration and movement
5. Performed excavation for utility trades such as electric, low voltage, water, and sewer.
6. 1,131 YDS Cast in Place concrete structures
7. Installed and repaired sidewalk electrical vault
8. Installed concrete sidewalk and curbs
9. Maintenance of vehicle and pedestrian traffic at all times for concrete pumping and trucking operations

213 50TH STREET, STE 2
BROOKLYN, NY 11220
WWW.TRACCONSTRUCTIONGROUP.COM
P: 718-766-9288
F: 718-766-9298

B. THE GILBERT

1. Concrete demolition for sidewalks and major structures such as pile caps and foundations.
2. 3,798 Tons of Hazmat soil excavation and removal with air monitoring
3. Installed underpinning under existing neighboring structures while monitoring for vibration and movements
4. Installed drilled piles and lagging for deep Support of Excavation while monitoring for vibration and movement
5. Performed excavation for utility trades such as electric, low voltage, water, and sewer.

As noted above, all the key required items to complete the BARUCH PLAZA project have been completed with diligent focus on Safety, Quality, Schedule, and Budget to create successful projects for our clients and communities.

Experienced sub-contractors that can fulfill the Special requirements request will be hired to complete the remaining phases.

Also, Mario Bocchino is part of our team that has been involved with Public projects valued over $500 million. Mario will be the Project manager responsible to complete the Baruch Project because of his experience and positive track record to complete projects with high demand. He recently completed for DDC a Plaza project in Queens with Project ID HWPLZ009Q.

Hope all information in this letter clarifies the Special Experience requirement. If any additional information is needed, please contact us.

Project References:

A. TEP Charter School

1. Owners Rep:
John DeGenova/Evans Heintges Architects
Project Manager/Architect 347-598-4288/212-352-2965
2. Sub-Subcontract amount of $1,650,000.00
3. Project Dates: 8/2016-6/2017

B. THE GILBERT

4. Owners Rep:
John Balog/Dattner Architects
Project Manager/Architect 917-434-6481/212-247-2660
5. Sub-Subcontract amount of $500,000.00
6. Project Dates: 3/2017-5/2017

Mario Bocchino

PERSONAL

Address:	42 Cambridge Road Freehold, NJ 07728
Telephone:	(732) 577-0419 (Home) (848) 459-7262 (Cell)
Email:	tuveni@aol.com

EDUCATION

Manhattan College, Riverdale, NY
Masters in Civil Engineering
Graduated December 2007

Manhattan College, Riverdale, NY
B. S. Civil Engineering
Graduated 2004

COMPUTER SKILLS

Primavera, Expedition, Microsoft Office, Microsoft Visio

PROFESSIONAL EXPERIENCE

E. E. Cruz & Company, Inc., Holmdel, NJ (6/2004 – 5/2011)
Title: Superintendent/Project Engineer

Perfetto Enterprises Company Inc. Staten Island NY 10302 (5/2011 – 5/2013)
Title: Project Manager

NY Asphalt, Inc. Staten Island NY 10309 (5/2013 – 2017)
Title: VP Civil

TRAC Construction Group Inc. Brooklyn, NY 11220 (2017-Present)
Title: Vice President

Position Details:

- Scheduling and planning work - 2 week schedules, schedule updates.
- All Superintendent activities in the field including reports, planning daily work for labor crews, and ordering daily materials.
- Handle submittals and RFI's.
- Submitted all Payments to agencies (NYC DDC, NYC DEP, NYC Parks Department, Port Authority of NY NJ)
- Handled Claims and change orders with all agencies
- Handled insurance, bond procurements
- Worked closely with estimator to win competitive public bids

Projects:

NY Asphalt, Inc.

NYC DDC HWPLZ009Q-Reconstruction of Myrtle Ave Plaza Queens NY (2016-2017)
Contract Value: $2,800,000.00

Project involving utilities, water main replacements, pigmented sidewalk and limestone curb replacements, granite blocks and seating structures, full depth asphalt paving, milling and paving,

NYC DDC SANDHW24 – Sandy Repairs Project Rockaway Beach Queens NY (2015-Present) Contract value: $9,500,000

Project involving utilities, water main replacements, sidewalk and curb replacements, full depth asphalt paving, milling and paving, and vinyl sheeting bulkhead work.

USTA AVE N PROJECT – AVE N Flushing Meadows Corona Park (2014-2015)
Contract Value: $4,000,000

Project was estimated by me and I Acted as full time Project Manager for this project involving utility relocations along Ave N. This project owner was US Tennis Center (Private). Project involved removal, trucking, and disposal of contaminated soil, 20" water main relocation, curb replacements, Milling and Paving, full depth asphalt restoration.
Very successful project completed on-time and under budget.

NYC DDC Contract P-USTA1 – New connector rd. construction and utility relocations (2014-2015)
Contract Value: $14 Million

Acted as full time Project manager for this project involving the relocation of connector rd. and meridian rd. Project involved removal, trucking and disposal of contaminated and hazardous soils, 20" water main relocation and installation, Storm sewers, concrete encased High voltage lines and relocation, de-energizing and re-energizing those existing lines onto new feeders. Project was accelerated to be completed by a specific date and we met the completion date.

Port Authority of NY & NJ – Rockaway Blvd. Access road JFK134.016 (2014 – 2015)
Contract Value: $2.9 million

Acted as full time project manager for this project involving the construction of the new access roadway into JFK Airport from Rockaway Blvd. Asphalt concrete paving, super-pave and other heavy duty paving mixes, Concrete repairs, Cast in place concrete AOA barrier with fence. Restricted hours work and Air-side work included in this project.

Port Authority of NY & NJ – JFK Cargo Service Rd. JFK924.201 (2013-2015)
Contract Value: $2.4 million

Acted as full time project manager for this project involving installation of new concrete curbs and sidewalks. Involved heavy MPT, milling and paving of approximately 6000 tons.

Port Authority of NY & NJ – Holland Tunnel Concrete Pavement Repairs (2013-2014)

Acted as full time Project Manager for this project involving heavy traffic MPT, Concrete pavement repairs full depth and partial depth. Approximately 20,000 SF of pavement repairs.

Perfetto Enterprises Company Inc.

Port Authority of NY & NJ – JFK Pavement Rehabilitation of Van Wyck Expressway South and North Service Roads JFK924.703 (2012-2013)
Contract Value: $3.4 Million

Acted as project manager for this project involving installation of new concrete curbs and sidewalks. Also, this job involves heavy MPT , milling and Paving. Also, job includes drilled foundations and new sign posts.

Port Authority of NY & NJ – Hangar 12 pavement repairs JFK914.205 (2012)
Contract Value: $980,000.00

Acted as Project Manager for this project involving concrete partial depth and full depth pavement repairs. Also, project involved milling and paving of plenum area.

NYC Parks Department – Construction of an Annex to Olmstead Center Q099-110MA (2011-2013)
Contract Value: $5.8 Million

Acted as Project Manager for this project involving the new construction of the annex to Olmstead Center (NYC Parks Department Main office). Excavation, Placement of concrete foundations, walls, concrete slabs on grade, and installation of exterior metal panels, all electrical, plumbing and HVAC for the new building. Installation of structural steel frame and roof system (Butler Building)

PANYNJ – New Jersey Marine Terminal Work Order MFP926.319 (2011 - 2012)
Contract Value: $1.9 Million

Acted as Project Manager for this project involving asphalt pavement work, storm drainage installation, traffic markings, MPT, storm sewer, catch basin installation. This project was located in Port Newark, Port Jersey and Port Elizabeth

NYC DEP/DDC – Vitrified Clay Pipe emergency sewer project Staten Island and Brooklyn North SER00201U and SEK201BN1 (2012)
Contract Values: $4.5 Million Staten Island and $4.9 Million Brooklyn North

Acted as Project Manager for this project involving emergency sewer repairs throughout Brooklyn and Staten Island. Project involved emergency MPT work in order to perform repairs of sewers and catch basin installations

NYC DDC – Second Ct., Barclay Ave, Lipsett Sewer and water main Improvements Staten Island NY SER002247 (2012)
Contract Value: $1.3 Million

Acted as Project Manager for this project involving 15' deep sewer installation, water main installation, asphalt pavement, concrete sidewalks, and concrete curbs, storm sewer with catch basins

EE Cruz & Co. Inc.

Columbia University Trust – Slurry wall, top down construction, deep excavation (2010-2011)
Contract Value: $90 Million

Acted as Superintendant for this project involving Slurry wall excavation, deep excavation and foundations for the new Columbia University Facility.

NY State DOT – Route 9A West Side Highway, Chambers St. to Battery Tunnel NY (2007-2010)
Contract Value: $200 Million (Tully Construction/EE Cruz Joint venture)

Acted as Superintendant/Project Engineer for this project involving high speed/congested area MPT, Concrete Roadway pavement demolition, concrete roadway placement, underground utility work, sewer, water main installation, Traffic signal and lighting work from Chambers St. to Battery Tunnel.

Conrail - Lehigh Valley Double Track Project, Bound Brook, NJ to Edison, NJ (2007)
Contract Value: $16 million

Acting as Superintendent/Project Engineer for this project involving 10 miles of siding track to be installed from Bound Brook, NJ to Edison, NJ. All underground utilities, clearing and grubbing, ditches, and gabion walls, 2 track bridges to be repaired along siding, grade crossings.

New Jersey Transit - Whitehouse Station Siding, Whitehouse Station, NJ (2006)
Contract Value: $1.2 million

Superintendent/Project Engineer for this project involving earthwork and disposal of material, installation of all Underground Duct banks for signal and communications, installation of drainage along siding: concrete pipe, Gabion Walls, Underdrain PVC piping; Grade Sub-ballast and ballast for track. Job was completed in two months, which was three months ahead of schedule.

Rahway Valley Sewage Authority, Rahway, NJ (2005-2006)
Contract Value: $130 million

Assistant Superintendent/Project Engineer for the reconstruction of operational treatment plant and new construction of two new final settling tanks, one new primary settling tank, new Headworks building, new Uv filter and effluent pump station. Scope of work included all underground piping for plant, support of excavation with steel sheeting, excavation for several new foundations, approximately 23,000 CY concrete for footings and walls of tanks and buildings, all interior electrical, HVAC and Plumbing for new buildings.

New Jersey Transit - Pascack Valley Line Sidings, Hackensack, NJ (2005)
Contract Value: $3.5 million

Superintendent/Project Engineer for the Pascack Valley Line Sidings, which consisted of three rail sidings, each one mile long, in Hackensack, NJ. Scope of work included earthwork and disposal of material, installation of all Underground Duct banks for signal and communications, installation of drainage along siding: concrete pipe, Gabion Walls, Underdrain PVC piping; Grade Sub-ballast and ballast for track. Worked on all submittals prior to job starting, procurement of materials, supervised daily work of two labor crews with a total of 15 Laborers and 5 Operators. Project was completed two months ahead of schedule.

New Jersey Transit - Meadowlands Maintenance Facility Kearny, NJ (2003 – 2005)
Contract Value: $75 million

Assistant Superintendent for this project, which had to be done while the facility was in operation. Work included the reconstruction of an old train wash building and the construction of eight new buildings for NJT (one new train wash, a warehouse, one locomotive shop, fueling and sanding building to name a few). Concrete foundations, columns, beams, slabs. Installation of Structural steel for 8 buildings. The job also consisted of installing underground utilities, grading and paving, and installing new track throughout the center yard.

Exhibit D

Wiggins, LaShawn (DDC)

From: Anna Olivieri <anna@tracconstructiongroup.com>
Sent: Monday, September 25, 2017 10:13 AM
To: Wiggins, LaShawn (DDC)
Cc: anthony@tracconstructiongroup.com; Venugopalan, Narayana (DDC); Loke, Carmen (DDC); Desyr, Garry (DDC); Mario Bocchino; Mario Bocchino
Subject: Re: HWBARUCH Pre-Award Meeting
Attachments: Project Street.docx

Good morning,

- When Trac Construction was formed? MARCH 14, 2012
- The date when Mr. Mario Bocchino was hired? SEPTEMBER 1, 2017
- Projects done by Trac Construction, where street work is within the city right of way? SEE ATTACHED PROJECT REFERENCE LIST

If additional information is required, please feel free to contact us.

On Fri, Sep 22, 2017 at 2:08 PM, Wiggins, LaShawn (DDC) <wigginsla@ddc.nyc.gov> wrote:

> Good Afternoon,
>
> Thank you for the information. Can you please provide us with the following additional information:
>
> - When Trac Construction was formed?
> - The date when Mr. Mario Bocchino was hired?
> - Projects done by Trac Construction, where street work is within the city right of way?
>
> Thank you for your time on this matter.
>
> La Shawn
>
> **La Shawn Wiggins, RLA**
>
> **Senior Project Manager**
>
> **cubicle: 417**
>
> **T** 718.391.1599

Notices to Bidders

Pre-Bid Questions (PBQs)

Please be advised that PBQs should be submitted to the Agency Contact Person (CSB_projectinquiries@ddc.nyc.gov) at least five (5) business days (by 5:00 PM EST) prior to the bid opening date as indicated in ATTACHMENT 1 - BID INFORMATION, page A-1 and SCHEDULE B, page 13, VOLUME 1 OF 3 of this BID BOOKLET.

All PBQs must reference the Project ID. If a Bidder has multiple PBQs for the same Project ID, the PBQs must be numbered sequentially, even if they are submitted separately.

Apprenticeship Program

If Apprenticeship Program is required as noted on Page 19 of this BID BOOKLET, the following notice applies:

Please be advised that, pursuant to the authority granted to the City under Labor Law §816-b, the New York City Department of Design and Construction hereby requires that the contractor awarded a contract as a result of this solicitation, and any of its subcontractors with subcontracts worth two million dollars or over, have, prior to entering into such contract or subcontract, apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor. In addition, the contractor and its subcontractors will be required to show that such apprenticeship program/s have successfully passed the two year Probation period following the initial registration date of such program/s with the New York State Department of Labor.

The failure to prove, upon request, that these requirements have been met shall result in the contract not being awarded to the contractor or the subcontractor not being approved.

Please be further advised that, pursuant to Labor Law §220, the allowable ratio of apprentices to journeypersons in any craft classification shall not be greater than the ratio permitted to the contractor as to its workforce on any job under the registered apprenticeship program.

Notices to Bidders

NYC Construction Loan Pilot Program

The New York City Department of Small Business Services (SBS), in conjunction with the New York Business Development Corporation (NYBDC), have established **a NYC Construction Loan** pilot program to provide prime contractors and subcontractors financing for mobilization costs on certain City construction projects.

Under this initiative, loans are available for early stage mobilization needs such as insurance, labor, supplies and equipment. Bidders are strongly encouraged to visit "Growing Your Business" at www.nyc.gov/nycbusiness to learn more about the loan or contact constructionloan@sbs.nyc.gov / (212) 513-6444 to obtain details and to determine preliminary eligibility.

A successful loan applicant will be required to make an assignment of its contract (or subcontract) payments to the lender NYBDC until the loan is repaid. If the loan is to a subcontractor, a prime contractor must honor the terms of such an assignment.

A prime contractor may not discriminate against a subcontractor or potential subcontractor by reason of the subcontractor's participation, or nonparticipation, in the NYC Construction loan program.

CITY OF NEW YORK

DEPARTMENT OF DESIGN AND CONSTRUCTION DIVISION OF INFRASTRUCTURE

BID BOOKLET

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

(NO TEXT ON THIS PAGE)

PROJECT ID: HWBARUCH

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

BID BOOKLET

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CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

SPECIAL NOTICE TO BIDDERS

BID SUBMISSION REQUIREMENTS

THE FOLLOWING DOCUMENTS ARE TO BE COMPLETED AND SUBMITTED WITH THE BID:

1. Bid Schedule and Bid Form, including Affirmation
2. Bid Security (if required, see Attachment 1 on Page A-1)
3. Schedule B: M/WBE Utilization Plan (if participation goals have been established)

FAILURE TO SUBMIT ITEMS (1), (2) AND (3)
WILL RESULT IN THE DISQUALIFICATION OF THE BID.

4. Safety Questionnaire
5. Construction Employment Report (if bid is $1,000,000 or more)
6. Contract Certificate (if bid is less than $1,000,000)
7. Confirmation of Vendex Compliance
8. Bidder's Certification of Compliance with Iran Divestment Act
9. Special Experience Requirements (if applicable)
10. Apprenticeship Program Questionnaire (if applicable)
11. Any addenda issued prior to the receipt of bids

FAILURE TO SUBMIT ITEMS (4) THROUGH (11)
MAY RESULT IN THE DISQUALIFICATION OF THE BID.

NOTES: (1) All of the above referred to blank forms to be completed and submitted with the bid are included in the BID BOOKLET.

(2) If the bidder has any questions or requires additional information, please contact the Department of Design and Construction by phone (718-391- 2601) or by fax (718-391-2627).

(3) VENDEX QUESTIONNAIRES: The Bidder is advised that Vendex Questionnaires and procedures have been changed. Vendex Questionnaires, as well as detailed instructions, may be obtained at www.nyc.gov/vendex. The bidder may also obtain Vendex forms and instructions by contacting the Agency Chief Contracting Officer or the contact person for this contract.

(4) SPECIAL EXPERIENCE REQUIREMENTS: The Bidder is advised that Special Experience Requirements may apply to this contract. Such requirements are set forth on pages 3, 3a, 3b, and 4 of this Bid Booklet.

SPECIAL NOTICE TO BIDDERS

SPECIAL EXPERIENCE REQUIREMENTS (Revised 03/2014)

(A) **SPECIAL EXPERIENCE REQUIREMENTS FOR THE BIDDER:** The Special Experience Requirements set forth below apply to the bidder. Compliance with such Special Experience Requirements will be determined solely by the City prior to an award of contract. Failure to comply with the Special Experience Requirements will result in rejection of the bid as non-responsive.

The requirements in this Section (A) apply to this contract where indicated by a blackened box (■).

■ The bidder must, within the last seven (7) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least one (1) project similar in scope and type to the required work. Such prior project may have been performed as a prime contractor, subcontractor or sub-subcontractor.

The Special Experience Requirements next to the blackened box below apply to the bidder. If the bidder intends to perform such work itself, it must demonstrate compliance with the Special Experience Requirements. If the bidder intends to subcontract this work, the proposed subcontractor or sub-subcontractor must demonstrate compliance with the Special Experience Requirements. The contractor, subcontractor or sub-subcontractor (hereinafter referred to as the "entity") that will perform any specific area of work indicated by the blackened box below, may have performed the required prior project(s) as a prime contractor, subcontractor or sub-subcontractor. Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City.

☐ **Trunk Water Main Work:** The entity that will perform the trunk water main work must, within the last seven (7) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least one (1) project similar in scope and type to the required work.

☐ **Best Management Practice Work:** Best Management Practice ("BMP") Work is any item of work in the Bid Schedule that begins with the prefix "BMP". The entity that will perform any BMP Work must, within the last five (5) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required work.

For professional services in connection with BMP Work, (i.e., monitoring and reporting services), the individual who will perform the required services must, within the last five (5) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required work. Additional requirements are set forth below.

☐ The individual serving as the Restoration Specialist (Construction Monitor) must be a Registered Landscape Architect licensed by the state of New York, or must have equivalent professional experience.

☐ The individual serving as the Erosion and Sediment Control Licensed/Certified Professional must be a Certified Professional in Erosion and Sediment Control (CPESC), certified by CPESC, Inc.

☐ **Micro-Tunneling/Pipe Jacking Work:** The entity that will perform the micro-tunneling/pipe jacking work must, within the last five (5) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

☐ **OTHER:** _____

_____

(B) SPECIAL EXPERIENCE REQUIREMENTS FOR SPECIFIC AREAS OF WORK (to be provided after an award of contract):

The requirements in this Section (B) apply to this contract where indicated by a blackened box (■).

The Special Experience Requirements set forth below apply to the contractor, subcontractor or sub-subcontractor that will perform the specific area of work. **Compliance with such Special Experience Requirements will be determined solely by the City after an award of contract.** After an award of contract, when requested by the City, the contractor will be required to submit the qualifications of the contractor, subcontractor or sub-subcontractor that will perform the specific area of work. If the bidder intends to perform such work itself, it must demonstrate compliance with the Special Experience Requirements. If the bidder intends to subcontract this work, the proposed subcontractor or sub-subcontractor must demonstrate compliance with the Special Experience Requirements. Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City.

Special Experience Requirements apply to the contractor, subcontractor or sub-subcontractor (hereinafter referred to as the "entity") that will perform any specific area of work indicated by a blackened box. The entity may have performed the required prior project(s) as a prime contractor, subcontractor or sub-subcontractor.

■ **Hazmat Work:** Hazmat Work is any item of work in the Bid Schedule that begins with the prefix 8.01. The entity that will perform any Hazmat Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least five (5) projects similar in scope and type to the required work.

☐ **Pile, CFA Pile, and/or Mini-Pile Work:** The entity that will perform the Pile, CFA Pile and/or Mini-Pile Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

For professional services in connection with Pile Work, (i.e., engineering and inspection services), the individual who will perform the required services must be a Professional Engineer licensed by the state of New York. Such individual must also comply with the above requirements for prior projects.

■ **Construction Report, Monitoring And Post-Construction Report, and Continuous Real-Time Monitoring For Vibrations And Movements And Post-Construction Report Work:** The entity that will perform the Construction Report, Monitoring For Vibrations And Movements, and Post-Construction Report Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

For professional services in connection with Reporting and Monitoring Work, (i.e., engineering and inspection services), the individual who will perform the required services must be a Professional Engineer licensed by the state of New York. Such individual must also comply with the above requirements for prior projects.

☐ **OTHER:** _____

_____

(C) **SPECIFICATIONS:** In the event of any conflict, omission or inconsistency between (1) the Specifications and/or Contract Drawings, and (2) the Special Experience Requirements in Section (B) of the Special Notice To Bidders, the special experience listed in the Specifications and/or Contract Drawings shall be controlling. The Special Experience Requirements in Section (B) of this Special Notice To Bidders are only for the convenience of the bidders.

(D) **SUBMISSION REQUIREMENTS:** For each project submitted to demonstrate compliance with the Special Experience Requirements, the bidder must complete and submit the Qualification Form included in the Bid Booklet. The City will only evaluate a project if the following criteria are met: (1) the project is described on the Qualification Form, and (2) all information on the Qualification Form is provided. The City will not evaluate any project which does not comply with the criteria set forth herein, including any project which is referred to only on the resume of an individual.

If Special Experience Requirements are indicated for any specific area of work, the submission requirement set forth above shall apply to the entity that will perform the specific area of work.

(E) **CONDITIONS**: In determining compliance with the Special Experience Requirements for the bidder set forth above, the City may consider prior projects completed by principal(s) or other employees of the bidder while affiliated with another entity, subject to the conditions set forth below.

- Any principal or other employee on whose prior experience the bidder is relying to demonstrate compliance with this special experience requirement must have held the following: (a) a significant management role in the prior entity with which he/she was affiliated, and (b) a significant management role in the entity submitting the bid for a period of six (6) months or more from the inception of the bidding entity.

- The bidder may not rely on the experience of its principals or other employees to demonstrate compliance with any other requirements, including without limitation, financial requirements or requirements for a specified minimum amount of annual gross revenues.

(F) **JOINT VENTURES**: In the event the bidder is a joint venture, at least one firm in the joint venture must meet the above described experience requirements.

Qualification Form

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: Perfetto Contracting Co., Inc.

Name of Project: Flatbush Streetscape - NYC EDC

Location of Project: Downtown Brooklyn - Flatbush Ave

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: Paul Cona - NYC Economic Development Corp.
Title: Resident Engineer Phone Number: 631-300-5598

Brief description of the Project completed or the Project in progress:
streetscape work, sidewalk, median, ped. ramps and restoration along Flatbush Ave from Tillary Street to Hanson Place, Brooklyn

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Prime

Amount of Contract, Subcontract or Sub-subcontract: $11,000,000.00

Start Date and Completion Date: 12/31/11

****

Name of Contractor: Perfetto Contracting Co., Inc.

Name of Project: Relocation of Utilities (NYS Thruway Authority)

Location of Project: From North Ave Bridge to a new Ped/Bridge - New Rochelle

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: Gregory White
Title: Engineer In Charge Phone Number: 845-222-4749

Brief description of the Project completed or the Project in progress:
Relocating utilities in New Rochelle

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Prime

Amount of Contract, Subcontract or Sub-subcontract: $2,385,505.50

Start Date and Completion Date: 05/30/2013

Qualification Form

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: Perfetto Contracting Co., Inc.

Name of Project: Grinding Existing Asphaltic Concrete Wearing Course in Preparation of Resurfacing Thereon by others - Boroughs of Manhattan and The Bronx

Location of Project: Manhattan and The Bronx

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: Stepehenson Salomom (NYC DDC)
Title: Engineer in Charge Phone Number: 718-250-5002

Brief description of the Project completed or the Project in progress:
Grinding existing asphalt boroughs of Manhattan and The Bronx

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Prime

Amount of Contract, Subcontract or Sub-subcontract: $9,942,237.60

Start Date and Completion Date: June/2008 - May/2009

****

Name of Contractor: Perfetto Contracting Co., Inc.

Name of Project: Grinding existing asphaltic concrete wearing course in preparation of of resurfacing by others

Location of Project: Various Locations Borough of Brooklyn and Staten Island

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: Stephenson Solomon (NYC DDC)
Title: Engineer In Charge Phone Number: 718-250-5002

Brief description of the Project completed or the Project in progress:
Grinding existing asphalt at various locations in the boroughs of Brooklyn and Staten Island

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Prime

Amount of Contract, Subcontract or Sub-subcontract: $8,136,067.00

Start Date and Completion Date: July/2009 - June/2010

Qualification Form

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: Perfetto Contracting Co., Inc.

Name of Project: Reconstruction of Collapsed or Otherwise Defective Sanitation Storm and Combined vitrified Clay Pipe Sewers in Various Locations of Staten Island

Location of Project: Various Locations in Staten Island

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: NYC Dept. of Environmental Protection (SER00201V)

Title: Fathi Husein (Resident Engineer) Phone Number: 718-595-4201

Brief description of the Project completed or the Project in progress:

Excavation and installation of underground utilities (water, and final restoration of roadway and surrounding

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Prime

Amount of Contract, Subcontract or Sub-subcontract: $4,629,881.50

Start Date and Completion Date: 8/27/12 - 8/26/13

****

Name of Contractor: Perfetto Contracting Co., Inc.

Name of Project: Construction of Storm & Sanitary Sewers and Appurtenances in Peru Street, SI

Location of Project: Peru Street between Morse Ave & Ocean Terrace, Staten Island

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: NYC Department of Design and Construction (SER200214)

Title: Sam Riad, EIC Phone Number: 718-605-3264

Brief description of the Project completed or the Project in progress:

Excavation and installation of underground utilities (sewer,water) and final restoration of roadway and surrounding areas.

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: Prime

Amount of Contract, Subcontract or Sub-subcontract: $5,876,486.80

Start Date and Completion Date: 12/3/2012 - 05/26/2014

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ATTACHMENT 1 - BID INFORMATION

PROJECT ID: HWBARUCH
PIN: 8502016HW0053C

Description and Location of Work:

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE
INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND
TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

Documents Available At: 30-30 Thomson Avenue
First Floor Bid Procurement Room
Long Island City, New York 11101
8:30 A.M. to 4:00 P.M. – Monday through Friday

Submission of Bids To: 30-30 Thomson Avenue
First Floor Bid Procurement Room
Long Island City, New York 11101
Before 11:00 A.M. on **August 4, 2017**

Bid Opening: 30-30 Thomson Avenue
First Floor Bid Procurement Room
Long Island City, New York 11101

Time and Date: 11:00 A.M. on **August 4, 2017**

Pre-Bid Conference: Yes _____ No X
If Yes, Mandatory _____ Optional: _____
Time and Date: _____
Location: _____

Bid Security: Bid Security is required in the amount set forth below; provided, however, bid security is not required if the TOTAL BID PRICE set forth on the Bid Form is less than $ 1,000,000.00.

(1) Bond in an amount not less than 10% of the TOTAL BID PRICE set forth on the Bid Form, OR

(2) Certified Check in an amount not less than 2% of the TOTAL BID PRICE set forth on the Bid Form.

Performance and Payment Security: Required for contracts in the amount of $1,000,000 or more. Performance Security and Payment Security shall each be in an amount equal to 100% of the Contract Price.

Agency Contact Person: Lorraine Holley
Phone: 718-391-2601 FAX: 718-391-2627
Email: CSB_projectinquiries@ddc.nyc.gov

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LIST OF CONTRACT DRAWINGS

SHEET NO.	DWG NO.	DRAWING NAME
1	TS-001	TITLE SHEET
2	T-001	TABLE OF CONTENTS & LIST OF STANDARD DRAWINGS
3	T-002	LEGEND AND ABBREVIATIONS
4	T-003	GENERAL NOTES - I
5	T-004	GENERAL NOTES - II
6	G-100	SURVEY CONTROLS - I
7	G-101	SURVEY CONTROLS - II
8	C-200	TYPICAL ROADWAY AND PAVEMENT SECTIONS
9	C-210	CIVIL DETAILS
10	G-200	GENERAL DEMOLITION PLAN
11	C-250	PLAZA CONSTRUCTION PLAN
12	C-251	EAST 24TH STREET AND 3RD AVENUE ROADWAY CONSTRUCTION PLAN, PAVEMENT MARKING PLAN, AND NECKDOWN DETAILS
13	C-260	PLAZA GRADING PLAN AND PROFILE
14	C-300	UTILITY PLAN AND PROFILE
15	C-310	CHUTE CONNECTION SECTIONS AND DETAILS
16	C-301	EAST 24TH STREET AND 3RD AVENUE UTILITY PLAN
17	C-320	PAVEMENT MARKING AND SIGNAGE PLAN
18	C-360	TRAFFIC SIGNALS PLAN
19	C-350	STREET LIGHTING PLAN
20	C-351	24TH ST AT 3RD AVE LIGHTING PLAN
21	C-380	FDNY COMMUNICATIONS DETAILS 1
22	C-381	FDNY COMMUNICATIONS DETAILS 2
23	C-382	FDNY COMMUNICATIONS DETAILS 3
24	G-300	TREE MITIGATION PLAN
25	G-310	PLAZA PLANTING MITIGATION DETAILS
26	B-100	BORING LOCATION PLAN AND LOGS

SHEET NO.	DWG NO.	DRAWING NAME
27	C-500	MPT GENERAL NOTES 1
28	C-501	MPT GENERAL NOTES 2
29	C-510	PLAZA MPT-1
30	C-511	PLAZA MPT-2
31	C-512	PLAZA MPT-3
32	C-520	MPT-1
33	C-521	MPT-2
34	C-522	EAST 24TH STREET AND 3RD AVE MPT
35	L-001	LANDSCAPE GENERAL NOTES
36	L-100	PLAZA MATERIALS PLAN
37	L-101	PLAZA LAYOUT PLAN
38	L-102	PLAZA PAVING LAYOUT PLAN
39	L-200	PLAZA LAYOUT ENLARGEMENT - I
40	L-201	PLAZA LAYOUT ENLARGEMENT - II
41	L-202	PLAZA LAYOUT ENLARGEMENT - III
42	L-300	PLAZA PLANTING PLAN
43	L-301	PLAZA PLANTING ENLARGEMENT - I
44	L-400	PLAZA SECTIONS AND ELEVATIONS
45	L-500	PLAZA DETAILS - I
46	L-501	PLAZA DETAILS - II
47	L-502	PLAZA DETAILS - III
48	L-503	PLAZA DETAILS - IV
49	L-504	PLAZA DETAILS - V
50	L-505	PLAZA DETAILS - VI
51	L-506	PLAZA DETAILS - VII
52	L-507	PLAZA DETAILS - VIII
53	L-508	PLAZA DETAILS - IX
54	L-509	PLAZA DETAILS - X
55	L-510	PLAZA DETAILS - XI
56	L-550	PLAZA FURNISHING DETAILS

SHEET NO.	DWG NO.	DRAWING NAME
57	L-600	PLAZA PLANTING DETAILS
58	S-001.00	GENERAL STRUCTURAL NOTES
59	S-101.00	EXISTING PLAZA DEMOLITION PLAN
60	S-201.00	STEEL FRAMING PLAN
61	S-301.00	MONUMENTAL STEPS FRAMING PLAN
62	S-401.00	DETAILS AND SECTIONS - I
63	S-402.00	DETAILS AND SECTIONS - II
64	A-001.00	WATERPROOFING GENERAL NOTES
65	A-100.00	WATERPROOFING SECTION DETAILS I
66	A-200.00	WATERPROOFING SECTION DETAILS II
67	A-201.00	WATERPROOFING SECTION DETAILS III
68	P-100.00	PLUMBING NOTES, LEGEND AND SCHEDULE
69	P-101.00	PLUMBING FLOOR PLAN CELLAR/B1 & STREET LEVE
70	P-102.00	PLUMBING DETAIL SHEET
71	WF-100	WAYFINDING FOOTINGS - I
72	WF-101	WAYFINDING FOOTINGS - II

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LIST OF STANDARD DRAWINGS

SHEET NO	DESCRIPTION	AGENCY
H-1010	STEEL FACED CONCRETE CURB STEEL FACING TYPE D	NYCDOT-HIGHWAY
H-1011	SIDEWALK PEDESTRIAN RAMPS	NYCDOT-HIGHWAY
H-1012	TIMBER CURBS	NYCDOT-HIGHWAY
H-1013	ILLUMINATED TIMBER BARRICADE	NYCDOT-HIGHWAY
H-1014	TEMPORARY PEDESTRAIN STEEEL BARRICADE	NYCDOT-HIGHWAY
H-1031	TYPICAL PAVEMENT KEY	NYCDOT-HIGHWAY
H-1034	TYPICAL CONSTRUCTION JOINTS FOR CONCRETE BASE FOR PAVEMENT	NYCDOT-HIGHWAY
H-1038	TYPE III BREAKAWAY BARRICADE	NYCDOT-HIGHWAY
H-1040	TRANSVERSE CONSTRUCTION JOINTS FOR CONCRETE BASE	NYCDOT-HIGHWAY
H-1041	CONCRETE COLLAR AROUND STEAM MANHOLE AND STEAM VALVE	NYCDOT-HIGHWAY
H-1042A	STANDARD TRENCH OR HOLE RESTORATION FOR STREETS PROJECTED BY NYC ADMIN CODE 19-144	NYCDOT-HIGHWAY
H-1042B	CONCRETE PAVEMENT RESTORATION	NYCDOT-HIGHWAY
H-1042C	ROADWAY RESTORATION FOR NEWLY CONSTRUCTED ROADWAYS	NYCDOT-HIGHWAY
H-1045	CONCRETE SIDEWALK	NYCDOT-HIGHWAY
H-1049	PLASTIC BARREL	NYCDOT-HIGHWAY
H-1053	DETAILS FOR CONSTRUCTING AREAS OF ADJUSTMENT AND TRANSITION SECTIONS	NYCDOT-HIGHWAY
H-1054	LIMITS OF MEASUREMENT FOR PAYMENT OF TEMPORARY ASPHALT PAVEMENT	NYCDOT-HIGHWAY
MS-1001	SIDEWALK PAVEMENT LIMITS	NYCDOT-HIGHWAY
MS-1004	CATCH BASIN ADJUSTMENT - TYPE 2	NYCDOT-HIGHWAY
MS-1005	ADJUSTMENT AT CATCH BASINS	NYCDOT-HIGHWAY
TCW-1	CROSSWALKS AND STOP BARS	NYCDOT-TP&M
TSC-1	STRIPING & CROSS HATCHING	NYCDOT-TP&M
10240-A-Z	VALVE BOX SKIRT, CAST IRON	NYCDEP-WATER DESIGN STANDARDS
10241-A-Z	HYDRANT VALVE BOX, CAST IRON	NYCDEP-WATER DESIGN STANDARDS
11576-A-Z	FOUNDATION FOR VALVE BOXES	NYCDEP-WATER DESIGN STANDARDS
13547-B-Z	WIDE FLANGE MANHOLE HEAD AND COVER	NYCDEP-WATER DESIGN STANDARDS
19841-Z-B	STANDARD METHODS FOR RECONSTRUCTING CATCH BASIN CONNECTIONS	NYCDEP-WATER DESIGN STANDARDS
22809-Z	HYDRANT DRAIN BASE	NYCDEP-WATER DESIGN STANDARDS
31050-Z	STANDARD METHODS FOR HYDRANT DRAINAGE	NYCDEP-WATER DESIGN STANDARDS
40868-Z	SUPPORTS FOR WATER MAINS OVER PIPE CROSSINGS	NYCDEP-WATER DESIGN STANDARDS
42063-Y	SHALLOW CROSSINGS FOR WATER MAINS, 24" DIAMETER AND SMALLER	NYCDEP-WATER DESIGN STANDARDS

SHEET NO	DESCRIPTION	AGENCY
44292-B-Z	GRAVEL OR BROKEN STONE BEDDING AND FILTER FABRIC INSTALLATION FOR DUCTILE CAST IRON PIPES	NYCDEP-WATER DESIGN STANDARDS
45161-A-Z	STANDARD STEEL HYDRANT FENDERS	NYCDEP-WATER DESIGN STANDARDS
46464-Z	METHOD FOR PROTECTING D.I. WATER MAIN WITH SHALLOW (LESS THAN 24") COVER	NYCDEP-WATER DESIGN STANDARDS
WM0401	PAVEMENT EXCAVATION LIMITS FOR PERMANENT RESTORATION IN STREETS NOT PROTECTED BY NYC ADM CODE 19.144 WATER MAINS 20" AND LESS IN DIAMETER	NYCDEP-WATER DESIGN STANDARDS
WM0402	PAVEMENT EXCAVATION LIMITS FOR PERMANENT RESTORATION IN STREETS PROTECTED BY NYC ADM CODE 19.144 WATER MAINS 20" AND LESS IN DIAMETER	NYCDEP-WATER DESIGN STANDARDS
SE-39	STANDARD FOR 27" DIAMETER CAST IRON MANHOLE FRAME AND COVER	NYCDEP-SEWER DESIGN STANDARDS
SE-40	STANDARD FOR 27" EXTENSION RING FOR 27" DIAMETER MANHOLE FRAME AND COVER	NYCDEP-SEWER DESIGN STANDARDS
SE-47	STANDARD FOR TYPE 1 CATCH BASIN (WITH CURB PIECE)	NYCDEP-SEWER DESIGN STANDARDS
SE-48	STANDARD FOR TYPE 2 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE-49	STANDARD FOR TYPE 3 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE-52A	STANDARD FOR PRECAST TYPE 1 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE-52B	STANDARD FOR SPLIT PRECAST TYPE 1 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE-53A	STANDARD FOR PRECAST TYPE 2 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE-53B	STANDARD FOR SPLIT PRECAST TYPE 2 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE-54	STANDARD FOR PRECAST TYPE 3 CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE57	STANDARD FOR CAST IRON FRAME FOR CATCH BASINS (WITH CURB PIECE)	NYCDEP-SEWER DESIGN STANDARDS
SE58	STANDARD FOR CAST IRON FRAME FOR CATCH BASINS (WITHOUT CURB PIECE)	NYCDEP-SEWER DESIGN STANDARDS
SE59	STANDARD FOR CAST IRON GRATING, BACK PLATE AND CURB PIECE FOR CATCH BASINS	NYCDEP-SEWER DESIGN STANDARDS
SE60	STANDARD FOR CAST IRON HOOD AND HOOKS FOR CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE61	STANDARD FOR DUCTILE IRON PIPE ALTERNATIVE	NYCDEP-SEWER DESIGN STANDARDS
SE67	STANDARD FOR CONSTRUCTION OF CATCH BASIN	NYCDEP-SEWER DESIGN STANDARDS
SE68	STANDARD FOR RECONSTRUCTION OF EXISTING MANHOLE AND REPLACEMENT OF EXISTING MH FRAME AND GRATE	NYCDEP-SEWER DESIGN STANDARDS
F-001	TYPICAL FOUNDATIONS S-14A S AND T FOR S-14A S-1A AND T-1 POLES	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
F-002	FOOTING DETAILS FOR TYPES M-2A AND S-14A POLES	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
F-006	DETAIL OF STANDARD 2" PIPE CONDUIT BEND	NYCDOT-BUREAU OF TRAFFIC OPERATIONS

SHEET NO	DESCRIPTION	AGENCY
F-007	STANDARD ANCHOR BOLT ASSEMBLES B, C AND D	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
F-008	FOUNDATION GROUNDING DETAIL	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
P-001	M-2A POLE WITH CAST IRON CASTING AND 20' TRAFFIC SIGNAL MAST ARM	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
P-002	NYC TRAFFIC SIGNAL POLE S-1A	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
P-005	MOUNTING ASTC CABINET ON TRAFFIC SIGNAL POLE	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
MA-001	M-2A POLE AND 20' TRAFFIC SIGNAL MAST ARM ARRANGEMENT DRAWING	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
MA-002	M-2A POLE AND 20' TRAFFIC SIGNAL MAST ARM ASEEMBLY DRAWING	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
MA-005	5' EXTENSION FOR 20' TRAFFIC SIGNAL MAST ARM	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
MA-008	M-2A POLE TRANSFORMER BASE DETAIL	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
MA-009	M-2A POLE ANCHOR BASE-BOLT COVERING AND SPRING NUTS DETAIL	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
SE-001	VEHICLE AND PEDESTRIAN SIGNALS MOUNTED ON POLES	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
SE-002	8" AND 12" VEHICLE SIGNALS	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
SE-003	16"X16" PEDESTRIAN SIGNALS	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
SE-004	MAST ARM TRAFFIC SIGNAL MOUNTING ASSEMBLIES 1MS, 2MS, 3MS, 4MS	NYCDOT-BUREAU OF TRAFFIC OPERATIONS
D-2861	IDENTIFICATION PLATES	NYCDOT-DIVISION OF STREET LIGHTING
E-3788	TYPICAL FOUNDATIONS FOR LAMPPOSTS	NYCDOT-DIVISION OF STREET LIGHTING
D-5012	SHALLOW FOUNDATION FOR TYPE 8,10,12 LAMPPOSTS	NYCDOT-DIVISION OF STREET LIGHTING
J-3179B	ROADWAY TYPE CONCRETE SERVICE BOX	NYCDOT-DIVISION OF STREET LIGHTING
D-2280	JUNCTION BOX	NYCDOT-DIVISION OF STREET LIGHTING
E-3768	TAPERED 8 FT STEEL ARM FOR FABRICATED STEEL LAMPPOST	NYCDOT-DIVISION OF STREET LIGHTING
H-3722 SH 3A	STEEL TRANSFORMER BASE	NYCDOT-DIVISION OF STREET LIGHTING
H-3722 SH 4A	TAPERED STEEL SHAFT ASSEMBLY	NYCDOT-DIVISION OF STREET LIGHTING
H-3722 SH 5A	SHAFT BASE AND BOLT COVER	NYCDOT-DIVISION OF STREET LIGHTING
H-5019	GROUNDING METHODS	NYCDOT-DIVISION OF STREET LIGHTING
J-3722	CAST IRON POLE CAP	NYCDOT-DIVISION OF STREET LIGHTING
E-5124	WF TYPE FOUNDATION	NYCDOT-DIVISION OF STREET LIGHTING

SHEET NO	DESCRIPTION	AGENCY
H-5305	FLUSHING MEADOWS PARK POLE	NYCDOT-DIVISION OF STREET LIGHTING
STANDARD DWG 141	MANHOLE CONSTRUCTION POST SETTING AND SUBSIDIARY CONNECTIONS	FDNY-BUREAU OF FACILITIES MANAGEMENT
STANDARD DWG 168	INSTALLATION OF FIRE ALARM PEDESTAL BUMPERS	FDNY-BUREAU OF FACILITIES MANAGEMENT

BID SCHEDULE

The following pages contain the Bid Schedule. Items listed in the Bid Schedule shall comply with the requirements of the corresponding sections of the specifications detailed in the table below. All references to the Standard Specifications, Details, Standards, and Drawings shall be to the version in effect at the time of bid.

NOTES:

- "XXX" in the table below signifies any possible combination of characters and spaces.
- The table below may contain item formats which are not included in the Bid Schedule.
- ***Please refer to the Bid Schedule to determine which specifications apply.***

Item Number Format	Applicable Specifications
4.XXX 6.XXX 7.XXX 8.XXX *(Except 8.01 XXX; see below)* 9.XXX	NYC Department of Transportation ("DOT") Standard Highway Specifications, as amended in the R-Pages, located in Volume 3 of 3 herein; ***AND*** NYC DOT Standard Details of Construction; ***OR,*** ***if the item is not contained within the Standard Specifications***, then see the applicable New Sections in the I-Pages, located in Volume 3 of 3 herein.
1.XXX 50.XXX through 55.XXX 60.XXX through 66.XXX 70.XXX through 79.XXX *(Except 79.11XXX; see below)* DSS XXX DSW XXX	NYC Department of Environmental Protection ("DEP") Standard Sewer and Water Main Specifications, as amended in the R-Pages and SW-Pages, located in Volume 3 of 3 herein; ***AND*** NYC DOT Specifications for Trunk Main Work; ***AND*** NYC DOT Sewer Design Standards; ***AND*** NYC DOT Water Main Standard Drawings; ***OR,*** ***if the item is not contained within the Standard Specifications,*** then see the Amendments to the Standard Sewer and Water Main Specifications in the SW-Pages, located in Volume 3 of 3 herein.
GI-XXX PM-XXX ROW XXX	New Sections in the I-Pages, located in Volume 3 of 3 herein ***AND*** NYC DEP Standards for Green Infrastructure.
UTL-XXX	Gas Cost Sharing Standard Specifications in the EP7-Pages, located in Volume 3 of 3 herein.

BID SCHEDULE

Item Number Format	Applicable Specifications
83X.XXX HW-XXX MX.XXX MP XXX NYC-XXX NYCT-XXX NYPD-XXX P XXX PK-XXX	New Sections in the I-Pages, located in Volume 3 of 3 herein.
BMP-XXX	Specifications for Construction of Best Management Practice (BMP) and Mitigation Area in the BMP-Pages, located in Volume 3 of 3 herein.
E XXX ME XXX	Specifications for the Specialty Electrical Works in the EL-Pages, located in Volume 3 of 3 herein.
SL-XXX	NYC DOT Division of Street Lighting Specifications ***AND*** NYC Division of Street Lighting Standard Drawings.
T-XXX	NYC DOT Specifications for Traffic Signals and Intelligent Transportation Systems ***AND*** NYC DOT Traffic Signal Standard Drawings.
JB XXX	Joint Bid Specifications in the JB-Pages, located in Volume 3 of 3 herein.
8.01 XXX	Specifications for Handling, Transportation and Disposal of Nonhazardous and Potentially Hazardous Contaminated Materials in the HAZ-Pages, located in Volume 3 of 3 herein.
67.XXX	Specifications for Abatement of Coal Tar Wrap Asbestos Containing Materials in the ASB-Pages, located in Volume 3 of 3 herein.
79.11XXX	Specifications for Abatement of Transit Authority Duct Insulation Asbestos Containing Materials in the ASB-Pages, located in Volume 3 of 3 herein.

(NO FURTHER TEXT ON THIS PAGE)

BID SCHEDULE

NOTE: (1) The Agency may reject a bid if it contains unbalanced bid prices. An unbalanced bid is considered to be one containing lump sum or unit items which do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs, anticipated for the performance of the items in question.

(2) The following bid prices on Unit Price Contracts are to be paid for the actual quantities of the item numbers in the completed work or structure, and they cover the cost of all work, labor, material, tools, plant and appliances of every description necessary to complete the entire work, as specified, and the removal of all debris, temporary work and appliances.

(3) PLEASE BE SURE A LEGIBLE BID IS ENTERED, IN INK, FOR EACH ITEM. Alterations must be initialed in ink by the bidder.

(4) The Extended Amount entered in Column 6 shall be the product of the Estimated Quantity in Column 3 times the Unit Price Bid in Column 5.

(5) Prospective bidders must examine the Bid Schedule carefully and, before bidding, must advise the Commissioner, in writing, if any pages are missing, and must request that such missing pages be furnished them. The pages of this Bid Schedule are numbered consecutively, as follows:
B - 3 Through B - 43

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

BID SCHEDULE FORM

COL 1 SEQ. NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
001	4.02 AB-R ASPHALTIC CONCRETE WEARING COURSE, 1-1/2" THICK	108.00	S.Y.	20	-	2,160	-
002	4.02 AG ASPHALTIC CONCRETE WEARING COURSE, 3" THICK	533.00	S.Y.	50	-	26,650	-
003	4.02 CB ASPHALTIC CONCRETE MIXTURE	84.00	TONS	200	-	16,800	-
004	4.04 B CONCRETE BASE FOR PAVEMENT, VARIABLE THICKNESS FOR TRENCH RESTORATION, CLASS B-32	10.00	C.Y.	300	-	3,000	-
005	4.04 HC CONCRETE BASE FOR PAVEMENT, 8" THICK (HIGH-EARLY STRENGTH)	115.00	C.Y.	600	-	69,000	-
006	4.06 CONCRETE IN STRUCTURES, CLASS A-40	195.00	C.Y.	1,750	-	341,250	-

BID SCHEDULE FORM

COL 1 SEQ NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
007	**4.08 ABM** CONCRETE CURB, MOUNTABLE (18" DEEP)	60.00	L.F.	111	-	6,660	-
008	**4.09 AD** STRAIGHT STEEL FACED CONCRETE CURB (18" DEEP)	50.00	L.F.	126	-	6,300	-
009	**4.09 AE** STRAIGHT STEEL FACED CONCRETE CURB (21" DEEP)	147.00	L.F.	84	-	12,348	-
010	**4.09 CE** CORNER STEEL FACED CONCRETE CURB (21" DEEP)	37.00	L.F.	111	-	4,107	-
011	**4.11 CA** FILL, PLACE MEASUREMENT	432.00	C.Y.	75	-	32,400	-
012	**4.11 CC** SELECT GRANULAR FILL, PLACE MEASUREMENT	141.00	C.Y.	125	-	17,625	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
013	**4.13 AAS** 4" CONCRETE SIDEWALK (UNPIGMENTED)	5,159.00	S.F.	20	-	103,180	-
014	**4.13 BAS** 7" CONCRETE SIDEWALK (UNPIGMENTED)	6,035.00	S.F.	15	-	90,525	-
015	**4.13 CABS** 4" CONCRETE SIDEWALK (PIGMENTED) (SAW CUT TYPE JOINTS)	5,975.00	S.F.	20	-	119,500	-
016	**4.13 CBBS** 7" CONCRETE SIDEWALK (PIGMENTED) (SAW CUT TYPE JOINTS)	10,900.00	S.F.	25	-	272,500	-
017	**4.13 DE** EMBEDDED PREFORMED DETECTABLE WARNING UNITS	40.00	S.F.	25	-	1,000	-
018	**4.14** STEEL REINFORCEMENT BARS	5,800.00	LBS.	1	-	5,800	-

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN

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CONTRACT PIN: 8502016HW0053C

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BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS.	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS.
019	4.14 W WELDED STEEL WIRE FABRIC	5,700.00	LBS.	1	-	5,700	-
020	4.15 TOPSOIL	195.00	C.Y.	90	-	17,550	-
021	4.16 AA TREES REMOVED (4" TO UNDER 12" CALIPER)	7.00	EACH	500	-	3,500 ~~38,000~~	00 -
022	4.16 EA TREES PLANTED, 4" TO 4-1/2" CALIPER, ALL TYPES	15.00	EACH	1,650	-	24,750	-
023	4.16 FAT TREES TRANSPLANTED, 5" TO 7" CALIPER, ALL TYPES	2.00	EACH	4,500	-	9,000	-
024	4.17 FB FLOWERING BULB, PLANTED, ALL TYPES	3,019.00	EACH	4	-	12,076	-

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CORRECTED BID PAGE

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
019	**4.14 W** WELDED STEEL WIRE FABRIC	5,700.00	LBS.	1	-	5,700	-
020	**4.15** TOPSOIL	195.00	C.Y.	90	-	17,550	-
021	**4.16 AA** TREES REMOVED (4" TO UNDER 12" CALIPER)	7.00	EACH	500	-	38,000	-
022	**4.16 EA** TREES PLANTED, 4" TO 4-1/2" CALIPER, ALL TYPES	15.00	EACH	1,650	-	24,750	-
023	**4.16 FAT** TREES TRANSPLANTED, 5" TO 7" CALIPER, ALL TYPES	2.00	EACH	4,500	-	9,000	-
024	**4.17 FB** FLOWERING BULB, PLANTED, ALL TYPES	3,019.00	EACH	4	-	12,076	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITTY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
025	4.17 PG1G PERENNIALS OR GROUNDCOVERS, PLANTED, 1 GALLON, ALL TYPES	335.00	EACH	30	-	10,050	-
026	4.17 PG2G PERENNIALS OR GROUNDCOVERS, PLANTED, 2 GALLON, ALL TYPES	305.00	EACH	40	-	12,200	-
027	4.17 VHA3 VINES PLANTED. 3 GAL., HYRANGEA ANONMALA	3.00	EACH	1	-	3	-
028	4.17 VHH10 VINES PLANTED. 10" HIGH, HEDERA HELIX	24.00	EACH	60	-	1,440	-
029	4.18 RDM RODENT DETERRENT MESH	175.00	S.Y.	100	-	17,500	-
030	4.21 TREE CONSULTANT	40.00	P/HR	70	-	2,800	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS.	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS.
031	**5.37** CONSTRUCTION REPORT	1.00	L.S.	20,000	-	20,000	-
032	**51.41S001** STANDARD CATCH BASIN, TYPE 1	6.00	EACH	20,000	-	120,000	-
033	**51.41S002** STANDARD CATCH BASIN, TYPE 2	4.00	EACH	15,000	-	60,000	-
034	**51.42S1SO** INCREMENTAL COST OF STANDARD CATCH BASIN TYPE 3 WITH CURB PIECE IN LIEU OF STANDARD CATCH BASIN TYPE 1	1.00	EACH	6,000	-	6,000	-
035	**52.11D12** 12" DUCTILE IRON PIPE BASIN CONNECTION	137.00	L.F.	400	-	54,800	-
036	**55.11AB** ABANDONING BASINS AND INLETS	3.00	EACH	2,000	-	6,000	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
037	**6.02 AAN** UNCLASSIFIED EXCAVATION	1,050.00	C.Y.	190		199,500	-
038	**6.06 PB1** CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 1	17.00	S.Y.	500	-	8,500	-
039	**6.06 PB1E** CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 1 ENGRAVED	76.00	S.Y.	800	-	60,800	-
040	**6.06 PB2** CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 2	16.00	S.Y.	500	-	8,000	-
041	**6.06 PB2E** CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 2 ENGRAVED	84.00	S.Y.	600	-	2,400	-
042	**6.06 PB3** CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 3	8.00	S.Y.	350	-	2,800	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
037	6.02 AAN UNCLASSIFIED EXCAVATION	1,050.00	C.Y.	190	-	199,500	-
038	6.06 PB1 CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 1	17.00	S.Y.	500	-	8,500	-
039	6.06 PB1E CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 1 ENGRAVED	76.00	S.Y.	800	-	60,800	-
040	6.06 PB2 CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 2	16.00	S.Y.	500	-	8,000	-
041	6.06 PB2E CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 2 ENGRAVED	84.00	S.Y.	600	-	50,400 ~~2,100~~	00 -
042	6.06 PB3 CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 3	8.00	S.Y.	350	-	2,800	-

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CORRECTED BID PAGE

BID SCHEDULE FORM

COL. 1 SEQ. NO.	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
043	6.06 PB3E CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 3 ENGRAVED	50.00	S.Y.	1,500	-	75,000	-
044	6.09 B CONCRETE HEADER (12" WIDE X 24" DEEP)	160.00	L.F.	75	-	12,000	-
045	6.20 BROKEN STONE BALLAST **Unit price bid shall not be less than: $ 60.00**	8.00	C.Y.	60	-	480	-
046	6.22 F ADDITIONAL HARDWARE	850.00	LBS.	1	-	850	-
047	6.23 AB REMOVE EXISTING FIRE ALARM POST	1.00	EACH	600	-	600	-
048	6.23 BA FURNISH AND INSTALL FIRE ALARM POST AND SUBBASE IN ACCORDANCE WITH F.D. STD. DWG. #141	2.00	EACH	2,160	-	4,320	-

BID SCHEDULE FORM

COL. 1 SEQ. NO.	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
049	**6.23 BD** FURNISH AND INSTALL 4-PAIR FIRE ALARM CABLE	184.00	L.F.	11	-	2,024	-
050	**6.23 BFC** FURNISH AND INSTALL FIRE DEPARTMENT 12 WIRE TERMINAL BOX AND TERMINATE FIRE ALARM CABLES	2.00	EACH	1,600	-	3,200	-
051	**6.23 BGSE** FURNISH AND INSTALL 4" P.V.C. CONDUIT, SCHEDULE 40, U.L. 651 (WITH PAVEMENT EXCAVATION)	47.00	L.F.	25	-	1,175	-
052	**6.23 BHE** FURNISH AND INSTALL 4" 90-DEGREE P.V.C. WIDE BEND, SCHEDULE 40, U.L. 651 (WITH PAVEMENT EXCAVATION) IN ACCORDANCE WITH F.D. STD. DWG. #141 OR #145AA	2.00	EACH	690	-	1,380	-
053	**6.23 BP** FURNISH AND INSTALL FIRE ALARM PEDESTAL BUMPERS (2 REQUIRED PER SET) IN ACCORDANCE WITH F.D. STD. DWG. #168	2.00	SETS	1,500	-	3,000	-
054	**6.23 XBE** FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (WITH PAVEMENT EXCAVATION)	100.00	L.F.	70	-	7,000	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
055	**6.25 RS** TEMPORARY SIGNS	**938.00**	**S.F.**	5	-	4690	-
056	**6.26** TIMBER CURB	**365.00**	**L.F.**	20	-	7300	-
057	**6.27 DBH** DEMOLITION, REMOVAL AND DISPOSAL OF BENCHES	**13.00**	**EACH**	610	-	7930	-
058	**6.27 DBI** DEMOLITION, REMOVAL AND DISPOSAL OF BICYCLE RACK	**19.00**	**EACH**	400	-	7600	-
059	**6.28 AA** LIGHTED TIMBER BARRICADES	**1,100.00**	**L.F.**	15	-	16 500	-
060	**6.36 DR** STRUCTURAL REPAIR AND ADJUSTMENT OF UTILITY STRUCTURES	**10.00**	**C.Y.**	1600	-	16 000	-

BID SCHEDULE FORM

COL. 1 SEQ. NO.	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS.	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS.
061	6.40 C ENGINEER'S FIELD OFFICE (TYPE C)	30.00	MONTH	8000	-	240,000	-
062	6.43 PHOTOGRAPHS	713.00	SETS	20	-	14,260	-
063	6.44 THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS (4" WIDE)	9,738.00	L.F.	1	-	9738	-
064	6.49 TEMPORARY PAVEMENT MARKINGS (4" WIDE)	3,567.00	L.F.	0	50	1783	50
065	6.50 CLEANING OF DRAINAGE STRUCTURES	3.00	EACH	700	-	2100	-
066	6.52 CG CROSSING GUARD	900.00	P/HR	35	-	31500	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
067	6.53 REMOVE EXISTING LANE MARKINGS (4" WIDE)	8,554.00	L.F.	1	-	8554	-
068	6.55 SAWCUTTING EXISTING PAVEMENT	544.00	L.F.	8	-	4352	-
069	6.67 SUBBASE COURSE, SELECT GRANULAR MATERIAL	20.00	C.Y.	26	-	520	-
070	6.68 PLASTIC FILTER FABRIC	475.00	S.Y.	2	-	950	-
071	6.74 ED STEEL PLATE EDGING	70.00	L.F.	500	-	35000	-
072	6.77 PSR-L44G PUBLIC SPACE RECEPTACLE BIN FOR LITTER, 44 GALLON	15.00	EACH	1500	-	22500	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
073	**6.77 PSR-MGPC44G** PUBLIC SPACE RECEPTACLE BIN FOR METAL, GLASS, PLASTIC & CARTONS, 44 GALLON	15.00	EACH	1500	-	22500	
074	**6.77 PSR-MP44G** PUBLIC SPACE RECEPTACLE BIN FOR MIXED PAPER, 44 GALLON	15.00	EACH	1700	-	25,500	-
075	**6.82 A** REMOVING EXISTING TRAFFIC AND STREET NAME SIGNS	53.00	S.F.	20	-	1060	-
076	**6.82 B** REMOVING EXISTING TRAFFIC AND STREET NAME SIGN POSTS	12.00	L.F.	14	-	168	-
077	**6.83 AA** FURNISHING NEW NON-REFLECTORIZED TRAFFIC SIGNS	20.00	S.F.	17	-	340	-
078	**6.83 AB** FURNISHING NEW TRAFFIC SIGN POSTS	12.00	L.F.	6	-	72	-

BID SCHEDULE FORM

COL 1 SEQ NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
079	**6.83 AR** FURNISHING NEW REFLECTORIZED TRAFFIC SIGNS	53.00	S.F.	30	-	1590	-
080	**6.83 BA** INSTALLING TRAFFIC SIGNS	73.00	S.F.	74	-	5402	-
081	**6.83 BB** INSTALLING TRAFFIC SIGN POSTS	12.00	L.F.	14	-	168	-
082	**6.85 A** TRAFFIC ENFORCEMENT AGENTS **PRICE BID SHALL BE FOR THE FIXED SUM OF $ 43,617.00**	1.00	F.S.	43,617	00	$43,617	00
083	**6.87** PLASTIC BARRELS	240.00	EACH	13	-	3120	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
084	6.91 REFLECTIVE CRACKING MEMBRANE (18" WIDE)	436.00	L.F.	2	-	872	-
085	6.99 AUDIO AND VIDEO DOCUMENTATION SURVEY	1.00	L.S.	3360	-	3360	-
086	60.11R606 FURNISHING AND DELIVERING 6-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	91.00	L.F.	52	-	4732	-
087	60.11R612 FURNISHING AND DELIVERING 12-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	274.00	L.F.	115	-	31510	-
088	60.12D06 LAYING 6-INCH DUCTILE IRON PIPE AND FITTINGS	114.00	L.F.	233	-	26,562	-
089	60.12D12 LAYING 12-INCH DUCTILE IRON PIPE AND FITTINGS	307.00	L.F.	155	-	47885	-

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BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
090	60.13M0A24 FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24-INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS	2.50	TONS	8040	-	20,100 ~~16,080~~	00
091	61.11DMM06 FURNISHING AND DELIVERING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	4.00	EACH	2500	-	10,000	-
092	61.11DMM12 FURNISHING AND DELIVERING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH	3870	-	11,610	-
093	61.12DMM06 SETTING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	4.00	EACH	2000	-	8000	-
094	61.12DMM12 SETTING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH	1789	-	5367	-

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CORRECTED BID PAGE

BID SCHEDULE FORM

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090	**60.13M0A24** FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24-INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS	2.50	TONS	8040	-	16,080	-
091	**61.11DMM06** FURNISHING AND DELIVERING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	4.00	EACH	2500	-	10,000	-
092	**61.11DMM12** FURNISHING AND DELIVERING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH	3870	-	11,610	-
093	**61.12DMM06** SETTING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	4.00	EACH	2000	-	8000	-
094	**61.12DMM12** SETTING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH	1789	-	5367	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
095	62.11SD FURNISHING AND DELIVERING HYDRANTS	5.00	EACH	3734	-	18670	-
096	62.12SG SETTING HYDRANTS COMPLETE WITH WEDGE TYPE RETAINER GLANDS	5.00	EACH	1662	-	8310	-
097	62.13RH REMOVING HYDRANTS	4.00	EACH	1246	-	4984	-
098	62.14FS FURNISHING, DELIVERING AND INSTALLING HYDRANT FENDERS	10.00	EACH	353	-	3530	-
099	63.11VC FURNISHING AND DELIVERING VARIOUS CASTINGS	4.00	TONS	1800	-	7200	-
100	65.31FF FURNISHING, DELIVERING AND PLACING FILTER FABRIC **Unit price bid shall not be less than: $ 0.50**	8,100.00	S.F.	0	50	4050	-

BID SCHEDULE FORM

COL 1 SEQ. NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
101	7.07 SS FURNISHING AND INSTALLING NEW STEEL BOLLARDS	5.00	EACH	6000	-	30,000	-
102	7.12 A PROCTOR ANALYSIS	3.00	EACH	180	-	540	-
103	7.12 B IN-PLACE SOIL DENSITY TEST	9.00	EACH	108	-	972	-
104	7.13 B MAINTENANCE OF SITE **Unit price bid shall not be less than: $ 8,000.00**	24.00	MONTH	8000	-	192,000	-
105	7.16 D TEST PITS	80.00	C.Y.	245	-	19600	-
106	7.36 PEDESTRIAN STEEL BARRICADES	2,270.00	L.F.	5	-	11350	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
107	**7.50 CB2** CITY BENCH WITH BACK (V 2)	21.00	EACH	3500	00	73500	00
108	**7.55 SS** STAINLESS STEEL RAILING	23.00	L.F.	918	00	21,114	00
109	**7.60 GS** FURNISH AND INSTALL DECORATIVE SCREENING	28.00	L.F.	720	00	20,160	00
110	**7.88 AA** RODENT INFESTATION SURVEY AND MONITORING **Unit price bid shall not be less than: $ 21,500.00**	1.00	L.S.	21,500	00	21,500	00
111	**7.88 AB** RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 87.00**	24.00	EACH	87	00	2,088	00
112	**7.88 AC** BAITING OF RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 14.00**	24.00	EACH	14	00	336	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
113	7.88 AD WATERBUG BAIT APPLICATIONS **Unit price bid shall not be less than: $ 94.00**	1.00	BLOCK	94	00	94	00
114	70.31FN FENCING **Unit price bid shall not be less than: $ 3.00**	200.00	L.F.	3	00	600	00
115	70.51EO EXCAVATION OF BOULDERS IN OPEN CUT **Unit price bid shall not be less than: $ 108.00**	10.00	C.Y.	130	00	1300	00
116	70.61RE ROCK EXCAVATION	10.00	C.Y.	600	00	6,000	00
117	70.71SB STONE BALLAST **Unit price bid shall not be less than: $ 22.00**	20.00	C.Y.	41	00	820	00
118	70.81CB CLEAN BACKFILL **Unit price bid shall not be less than: $ 22.00**	110.00	C.Y.	30	00	3,300	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
119	**70.91SW12** FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS	**3,600.00**	**S.F.**	1	00	3,600	00
120	**72.11HF** HYDRAULIC FILL FOR ABANDONED SEWERS AND WATER MAINS	**1.00**	**C.Y.**	100	00	100	00
121	**73.11AB** ADDITIONAL BRICK MASONRY **Unit price bid shall not be less than: $ 62.50**	**10.00**	**C.Y.**	75	00	750	00
122	**73.21AC** ADDITIONAL CONCRETE **Unit price bid shall not be less than: $ 90.00**	**10.00**	**C.Y.**	200	00	2,000	00
123	**73.31AE0** ADDITIONAL EARTH EXCAVATION INCLUDING TEST PITS (ALL DEPTHS) **Unit price bid shall not be less than: $ 29.00**	**40.00**	**C.Y.**	450	00	18,000	00
124	**73.41AG** ADDITIONAL SELECT GRANULAR BACKFILL **Unit price bid shall not be less than: $ 22.00**	**10.00**	**C.Y.**	29	00	290	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
125	**8.01 C1** HANDLING, TRANSPORTING AND DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOIL	700.00	TONS	35	00	24,500	00
126	**8.01 C2** SAMPLING AND TESTING OF CONTAMINATED/POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PURPOSES	3.00	SETS	2,500	00	7,500	00
127	**8.01 H** HANDLING, TRANSPORTING AND DISPOSAL OF HAZARDOUS SOIL	30.00	TONS	400	00	12,000	00
128	**8.01 S** HEALTH AND SAFETY	1.00	L.S.	4,200	00	4,200	00
129	**8.01 W1** REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER	3.00	DAY	2,400	00	7,200	00
130	**8.01 W2** SAMPLING AND TESTING OF CONTAMINATED WATER	2.00	SETS	1,452	00	2,904	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
131	8.02 A SPECIAL CARE EXCAVATION AND RESTORATION FOR SIDEWALK WORK	6,940.00	S.F.	7	00	486,150	00
132	8.02 B SPECIAL CARE EXCAVATION AND RESTORATION FOR CURB WORK	40.00	L.F.	18	00	720	00
133	8.07 TEMPORARY ALUMINUM PEDESTRIAN BRIDGE	30.00	EACH	792	00	23,760	00
134	8.08 VMS VARIABLE MESSAGE SIGN	2.00	EACH	5000	00	10000	00
135	8.22 D THREE PLY MEMBRANE WATERPROOFING	1,000.00	S.F.	19	00	19,00	00
136	8.32 BARK CHIP MULCH	195.00	S.Y.	29	00	56,55	00

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN

PROJECT ID: HWBARUCH
CONTRACT PIN: 8502016HW0053C

7/5/2017 4:39 PM

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
131	8.02 A SPECIAL CARE EXCAVATION AND RESTORATION FOR SIDEWALK WORK	6,940.00	S.F.	~~7~~ 70	~~00~~ 00	~~486,450~~ 485,800	~~00~~ 00
132	8.02 B SPECIAL CARE EXCAVATION AND RESTORATION FOR CURB WORK	40.00	L.F.	18	00	720	00
133	8.07 TEMPORARY ALUMINUM PEDESTRIAN BRIDGE	30.00	EACH	792	00	23,760	00
134	8.08 VMS VARIABLE MESSAGE SIGN	2.00	EACH	5000	00	10000	00
135	8.22 D THREE PLY MEMBRANE WATERPROOFING	1,000.00	S.F.	19	00	19,00	00
136	8.32 BARK CHIP MULCH	195.00	S.Y.	29	00	56,55	00

10/17/17

CORRECTED BID PAGE

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
137	**9.00 C** EXPLORATORY TEST PITS	**696.00**	**C.F.**	10	00	6960	00
138	**9.71 WAD** SURVEY MONITORING AND VISUAL INSPECTION OF EXISTING BUILDINGS	**30.00**	**DAY**	1,440	00	43,200	00
139	**9.71 WBB** VIBRATION MONITORING OF EXISTING BUILDINGS	**1.00**	**L.S.**	50,000	00	50,000	00
140	**9.77 RSR** REMOVE, STORE AND RESET FLAGPOLE INCLUDING FOUNDATION	**5.00**	**EACH**	21,000	00	105,000	00
141	**9.95 BL** DIMENSIONED GRANITE MASONRY, LARGE BLOCKS	**6.00**	**C.Y.**	7,000	00	42,000	00
142	**9.95 BM** DIMENSIONED GRANITE MASONRY, MEDIUM BLOCKS	**3.00**	**C.Y.**	11,000	00	33,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS.	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS.
143	**9.95 BS** DIMENSIONED GRANITE MASONRY, SMALL BLOCKS	2.00	C.Y.	10,000	00	20,000	00
144	**9.95 GST** GRANITE STAIR TREADS	60.00	L.F.	200	00	12,000	00
145	**9.95 GV** GRANITE VENEER	1,130.00	S.F.	200	00	226,000	00
146	**9.95 S** NEW GRANITE STEPS	55.00	L.F.	200	00	11,000	00
147	**BVM11-PL** BARUCH VAULT #11 MODIFICATIONS. PLUMBING WORK	1.00	L.S.	100,000	00	100000	00
148	**BVM11-ST** BARUCH VAULT #11 MODIFICATIONS. STRUCTURAL WORK	1.00	L.S.	700,000	00	700000	00

BID SCHEDULE FORM

COL 1 SEQ. NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
149	**BVM11-WP** BARUCH VAULT #11 MODIFICATIONS. WATERPROOFING	5,650.00	S.F.	20	00	113,000	00
150	**HW-914** ALLOWANCE FOR WAYFINDING TOTEMS **PRICE BID SHALL BE FOR THE FIXED SUM OF $ 6,469.00**	1.00	F.S.	6,469	00	$6,469	00
151	**RCP-SD1** CUSTOM SKATEBOARD DETERRENT, TYPE 1	16.00	EACH	600	00	9,600	00
152	**RCP-SD1A** CUSTOM SKATEBOARD DETERRENT, TYPE 1A	1.00	EACH	500	00	500	00
153	**RCP-SD2** CUSTOM SKATEBOARD DETERRENT, TYPE 2	44.00	EACH	1400	00	61,600	00

BID SCHEDULE FORM

COL. 1 SEQ. NO.	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
154	RCP-SD3 CUSTOM SKATEBOARD DETERRENT, TYPE 3	21.00	EACH	400	00	8,400	00
155	RCP-SD4 CUSTOM SKATEBOARD DETERRENT, TYPE 4	38.00	EACH	1500	00	57,000	00
156	RCP-SD4A CUSTOM SKATEBOARD DETERRENT, TYPE 4A	1.00	EACH	1,500	00	1,500	00
157	SL-20.01.02 FURNISH AND INSTALL FOUNDATION FOR TYPE "WF" LAMPPOST, AS PER DRAWING E-5124	16.00	EACH	2000	00	32,000	00
158	SL-20.02.02 FURNISH AND INSTALL STANDARD TYPE ANCHOR BOLT FOUNDATION, AS PER DRAWING E-3788	1.00	EACH	1,100	00	1,100	00
159	SL-21.03.02 FURNISH AND INSTALL TYPE 2S, 4S, 6S, 8S OR 12S LAMPPOST WITH TRANSFORMER BASE	1.00	EACH	400	00	400	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
160	SL-21.04.55 FURNISH AND INSTALL TYPE "FLUSHING MEADOWS PARK" LAMPPOST AS PER STD. DWG. H-5305.	16.00	EACH	700	00	11,200	00
161	SL-21.09.08 REMOVE ALL STREET LIGHTING EQUIPMENT FROM TYPE "M-2" TRAFFIC POST (ARM(S), PHOTOELECTRIC CONTROLLER, LUMINAIRE (S), SHAFT EXTENSION, WIRING, ETC.)	1.00	EACH	700	00	700	00
162	SL-21.09.09 REMOVE F.S. SPUN ALUMINUM, #10, ETC LAMPPOST, WITH ARMS(S), LUMINAIRE(S), ETC., WITH ALL ATTACHMENTS, IF ANY. REMOVE PORTION OF FOUNDATION. RESTORE TO SURROUNDING CONDITIONS.	4.00	EACH	3,000	00	12,000	00
163	SL-22.05.26A FURNISH AND INSTALL TYPE LED "FLUSHING MEADOWS PARK"	16.00	EACH	500	00	8,000	00
164	SL-22.16.05 FURNISH AND INSTALL ROADWAY TYPE LED FIXTURE AS PER SPECIFICATION 466 WITH PEC RECEPTACLE AND PEC	2.00	EACH	2,500	00	5000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
165	**SL-24.02.02** FURNISH AND INSTALL FABRICATED STEEL 8 Ft. ARM ON LAMPPOST OR "M-2" TRAFFIC POLE SHAFT EXTENSION.	1.00	EACH	600	00	600	00
166	**SL-24.02.03** FURNISH AND INSTALL FABRICATED STEEL 6 Ft. EXTENSION ARM ON LAMPPOST OR "M-2" POLE SHAFT EXTENSION, AS PER DRAWING J-3951.	1.00	EACH	600	00	600	00
167	**SL-28.01.01** FURNISH AND INSTALL COPPER WELD GROUND ROD AND CLAMP, AS PER DRAWING H-5019	3.00	EACH	340	00	1020	00
168	**SL-33.01.02** FURNISH AND INSTALL NO. 6 AWG XLP COPPER CABLE OR EQUAL IN CONDUIT	2,200.00	L.F.	6	00	13,200	00
169	**SL-33.03.01** FURNISH AND INSTALL #6 BARE COPPER CONDUCTOR IN CONDUIT OR OVERHEAD.	1,100.00	L.F.	6	00	6,600	00
170	**SL-35.03.04** FURNISH AND INSTALL 2" HOT DIPPED GALVANIZED STEEL CONDUIT IN UNPAVED AREA	900.00	L.F.	60	00	54,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
171	SL-37.05.04 FURNISH AND INSTALL TYPE 2418 SIDEWALK CONCRETE BOX WITH CAST IRON FRAME AND COVER WITH TAMPER PROOF BOLTS AS PER DWG J-3179A.	9.00	EACH	3000	00	27,00	00
172	SL-40.01.02 FURNISH AND INSTALL GFI OUTLET 14' ABOVE GROUND ON STREET LIGHT POLE	16.00	EACH	300	00	4,800	00
173	T-1.1 INSTALL TYPE "S" OR "T" FOUNDATION	1.00	EACH	1000	00	1000	00
174	T-1.18 REMOVE TYPE "A", "B", "S" OR "T" SERIES FOUNDATION	1.00	EACH	500	00	500	00
175	T-1.20 REMOVE TYPE "M" SERIES FOUNDATION	3.00	EACH	500	00	1500	00
176	T-1.3 INSTALL TYPE "M2-5S" FOUNDATION	2.00	EACH	1300	00	26,00	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
177	T-1.6 INSTALL TYPE "M2-5T" FOUNDATION	1.00	EACH	1,300	00	1,300	00
178	T-2.1 INSTALL TYPE "S-1" OR "T-1" SERIES POST	1.00	EACH	500	00	500	00
179	T-2.16 FURNISH, INSTALL, MAINTAIN AND REMOVE TEMPORARY POST OR PYLON WITH SIGNALS	5.00	EACH	1,500	00	7,500	00
180	T-2.22 REMOVE TYPE "S-1" OR "T-1" SERIES POST	1.00	EACH	500	00	500	00
181	T-2.24 REMOVE TYPE "M" SERIES POST	3.00	EACH	100	00	300	00
182	T-2.4 INSTALL TYPE "M-2" POST	3.00	EACH	2,000	00	6,000	00

BID SCHEDULE FORM

COL 1 SEQ. NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	COL 5 CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL 6 CTS
183	T-20000 FURNISH TEN FOOT ALUMINUM SIGNAL POST TYPE "S-1"	1.00	EACH	1,000	00	1,000	00
184	T-20020 a) FURNISH 3/4" ANCHOR BOLT ASSEMBLIES FOR S-1 (EACH) (3 REQUIRED PER POST)	3.00	EACH	35	00	105	00
185	T-20160 FURNISH 20 FOOT SIGNAL MAST ARM POLE ASSEMBLY TYPE "M-2"	3.00	EACH	5,000	00	15,000	00
186	T-20184 a) FURNISH 5' EXTENSION ARM ASSEMBLY WITH FITTINGS	1.00	EACH	450	00	450	00
187	T-20220 c) FURNISH 1-1/4" ANCHOR BOLT ASSEMBLIES FOR M-2 (EACH) (4 REQUIRED PER POST)	12.00	EACH	84	00	1,008	00
188	T-3.1 INSTALL "ONE-WAY" SIGNAL UNIT ON MAST ARM OR TOP OF TRAFFIC POST	6.00	EACH	400	00	2,400	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
189	T-3.18 REMOVE SIGNAL HEAD FROM ANY TYPE POST	6.00	EACH	320	00	1,920	00
190	T-3.2 INSTALL "ONE-WAY" SIGNAL UNIT ON THE SHAFT OF ANY POST	2.00	EACH	480	00	960	00
191	T-3.21 REMOVE PEDESTRIAN SIGNAL OR SIGN UNIT OR OTHER ILLUMINATED SIGNS FROM ANY POST	6.00	EACH	300	00	1,800	00
192	T-3.6 INSTALL PEDESTRIAN SIGNAL ON ANY TYPE POST	8.00	EACH	300	00	2,400	00
193	T-30013L FURNISH ADJUSTABLE 3 SECTION 1-WAY, DIE CAST ALUMINUM TRAFFIC SIGNALS 8" - W/LED LENS	7.00	EACH	500	00	3,500	00
194	T-31200 e) "VB" ASSEMBLY *ASSEMBLY IS EQUAL TO ONE PAIR	2.00	EACH	100	00	200	00

BID SCHEDULE FORM

COL 1 SEQ. NO	COL 2 ITEM NUMBER and DESCRIPTION	COL 3 ENGINEER'S ESTIMATE OF QUANTITY	COL 4 UNIT	COL 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
195	T-31205 FURNISH MAST ARM SIGNAL MOUNTING ASSEMBLY - a) "1MS"	2.00	EACH	65	00	130	00
196	T-31210 h) "HUB" ASSEMBLY *ASSEMBLY IS EQUAL TO ONE PAIR	7.00	EACH	30	00	210	00
197	T-31215 b) "2MS"	2.00	EACH	300	00	600	00
198	T-31340 f) "VB-P" ASSEMBLY *ASSEMBLY IS EQUAL TO ONE PAIR	2.00	EACH	100	00	220	00
199	T-31351 g) "VB-2P" ASSEMBLY *ASSEMBLY IS EQUAL TO ONE PAIR	3.00	EACH	300	00	900	00
200	T-31500GL FURNISH 12" LENS & SIGNAL SECTION (LED GREEN ARROWS)	1.00	EACH	250	00	250	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
201	T-31500L FURNISH ADJUSTABLE 3 SECTION 1-WAY, DIE CAST ALUMINUM TRAFFIC SIGNALS 12" - W/LED LENS	2.00	EACH	700	00	1,400	00
202	T-31501AA FURNISH 12" AMBER ARROW LED (AS PER NYC SPEC)	2.00	EACH	110	00	220	00
203	T-31501GA FURNISH 12 INCH GREEN ARROW LED (AS PER NYC SPECIFICATION)	2.00	EACH	150	00	300	00
204	T-31501-RA FURNISH 12 INCH RED ARROW LED (AS PER ITE SPECIFICATION 1/1/98)	2.00	EACH	150	00	300	00
205	T-33000L FURNISH POLYCARBONATE INCANDESCENT PED SIGNAL W/LED LENS	1.00	EACH	600	00	600	00
206	T-33001-L FURNISH POLYCARBONATE PEDESTRIAN SIGNAL (16 X 16) W/LED COUNT LENS (SPECIFICATION A-L)	5.00	EACH	700	00	3,500	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
207	T-4.22 INSTALL ANY TYPE OF ADVANCED SOLID STATE TRAFFIC SIGNAL CONTROLLER AND CABINET ON METAL POLE	1.00	EACH	1,932	00	1,932	00
208	T-4.8 REMOVE ONE CONTROL BOX AND CONTROLLER FROM ANY POST OR SUPPORT	1.00	EACH	1,000	00	1,000	00
209	T-5.1 FURNISH AND INSTALL 2" RIGID UNDERGROUND CONDUIT IN UNPAVED ROADWAY	140.00	L.F.	70	00	9,800	00
210	T-5.2 FURNISH AND INSTALL 2" RIGID UNDERGROUND CONDUIT IN PAVED ROADWAY	180.00	L.F.	70	00	12,600	00
211	T-5.32 RESTORING PERMANENT ROADWAY (INCLUDING SAWCUT)	180.00	L.F.	40	00	7200	00
212	T-6.1 INSTALL CABLE (INCLUDES OVERHEAD)	900.00	L.F.	7	00	6,300	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
213	T-6.10 REMOVE CABLE (INCLUDES OVERHEAD)	1,500.00	L.F.	6	00	9,000	00
214	T-6.2 INSTALL MULTIPLE CABLE (INCLUDES OVERHEAD)	1,500.00	L.F.	10	00	15,000	00
215	T-60000B FURNISH 2 c # 10B (BREAKDOWN = 2#10 WITH 3RD WIRE FOR GROUNDING).	1,500.00	L.F.	4	00	6,000	00
216	T-60040 c) 7 CONDUCTOR, 14 A.W.G.	900.00	L.F.	3	00	2,700	00
217	T-60190 e) 13 CONDUCTOR, 14 A.W.G.	1,800.00	L.F.	3	00	5,400	00
218	T-8.10 RELOCATE CONCRETE PYLON WITH POST	3.00	EACH	1,300	00	3,900	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
219	T-8.8 INSTALL CONCRETE PYLON	3.00	EACH	1100	-	3300	-
220	T-8.9 REMOVE CONCRETE PYLON	3.00	EACH	600	-	1800	-
221	T-81000 FURNISH CONCRETE PYLON	3.00	EACH	1300	-	3900	-
222	UTL-6.01.8 GAS SERVICES CROSSING TRENCHES AND/OR EXCAVATIONS (S6.01) **Unit price bid shall not be less than: $ 465.00**	2.00	EACH	465	-	930	-
223	UTL-6.01.9 GAS MAIN CROSSING WATER MAIN UP TO 20" IN DIAMETER (S6.01) **Unit price bid shall not be less than: $ 485.00**	2.00	EACH	485	-	970	-
224	UTL-6.03 REMOVAL OF ABANDONED GAS FACILITIES. ALL SIZES. (S6.03) **Unit price bid shall not be less than: $ 15.00**	50.00	L.F.	15	-	750	-

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
225	UTL-6.03.1A REMOVAL OF ABANDONED GAS FACILITIES WITH POSSIBLE COAL TAR WRAP. ALL SIZES. (FOR CON EDISON WORK ONLY) (S6.03) **Unit price bid shall not be less than: $ 25.00**	20.00	L.F.	75	-	500	-
226	UTL-6.05 ADJUST HARDWARE TO GRADE BY RESETTING. (ROAD RECONSTRUCTION.) (S6.05) **Unit price bid shall not be less than: $ 65.00**	5.00	EACH	65	-	325	-
227	UTL-6.06 SPECIAL CARE EXCAVATION AND BACKFILLING (S6.06) **Unit price bid shall not be less than: $ 180.00**	30.00	C.Y.	180	-	5400	-
228	UTL-6.07 TEST PITS FOR GAS FACILITIES (S6.07) **Unit price bid shall not be less than: $ 100.00**	25.00	C.Y.	120	-	3000	-
229	UTL-GCS-2WS GAS INTERFERENCES AND ACCOMMODATIONS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 20,000.00	1.00	F.S.	20,000	00	$20,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS

SUB-TOTAL: $ ~~6,686,571.50~~ $5,708,021.50

230	6.39 A MOBILIZATION BID PRICE OF MOBILIZATION SHALL NOT EXCEED 4% OF THE ABOVE SUB-TOTAL PRICE.	1.00	L.S.	223,182	86	223,182	86

10/17/17

TOTAL BID PRICE: $ ~~6,914,034.36~~ $5,931,204.36

10/17/17

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM. THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

CORRECTED BID PAGE

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS

SUB-TOTAL: $ 5,686,571.50

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TOTAL BID PRICE: $ 5,914,034.36

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

(NO TEXT ON THIS PAGE)

BID FORM
THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

BID FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

RECONSTRUCTION OF EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

Name of Bidder: Perfetto Contracting Co., Inc.

Date of Bid Opening: 8/4/17

Bidder is: (Check one, whichever applies) Individual ( ) Partnership ( ) Corporation (X)

Place of Business of Bidder: 152 41st Street Brooklyn, NY 11232

Bidder's Telephone Number: 718-858-8600 Fax Number: 718-858-8604

Bidder's E-Mail Address: msubrati@perfettocontracting.com

Residence of Bidder (If Individual): n/a

If Bidder is a Partnership, fill in the following blanks:

Names of Partners	Residence of Partners
n/a	n/a

If Bidder is a Corporation, fill in the following blanks:
Organized under the laws of the State of New York

Name and Home Address of President: Cesare Perfetto
12 Gorge Road Staten Island, NY 10305

Name and Home Address of Secretary: Cesare Perfetto
12 Gorge Road Staten Island, NY 10305

Name and Home Address of Treasurer: Cesare Perfetto
12 Gorge Road Staten Island, NY 10305

BID FORM

The above-named Bidder affirms and declares:

1. The said bidder is of lawful age and the only one interested in this bid; and no person, firm or corporation other than hereinbefore named has any interest in this bid, or in the Contract proposed to be taken.

2. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief: (1) the prices in this bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (2) unless otherwise required by law, the prices quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and (3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

3. No councilman or other officer or employee or person whose salary is payable in whole or in part from the City Treasury is directly or indirectly interested in this bid, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

4. The bidder is not in arrears to the City of New York upon debt or contract or taxes, and is not a defaulter, as surety or otherwise, upon any obligation of the City of New York, and has not been declared not responsible, or disqualified, by any agency of the City of New York or State of New York, nor is there any proceeding pending relating to the responsibility or qualification of the bidder to receive public contracts except as set forth on the Affirmation included as page C-6 of this Bid Booklet.

The bidder hereby affirms that it has paid all applicable City income, excise and other taxes for all years it has conducted business activities in New York City.

5. The bidder, as an individual, or as a member, partner, director or officer of the bidder, if the same be a firm, partnership or corporation, executes this document expressly warranting and representing that should this bid be accepted by the City and the Contract awarded to him, he and his subcontractors engaged in the performance: (1) will comply with the provisions of Section 6-108 of the Administrative Code of the City of New York and the non-discrimination provisions of Section 220a of the New York State Labor Law, as more expressly and in detail set forth in the Agreement; (2) will comply with Section 6-109 of the Administrative Code of the City of New York in relation to minimum wages and other stipulations as more expressly and in detail set forth in the Agreement; (3) have complied with the provisions of the aforesaid laws since their respective effective dates, and (4) will post notices to be furnished by the City, setting forth the requirements of the aforesaid laws in prominent and conspicuous places in each and every plant, factory, building and structure where employees engaged in the performance of the Contract can readily view it, and will continue to keep such notices posted until the supplies, materials and equipment, or work labor and services required to be furnished or rendered by the Contractor have been finally accepted by the City. In the event of any breach or violation of the foregoing, the Contractor may be subject to damages, liquidated or otherwise, cancellation of the Contract and suspension as a bidder for a period of three years. (The words, "the bidder", "he", "his", and "him" where used herein shall mean the individual bidder, firm, partnership or corporation executing this bid).

6. Compliance Report

The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, (1) represents that his attention has been specifically drawn to Executive Order No. 50, dated, April 25, 1980, on Equal Employment Compliance of the contract, and (2) warrants that he will comply with the provisions of Executive Order No. 50. The Employment Report must be submitted as part of the bid.

The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, executes this document expressly warranting that he will comply with: (1) the provision of the contract on providing records, Chapter 8.

7. By submission of this bid, the bidder certifies that it now has and will continue to have the financial capability to fully perform the work required for this contract. Any award of this contract will be made in reliance upon such certification. Upon request therefor, the bidder will submit written verification of such financial capability in a form that is acceptable to the department.

8. In accordance with Section 165 of the State Finance Law, the bidder agrees that tropical hardwoods, as defined in Section 165 of the State Finance Law, shall not be utilized in the performance of this Contract, except as the same are permitted by the foregoing provision of law.

9. The bidder has visited and examined the site of the work and has carefully examined the Contract in the form approved by the Corporation Counsel, and will execute the Contract and perform all its items, covenants and conditions, and will provide, furnish and deliver all the work, materials, supplies, tools and appliances for all labor and materials necessary or required for the hereinafter named work, all in strict conformity with the Contract, for the prices set forth in the Bid Schedule:

10. M/WBE UTILIZATION PLAN: By signing its bid, the bidder agrees to the Vendor Certification and Required Affirmations set forth below, unless a full waiver of the Participation Goals is granted. The Vendor Certification and Required Affirmations will be deemed to satisfy the requirement to complete Section V of Part II of Schedule B: M/WBE Utilization Plan.

Section V: Vendor Certification and Required Affirmations:

I hereby:

1) acknowledge my understanding of the M/WBE participation requirements as set forth in this Contract and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York and the rules promulgated thereunder;
2) affirm that the information supplied in support of the M/WBE Utilization Plan is true and correct;
3) agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;
4) agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and
5) agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or If a partial waiver is obtained or such goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.

BID FORM

PROJECT ID. HWBARUCH

TOTAL BID PRICE: In the space provided below, the Bidder shall indicate its Total Bid Price in figures. Such Total Bid Price is set forth on the final page of the Bid Schedule.

10/17/17

TOTAL BID PRICE:
(a/k/a BID PROPOSAL)

$5,931,204.36
~~$5,914,034.36~~
8/4/17

BIDDER'S SIGNATURE AND AFFIDAVIT

Bidder: Perfetto Contracting Co., Inc.

By: _____
(Signature of Partner or corporate officer)

_____
Secretary of Corporate Bidder

Attest:
(Corporate Seal)

Affidavit on the following page should be subscribed and sworn to before a Notary Public

CORRECTED BID PAGE

BID FORM

PROJECT ID. HWBARUCH

TOTAL BID PRICE: In the space provided below, the Bidder shall indicate its Total Bid Price in figures. Such Total Bid Price is set forth on the final page of the Bid Schedule.

TOTAL BID PRICE:
(a/k/a BID PROPOSAL)

$ 5,914,034.36
BB 8/4/17

BIDDER'S SIGNATURE AND AFFIDAVIT

Bidder: Perfetto Contracting Co.,Inc.

By: _____
(Signature of Partner or corporate officer)

_____
Secretary of Corporate Bidder

Attest:
(Corporate Seal)

Affidavit on the following page should be subscribed
and sworn to before a Notary Public

BID FORM (TO BE NOTARIZED)

AFFIDAVIT WHERE BIDDER IS AN INDIVIDUAL

STATE OF NEW YORK, COUNTY OF _____ ss:

_____ being duly sworn says:

I am the person described in and who executed the foregoing bid, and the several matters therein stated are in all respects true.

_____

(Signature of the person who signed the Bid)

Subscribed and sworn to before me this

_____ day of _____, _____

_____

Notary Public

AFFIDAVIT WHERE BIDDER IS A PARTNERSHIP

STATE OF NEW YORK, COUNTY OF _____ ss:

_____ being duly sworn says:

I am a member of _____ the firm described in and which executed the foregoing bid. I subscribed the name of the firm thereto on behalf of the firm, and the several matters therein stated are in all respects true.

_____

(Signature of Partner who signed the Bid)

Subscribed and sworn to before me this

_____ day of _____, _____

_____

Notary Public

AFFIDAVIT WHERE BIDDER IS A CORPORATION

STATE OF NEW YORK, COUNTY OF Kings ss:

Cesare Perfetto being duly sworn says:

I am the President of the above named corporation whose name is subscribed to and which executed the foregoing bid. I reside at 12 Gorge Road Staten Island, NY 10304.

I have knowledge of the several matters therein stated, and they are in all respects true.

_____ 8/4/17

(Signature of Corporate Officer who signed the Bid)

Subscribed and sworn to before me this

_____ day of August, 2017

_____

Notary Public

JOHN P. WIEGMAN
Notary Public, State of New York
No. 01WI6212179
Qualified in Nassau County
Commission Expires October 13, 2017

AFFIRMATION

PROJECT ID. HWBARUCH

The undersigned bidder affirms and declares that said bidder is not in arrears to the City of New York upon debt, contract or taxes and is not a defaulter, as surety or otherwise, upon obligation to the City of New York, and has not been declared not responsible, or disqualified, by any agency of the City of New York, nor is there any proceeding pending relating to the responsibility or qualification of the bidder to receive public contracts except: None

(If none, the bidder shall insert the word "None" in the space provided above.)

Full Name of Bidder: Perfetto Contracting Co., Inc.
Address: 152 41st Street
City Brooklyn State NY Zip Code 11232

CHECK ONE BOX AND INCLUDE APPROPRIATE NUMBER:

/__/ A - Individual or Sole Proprietorship*
SOCIAL SECURITY NUMBER

/__/ B - Partnership, Joint Venture or other unincorporated organization
EMPLOYER IDENTIFICATION NUMBER

/X/ C- Corporation
EMPLOYER IDENTIFICATION NUMBER

11-2814026

By: _____
Signature

Title: President

If a corporation, place seal here

This affirmation must be signed by an officer or duly authorized representative.

*Under the Federal Privacy Act the furnishing of Social Security Numbers by bidders on City contracts is voluntary. Failure to provide a Social Security Number will not result in a bidder's disqualification. Social Security Numbers will be used to identify bidders, proposers or vendors to ensure their compliance with laws, to assist the City in enforcement of laws, as well as to provide the City a means of identifying of businesses which seek City contracts.

BID BOND 1
FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS. That we, PERFETTO CONTRACTING CO., INC.

152 41st Street, BROOKLYN, NY 11232

hereinafter referred to as the "Principal", and Fidelity and Deposit Company of Maryland
600 Red Brook Blvd., Suite 600
Owings Mills, MD 21117

hereinafter referred to as the "Surety" are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "CITY", or to its successors and assigns in the penal sum of

Ten Percent of Amount Bid

($ 10%), Dollars lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the Principal is about to submit (or has submitted) to the City the accompanying proposal, hereby made a part hereof, to enter into a contract in writing for

PROJECT ID: HWBARUCH - RECONSTRUCTION OF EAST 25TH SREET PLAZA BETWEEN LEXINGTON AND 3RD AVENUE AT BARUCH COLLEGE INCLUDING SEWER,WATERMAINS, STREET LIGHTING AND TRAFFIC SIGNAL WORK/MANHATTAN

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall not withdraw said Proposal without the consent of the City for a period of forty-five (45) days after the opening of bids and in the event of acceptance of the Principal's Proposal by the City, if the Principal shall:

(a) Within ten (10) days after notification by the City, execute in quadruplicate and deliver to the City all the executed counterparts of the Contract in the form set forth in the Contract Documents, in accordance with the proposal as accepted, and

(b) Furnish a performance bond and separate payment bond, as may be required by the City, for the faithful performance and proper fulfillment of such Contract, which bonds shall be satisfactory in all respects to the City and shall be executed by good and sufficient sureties, and

(c) In all respects perform the agreement created by the acceptance of said Proposal as provided in the Information for Bidders, bound herewith and made a part hereof, or if the City shall reject the aforesaid Proposal, then this obligation shall be null and void; otherwise to remain in full force and effect.

(NO TEXT ON THIS PAGE)

BID BOND 2

In the event that the Proposal of the Principal shall be accepted and the Contract be awarded to him the Surety hereunder agrees subject only to the payment by the Principal of the premium therefore, if requested by the City, to write the aforementioned performance and payment bonds in the form set forth in the Contract Documents.

It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

There shall be no liability under this bond if, in the event of the acceptance of the Principal's Proposal by the City, either a performance bond or payment bond, or both, shall not be required by the City on or before the 30th day after the date on which the City signs the Contract.

The surety, for the value received, hereby stipulates and agrees that the obligations of the Surety and its bond shall in no way be impaired or affected by any postponements of the date upon which the City will receive or open bids, or by any extensions of the time within which the City may accept the Principal's Proposal, or by any waiver by the City of any of the requirements of the Information for Bidders, and the Surety hereby waives notice of any such postponements, extensions, or waivers.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers the 4th day of August, 2017.

(Seal) PERFETTO CONTRACTING CO., INC. (L.S.)
Principal

By: _____

(Seal) Fidelity and Deposit Company of Maryland
Surety

By: _____
William D. Haas, Attorney-in-Fact

ACKNOWLEDGMENT OF PRINCIPAL - IF A CORPORATION

STATE OF New York
COUNTY OF Kings } ss

On this 4th day of August 2017 before me personally appeared Cesare Perfetto to be known, who, being by me duly sworn, did depose and say; that he/she resides at 12 Gorge Rd Si 10304, that he/she is the .....

.....of .....the corporation described in and which executed the within insurance instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

8/4/17

JOHN P. WIEGMAN
Notary Public, State of New York
No. 01WI6212179
Qualified in Nassau County
Commission Expires October 13, 2017

KINGS

ACKNOWLEDGMENT OF PRINCIPAL - IF INDIVIDUAL OR FIRM

STATE OF
COUNTY OF } ss

On this .....day of ....., ... before me personally appeared

.....to me know to be (the individual) (one of the firm

of.....), described in and who executed the within instrument and he/she thereupon acknowledged to me that he/she executed the same (as the act and deed of said firm).

.....

ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF NEW YORK
COUNTY OF WESTCHESTER } ss

On this August 4, 2017, before me personally came WILLIAM D. HAAS

to me known, who, being by me duly sworn, did depose and say; that he/she resides in

RYE, NEW YORK; that he/she is the Attorney-in-Fact of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to WILLIAM D. HAAS his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ALICE McCARTHY
NOTARY PUBLIC, State of New York
No. 01MC5079342
Qualified in Dutchess County
Commission Expires June 02, 2019

Alice McCarthy
Notary Public

FIDELITY AND DEPOSIT COMPANY

OF MARYLAND

600 Red Brook Blvd., Suite 600, Owings Mills, MD 21117

Statement of Financial Condition
As Of December 31, 2016

ASSETS

Bonds		$ 141,903,342
Stocks		22,845,654
Cash and Short Term Investments		3,080,053
Reinsurance Recoverable		13,996,720
Other Accounts Receivable		27,147,872
TOTAL ADMITTED ASSETS		$ 208,973,641

LIABILITIES, SURPLUS AND OTHER FUNDS

Reserve for Taxes and Expenses		$ 896,428
Ceded Reinsurance Premiums Payable		40,193,693
Securities Lending Collateral Liability		0
TOTAL LIABILITIES		$ 41,090,121
Capital Stock, Paid Up	$ 5,000,000	
Surplus	162,883,521	
Surplus as regards Policyholders		167,883,520
TOTAL		$ 208,973,641

Securities carried at $62,166,344 in the above statement are deposited with various states as required by law.

Securities carried on the basis prescribed by the National Association of Insurance Commissioners. On the basis of market quotations for all bonds and stocks owned, the Company's total admitted assets at December 31, 2016 would be $209,350,832 and surplus as regards policyholders $168,260,711.

I, DENNIS F. KERRIGAN, Corporate Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing statement is a correct exhibit of the assets and liabilities of the said Company on the 31st day of December, 2016.

Corporate Secretary

State of Illinois
City of Schaumburg } SS:

Subscribed and sworn to, before me, a Notary Public of the State of Illinois, in the City of Schaumburg, this 1st day of March, 2017.

Notary Public

DARRYL JOINER
OFFICIAL SEAL
Notary Public - State of Illinois
My Commission Expires
February 24, 2018

Bond Number Bid Bond

Obligee: The City of New York

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **Michael P. Bond, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **William D. Haas**, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND,** this 24th day of April, A.D. 2017.

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Michael P. Bond
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 24th day of April, A.D. 2017, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Michael P. Bond, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 4th day of August, 2017.

Michael C. Fay, Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
www.zurichna.com/en/claims

M/WBE PROGRAM

M/WBE UTILIZATION PLAN

M/WBE Program Requirements: The requirements for the M/WBE Program are set forth on the following pages of this Bid Booklet, in the section entitled "Notice to All Prospective Contractors".

Schedule B: M/WBE Utilization Plan: Schedule B: M/WBE Utilization Plan for this Contract is set forth in this Bid Booklet on the pages following the section entitled "Notice to All Prospective Contractors". The M/WBE Utilization Plan (Part I) indicates whether Participation Goals have been established for this Contract. If Participation Goals have been established for this Contract, the bidder must submit an M/WBE Utilization Plan (Part II) with its bid.

Waiver: The bidder may seek a full or partial pre-award waiver of the Participation Goals in accordance with the "Notice to All Prospective Contractors" (See Part A, Section 10). The bidder's request for a waiver must be submitted at least seven (7) calendar days prior to the bid date. Waiver requests submitted after the deadline will not be considered. The form for requesting a waiver of the Participation Goals is set forth in the M/WBE Utilization Plan (Part III).

Rejection of the Bid: The bidder must complete Schedule B: M/WBE Utilization Plan (Part II) set forth in this Bid Booklet on the pages following the section entitled "Notice to All Prospective Contractors". A Schedule B submitted by the bidder which does not include the Vendor Certification and Required Affirmations (See Section V of Part II) will be deemed to be non-responsive, unless a full waiver of the Participation Goals is granted (Schedule B, Part III). In the event that the City determines that the bidder has submitted a Schedule B where the Vendor Certification and Required Affirmations are completed but other aspects of the Schedule B are not complete, or contain a copy or computation error that is at odds with the Vendor Certification and Required Affirmations, the bidder will be notified by the Agency and will be given four (4) calendar days from receipt of notification to cure the specified deficiencies and return a completed Schedule B to the Agency. Failure to do so will result in a determination that the Bid is non-responsive. Receipt of notification is defined as the date notice is emailed or faxed (if the bidder has provided an email address or fax number), or no later than five (5) calendar days from the date of mailing or upon delivery, if delivered.

Impact on LBE Requirements: If Participation Goals have been established for the participation of M/WBEs, the contractor is not required to comply with the Locally Based Enterprise Program ("LBE"). The LBE Program is set forth in Article 67 of the Contract.

NOTICE TO ALL PROSPECTIVE CONTRACTORS

PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter "Section 6-129"). Section 6-129 establishes the program for participation in City procurement ("M/WBE Program") by minority- owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan"), and are detailed below. The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129. Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts. Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

1. The **MBE and/or WBE Participation Goals** established for this Contract or Task Orders issued pursuant to this Contract, ("**Participation Goals**"), as applicable, are set forth on Schedule B, Part I to this Contract (see Page 1, line 1 Total Participation Goals) or will be set forth on Schedule B, Part I to Task Orders issued pursuant to this Contract, as applicable.

The **Participation Goals** represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with New York City Department of Small Business Services as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If **Participation Goals** have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the **Participation Goals**, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If **Participation Goals** have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant **Participation Goal**, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant **Participation Goal**. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If **Participation Goals** have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals**, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre- award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE **Participation Goals**, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part II (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified **Participation Goals** by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals** that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed nonresponsive.

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART II). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS (SEE SECTION V OF PART II) WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART III). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO _

SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multiyear contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work.** In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the firms' commencement of work. A list of MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include, but not be limited to,: the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's **M/WBE** Utilization Plan, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its **M/WBE** Utilization Plan in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an **M/WBE** Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or $500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the **Participation Goals** should be modified.

10. Pre-award waiver of the **Participation Goals**. (a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the **Participation Goals** in accordance with Section 6-129, which requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part III (Page 5) of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at zhangji@ddc.nyc.gov or via facsimile at (718) 391-1886. Bidders, proposers, or contractors, as applicable, who have submitted requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its **M/WBE** Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the **M/WBE** Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of **M/WBE** Utilization Plan. (a) A Contractor may request a modification of its **M/WBE** Utilization Plan after award of this Contract. **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission**. The Agency may grant a request for Modification of a Contractor's **M/WBE** Utilization Plan if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the **Participation Goals.** In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the M/WBE Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;

(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
(vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
(vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
(viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's M/WBE officer shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the **Participation Goals** when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its **M/WBE** Utilization Plan would be awarded to subcontractors.

12. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an **M/WBE** Utilization Plan and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Participation Goals**, the Contractor will not be deemed in violation of the M/WBE Program requirements for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

13. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its M/WBE Utilization Plan, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

14. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B: MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of an **M/WBE** Utilization Plan, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the **M/WBE** Utilization Plan.

2. Pursuant to DSBS rules, construction contracts that include a requirement for an **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:

(a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
(b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
(c) making a finding that the Contractor is in default of the Contract;
(d) terminating the Contract;
(e) declaring the Contractor to be in breach of Contract;
(f) withholding payment or reimbursement;
(g) determining not to renew the Contract;
(h) assessing actual and consequential damages;
(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
(k) taking any other appropriate remedy.

4. If an **M/WBE** Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its **Participation Goals** contained in its **M/WBE** Utilization Plan or the **Participation Goals** as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the **Participation Goals** and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the **Participation Goals**, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6- 129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its **M/WBE** Utilization Plan shall be a factor in the evaluation of its performance. Whenever Agency determines that a Contractor's compliance with an **M/WBE** Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in VENDEX as caution data.

Tax ID #: 11-2814026

APT E-PIN #: 85017B0017

SCHEDULE B – M/WBE Utilization Plan
Part I: M/WBE Participation Goals

Part I to be completed by contracting agency

Contract Overview

APT E- Pin #	85017B00017	**FMS Project ID#:**	HWBARUCH
Project Title/ Agency PIN #	RECONSTRUCTION OF EAST 25TH STREET PLAZA / 8502016HW0053C		
Bid/Proposal Response Date	AUGUST 4, 2017		
Contracting Agency	Department of Design and Construction		
Agency Address	30-30 Thomson Ave. **City** Long Island City **State** NY **Zip Code** 11101		
Contact Person	Yamina Youb	**Title**	M/WBE Compliance Analyst
Telephone #	(718) 391-1607	**Email**	Youbya@DDC.NYC.Gov

Project Description *(attach additional pages if necessary)*

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

M/WBE Participation Goals for Services
Enter the percentage amount for each group or for an unspecified goal. Please note that there are no goals for Asian Americans in Professional Services.

Prime Contract Industry: Construction

Group	Percentage	
Unspecified	9 %	
or		
Black American	UNSPECIFIED	
Hispanic American	UNSPECIFIED	
Asian American	UNSPECIFIED	
Women	UNSPECIFIED	
Total Participation Goals	9 %	Line 1

**Note: For this procurement, individual ethnicity and gender goals are not specified. The Total Participation Goal for construction contracts may be met by using either Black-American, Hispanic-American, Asian American, or Women certified firms or any combination of such firms.*

Tax ID #: 11-2814026

APT E-PIN #: 8507B00017

SCHEDULE B - Part II: M/WBE Participation Plan

Part II to be completed by the bidder/proposer.
Please note: For Non-M/WBE Prime Contractors who will NOT subcontract any services and will self-perform the entire contract, you must obtain a FULL waiver by completing the Waiver Application on pages 17 and 18 and timely submitting it to the contracting agency pursuant to the Notice to Prospective Contractors. Once a FULL WAIVER is granted, it must be included with your bid or proposal and you do not have to complete or submit this form with your bid or proposal.

Section I: Prime Contractor Contact Information

Tax ID #	11-2814026	**FMS Vendor ID #**	000909053
Business Name	Perfetto Contracting Co., Inc.	**Contact Person**	Mohamed Subrati
Address	152 41st Street Brooklyn, NY 11232		
Telephone #	718-858-8600	**Email**	msubrati@perfettocontracting.com

Section II: M/WBE Utilization Goal Calculation: Check the applicable box and complete subsection.

PRIME CONTRACTOR ADOPTING AGENCY M/WBE PARTICIPATION GOALS

☒ **For Prime Contractors (Including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals.**	**Total Bid/Proposal Value**		**Agency Total Participation Goals (Line 1, Page 13)**		**Calculated M/WBE Participation Amount**
Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	$ 5,914,034.36	X	9%	=	$ 532,263.09 **Line 2**

PRIME CONTRACTOR OBTAINED PARTIAL WAIVER APPROVAL: ADOPTING MODIFIED M/WBE PARTICIPATION GOALS

☐ **For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Modified M/WBE Participation Goals:**	**Total Bid/Proposal Value**		**Adjusted Participation Goal (From Partial Waiver)**		**Calculated M/WBE Participation Amount**
Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	$	X		=	$ **Line 3**

Tax ID #: 11-2814026

APT E-PIN #: 8507B00017

Section III: M/WBE Utilization Plan: How Proposer/Bidder Will Fulfill M/WBE Participation Goals. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation. Check applicable box. The Proposer or Bidder will fulfill the M/WBE Participation Goals:

☐ As an M/WBE Prime Contractor that will self-perform and/or subcontract to other M/WBE firms a portion of the contract the value of which is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals. Please check all that apply to Prime Contractor:

☐ MBE ☐ WBE

☐ As a Qualified Joint Venture with an M/WBE partner, in which the value of the M/WBE partner's participation and/or the value of any work subcontracted to other M/WBE firms is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals.

☒ As a non M/WBE Prime Contractor that will enter into subcontracts with M/WBE firms the value of which is at least the amount located on Lines 2 or 3 above, as applicable.

Section IV: General Contract Information

What is the expected percentage of the total contract dollar value that you expect to award in subcontracts for services, regardless of M/WBE status? % 9

✓ Scopes of Subcontract Work

Enter brief description of the type(s) and dollar value of subcontracts for all/any services you plan on subcontracting if awarded this contract. For each item, indicate whether the work is designated for participation by MBEs and/or WBEs and the time frame in which such work is scheduled to begin and end. Use additional sheets if necessary.

1. Photos & Video (MWBE) $12,428.00 (during project)
2. Haz Non Haz (MWBE) $39,300.00 (during project)
3. Landscaping (MWBE) $137,393.00 (during project)
4. Rodent Control (MWBE) $18,886.00 (during project)
5. Sawcutting (MWBE) $7,951.00 (during project)
6. Stone Work (MWBE) $316,308.09 (during project)
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.

Tax ID #: 11-2814026

APT E-PIN #: 8507B00017

Section V: Vendor Certification and Required Affirmations

I hereby:

1) acknowledge my understanding of the M/WBE participation requirements as set forth herein and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York ("Section 6-129"), and the rules promulgated thereunder;

2) affirm that the information supplied in support of this M/WBE Utilization Plan is true and correct;

3) agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;

4) agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and

5) agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.

Signature _____ **Date** 08/04/17

Print Name Cesare Perfetto **Title** President

NOT APPLICABLE AT THIS TIME

SCHEDULE B – PART III – REQUEST FOR WAIVER OF M/WBE PARTICIPATION REQUIREMENT

Contract Overview

Tax ID # _____ **FMS Vendor ID #** _____

Business Name _____

Contact Name _____ **Telephone #** _____ **Email** _____

Type of Procurement ☐ **Competitive Sealed Bids** ☐ **Other** **Bid/Response Due Date** _____

APT E-PIN # (for this procurement): _____ **Contracting Agency:** _____

***M/WBE Participation Goals** as described in bid/solicitation documents*

_____ % **Agency M/WBE Participation Goal**

Proposed M/WBE Participation Goal *as anticipated by vendor seeking waiver*

_____ % **of the total contract value anticipated in good faith by the bidder/proposer to be subcontracted for services and/or credited to an M/WBE Prime Contractor or Qualified Joint Venture.**

Basis for Waiver Request: *Check appropriate box & explain in detail below (attach additional pages if needed)*

☐ **Vendor does not subcontract services, and has the capacity and good faith intention to perform all such work itself with its own employees.**

☐ **Vendor subcontracts *some* of this type of work but at a *lower* % than bid/solicitation describes, and has the capacity and good faith intention to do so on this contract. (Attach subcontracting plan outlining services that the vendor will self-perform and subcontract to other vendors or consultants.)**

☐ **Vendor has other legitimate business reasons for proposing the M/WBE Participation Goal above. Explain under separate cover.**

References

List 3 most recent contracts performed for NYC agencies (if any). Include information for each subcontract awarded in performance of such contracts. Add more pages if necessary.

CONTRACT NO. _____ **AGENCY** _____ **DATE COMPLETED** _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

CONTRACT NO. _____ **AGENCY** _____ **DATE COMPLETED** _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

CONTRACT NO. **AGENCY** **DATE COMPLETED**

Total Contract Amount $ **Total Amount Subcontracted** $

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

List 3 most recent contracts performed for other entities. Include information for each subcontract awarded in performance of such contracts. Add more pages if necessary.

(Complete ONLY if vendor has performed fewer than 3 New York City contracts.)

TYPE OF Contract _____ **ENTITY** _____ **DATE COMPLETED** _____

Manager at entity that hired vendor (Name/Phone No./Email) _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Type of Work Subcontracted _____ _____ _____

_____

TYPE OF Contract _____ **AGENCY/ENTITY** _____ **DATE COMPLETED** _____

Manager at agency/entity that hired vendor (Name/Phone No./Email) _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

_____

TYPE OF Contract _____ **AGENCY/ENTITY** _____ **DATE COMPLETED** _____

Manager at entity that hired vendor (Name/Phone No./Email) _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

_____

VENDOR CERTIFICATION: *I hereby affirm that the information supplied in support of this waiver request is true and correct, and that this request is made in good faith.*

Signature: _____ **Date:** _____

Print Name: _____ **Title:** _____

Shaded area below is for agency completion only

AGENCY CHIEF CONTRACTING OFFICER APPROVAL

Signature: _____ Date: _____

CITY CHIEF PROCUREMENT OFFICER APPROVAL

Signature: _____ Date: _____

Waiver Determination:

Full Waiver Approved ☐
Waiver Denied ☐
Partial Waiver Approved ☐
Revised Participation Goal ____ %

APPRENTICESHIP PROGRAM REQUIREMENTS

Bidders are advised that the Apprenticeship Program Requirements set forth below apply to each contract for which a check mark is indicated before the word "Yes". Compliance with these requirements will be determined solely by the City.

__√__ YES _____ NO

(1) Apprenticeship Program Requirements

Notice to Bidders: Please be advised that, pursuant to the authority granted to the City under Labor Law Section 816-b, the Department of Design and Construction hereby requires that the contractor awarded a contract as a result of this Invitation for Bids, and any of its subcontractors with subcontracts worth two million dollars or over, have, prior to entering into such contract or subcontract, apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor. In addition, the contractor and its subcontractors will be required to show that such apprenticeship program/s have successfully passed the two year Probation period following the initial registration date of such program/s with the New York State Department of Labor.

The failure to prove, upon request, that these requirements have been met shall result in the contract not being awarded to the contractor or the subcontract not being approved.

Please be further advised that, pursuant to Labor Law Section 220, the allowable ratio of apprentices to journeypersons in any craft classification shall not be greater than the ratio permitted to the contractor as to its workforce on any job under the registered apprenticeship program.

(2) Apprenticeship Program Questionnaire

The bidder must submit a completed and signed Apprenticeship Program Questionnaire. The Questionnaire is set forth on the following page of the Bid Booklet.

APPRENTICESHIP PROGRAM QUESTIONNAIRE ("APQ")

Bidder Name: Perfetto Contracting Co., Inc.
Project ID Number: HWBARUCH
The Bidder MUST complete, sign, and submit this Apprenticeship Program Questionnaire with its bid.

1. Does the bidder have any Apprenticeship Program agreement(s) appropriate for the type and scope of work to be performed? (Note: Participation may be by either direct sponsorship or through collective bargaining agreement(s).)

   X YES _____NO

2. Has/have the bidder's Apprenticeship Program agreement(s) been registered with, and approved by the New York State Commissioner of Labor ("NYSDOL Commissioner")?

   X YES _____NO

3. Has/have the bidder's Apprenticeship Program successfully passed the two-year Probation period following its initial registration with the New York State Department of Labor ("NYSDOL")?

   X YES _____NO

If the answers to Questions 1, 2, and 3 are "Yes". The bidder shall, in the space below (and/or attached herewith where applicable), provide the contact information for such Apprenticeship Program(s) as well as information demonstrating that such Apprenticeship Program(s) have passed the two-year Probation period following its initial registration with the NYSDOL. (The bidder may attach additional pages if necessary).

- **Where the bidder directly sponsors any such apprenticeship Program(s),** the bidder shall provide the following:
  - The trade classification(s) covered by such program(s), and the date(s) such program(s) was/were approved by the NYSDOL Commissioner; and/or
  - A copy of a letter(s) from the NYSDOL, on NYSDOL's letterhead, executed by an official thereof, which verifies/verify the trade classification(s) covered by such program(s), and the date(s) such program(s) was/were approved by the NYSDOL Commissioner and the Active status of such program(s).

- **Where the bidder participates in any such Apprenticeship Program(s) through its membership in an employer organization(s) that directly sponsors such program(s) or where the employer association(s) participates in such program(s) through collective bargaining,** the bidder shall provide the following:
  - The contact information for the employer organization(s), and the apprenticeable trade(s) covered pursuant to the bidder's affiliation therewith, and the date such program(s) was/were approved by the NYSDOL Commissioner; or
  - A letter(s) from such employer organization(s), on letterhead of such organization(s), executed by an officer, delegate or official thereof, which verifies/verify the trade classification(s) covered by such program(s) was/were approved by the NYSDOL Commissioner, and that the bidder is both a member in good standing of the identified employer organization and is subject to the provisions of the Apprenticeship Program agreement(s) sponsored thereby.

APPRENTICESHIP PROGRAM QUESTIONNAIRE ("APQ")

Project ID Number: HWBARUCH

- **Where the bidder participates in any such Apprenticeship Programs through collective bargaining agreements,** the bidder shall provide the following:
    - The contact information for such collective bargaining entity(ies) and the apprenticeable trade(s) covered pursuant to the bidder's affiliation therewith;
    - A letter(s) from such collective bargaining entity(ies), on letterhead of such entity(ies), executed by an officer, delegate or official thereof, which verifies/verify the bidder's status as a signatory/participant in good standing to such collective bargaining entity(ies) Apprenticeship Program Agreements.

We are governing Apprenticeship Programs with Local Unions when available.

Bidder: Perfetto Contracting Co., Inc.

By: _____ Title: President
(Signature of Partner or Corporate Officer)

Date: 08/04/17

Project ID. HWBARUCH

SAFETY QUESTIONNAIRE

The bidder must include, with its bid, all information requested on this Safety Questionnaire. Failure to provide a completed and signed Safety Questionnaire at the time of bid opening may result in disqualification of the bid as non-responsive.

1. Bidder Information:

Company Name: Perfetto Contracting Co., Inc.

DDC Project Number: HWBARUCH

Company Size: _____ Ten (10) employees or less

X Greater than ten (10) employees

Company has previously worked for DDC X YES _____ NO

2. Type(s) of Construction Work

TYPE OF WORK	LAST 3 YEARS	THIS PROJECT
General Building Construction	X	
Residential Building Construction		
Nonresidential Building Construction		
Heavy Construction, except building		X
Highway and Street Construction	X	X
Heavy Construction, except highways		
Plumbing, Heating, HVAC		
Painting and Paper Hanging		
Electrical Work		X
Masonry, Stonework and Plastering	X	X
Carpentry and Floor Work	X	X
Roofing, Siding, and Sheet Metal		
Concrete Work	X	X
Specialty Trade Contracting		
Asbestos Abatement		X
Other (specify)		
Sewer/Water Main	X	X

3. Experience Modification Rate:

The Experience Modification Rate (EMR) is a rating generated by the National Council of Compensation Insurance (NCCI). This rating is used to determine the contractor's premium for worker's compensation insurance. The contractor may obtain its EMR by contacting its insurance broker or the NCCI. If the contractor cannot obtain its EMR, it must submit a written explanation as to why.

Project ID. HWBARUCH

The Contractor must indicate its Intrastate and Interstate EMR for the past three years. [Note: For contractors with less than three years of experience, the EMR will be considered to be 1.00].

YEAR	INTRASTATE RATE	INTERSTATE RATE
2016		1.06
2015		1.08
2014		1.18

If the Intrastate and/or Interstate EMR for any of the past three years is greater than 1.00, the contractor must attach, to this questionnaire, a written explanation for the rating and identify what corrective action was taken to correct the situation resulting in that rating.

4. OSHA Information:

____ YES __X__ NO Contractor has received a willful violation issued by OSHA or New York City Department of Buildings (NYCDOB) within the last three years.

____ YES __X__ NO Contractor has had an incident requiring OSHA notification within 8 hours (i.e., fatality, or hospitalization of three or more employees).

The Occupational Safety and Health Act (OSHA) of 1970 requires employers with ten or more employees, on a yearly basis to complete and maintain on file the form entitled "Log of Work-related Injuries and Illnesses". This form is commonly referred to as the OSHA 300 Log (OSHA 200 Log for 2001 and earlier).

The OSHA 300 Log must be submitted for the last three years for contractors with more than ten employees.

The Contractor must indicate the total number of hours worked by its employees, as reflected in payroll records for the past three years.

The contractor must submit the Incident Rate for Lost Time Injuries (the Incident Rate) for the past three years. The Incident Rate is calculated in accordance with the formula set forth below. For each given year, the total number of incidents is the total number of non-fatal injuries and illnesses reported on the OSHA 300 Log. The 200,000 hours represents the equivalent of 100 employees working forty hours a week, fifty weeks per year.

$$\text{Incident Rate} = \frac{\text{Total Number of Incidents X 200,000}}{\text{Total Number of Hours Worked by Employees}}$$

YEAR	TOTAL NUMBERS OF HOURS WORKED BY EMPLOYEES	INCIDENT RATE
2016	176,117.00	2.27
2015	195,400.50	3.07
2014	89,036.7	0.00

Project ID. HWBARUCH

If the contractor's Incident Rate for any of the past three years is one point higher than the Incident Rate for the type of construction it performs (listed below), the contractor must attach, to this questionnaire, a written explanation for the relatively high rate.

General Building Construction	8.5
Residential Building Construction	7.0
Nonresidential Building Construction	10.2
Heavy Construction, except building	8.7
Highway and Street Construction	9.7
Heavy Construction, except highways	8.3
Plumbing, Heating, HVAC	11.3
Painting and Paper Hanging	6.9
Electrical Work	9.5
Masonry, Stonework and Plastering	10.5
Carpentry and Floor Work	12.2
Roofing, Siding, and Sheet Metal	10.3
Concrete Work	8.6
Specialty Trade Contracting	8.6

5. Safety Performance on Previous DDC Project(s)

_X_ YES ___ NO Contractor previously audited by the DDC Office of Site Safety.

DDC Project Number(s): HWS2005R, HWRP064, _____

___ YES _X_ NO Accident on previous DDC Project(s).

DDC Project Number(s): _____, _____, _____

___ YES _X_ NO Fatality or Life-altering Injury on DDC Project(s) within the last three years. [Examples of a life-altering injury include loss of limb, loss of a sense (e.g., sight, hearing), or loss of neurological function].

DDC Project Number(s): _____, _____, _____

Date: 08/04/17 By: _____

(Signature of Owner, Partner, Corporate Officer)

Title: President

Pre-Award Process

The bidder is advised that as part of the pre-award review of its bid, it may be required to submit the information described in Sections (A) through (D) below. If required, such information must be submitted by the bidder within five (5) business days following receipt of notification from DDC that it is among the low bidders. Such notification from DDC will be by facsimile or in writing and will specify the types of information must be submitted. The types of information the bidder may be required to submit are described below. In the event the bidder fails to submit the required information within the specified time frame, its bid may be rejected as nonresponsive.

****

(A) **Project Reference Form**: If required, the bidder must complete and submit the Project Reference Form set forth on pages 27 through 29 of this Bid Booklet. The Project Reference Form consists of 3 parts: (1) Contracts Completed by the Bidder, (2) Contracts Currently Under Construction by the Bidder, and (3) Pending Contracts Not Yet Started by the Bidder.

(B) **Copy of License**: If required, the bidder must submit a copy of the license under which the bidder will be performing the work. Such license must clearly show the following: (1) Name of the Licensee, (2) License Number, and (3) Expiration date of the License. A copy of the license will be required from bidders for the following contracts: Plumbing Work, Electrical Work and Asbestos Abatement.

(C) **Financial Information**: If required, the bidder must submit the financial information described below:

(1) Audited Financial Statements: Financial statements (Balance Sheet and Income Statement) of the entity submitting the bid, as audited by an independent auditor licensed to practice as a certified public accountant (CPA). Audited financial statements for the three most recent fiscal years must be submitted. Each such financial statement must include the auditor's standard report.

If the bidder does not have audited financial statements, it must submit an affidavit attesting to the fact that the bidder does not have such statements. In addition, the bidder must submit the following documentation covering the three most recent fiscal years: signed federal tax returns, unaudited financial statements, and a "certified review letter" from a certified public accountant (CPA) verifying the unaudited financial statements.

Unless the most recent audited or unaudited financial statement was issued within ninety (90) days, the bidder must submit interim financial information that includes data on financial position and results of operation (income data) for the current fiscal year. Such information may be summarized on a monthly or quarterly basis or at other intervals.

(2) Schedule of Aged Accounts Receivable, including portion due within ninety (90) days.

(D) **Project Specific Information**: If required, the bidder must submit the project specific information described below:

(1) Statement indicating the number of years of experience the bidder has had and in what type of construction.
(2) Resumes of all key personnel to be involved in the project, including the proposed project superintendent.
(3) List of significant pieces of equipment expected to be used for the contract, and whether such equipment is owned or leased.
(4) Description of work expected to be subcontracted, and to what firms, if known.
(5) List of key material suppliers.
(6) Preliminary bar chart time schedule
(7) Contractor's expected means of financing the project. This should be based on the assumption that the contractor is required to finance 2X average monthly billings throughout the contract period.
(8) Any other issues the contractor sees as impacting his ability to complete the project according to the contract.

In addition to the information described in Sections (A) through (D) above, the bidder shall submit such additional information as the Commissioner may require, including without limitation, an explanation or justification for specific unit price items.

The bidder is further advised that it may be required to attend a pre-award meeting with DDC representatives. If such a meeting is convened, the bidder will be advised as to any additional material to be provided.

A. PROJECT REFERENCES – SIMILAR CONTRACTS COMPLETED BY THE BIDDER

List all contracts substantially completed within the last 4 years similar to the contract being awarded, up to a maximum of 10, in descending order of date of substantial completion.

Project & Location	Contract Type	Contract Amount ($000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
		PLEASE SEE ATTACHED			

A. PROJECT REFERENCE - SIMILAR CONTRACTS COMPLETED BY THE BIDDER
List all contracts substantially completed within the last 4 years similar to the contract being awarded, up to a maximum of 10, in descending order of date of substantial completion.

Project & Location	Contract Description	Contract Amount	Date Completed	Owner Ref. & Tel No.	Architec/Engineer Ref. & Tel No. different from owner
(NYC DDC) HW2CR09A	Grinding Existing Asphalt Boroughs of Brooklyn & Staten Island	$8,599,104.96	08/31/10	Robert Yueh NYC DDC 718-391-1937	Same as Owner
(NYC DDC) HW2CR08A	Grinding Existing Asphalt Boroughs of Brooklyn & Staten Island	$9,942,337.60	04/23/09	NYC DDC Robert Yueh 718-391-1937	Same as Owner
(NYC DDC) HWKP2015	Surface Remediation of Prospect Park West between Montgomery Place and Garfield Place - Brooklyn	$1,448,319.08	12/02/07	NYC DDC Robert Yeuh 718-391-1937	Same as Owner
NYC EDC) 20330005	Downtown Brooklyn Flatbush Streetscape	$11,000,000.00	12/31/11	NYC EDC Paul Cona (631) 300-5598	Same as Owner
(NYC DDC) HD161B2	Gateway Estates Area Phase 2B - Brooklyn	$1,450,695.97	06/01/10	NYC DDC Robert Yueh 718-391-1937	Same as Owner
HWK1152-R (NYC DDC)	Bulkhead and Outfalls at Gerritsen Beach - Brooklyn	$2,653,898.78	05/23/09	NYC DDC Robert Yeuh 718-391-1937	Same as Owner
HWRP064 (20050032140) (NYC DDC)	Restoration of Dead End of Merrick Avenue Including Water Main and Sewer Work in the Borough of Staten Island	$592,600.00	1/31/06	NYC DDC Robert Yueh 718-391-1937	Same as Owner
HWBUSPAD4 (NYC DDC)	Reconstruction of Bus Pads Brooklyn & Manhattan, NYC	$986,628.19	9/29/09	NYC DDC Robert Yueh 718-391-1937	Same as Owner
NYC EDC 13690008	Brooklyn Rail Improvements SBMT Rail Extension	$7,662.869.00	8/7/2012	NYC EDC Theresa Llorente 212-312-4268	Same as Owner

B. PROJECT REFERENCES – CONTRACTS CURRENTLY UNDER CONSTRUCTION BY THE BIDDER

List all contracts currently under construction even if they are not similar to the contract being awarded.

Project & Location	Contract Type	Contract Amount ($000)	Subcontracted to Others ($000)	Uncompleted Portion ($000)	Date Scheduled to Complete	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
			PLEASE SEE ATTACHED				

B. PROJECT REFERENCE - CONTRACTS CURRENTLY UNDER CONSTRUCTION BY THE BIDDER
List all contracts currently under construction even if they are not similar to the contract being awarded.

Project & Location	Contract Type	Contract Amount	Subcontracted to Others	Uncompleted Portion	Date Scheduled to Complete	Owner Ref. & Tel No.	Architec/Engineer Ref. & Tel No. different from owner
HD-161D Reconstruction of Gateway Estates Area Phase D Brooklyn	Public Work City Contract	$14,973,047.70	$5,000,000.00	$8,500,000.00	Jun-17	New York City Dept of Design & Construction	Same as Owner
CONISPH2A Construction of Storm & Sanitary Sewers Neptune Ave. Borough of Brooklyn	Public Work City Contract	$23,883,663.50	$239,000.00	$21,850,000.00	Jul. 17	New York City Dept. of Design & Cosntruction	Same as Owner
D262687 Deck Replacement of Hylan Boulevard Bridges over the Staten Island Expressway Borough of Staten Island	Public Work NY State Contract	$9,984,859.37	$1,961,000.00	$9,585,000.00	Jan. 17	New York State Department of Transportation Nicholas Parisi 718-1-788-8024	Same as Owner
GQBB08-01 Construction of Right of Way Bioswales and Stormwater Greenstreet - Various Locations	Public Work City Contract	$7,421,895.00	$742,190.00	$7,421,895.00	Aug. 17	New York City Dept. of Environmental Control	Same as Owner
HWK1048A Reconstruction of West Street From Eagle St to Quay Street Borough of Brooklyn	Public Work City Contract	$28,322,002.64	$8,000,000.00	$20,000,000.00	Mar-17	New York City Dept. of Design and Construction	Same as Owner
SER00201Y Construction of Storm & Sanitary Sewers and Appurtenances in Staten Island, NY	Publice Work City Contract	$6,261,402.50	$350,000.00	$5,000,000.00	May-17	New York City Dept. of Design & Cosntruction	Same as Owner

B. PROJECT REFERENCE - CONTRACTS CURRENTLY UNDER CONSTRUCTION BY THE BIDDER
List all contracts currently under construction even if they are not similar to the contract being awarded.

Project & Location	Contract Type	Contract Amount	Subcontracted to Others	Uncompleted Portion	Date Scheduled to Complete	Owner Ref. & Tel No.	Architec/Engineer Ref. & Tel No. different from owner
SER200208 Construction of Sanitary and Storm Sewers in Amboy Rd Borough of Staten Island	Public Work City Contract	$4,957,000.00	$250,000.00	$1,000,000.00	Oct. 15	New York City Dept of Design & Construction	Same as Owner
RED-371 Distribution of Water Main Extensions / Replacements Staten Island & Brooklyn	Public Work City Contract	$ 3,496,317.76	$140,950.00	$ 213,202.98	Aug. 15	NYC DDC Sasan Sareh, P.E. 718-391-2542	Same
GQBB08-01 Construction of Right of Way Bioswales and Stormwater Greenstreet - Various Locations	Public Work City Contract	$7,421,895.00	$742,190.00	$7,421,895.00	Aug. 16	New York City Dept. of Environmental Control	Same as Owner
CONISPH2A Construction of Storm & Sanitary Sewers Neptune Ave. Borough of Brooklyn	Public Work City Contract	$23,883,663.50	$239,000.00	$21,850,000.00	Jul. 17	New York City Dept. of Design & Cosntruction	Same as Owner
D262687 Deck Replacement of Hylan Boulevard Bridges over the Staten Island Expressway Borough of Staten Island	Public Work NY State Contract	$9,984,859.37	$1,961,000.00	$9,585,000.00	Jan. 17	New York State Department of Transportation Nicholas Parisi 718-1-788-8024	Same as Owner
Safety Improvements at PS 199 Maurice Fitzgerald School 39-20 48th Avenue Borough of Queens HWPS199		$5,100,000.00				NYC Department of Design and Construction (718) 391-1501	Same as Owner

C. PROJECT REFERENCES – PENDING CONTRACTS NOT YET STARTED BY THE BIDDER

List all contracts awarded to or won by the bidder but not yet started.

Project & Location	Contract Type	Contract Amount ($000)	Date Scheduled to Start	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
		PLEASE SEE ATTACHED			

C. PROJECT REFERENCES - PENDING CONTRACTS NOT YET STARTED BY THE BIDDER

List all contracts awarded to or won by the bidder but not yet started

Project & Location	Contract Type	Contract Amount	Date Scheduled to Start	Owner Ref. & Tel. No.	Architect/Engineer Reference & Tel. if different from Owner
Reconstruction of Victory Boulevard from Lester St to Sommer Lane Borough of Staten Island HWR00505	Public Work City Contract	$8,585,000.00	Awarded on 1/29/16 Waiting for NTP	NYC Department of Design and Construction (718) 391-1501	Same
Accelerated Distribution Water Main Replacement and Sewer Rehabilitation - Queens QEDA003	Public Work City Contract	$20,100,000.00	Waiting to be Awarded (Bid Date 2/16/17)	NYC Department of Design and Construction (718) 391-1501	Same
Reconstruction of Bedford Plaza Borough of Brooklyn HWPLZ016K	Public Work City Contract	$3,321,000.00	Awarded on 12/09/16 NPT Letter 5/23/17	NYC Department of Design and Construction (718) 391-1501	Same
Reconstruction of Rockaway Beach Blvd. - Queens SANDHW13	Public Work City Contract	$24,843,800.00	Awarded 6/7/17 (Bid Date 3/17/17)	NYC Department of Design and Construction (718) 391-1501	Same
Construction of Storm Sewers & Apprtenances in Richmond Ave. - Staten Island SER200235	Public Work City Contract	$5,021,000.00	Awarded 3/22/17	NYC Department of Design and Construction (718) 391-1501	Same

OFFICE OF THE MAYOR
BUREAU OF LABOR SERVICES
CONTRACT CERTIFICATE

To be completed if the contract is less than $1,000,000

Contractor: Not Applicable at this Time

Address: _____

_____

Telephone Number: _____

Name and Title of Signatory: _____

_____

Contracting Agency or Owner: _____

Project Number: _____

Proposed Contract Amount: _____

Description and Address of Proposed Contract: _____

Names of Subcontractors in the amount of 750,000 or more on this contract (if not known at this time, so state indicating that trades will be subcontracted):

_____

_____

_____

I, (fill in name of person signing) _____, hereby affirm that I am authorized by the above-named contractor to certify that said contractor's proposed contract with the above-named owner or city agency is less than $1,000,000. This affirmation is made in accordance with Executive Order No. 50 (1980) as amended and its implementing regulations.

_____ _____

Date Signature

WILLFUL OR FRAUDULENT FALSIFICATION OF ANY DATA OR INFORMATION SUBMITTED HEREWITH MAY RESULT IN THE TERMINATION OF ANY CONTRACT BETWEEN THE CITY AND THE BIDDER OR CONTRACTOR AND BAR THE BIDDER OR CONTRACTOR FROM PARTICIPATION IN ANY CITY CONTRACT FOR A PERIOD OF UP TO THREE YEARS. FURTHER, SUCH FALSIFICATION MAY RESULT IN CRIMINAL PROSECUTION.

(NO TEXT ON THIS PAGE)

VENDEX COMPLIANCE

(A) **Vendex Fees:** Pursuant to Procurement Policy Board Rule 2-08(f)(2), the contractor will be charged a fee for the administration of the VENDEX system, including the Vendor Name Check process, if a Vendor Name Check review is required to be conducted by the Department of Investigation. The contractor shall also be required to pay the applicable required fees for any of its subcontractors for which Vendor Name Check reviews are required. The fee(s) will be deducted from payments made to the contractor under the contract. For contracts with an estimated value of less than or equal to $1,000,000, the fee will be $175 per Vendor Name Check review. For contracts with an estimated value of greater than $1,000,000, the fee will be $350 per Vendor Name Check review.

(B) **Confirmation of Vendex Compliance:** The Bidder shall submit this Confirmation of Vendex Compliance to the Department of Design and Construction, Contracts Section, 30-30 Thomson Avenue – First Floor, Long Island City, NY 11101.

Bid Information: The Bidder shall complete the bid information set forth below.

Name of Bidder: Perfetto Contracting Co., Inc.
Bidder's Address: 152 41st Street Brooklyn NY 11232
Bidder's Telephone Number: 718-858-8600
Bidder's Fax Number: 718-228-5256
Date of Bid Opening: 08/04/17
Project ID: HWBARUCH

Vendex Compliance: To demonstrate compliance with Vendex requirements, the Bidder shall complete either Section (1) or Section (2) below, whichever applies.

(1) **Submission of Vendex Questionnaires to MOCS:** By signing in the space provided below, the Bidder certifies that as of the date specified below, the Bidder has submitted Vendex Questionnaires to the Mayor's Office of Contract Services, Attn: VENDEX, 253 Broadway, 9th Floor, New York, New York 10007.

Date of Submission: _____

By: _____
(Signature of Partner or corporate officer)

Print Name: _____

(2) **Submission of Certification of No Change to DDC:** By signing in the space provided below, the Bidder certifies that it has read the instructions in a "Vendor's Guide to Vendex" and that such instructions do not require the Bidder to submit Vendex Questionnaires. The Bidder has completed **TWO ORIGINALS** of the Certification of No Change set forth on the next page of this Bid Booklet.

By: _____
(Signature of Partner or corporate officer)

Print Name: Cesare Perfetto/President

(NO TEXT ON THIS PAGE)

Certificate of No Change Form

Mayor's Office of Contract Services

- Please submit two completed forms. Copies will not be accepted.
- Please send both copies to the agency that requested it, unless you are advised to send it directly to the Mayor's Office of Contract Services (MOCS).
- A materially false statement willfully or fraudulently made in connection with this certification, and/or the failure to conduct appropriate due diligence in verifying the information that is the subject of this certification, may result in rendering the submitting entity non-responsible for the purpose of contract award.
- A materially false statement willfully or fraudulently made in connection with this certification may subject the person making the false statement to criminal charges.

I, Cesare Perfetto, being duly sworn, state that I have read
Enter Your Name

and understand all the items contained in the vendor questionnaire and any submission of change as identified on page one of this form and certify that as of this date, these items have not changed. I further certify that, to the best of my knowledge, information and belief, those answers are full, complete, and accurate; and that, to the best of my knowledge, information, and belief, those answers continue to be full, complete, and accurate.

In addition, I further certify on behalf of the submitting vendor that the information contained in the principal questionnaire(s) and any submission of change identified on page two of this form have not changed and have been verified and continue, to the best of my knowledge, to be full, complete and accurate.

I understand that the City of New York will rely on the information supplied in this certification as additional inducement to enter into a contract with the submitting entity.

Vendor Questionnaire *This section is required.*

This refers to the vendor questionnaire(s) submitted for the vendor doing business with the City.

Name of Submitting Entity: Perfetto Contracting Co., Inc.

Vendor's Address: 152 41st Street Brooklyn NY 11232

Vendor's EIN or TIN: 11-2814026 Requesting Agency: NYC DDC

Are you submitting this Certification as a parent? (Please circle one) Yes No

Signature date on the last full vendor questionnaire signed for the submitting vendor: 08/02/16

Signature date on change submission for the submitting vendor: _____

Principal Questionnaire

This section refers to the most recent principal questionnaire submissions.

Mayor's Office of Contract Services

	Principal Name	Date of signature on last full Principal Questionnaire	Date(s) of signature on submission of change
1	Cesare Perfetto	08/02/16	N/A
2			
3			
4			
5			
6			

☐ Check if additional changes were submitted and attach a document with the date of additional submissions.

Certification *This section is required.*

This form must be signed and notarized. Please complete this twice. Copies will not be accepted.

Certified By:

Cesare Perfetto
Name (Print)

President
Title

Perfetto Contracting Co., Inc.
Name of Submitting Entity

Signature | 8/23/2016 *Date*

Notarized By:

Notary Public | *County License Issued* | *License Number*

Sworn to before me on: 8/23/2016
Date

Mayor's Office of Contract Services
253 Broadway, 9th Floor New York, NY 10007
Phone: 212 788 0018 Fax: 212 788 0049

IRAN DIVESTMENT ACT COMPLIANCE RIDER

FOR NEW YORK CITY CONTRACTORS

The Iran Divestment Act of 2012, effective as of April 12, 2012, is codified at State Finance Law ("SFL") §165-a and General Municipal Law ("GML") §103-g. The Iran Divestment Act, with certain exceptions, prohibits municipalities, including the City, from entering into contracts with persons engaged in investment activities in the energy sector of Iran. Pursuant to the terms set forth in SFL §165-a and GML §103-g, a person engages in investment activities in the energy sector of Iran if:

(a) The person provides goods or services of twenty million dollars or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or

(b) The person is a financial institution that extends twenty million dollars or more in credit to another person, for forty-five days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created pursuant to paragraph (b) of subdivision three of Section 165-a of the State Finance Law and maintained by the Commissioner of the Office of General Services.

A bid or proposal shall not be considered for award nor shall any award be made where the bidder or proposer fails to submit a signed and verified bidder's certification.

Each bidder or proposer must certify that it is not on the list of entities engaged in investment activities in Iran created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law. In any case where the bidder or proposer cannot certify that they are not on such list, the bidder or proposer shall so state and shall furnish with the bid or proposal a signed statement which sets forth in detail the reasons why such statement cannot be made. The City of New York may award a bid to a bidder who cannot make the certification on a case by case basis if:

(1) The investment activities in Iran were made before the effective date of this section (i.e., April 12, 2012), the investment activities in Iran have not been expanded or renewed after the effective date of this section and the person has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran: or

(2) The City makes a determination that the goods or services are necessary for the City to perform its functions and that, absent such an exemption, the City would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.

BIDDER'S CERTIFICATION OF COMPLIANCE WITH IRAN DIVESTMENT ACT

Pursuant to General Municipal Law §103-g, which generally prohibits the City from entering into contracts with persons engaged in investment activities in the energy sector of Iran, the bidder/proposer submits the following certification:

[*Please Check One*]

BIDDER'S CERTIFICATION

☒ By submission of this bid or proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief, that each bidder/proposer is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law.

☐ I am unable to certify that my name and the name of the bidder/proposer does not appear on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law. I have attached a signed statement setting forth in detail why I cannot so certify.

Dated: 4th, New York
August, 20 17

SIGNATURE

Cesare Perfetto
PRINTED NAME

President
TITLE

Sworn to before me this
4th day of Aug, 20 17

Notary Public

Dated: 08/04/17

THE CITY OF NEW YORK
DEPARTMENT OF SMALL BUSINESS SERVICES
DIVISION OF LABOR SERVICES
CONTRACT COMPLIANCE UNIT
110 WILLIAMS STREET
NEW YORK, NEW YORK 10038
PHONE: (212) 513-6323
FAX: (212) 618-8879

CONSTRUCTION

EMPLOYMENT

REPORT

(NO TEXT ON THIS PAGE)

The City of New York
Department of Small Business Services
Division of Labor Services
Contract Compliance Unit
110 William Street
New York, New York 10038
Phone: (212) 513 – 6323
Fax: (212) 618-8879

CONSTRUCTION EMPLOYMENT REPORT INSTRUCTIONS

WHO MUST FILE A CONSTRUCTION EMPLOYMENT REPORT

A Construction Employment Report (ER) must be filed if you meet the following conditions:

CONTRACT FUNDING SOURCE	CONTRACTOR	CONTRACT VALUE	SUBMISSION REQUIREMENT
Federal/Federally assisted	Prime and subcontractors	$10,000 or greater	Construction Employment Report
City and state funded	Prime contractor	$1,000,000 or greater	
	Subcontractor	$750,000 or greater	
		Less than $750,000	Less than $750,000 Certificate (City/State Only)

Prime Contractor:

- A general contractor or construction manager selected to perform work on a construction project funded (in whole or in part) by the federal government with a proposed contract value of $10,000 or more.
- A general contractor or construction manager selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of $1,000,000 or more.

Subcontractor:

- A subcontractor selected to perform work on a construction project funded (in whole or in part) by the federal government with a proposed contract value of $10,000 or more.
- A subcontractor selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of $750,000 or more.
- A subcontractor selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of less than $750,000 must submit a "Less than $750,000" certificate.

WHERE TO FILE

Employment Reports must be filed with the City agency awarding the contract. If you are a contractor or subcontractor who will be working for a private developer in receipt of funding or assistance from the City, the ER must be filed with the City agency with jurisdiction over the developer's project.

DLS REVIEW PROCESS

In accordance with Executive Order 50 (EO 50), upon receipt by DLS of a completed ER, DLS conducts a review of the contractor's current employment policies, practices and procedures, as well as perform a statistical analysis of the contractor's workforce, if necessary. The process is as follows:

1. Within five (5) business days, DLS will review the ER for completeness and accuracy. If any information is omitted or incorrect, or if necessary documents are not submitted, the submission shall be deemed incomplete and DLS will inform the contractor. The substantive compliance review does not commence until the submission is complete. **An incomplete submission will delay the review process and may preclude or interrupt the contract approval.**

2. If the ER submission is complete, the compliance review will proceed, resulting in one of the following:

   Certificate of Approval
   The contractor is found to be in compliance with all applicable laws and regulations. The approval is valid for 36 months.

   Continued Approval Certificate
   The contractor has been issued a Certificate of Approval in the previous 36 months which is good for the applicable contract.

   Conditional Certificate of Compliance
   The contractor is required to take corrective actions in order to be in compliance with EO 50. The contractor must meet the conditions within one month of the issue of the Conditional Certificate.

   Determination of Nonperformance
   The contractor has failed to take the required corrective actions stipulated in the Conditional Certificate. A determination of nonperformance may prevent a contractor from receiving an award of a contract.

HOW TO COMPLETE THE EMPLOYMENT REPORT

Contents

General Information
Part I: Contractor/Subcontractor Information
Part II: Employment Policies and Practices
Part III: Contract Bid Information and Projected and Current Workforce Forms
Signature Page

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

Questions 7 – 11: Please provide the required contact information for your company. All contracts must have a designated Equal Employment Officer.

Question 12: If you are a subcontractor, you must state the name of the contractor for whom you are providing the construction services.

Question 13: Please provide the number of permanent employees in your company.

Question 14a-g: The Project Identification Number (PIN) and the Contract Registration ID Number (CT#) can be obtained from the City agency. Provide a description of the trade work you will perform on this project and the address where the work will be performed. Subcontractors can obtain this information from the contract they have with the prime contractor.

Questions 15 – 18: If your company has received a valid Certificate of Approval within the past 36 months, been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP), or if your company has submitted an ER for a different contract for which you have not yet received a compliance certificate, then you only need to complete and submit the following:

- General Information section
- Part I - Contractor/Subcontractor Information
- Form B - Projected Workforce
- Signature Page

If your company is currently waiting for an approval on another contract previously submitted, be certain to identify the date on which you submitted the completed Employment Report, the name of the City contracting agency with which the contract was made, and the name and telephone number of the person to whom the Employment Report was submitted.

If your company was issued a Conditional Certificate of Approval, all required corrective actions must have been taken or DLS will not issue a Continued Certificate.

Question 18: If the company was audited by the OFCCP, also provide the following:

- Identify the reviewing OFCCP office by its name and address
- If an unconditional certificate of compliance was issued by the OFCCP, attach a copy of the certificate in lieu of completing Parts II and III;
- Include copies of all corrective actions and documentation of OFCCP's performance; and
- Provide a copy of all stated OFCCP findings.

Question 19: Please provide a copy of any Collective Bargaining Agreement(s) which is negotiated through an employer trade association on behalf of your organization or any of its affiliates.

PART II: EMPLOYMENT POLICIES AND PRACTICES

Remember to label all documents with the question number for which they are submitted.

Questions 20a – j: You must respond to the questions as to whether or not your firm has documents reflecting written policies, benefits and procedures. If so, then you must identify by name each document in which the policy(ies), procedure(s) and benefit(s) is located and submit copies of all of the document(s). If your firm follows unwritten practices or procedures, include an explanation of how they operate. Please submit the most current document(s), including all applicable amendments. Label each document and/or unwritten practice according to the question to which it corresponds (e.g. 20a, 20b, etc.)

Questions 21a – h: Inquires about the manner/methods by which you comply with the requirements of the Immigration Reform and Control Act of 1986 (IRCA).

Question 22: Inquires into where and how I-9 forms are maintained and stored.

Questions 23a – e: Inquires into whether or not there is a requirement that an applicant or employee be subjected to a medical examination at any given time. Copes of the medical information questionnaire and instructions must be submitted with the Employment Report.

Question 24: Indicate the existence and location of all statements of your firm's Equal Employment Opportunity policy and attach a copy of each statement.

Question 25: Submit any current Affirmative Action Plan(s) created pursuant to Executive Order 11246.

Question 26: If your firm or collective bargaining agreement has an internal grievance procedure, indicate this and submit a copy of the policy and procedure. If unwritten, explain its nature and operation. Explain how your firm's procedure addresses EEO complaints.

Question 27: If your employees have used the procedure in the last three (3) years, please submit an explanation in the format indicated below:

1. Number of complaint(s)	2. Nature of the complaint(s)	3. Position(s) of the complainant(s)	4. Was an investigation conducted? Y/N	5. Current status of the disposition

Question 28: Indicate whether in the past three (3) years complaints have been filed with a court of law or administrative agency, naming your company as a defendant (or respondent) in a complaint alleging violation of any anti-discrimination or affirmative action laws. If yes, develop and submit a log to show, for each administrative/and or judicial action filed, the following information:

1. Name(s) of complainant(s)	2. Administrative agency or court in which action was filed	3. Nature of the complaint(s)	4. Current status	5. If not pending, the complaint's disposition

Question 29: Identify each job for which a physical qualification exists. Identify and explain the physical qualification(s) for each stated job. Submit job descriptions for each job and the reasons for the qualifications.

Question 30: Identify each job for which there exists any qualification related to age, race, color, national origin, sex, creed, disability, marital status, sexual orientation or citizenship status. Identify and explain the specific related qualification for each job stated. Submit job descriptions for each job and the reasons for the qualifications.

PART III: CONTRACT BID INFORMATION AND PROJECTED AND CURRENT WORKFORCE FORMS

FORM A: CONTRACT BID INFORMATION – USE OF SUBCONTRACTORS/TRADES

Your projections for the utilization of subcontractors on the proposed contract are to be provided in this section. A chart has been provided for the identification of subcontractors. Information is to be provided to the extent known at the time the ER is filed for review by DLS. If the subcontractor's name is unknown, then write "unknown". Under "ownership", enter the appropriate race/ethnic and gender code. If the contract is federally funded or assisted and the subcontractor is being utilized in accordance with applicable federal requirements with respect to Minority Business Enterprise or Woman Business Enterprise requirements, enter the appropriate code. This will also apply to state funded contracts with similar requirements for minority and female owned businesses.

FORM B: PROJECTED WORKFORCE FOR WORK TO BE PERFORMED ON THIS PROJECT

For each trade to be engaged by your company for this project, enter the projected workforce for Males and Females by trade classification in the charts provided.

FORM C: CURRENT WORKFORCE FOR WORK TO BE PERFORMED ON THIS PROJECT

For each trade *currently* engaged by your company for all work performed in NYC, enter the current workforce for Males and Females by trade classification in the charts provided.

SIGNATURE PAGE

The signatory of this Employment Report and all other documents submitted to DLS must be an official authorized to enter into a binding legal agreement. The signature page must be completed in its entirety and notarized. Only original signatures will be accepted.

The City of New York Department of Small Business Services
Division of Labor Services Contract Compliance Unit
110 William Street, New York, New York 10038
Phone: (212) 513 – 6323
Fax: (212) 618-8879

CONSTRUCTION EMPLOYMENT REPORT

GENERAL INFORMATION

1. Your contractual relationship in this contract is: Prime contractor_x_ Subcontractor____

1a. Are M/WBE goals attached to this project? Yes _x_ No ____

2. Please check one of the following if your firm would like information on how to certify with the City of New York as a:

___Minority Owned Business Enterprise
___Women Owned Business Enterprise
___Disadvantaged Business Enterprise
___Locally Based Business Enterprise
___Emerging Business Enterprise

2a. If you are certified as an **MBE**, **WBE**, **LBE, EBE** or **DBE**, what city/state agency are you certified with? _____ Are you DBE certified? Yes ____ No _x_

3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes___ No_x_

4. Is this project subject to a project labor agreement? Yes ____ No _x_

5. Are you a Union contractor? Yes ____ No ____ If yes, please list which local(s) you affiliated with Local Union 1010, Local 731, Local 1536, Local 15 & Local 14

6. Are you a Veteran owned company? Yes ____ No _x_

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

7. 11-2814026 dfarinaccio@perfettocontracting.com
Employer Identification Number or Federal Tax I.D. Email Address

8. Perfetto Contracting Co., Inc.
Company Name

9. 152 41st Street Brooklyn NY 11232
Company Address and Zip Code

10. Cesare Perfetto 718-858-8600
Chief Operating Officer Telephone Number

11. Cesare Perfetto 718-858-8600
Designated Equal Opportunity Compliance Officer (If same as Item #10, write "same") Telephone Number

12. same
Name of Prime Contractor and Contact Person (If same as Item #8, write "same")

13. Number of employees in your company: +/- 60 Employees (Seasonal)

14. Contract information:

(a) NYC Dept. of Design & Construction
Contracting Agency (City Agency)

(b) _____
Contract Amount

(c) _____
Procurement Identification Number (PIN)

(d) HWBARUCH
Contract Registration Number (CT#)

(e) unknown at this time
Projected Commencement Date

(f) Unknown at this time
Projected Completion Date

(g) Description and location of proposed contract:

Reconstruction of East 25th Street Plaza between Lexington and 3rd Avenue at Baruch College - Including Sewer, Watermain, Street Lighting and Traffic Signal Work - Borough of Manhattan

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes x No___

If yes, attach a copy of certificate. (See attached)

16. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes___ No x

If yes, attach a copy of certificate.

NOTE: DLS WILL NOT ISSUE A CONTINUED CERTIFICATE OF APPROVAL IN CONNECTION WITH THIS CONTRACT UNLESS THE REQUIRED CORRECTIVE ACTIONS IN PRIOR CONDITIONAL CERTIFICATES OF APPROVAL HAVE BEEN TAKEN.

17. Has an Employment Report already been submitted for a different contract (not covered by this Employment Report) for which you have not yet received compliance certificate?
Yes___ No x If yes,

Date submitted: n/a
Agency to which submitted: _____
Name of Agency Person: _____
Contract No: _____
Telephone: _____

18. Has your company in the past 36 months been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP)? Yes___ No x

If yes,

Small Business Services

Maria Torres-Springer
Commissioner

June 10, 2015

PERFETTO CONTRACTING
JUN 15 2015
RECEIVED

Ms. Delores Farinaccio
Perfetto Contracting Co., Inc.
250 Sixth Street
Brooklyn, NY 11215

RE: Department of Design and Construction Contracts; (1) #8502014HW0022C, HWD005K01; Fulton Street Improvements; Borough of Brooklyn; Contract Value: $1,971,448.50; **File #215CY118**; and

(2) #8502014HW0011C, HWK1048A; The Brooklyn Waterfront Greenway Section One – Reconstruction of West Street from Eagle Street to Quay Street; Borough of Brooklyn; Contract Value: $28,322,802.64; **File #215CY185; Certificate of Approval.**

Dear Ms. Farinaccio:

The Department of Small Business Services/Division of Labor Services (DLS) has concluded that Perfetto Contracting Co., Inc. has met the equal employment opportunity requirements of the City of New York, as stated in Executive Order No. 50 (1980) as amended (E.O. 50), its implementing Rules (Rules), and Chapter 56 of the City Charter (Chapter 56). Consequently, DLS has notified the Department of Design and Construction of this determination.

Contingent upon Perfetto Contracting Co., Inc.'s ongoing compliance with E.O. 50 and Chapter 56, this approval shall be effective for the three (3) year period commencing on May 18, 2015 and terminating on May 17, 2018. **The determination for a three year approval only exempts contractors from completing the policy and procedure section of the Employment Report on future contracts within this three year period.** However, a Construction Employment Report must be submitted for each new project. In addition, Perfetto Contracting Co., Inc., must regularly submit to DLS the **Monthly Workforce Utilization Table and Monthly Payroll Records** as explained during the pre-award conference on May 15, 2015.

Small Business Services

careers
businesses
neighborhoods

Gregg Bishop
Commissioner

216CY340

August 2, 2016

Mr. Nicholas Garcia
Assistant Lead Estimator
Perfetto Contracting Co. Inc.
152 41st Street
Brooklyn, NY 11232

Re: **New York City Department of Design and Construction Contract**; PIN No. 8502016HW0037C; FMS ID: HWPLZ016K; Reconstruction of Bedford Plaza; Borough of Brooklyn; Contract Value: $3,321,000.00; **Continued Certificate of Approval.**

Dear Mr. Garcia:

Please be advised that Perfetto Contracting Co. Inc. has already received notice of its approval for the three **(3)** year period indicated in the Department of Small Business Services/Division of Labor Services (DLS) Certificate of Approval dated June 10, 2015, for DLS File No. 215CY185.

As your organization continues to meet the equal employment opportunity requirements of the City of New York, DLS approves the awarding of the above-referenced contract. This approval does not extend the initial three **(3)** year approval **(May 18, 2015 – May 17, 2018)** referred to above.

If you have any questions regarding this letter, please call **Mr. Isaac Molho**, Contract Reviewer, at (212) 618-8796 or e-mail him at imolho@sbs.nyc.gov.

Very truly yours,

Helen Wilson
Assistant Commissioner
Division of Labor Services

cc: Nilofer Barkatullah (DDC)
Isaac Molho
FILE

(a) Name and address of OFCCP office.
not applicable

(b) Was a Certificate of Equal Employment Compliance issued within the past 36 months?
Yes___ No_x_

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes___ No___

If yes, attach a copy of such requirements or agreements.

(d) Were any deficiencies found? Yes___ No___

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes_x_ No___

If yes, attach a list of such associations and all applicable CBA's. (See attached)

PART II: DOCUMENTS REQUIRED

20. For the following policies or practices, attach the relevant documents (e.g., printed booklets, brochures, manuals, memoranda, etc.). If the policy(ies) are unwritten, attach a full explanation of the practices. See instructions.

_Y_ (a) Health benefit coverage/description(s) for all management, nonunion and union employees (whether company or union administered)

_Y_ (b) Disability, life, other insurance coverage/description

_Y_ (c) Employee Policy/Handbook

_N_ (d) Personnel Policy/Manual

_N_ (e) Supervisor's Policy/Manual

_Y_ (f) Pension plan or 401k coverage/description for all management, nonunion and union employees, whether company or union administered

_Y_ (g) Collective bargaining agreement(s).

_Y_ (h) Employment Application(s)

_N_ (i) Employee evaluation policy/form(s).

_Y_ (j) Does your firm have medical and/or non-medical (i.e. education, military, personal, pregnancy, child care) leave policy?

21. To comply with the Immigration Reform and Control Act of 1986 when and of whom does your firm require the completion of an I-9 Form?

(a) Prior to job offer	Yes___	No_x_
(b) After a conditional job offer	Yes_x_	No___
(c) After a job offer	Yes_x_	No___
(d) Within the first three days on the job	Yes___	No_x_
(e) To some applicants	Yes___	No_x_
(f) To all applicants	Yes_x_	No___
(g) To some employees	Yes___	No_x_
(h) To all employees	Yes_x_	No___

22. Explain where and how completed I-9 Forms, with their supportive documentation, are maintained and made accessible.
The I-9's along with the W4 are filed in our office

23. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes___ No_x_

If yes, is the medical examination given: n/a

(a) Prior to a job offer	Yes___	No___
(b) After a conditional job offer	Yes___	No___
(c) After a job offer	Yes___	No___
(d) .To all applicants	Yes___	No___
(e) Only to some applicants	Yes___	No___

If yes, list for which applicants below and attach copies of all medical examination or questionnaire forms and instructions utilized for these examinations.
n/a

24. Do you have a written equal employment opportunity (EEO) policy? Yes_x_ No___

If yes, list the document(s) and page number(s) where these written policies are located.
Please see attached.

25. Does the company have a current affirmative action plan(s) (AAP)
_x_ Minorities and Women
_____ Individuals with handicaps
_____ Other. Please specify _____

26. Does your firm or collective bargaining agreement(s) have an internal grievance procedure with respect to EEO complaints? Yes_x_ No___

If yes, please attach a copy of this policy. (see attached)

If no, attach a report detailing your firm's unwritten procedure for handling EEO complaints.

27. Has any employee, within the past three years, filed a complaint pursuant to an internal grievance procedure or with any official of your firm with respect to equal employment opportunity? Yes___ No_x_

If yes, attach an internal complaint log. See instructions. n/a

28. Has your firm, within the past three years, been named as a defendant (or respondent) in any administrative or judicial action where the complainant (plaintiff) alleged violation of any anti-discrimination or affirmative action laws? Yes___ No_x_

If yes, attach a log. See instructions. n/a

29. Are there any jobs for which there are physical qualifications? Yes___ No_x_

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).
Not applicable

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes___ No_x_

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).
Not applicable

SIGNATURE PAGE

I, (print name of authorized official signing) Cesare Perfetto hereby certify that the information submitted herewith is true and complete to the best of my knowledge and belief and submitted with the understanding that compliance with New York City's equal employment requirements, as contained in Chapter 56 of the City Charter, Executive Order No. 50 (1980), as amended, and the implementing Rules and Regulations, is a contractual obligation. I also agree on behalf of the company to submit a certified copy of payroll records to the Division of Labor Services on a monthly basis.

Perfetto Contracting Co.Inc.
Contractor's Name

Dolores Farinaccio	Contract Administrator
Name of person who prepared this Employment Report	Title
Cesare Perfetto	President
Name of official authorized to sign on behalf of the contractor	Title

718-858-8600
Telephone Number



08/04/17
Signature of authorized official — Date

If contractors are found to be underutilizing minorities and females in any given trade based on Chapter 56 Section 3H, the Division of Labor Services reserves the right to request the contractor's workforce data and to implement an employment program.

Contractors who fail to comply with the above mentioned requirements or are found to be in noncompliance may be subject to the withholding of final payment.

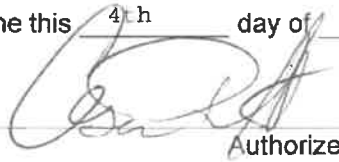
Willful or fraudulent falsifications of any data or information submitted herewith may result in the termination of the contract between the City and the bidder or contractor and in disapproval of future contracts for a period of up to five years. Further, such falsification may result in civil and/and or criminal prosecution.

To the extent permitted by law and consistent with the proper discharge of DLS' responsibilities under Charter Chapter 56 of the City Charter and Executive Order No. 50 (1980) and the implementing Rules and Regulations, all information provided by a contractor to DLS shall be confidential.

Only original signatures accepted.

8/4/17

Sworn to before me this 4th day of August 20 2017



JOHN P. WIEGMAN
Notary Public, State of New York
No. 01WI6212179
Qualified in Nassau County
Commission Expires October 13, 2017

Notary Public — Authorized Signature — Date

FORM A. CONTRACT BID INFORMATION: USE OF SUBCONTRACTORS/TRADES

1. Do you plan to subcontractor work on this contract? Yes x No___

2. If yes, complete the chart below.

NOTE: All proposed subcontractors with a subcontract in excess of $750,000 must complete an Employment Report for review and approval before the contract may be awarded and work commences.

SUBCONTRACTOR'S NAME*	OWNERSHIP (ENTER APPROPRIATE CODE LETTERS BELOW)	WORK TO BE PERFORMED BY SUBCONTRACTOR	TRADE PROJECTED FOR USE BY SUBCONTRACTOR	PROJECTED DOLLAR VALUE OF SUBCONTRACT
	UNKNOWN AT THIS TIME			

***If subcontractor is presently unknown, please enter the trade (craft name).**

OWNERSHIP CODES
- W: White
- B: Black
- H: Hispanic
- A: Asian
- N: Native American
- F: Female

FORM B: PROJECTED WORKFORCE

TRADE CLASSIFICATION CODES

(J) Journeylevel Workers
(H) Helper
(TOT) Total by Column
(A) Apprentice
(TRN) Trainee

For each trade to be engaged by your company for this project, enter the projected workforce for Males and Females by trade classification on the charts below.

Trade: Laborers

Union Affiliation, if applicable: Local Union 731

Total (Col. #1-10): 7

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): 3

Total Female (Col. #6 – 10): 1

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	4	1	1				1			
H										
A										
TRN										
TOT	4	1	1							

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, local unions and references

FORM B: PROJECTED WORKFORCE

Trade:
Laborers/Road Pavers

Union Affiliation, if applicable
Local Union 1010

Total (Col. #1-10):
4

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10):
0

Total Female (Col. #6 – 10):
0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	3		1							
H										
A										
TRN										
TOT	3		1							

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references

FORM C: CURRENT WORKFORCE

TRADE CLASSIFICATION CODES

(J) Journeylevel Workers
(A) Apprentice
(H) Helper
(TRN) Trainee
(TOT) Total by Column

For each trade currently engaged by your company for all work performed in New York City, enter the current workforce for Males and Females by trade classification on the charts below.

Trade:
Flaggers/Traffic Control

Union Affiliation, if applicable
Non Union

Total (Col. #1-10):
8

Total Minority, Male & Female
(Col. #2,3,4,5,7,8,9, & 10):
8

Total Female
(Col. #6 – 10):
1

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J		5	2				1			
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references.

FORM C: CURRENT WORKFORCE

Trade:
Laborers

Union Affiliation, if applicable
Local Union 731

Total (Col. #1-10):
18

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10):
7

Total Female (Col. #6 – 10):
1

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	11	2	3		1			1		
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references

FORM C: CURRENT WORKFORCE

Trade:
Laborers/Road Pavers

Union Affiliation, if applicable
Local Union 1010

Total (Col. #1-10):
11

Total Minority, Male & Female
(Col. #2,3,4,5,7,8,9, & 10):
6

Total Female
(Col. #6 – 10):
1

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	5		5					1		
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references

FORM C: CURRENT WORKFORCE

Trade:
Eng.Operators

Union Affiliation, if applicable
Local Union 14

Total (Col. #1-10):
5

Total Minority, Male & Female
(Col. #2,3,4,5,7,8,9, & 10):
2

Total Female
(Col. #6 – 10):
1

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	3	1						1		
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references

FORM C: CURRENT WORKFORCE

Trade:
Eng.Operators

Union Affiliation, if applicable
Local Union 15

Total (Col. #1-10):
6

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10):
1

Total Female (Col. #6 – 10):
0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	5	1								
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references

FORM C: CURRENT WORKFORCE

Trade:
Timberman

Union Affiliation, if applicable
Local Union 1536

Total (Col. #1-10):
2

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10):
1

Total Female (Col. #6 – 10):
0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	1	1								
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

Employment applications, unions and references

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

ADDENDA CONTROL SHEET

BID OPENING DATE: **AUGUST 4, 2017**

PROJECT NO.: **HWBARUCH**

DESCRIPTION: **RECONSTRUCTION OF EAST 25TH STREET PLAZA**

Addendum		Addendum Contains:				
No.	Date	Revised Bid Date/Time	Revised Bid Schedule	Questions & Responses	Additional Ammendments	Drawings (number)
1	6/28/2017	☐	☐	☒	☒	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)
		☐	☐	☐	☐	☐ (0)

The Table above is a guide. Refer to the referenced Addendum for specific information.

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: **HWBARUCH**

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE
INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND
TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

ADDENDUM NO. 1

DATED: JULY 28, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Contract Drawings Sheet 8 OF 72, Detail ④, Baruch Vault Area Concrete Sidewalk;
   Delete first line in sidewalk callout: **4" (MIN.) CONCRETE SIDEWALK 4.13 AAS**
   Substitute with the following first line: **4" (MIN.) Concrete SIDEWALK, ITEM 4.13 CABS (PIGMENTED)**

2. **Refer** to the Contract Drawings Sheet 12 OF 72, SECTION B-B: TYPICAL FULL DEPTH RECONSTRUCTION DETAIL;
   Delete last line in curb callout: **CURB (18" DEEP), ITEM 4.09 CD**
   Substitute with **CURB (21" DEEP), ITEM 4.09 CE**

3. For additional information, see the attached ONE (1) page of "Questions Submitted by Bidders and DDC's Responses".

END OF ADDENDUM NO. 1

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of ONE (1) page, and ONE (1) page attachment.

THIS ADDENDUM MUST BE SIGNED BY ALL BIDDERS AND ATTACHED TO THEIR BID

MOHSEN ZARGARELAHI, P.E.
Assistant Commissioner

PERFECTO CONTRACTING CO INC
Name of Bidder

By: _____

Questions Submitted by Bidders and DDC's Responses

QUESTION #1:

In Bid Booklet 4 of 4,Under the section entitled General Mechanical Requirements, Paragraph 1.4 Section 01-35-03-1 it states removal and disposal of asbestos materials if encountered in the removal of concealed pipes and ducts.
What is NOT written in the specification is how the Contractor is to be paid for the removal and disposal of this material if it is required.

DDC'S RESPONSE:

Refer to Bid Booklet 4 of 4, Addendum to the General Conditions, Section VII, Table of Applicability of Sections/Sub Sections and Amended Sub-Sections, page 3 of 15: the Section 01 35 03, General Mechanical Requirements Does not Apply.

QUESTION #2:

Please clarify as to whether the Baruch Vault Area Concrete Sidewalk is pigmented or unpigmented.

DDC'S RESPONSE:

Please refer to Article 1 of this Addendum 1.

QUESTION #3:

On Sheet 12 of 72, Section B-B shows Item 4.09 CD - Corner Steel Faced Curb (18" Deep). However, this Item doesn't appear in the bid item list. Please advise.

DDC'S RESPONSE:

Please refer to Article 2 of this Addendum 2.

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 1 OF 4

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE
INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND
TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

_____

Contractor.

_____

Dated_____, **20**____

_____

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000
WEBSITE www1.nyc.gov/site/ddc/index.page

VOLUME 2 OF 4

INFORMATION FOR BIDDERS
CONTRACT
PERFORMANCE AND PAYMENT BONDS
PREVAILING WAGE SCHEDULE

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

FOR THE DEPARTMENT OF TRANSPORTATION
PREPARED BY MATHEWS NIELSEN LANDSCAPE ARCHITECTS, P.C.

AUGUST 26, 2016

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000
WEBSITE www1.nyc.gov/site/ddc/index.page

VOLUME 2 OF 4

INFORMATION FOR BIDDERS
CONTRACT
PERFORMANCE AND PAYMENT BONDS
PREVAILING WAGE SCHEDULE

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

AUGUST 26, 2016

NOTICE TO BIDDERS

The City of New York has issued a new Standard Construction Contract. The new Contract, which is incorporated in this bid, is different from the 2013 version previously used by the City. Some of the significant changes are listed below. In addition, this March 2017 version incorporates the Insurance Rider (Articles 22.1.1(c) and 22.3.3), the Paid Sick Leave Law Contract Rider (Article 35.5), and the Hiring and Employment Rider: HireNYC and Reporting Requirements (Article 35.6). This notice is only a partial listing. Please refer to the Contract itself for a full understanding of the changes and the actual text of the changes that were made. The text of the revised Standard Construction Contract is the controlling document if there are any discrepancies between this notice and the Standard Construction Contract.

Significant changes include the following:

- **ARTICLE 11 - DAMAGES CAUSED BY DELAYS:** Article 11 no longer provides for agencies to make determinations on claims for damages for delay or make payments for those claims through a change order. Instead claims will be submitted to the Comptroller in accordance with the standards in the Contract. The revised Article 11 also sets forth additional detail of what delay costs are compensable and how they are to be calculated.

- **ARTICLE 12 - COORDINATION WITH OTHER CONTRACTORS:** The March 2017 version revises Article 12.3 concerning the Engineer's failure to issue directions to an Other Contractor.

- **ARTICLE 14 - COMPLETION AND FINAL ACCEPTANCE OF THE WORK:** The March 2017 version clarifies Article 14.2.2 concerning the dates to complete punch list work.

- **ARTICLE 30 - NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS:** The March 2017 version clarifies the relationship between the requirements in Article 30.1 concerning when the contractor must submit notice and documentation of claims for delay damages, extra work, and other claims and the requirements that are set forth in Articles 11 and 27.

- **ARTICLE 56 - CLAIMS AND ACTIONS THEREON:** The March 2017 version revises Article 56.2.2 concerning the time to commence an action arising out of the Commissioner's exercise of his/her right to complete punch list or unsatisfactory work.

- **ARTICLE 78 - EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS:** The March 2017 version adds a new Article 78 requiring pre-bid viewing of the site and allowing the contractor to obtain a change order for extra work due to changed subsurface conditions.

Please discontinue use of this notice after September 30, 2017

(NO TEXT THIS PAGE)

CITY OF NEW YORK

STANDARD CONSTRUCTION CONTRACT

March 2017

(NO TEXT ON THIS PAGE)

CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT

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WITNESSETH:

The parties, in consideration of the mutual agreements contained herein, agree as follows:

CHAPTER I: THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

1.1 Except for titles, subtitles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of this **Contract**:

1.1.1 All provisions required by law to be inserted in this **Contract**, whether actually inserted or not;

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The **Contract**;

1.1.5 The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and, if used, the Bid Booklet;

1.1.6 All Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed or the Order to Work.

1.2 Should any conflict occur in or between the Drawings and Specifications, the **Contractor** shall be deemed to have estimated the most expensive way of doing the **Work**, unless the **Contractor** shall have asked for and obtained a decision in writing from the **Commissioner** of the **Agency** that is entering into this **Contract**, before the submission of its bid, as to what shall govern.

ARTICLE 2. DEFINITIONS

2.1 The following words and expressions, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless a different meaning is clear from the context:

2.1.1 **"Addendum"** or **"Addenda"** shall mean the additional Contract provisions and/or technical clarifications issued in writing by the Commissioner prior to the receipt of bids.

2.1.2 **"Agency"** shall mean a city, county, borough or other office, position, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury.

2.1.3 **"Agency Chief Contracting Officer" (ACCO)** shall mean a person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the CCPO, or his/her duly authorized representative.

2.1.4 **"Allowance"** shall mean a sum of money which the Agency may include in the total amount of the Contract for such specific contingencies as the Agency believes may be necessary to complete the Work, *e.g.*, lead or asbestos remediation, and for which the Contractor will be paid on the basis of stipulated unit prices or a formula set forth in the Contract or negotiated between the parties provided, however, that if the Contractor is not directed to use the Allowance, the Contractor shall have no right to such money and it shall be deducted from the total amount of the Contract.

2.1.5 **"City"** shall mean the City of New York.

2.1.6 **"City Chief Procurement Officer" (CCPO)** shall mean a person delegated authority by the Mayor to coordinate and oversee the procurement activity of Mayoral agency staff, including the ACCO and any offices which have oversight responsibility for the procurement of construction, or his/her duly authorized representative.

2.1.7 **"Commissioner"** shall mean the head of the Agency that has entered into this Contract, or his/her duly authorized representative.

2.1.8 **"Comptroller"** shall mean the Comptroller of the City of New York.

2.1.9 **"Contract"** or **"Contract Documents"** shall mean each of the various parts of the contract referred to in Article 1 hereof, both as a whole and severally.

2.1.10 **"Contract Drawings"** shall mean only those drawings specifically entitled as such and listed in the Specifications or in any Addendum, or any drawings furnished by the Commissioner, pertaining or supplemental thereto.

2.1.11 **"Contract Work"** shall mean everything required to be furnished and done by the Contractor by any one or more of the parts of the Contract referred to in Article 1, except Extra Work as hereinafter defined.

2.1.12 **"Contractor"** shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and its, their, his/her successors, personal representatives, executors, administrators, and assigns, and any person, firm, partnership, joint venture, individual, or corporation which shall at any time be substituted in the place of the Contractor under this Contract.

2.1.13 **"Days"** shall mean calendar days, except where otherwise specified.

2.1.14 **"Engineer"** or **"Architect"** or **"Project Manager"** shall mean the person so designated in writing by the Commissioner in the Notice to Proceed or the Order to Work to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be. Subject to written approval by the Commissioner, the Engineer, Architect or Project Manager may designate an authorized representative.

2.1.15 **"Engineering Audit Officer" (EAO)** shall mean the person so designated by the Commissioner to perform responsible auditing functions hereunder.

2.1.16 **"Extra Work"** shall mean Work other than that required by the Contract at the time of award which is authorized by the Commissioner pursuant to Chapter VI of this Contract.

2.1.17 **"Federal-Aid Contract"** shall mean a contract in which the United States (federal) Government provides financial funding as so designated in the Information for Bidders.

2.1.18 **"Final Acceptance"** shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.

2.1.19 **"Final Approved Punch List"** shall mean a list, approved pursuant to Article 14.2.2, specifying those items of Work to be completed by the Contractor after Substantial Completion and dates for the completion of each item of Work.

2.1.20 **"Law"** or **"Laws"** shall mean the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a statute of the United States or of the State of New York, a local law of the City of New York, any ordinance, rule or regulation having the force of law, or common law.

2.1.21 **"Materialman"** shall mean any corporation, firm, partnership, joint venture, or individual, other than employees of the Contractor, who or which contracts with the Contractor or any Subcontractor, to fabricate or deliver, or who actually fabricates or delivers, plant, materials or equipment to be incorporated in the Work.

2.1.22 **"Means and Methods of Construction"** shall mean the labor, materials, temporary structures, tools, plant, and construction equipment, and the manner and time of their use, necessary to accomplish the result intended by this Contract.

2.1.23**"Notice to Proceed" or "Order to Work"** shall mean the written notice issued by the Commissioner specifying the time for commencement of the Work and the Engineer, Architect or Project Manager.

2.1.24 **"Other Contractor(s)"** shall mean any contractor (other than the entity which executed this Contract or its Subcontractors) who or which has a contract with the City for work on or adjacent to the building or Site of the Work.

2.1.25 **"Payroll Taxes"** shall mean State Unemployment Insurance (SUI), Federal Unemployment Insurance (FUI), and payments pursuant to the Federal Insurance Contributions Act (FICA).

2.1.26 **"Project"** shall mean the public improvement to which this Contract relates.

2.1.27 **"Procurement Policy Board" (PPB)** shall mean the Agency of the City of New York whose function is to establish comprehensive and consistent procurement policies and rules which shall have broad application throughout the City.

2.1.28 **"Required Quantity"** in a unit price Contract shall mean the actual quantity of any item of Work or materials which is required to be performed or furnished in order to comply with the Contract.

2.1.29 **"Resident Engineer"** shall mean the representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the Work.

2.1.30 **"Site"** shall mean the area upon or in which the Contractor's operations are carried on, and such other areas adjacent thereto as may be designated as such by the Engineer.

2.1.31 **"Small Tools"** shall mean items that are ordinarily required for a worker's job function, including but not limited to, equipment that ordinarily has no licensing, insurance or substantive storage costs associated with it; such as circular and chain saws, impact drills, threaders, benders, wrenches, socket tools, etc.

2.1.32 **"Specifications"** shall mean all of the directions, requirements, and standards of performance applying to the Work as hereinafter detailed and designated under the Specifications.

2.1.33 **"Subcontractor"** shall mean any person, firm or corporation, other than employees of the Contractor, who or which contracts with the Contractor or with its subcontractors to furnish, or actually furnishes labor, or labor and materials, or labor and equipment, or superintendence, supervision and/or management at the Site. Wherever the word Subcontractor appears, it shall also mean sub-Subcontractor.

2.1.34 **"Substantial Completion"** shall mean the written determination by the Engineer that the Work required under this Contract is substantially, but not entirely, complete and the approval of the **Final Approved Punch List**.

2.1.35 **"Work"** shall mean all services required to complete the Project in accordance with the Contract Documents, including without limitation, labor, material, superintendence, management, administration, equipment, and incidentals, and obtaining any and all permits, certifications and licenses as may be necessary and required to complete the Work, and shall include both Contract Work and Extra Work.

CHAPTER II: THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

3.1 Unless otherwise expressly provided in the **Contract Drawings**, **Specifications,** and **Addenda**, the **Work** shall be performed in accordance with the best modern practice, utilizing, unless otherwise specified in writing, new and unused materials of standard first grade quality and workmanship and design of the highest quality, to the satisfaction of the **Commissioner**.

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

4.1 Unless otherwise expressly provided in the **Contract Drawings**, **Specifications,** and **Addenda**, the **Means and Methods of Construction** shall be such as the **Contractor** may choose; subject, however, to the **Engineer's** right to reject the **Means and Methods of Construction** proposed by the **Contractor** which in the opinion of the **Engineer**:

4.1.1 Will constitute or create a hazard to the **Work**, or to persons or property; or

4.1.2 Will not produce finished **Work** in accordance with the terms of the **Contract**; or

4.1.3 Will be detrimental to the overall progress of the **Project**.

4.2 The **Engineer's** approval of the **Contractor's Means and Methods of Construction**, or his/her failure to exercise his/her right to reject such means or methods, shall not relieve the **Contractor**

of its obligation to complete the **Work** as provided in this **Contract**; nor shall the exercise of such right to reject create a cause of action for damages.

ARTICLE 5. COMPLIANCE WITH LAWS

5.1 The **Contractor** shall comply with all **Laws** applicable to this **Contract** and to the **Work** to be done hereunder.

5.2 Procurement Policy Board Rules: This **Contract** is subject to the Rules of the **PPB** ("**PPB** Rules") in effect at the time of the bid opening for this **Contract**. In the event of a conflict between the **PPB** Rules and a provision of this **Contract**, the **PPB** Rules shall take precedence.

5.3 Noise Control Code provisions.

5.3.1 In accordance with the provisions of Section 24-216(b) of the Administrative Code of the **City** ("Administrative Code"), Noise Abatement Contract Compliance, devices and activities which will be operated, conducted, constructed or manufactured pursuant to this **Contract** and which are subject to the provisions of the **City** Noise Control Code shall be operated, conducted, constructed, or manufactured without causing a violation of the Administrative Code. Such devices and activities shall incorporate advances in the art of noise control development for the kind and level of noise emitted or produced by such devices and activities, in accordance with regulations issued by the **Commissioner** of the **City** Department of Environmental Protection.

5.3.2 The **Contractor** agrees to comply with Section 24-219 of the Administrative Code and implementing rules codified at 15 Rules of the City of New York ("RCNY") Section 28-100 *et seq*. In accordance with such provisions, the **Contractor**, if the **Contractor** is the responsible party under such regulations, shall prepare and post a Construction Noise Mitigation Plan at each **Site**, in which the **Contractor** shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the **Contractor** cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the **City** Department of Environmental Protection. In addition, the **Contractor**'s certified Construction Noise Mitigation Plan is subject inspection by the **City** Department of Environmental Protection in accordance with Section 28-101 of Title 15 of RCNY. No **Contract Work** may take place at a **Site** unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the **Contractor** shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties pursuant to the applicable provisions of the Administrative Code and RCNY.

5.4 Ultra Low Sulfur Diesel Fuel: In accordance with the provisions of Section 24-163.3 of the Administrative Code, the **Contractor** specifically agrees as follows:

5.4.1 Definitions. For purposes of this Article 5.4, the following definitions apply:

5.4.1(a) "Contractor" means any person or entity that enters into a Public Works Contract with a **City Agency**, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such Public Works Contract.

5.4.1(b) "Motor Vehicle" means any self-propelled vehicle designed for transporting persons or property on a street or highway.

5.4.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.4.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this term shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) horsepower or less and that are not used in any construction program or project.

5.4.1(e) "Public Works Contract" means a contract with a **City Agency** for a construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a **City Agency** for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a **City Agency** for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

5.4.1(f) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.4.2 Ultra Low Sulfur Diesel Fuel

5.4.2(a) All **Contractors** shall use Ultra Low Sulfur Diesel Fuel in diesel-powered Nonroad Vehicles in the performance of this **Contract**.

5.4.2(b) Notwithstanding the requirements of Article 5.4.2(a), **Contractors** may use diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) to fulfill the requirements of this Article 5.4.2, where the Commissioner of the **City** Department of Environmental Protection ("DEP Commissioner") has issued a determination that a sufficient quantity of Ultra Low Sulfur Diesel Fuel is not available to meet the needs of **Agencies** and **Contractors**. Any such determination shall expire after six (6) months unless renewed.

5.4.2(c) **Contractors** shall not be required to comply with this Article 5.4.2 where the **City Agency** letting this **Contract** makes a written finding, which is approved, in writing, by the DEP Commissioner, that a sufficient quantity of Ultra Low Sulfur Diesel Fuel, or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is not available to meet the requirements of Section 24-163.3 of the Administrative Code, provided that such **Contractor** in its fulfillment of the

requirements of this **Contract**, to the extent practicable, shall use whatever quantity of Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is available. Any finding made pursuant to this Article 5.4.2(c) shall expire after sixty (60) **Days**, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the **City Agency** renews the finding in writing and such renewal is approved by the DEP Commissioner.

5.4.2(d) **Contractors** may check on determinations and approvals issued by the DEP Commissioner pursuant to Section 24-163.3 of the Administrative Code, if any, at www.dep.nyc.gov or by contacting the **City Agency** letting this **Contract**.

5.4.2(e) The requirements of this Article 5.4.2 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.3 Best Available Technology

5.4.3(a) All **Contractors** shall utilize the best available technology for reducing the emission of pollutants for diesel-powered Nonroad Vehicles in the performance of this **Contract**. For determinations of best available technology for each type of diesel-powered Nonroad Vehicle, **Contractors** shall comply with the regulations of the **City** Department of Environmental Protection, as and when adopted, Chapter 14 of Title 15 of the Rules of the City of New York (RCNY). The **Contractor** shall fully document all steps in the best available technology selection process and shall furnish such documentation to the **City Agency** or the DEP Commissioner upon request. The **Contractor** shall retain all documentation generated in the best available technology selection process for as long as the selected best available technology is in use.

5.4.3(b) No **Contractor** shall be required to replace best available technology for reducing the emission of pollutants or other authorized technology utilized for a diesel-powered Nonroad Vehicle in accordance with the provisions of this Article 5.4.3 within three (3) years of having first utilized such technology for such vehicle.

5.4.3(c) This Article 5.4.3 shall not apply to any vehicle used to satisfy the requirements of a specific Public Works Contract for fewer than twenty (20) **Days**.

5.4.3(d) The **Contractor** shall not be required to comply with this Article 5.4.3 with respect to a diesel-powered Nonroad Vehicle under the following circumstances:

5.4.3(d)(i) Where the **City Agency** makes a written finding, which is approved, in writing, by the DEP Commissioner, that the best available technology for reducing the emission of pollutants as required by this Article 5.4.3 is unavailable for such vehicle, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(ii) Where the DEP Commissioner has issued a written waiver based upon the **Contractor** having demonstrated to the DEP Commissioner that the use of the best available technology for reducing the emission of pollutants might endanger the operator of such vehicle or those working near such vehicle, due to engine malfunction, the **Contractor** shall use whatever technology for

reducing the emission of pollutants, if any, is available and appropriate for such vehicle, which would not endanger the operator of such vehicle or those working near such vehicle.

5.4.3(d)(iii) In determining which technology to use for the purposes of Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above, the **Contractor** shall primarily consider the reduction in emissions of particulate matter and secondarily consider the reduction in emissions of nitrogen oxides associated with the use of such technology, which shall in no event result in an increase in the emissions of either such pollutant.

5.4.3(d)(iv) The **Contractor** shall submit requests for a finding or a waiver pursuant to this Article 5.4.3(d) in writing to the DEP Commissioner, with a copy to the **ACCO** of the **City Agency** letting this **Contract**. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above shall expire after one hundred eighty (180) **Days**, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the **City Agency** renews the finding, in writing, and the DEP Commissioner approves such finding, in writing, or the DEP Commissioner renews the waiver, in writing.

5.4.3(e) The requirements of this Article 5.4.3 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.4 Section 24-163 of the Administrative Code. The **Contractor** shall comply with Section 24-163 of the Administrative Code related to the idling of the engines of motor vehicles while parking.

5.4.5 Compliance

5.4.5(a) The **Contractor's** compliance with Article 5.4 may be independently monitored. If it is determined that the **Contractor** has failed to comply with any provision of Article 5.4, any costs associated with any independent monitoring incurred by the **City** shall be reimbursed by the **Contractor**.

5.4.5(b) Any **Contractor** who violates any provision of Article 5.4, except as provided in Article 5.4.5(c) below, shall be liable for a civil penalty between the amounts of one thousand ($1,000) and ten thousand ($10,000) dollars, in addition to twice the amount of money saved by such **Contractor** for failure to comply with Article 5.4.

5.4.5(c) No **Contractor** shall make a false claim with respect to the provisions of Article 5.4 to a **City Agency**. Where a **Contractor** has been found to have done so, such **Contractor** shall be liable for a civil penalty of twenty thousand ($20,000) dollars, in addition to twice the amount of money saved by such **Contractor** in association with having made such false claim.

5.4.6 Reporting

5.4.6(a) For all Public Works Contracts covered by this Article 5.4, the **Contractor** shall report to the **City Agency** the following information:

5.4.6(a)(i) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(a)(ii) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(a)(iii) The number of such Nonroad Vehicles that utilized the best available technology for reducing the emission of pollutants, including a breakdown by vehicle model and the type of technology;

5.4.6(a)(iv) The number of such Nonroad Vehicles that utilized such other authorized technology in accordance with Article 5.4.3, including a breakdown by vehicle model and the type of technology used for each such vehicle;

5.4.6(a)(v) The locations where such Nonroad Vehicles were used; and

5.4.6(a)(vi) Where a determination is in effect pursuant to Article 5.4.2(b) or 5.4.2(c), detailed information concerning the **Contractor's** efforts to obtain Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm).

5.4.6(b) The **Contractor** shall submit the information required by Article 5.4.6(a) at the completion of **Work** under the Public Works Contract and on a yearly basis no later than August 1 throughout the term of the Public Works Contract. The yearly report shall cover **Work** performed during the preceding fiscal year (July 1 - June 30).

5.5 Ultra Low Sulfur Diesel Fuel. In accordance with the Coordinated Construction Act for Lower Manhattan, as amended:

5.5.1 Definitions. For purposes of this Article 5.5, the following definitions apply:

5.5.1(a) "Lower Manhattan" means the area to the south of and within the following lines: a line beginning at a point where the United States pierhead line in the Hudson River as it exists now or may be extended would intersect with the southerly line of West Houston Street in the Borough of Manhattan extended, thence easterly along the southerly side of West Houston Street to the southerly side of Houston Street, thence easterly along the southerly side of Houston Street to the southerly side of East Houston Street, thence northeasterly along the southerly side of East Houston Street to the point where it would intersect with the United States pierhead line in the East River as it exists now or may be extended, including tax lots within or immediately adjacent thereto.

5.5.1(b) "Lower Manhattan Redevelopment Project" means any project in Lower Manhattan that is funded in whole or in part with federal or State funding, or any project intended to improve transportation between Lower Manhattan and the two air terminals in the **City** known as LaGuardia Airport and John F. Kennedy International Airport, or between Lower Manhattan and the air terminal in Newark known as Newark Liberty International Airport, and that is funded in whole or in part with federal funding.

5.5.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.5.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower (HP) and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) HP or less and that are not used in any construction program or project.

5.5.1(e) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.5.2 Requirements. **Contractors** and **Subcontractors** are required to use only Ultra Low Sulfur Diesel Fuel to power the diesel-powered Nonroad Vehicles with engine HP rating of fifty (50) HP and above used on a Lower Manhattan Redevelopment Project and, where practicable, to reduce the emission of pollutants by retrofitting such Nonroad Vehicles with oxidation catalysts, particulate filters, or technology that achieves lowest particulate matter emissions.

5.6 Pesticides. In accordance with Section 17-1209 of the Administrative Code, to the extent that the **Contractor** or any **Subcontractor** applies pesticides to any property owned or leased by the **City**, the **Contractor,** and any **Subcontractor** shall comply with Chapter 12 of the Administrative Code.

5.7 Waste Treatment, Storage, and Disposal Facilities and Transporters. In connection with the **Work**, the **Contractor** and any **Subcontractor** shall use only those waste treatment, storage, and disposal facilities and waste transporters that possess the requisite license, permit or other governmental approval necessary to treat, store, dispose, or transport the waste, materials or hazardous substances.

5.8 Environmentally Preferable Purchasing. The **Contractor** shall ensure that products purchased or leased by the **Contractor** or any **Subcontractor** for the **Work** that are not specified by the **City** or are submitted as equivalents to a product specified by the **City** comply with the requirements of the New York City Environmentally Preferable Purchasing Program contained in Chapter 11 of Title 43 of the RCNY, pursuant to Chapter 3 of Title 6 of the Administrative Code.

ARTICLE 6. INSPECTION

6.1 During the progress of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall at all times afford the representatives of the **City** every reasonable, safe, and proper facility for inspecting all **Work** done or being done at the **Site** and also for inspecting the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

6.2 The **Contractor's** obligation hereunder shall include the uncovering or taking down of finished **Work** and its restoration thereafter; provided, however, that the order to uncover, take down and restore shall be in writing, and further provided that if **Work** thus exposed proves satisfactory, and if the **Contractor** has complied with Article 6.1, such uncovering or taking down and restoration shall be

considered an item of **Extra Work** to be paid for in accordance with the provisions of Article 26. If the **Work** thus exposed proves unsatisfactory, the **City** has no obligation to compensate the **Contractor** for the uncovering, taking down or restoration.

6.3 Inspection and approval by the **Commissioner**, the **Engineer**, **Project Manager**, or **Resident Engineer**, of finished **Work** or of **Work** being performed, or of materials and equipment at the place of manufacture or preparation, shall not relieve the **Contractor** of its obligation to perform the **Work** in strict accordance with the **Contract**. Finished or unfinished **Work** not found to be in strict accordance with the **Contract** shall be replaced as directed by the **Engineer**, even though such **Work** may have been previously approved and paid for. Such corrective **Work** is **Contract Work** and shall not be deemed **Extra Work**.

6.4 Rejected **Work** and materials shall be promptly taken down and removed from the **Site**, which must at all times be kept in a reasonably clean and neat condition.

ARTICLE 7. PROTECTION OF WORK AND OF PERSONS AND PROPERTY; NOTICES AND INDEMNIFICATION

7.1 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall be under an absolute obligation to protect the finished and unfinished **Work** against any damage, loss, injury, theft and/or vandalism and in the event of such damage, loss, injury, theft and/or vandalism, it shall promptly replace and/or repair such **Work** at the **Contractor's** sole cost and expense, as directed by the **Resident Engineer**. The obligation to deliver finished **Work** in strict accordance with the **Contract** prior to **Final Acceptance** shall be absolute and shall not be affected by the **Resident Engineer's** approval of, or failure to prohibit, the **Means and Methods of Construction** used by the **Contractor**.

7.2 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall take all reasonable precautions to protect all persons and the property of the **City** and of others from damage, loss or injury resulting from the **Contractor's**, and/or its **Subcontractors'** operations under this **Contract.** The **Contractor's** obligation to protect shall include the duty to provide, place or replace, and adequately maintain at or about the **Site** suitable and sufficient protection such as lights, barricades, and enclosures.

7.3 The **Contractor** shall comply with the notification requirements set forth below in the event of any loss, damage or injury to **Work**, persons or property, or any accidents arising out of the operations of the **Contractor** and/or its **Subcontractors** under this **Contract**.

7.3.1 The **Contractor** shall make a full and complete report in writing to the **Resident Engineer** within three (3) **Days** after the occurrence.

7.3.2 The **Contractor** shall also send written notice of any such event to all insurance carriers that issued potentially responsive policies (including commercial general liability insurance carriers for events relating to the **Contractor**'s own employees) no later than twenty (20) days after such event and again no later than twenty (20) days after the initiation of any claim and/or action resulting therefrom. Such notice shall contain the following information: the number of the insurance policy, the name of the Named Insured, the date and location of the incident, and the identity of the persons injured or property damaged. For any policy on which the **City** and/or the **Engineer**, **Architect**, or **Project Manager** are Additional Insureds, such notice shall expressly specify that "this notice is

being given on behalf of the City of New York as Additional Insured, such other Additional Insureds, as well as the Named Insured."

7.3.2(a) Whenever such notice is sent under a policy on which the **City** is an Additional Insured, the **Contractor** shall provide copies of the notice to the **Comptroller,** the **Commissioner** and the **City** Corporation Counsel. The copy to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller's Office, 1 Centre Street – Room 1222, New York, New York, 10007. The copy to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions. The copy to the **City** Corporation Counsel shall be sent to Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

7.3.2(b) If the **Contractor** fails to provide any of the foregoing notices to any appropriate insurance carrier(s) in a timely and complete manner, the **Contractor** shall indemnify the **City** for all losses, judgments, settlements, and expenses, including reasonable attorneys' fees, arising from an insurer's disclaimer of coverage citing late notice by or on behalf of the **City**.

7.4 To the fullest extent permitted by law, the **Contractor** shall defend, indemnify, and hold the **City**, its employees, and officials (the "Indemnitees") harmless against any and all claims (including but not limited to claims asserted by any employee of the **Contractor** and/or its **Subcontractors**) and costs and expenses of whatever kind (including but not limited to payment or reimbursement of attorneys' fees and disbursements) allegedly arising out of or in any way related to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract** or from the **Contractor's** and/or its **Subcontractors'** failure to comply with any of the provisions of this **Contract** or of the **Law**. Such costs and expenses shall include all those incurred in defending the underlying claim and those incurred in connection with the enforcement of this Article 7.4 by way of cross-claim, third-party claim, declaratory action or otherwise. The parties expressly agree that the indemnification obligation hereunder contemplates (1) full indemnity in the event of liability imposed against the Indemnitees without negligence and solely by reason of statute, operation of **Law** or otherwise; and (2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing or contributing to the underlying claim (in which case, indemnification will be limited to any liability imposed over and above that percentage attributable to actual fault whether by statute, by operation of **Law**, or otherwise). Where partial indemnity is provided hereunder, all costs and expenses shall be indemnified on a pro rata basis.

7.4.1 Indemnification under Article 7.4 or any other provision of the **Contract** shall operate whether or not **Contractor** or its **Subcontractors** have placed and maintained the insurance specified under Article 22.

7.5 The provisions of this Article 7 shall not be deemed to create any new right of action in favor of third parties against the **Contractor** or the **City**.

CHAPTER III: TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

8.1 The **Contractor** shall commence the **Work** on the date specified in the **Notice to Proceed** or the **Order to Work**. The time for performance of the **Work** under the **Contract** shall be computed from

the date specified in the **Notice to Proceed** or the **Order to Work. TIME BEING OF THE ESSENCE** to the **City**, the **Contractor** shall thereafter prosecute the **Work** diligently, using such **Means and Methods of Construction** as are in accord with Article 4 herein and as will assure its completion not later than the date specified in this Contract, or on the date to which the time for completion may be extended.

ARTICLE 9. PROGRESS SCHEDULES

9.1 To enable the **Work** to be performed in an orderly and expeditious manner, the **Contractor**, within fifteen (15) **Days** after the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule based on the Critical Path Method in the form of a bar graph or in such other form as specified by the **Engineer**, and monthly cash flow requirements, showing:

9.1.1 The anticipated time of commencement and completion of each of the various operations to be performed under this **Contract**; and

9.1.2 The sequence and interrelation of each of these operations with the others and with those of other related contracts; and

9.1.3 The estimated time required for fabrication or delivery, or both, of all materials and equipment required for the **Work**, including the anticipated time for obtaining required approvals pursuant to Article 10; and

9.1.4 The estimated amount in dollars the **Contractor** will claim on a monthly basis.

9.2 The proposed schedule shall be revised as directed by the **Engineer**, until finally approved by the **Engineer**, and after such approval, subject to the provisions of Article 11, shall be strictly adhered to by the **Contractor**.

9.3 If the **Contractor** shall fail to adhere to the approved progress schedule, or to the schedule as revised pursuant to Article 11, it shall promptly adopt such other or additional **Means and Methods of Construction**, at its sole cost and expense, as will make up for the time lost and will assure completion in accordance with the approved progress schedule. The approval by the **City** of a progress schedule which is shorter than the time allotted under the **Contract** shall not create any liability for the **City** if the approved progress schedule is not met.

9.4 The **Contractor** will not receive any payments until the proposed progress schedule is submitted.

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

10.1 From time to time as the **Work** progresses and in the sequence indicated by the approved progress schedule, the **Contractor** shall submit to the **Engineer** a specific request in writing for each item of information or approval required by the **Contractor**. These requests shall state the latest date upon which the information or approval is actually required by the **Contractor**, and shall be submitted in a reasonable time in advance thereof to provide the **Engineer** a sufficient time to act upon such submissions, or any necessary re-submissions thereof.

10.2 The **Contractor** shall not have any right to an extension of time on account of delays due to the **Contractor's** failure to submit requests for the required information or the required approval in accordance with the above requirements.

ARTICLE 11. NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY

11.1 After the commencement of any condition which is causing or may cause a delay in completion of the **Work**, including conditions for which the **Contractor** may be entitled to an extension of time, the following notifications and submittals are required:

11.1.1 Within fifteen (15) **Days** after the **Contractor** becomes aware or reasonably should be aware of each such condition, the **Contractor** must notify the **Resident Engineer** or **Engineer**, as directed by the **Commissioner**, in writing of the existence, nature and effect of such condition upon the approved progress schedule and the **Work**, and must state why and in what respects, if any, the condition is causing or may cause a delay. Such notice shall include a description of the construction activities that are or could be affected by the condition and may include any recommendations the **Contractor** may have to address the delay condition and any activities the **Contractor** may take to avoid or minimize the delay.

11.1.2 If the **Contractor** shall claim to be sustaining damages for delay as provided for in this Article 11,within forty-five (45) **Days** from the time such damages are first incurred for each such condition, the **Contractor** shall submit to the **Commissioner** a verified written statement of the details and estimates of the amounts of such damages, including categories of expected damages and projected monthly costs, together with documentary evidence of such damages as the **Contractor** may have at the time of submission ("statement of delay damages"), as further detailed in Article 11.6. The **Contractor** may submit the above statement within such additional time as may be granted by the **Commissioner** in writing upon written request therefor.

11.1.3 Articles 11.1.1 and 11.1.2 do not relieve the **Contractor** of its obligation to comply with the provisions of Article 44.

11.2 Failure of the **Contractor** to strictly comply with the requirements of Article 11.1.1 may, in the discretion of the **Commissioner**, be deemed sufficient cause to deny any extension of time on account of delay arising out of such condition. Failure of the **Contractor** to strictly comply with the requirements of both Articles 11.1.1 and 11.1.2 shall be deemed a conclusive waiver by the **Contractor** of any and all claims for damages for delay arising from such condition and no right to recover on such claims shall exist.

11.3 When appropriate and directed by the **Engineer**, the progress schedule shall be revised by the **Contractor** until finally approved by the **Engineer**. The revised progress schedule must be strictly adhered to by the **Contractor**.

11.4 Compensable Delays

11.4.1 The **Contractor** agrees to make claim only for additional costs attributable to delay in the performance of this **Contract** necessarily extending the time for completion of the **Work** or resulting from acceleration directed by the **Commissioner** and required to maintain the progress schedule, occasioned solely by any act or omission to act of the **City** listed below. The **Contractor** also agrees that delay from any other cause shall be

compensated, if at all, solely by an extension of time to complete the performance of the **Work**.

11.4.1.1 The failure of the **City** to take reasonable measures to coordinate and progress the **Work** to the extent required by the **Contract**, except that the City shall not be responsible for the **Contractor's** obligation to coordinate and progress the **Work** of its **Subcontractors**.

11.4.1.2 Unreasonable delays attributable to the review of shop drawings, the issuance of change orders, or the cumulative impact of change orders that were not brought about by any act or omission of the **Contractor**.

11.4.1.3 The unavailability of the **Site** caused by acts or omissions of the **City**..

11.4.1.4 The issuance by the **Engineer** of a stop work order that was not brought about through any act or omission of the **Contractor**.

11.4.1.5 Differing site conditions or environmental hazards that were neither known nor reasonably ascertainable on a pre-bid inspection of the **Site** or review of the bid documents or other publicly available sources, and that are not ordinarily encountered in the **Project**'s geographical area or neighborhood or in the type of **Work** to be performed.

11.4.1.6 Delays caused by the **City's** bad faith or its willful, malicious, or grossly negligent conduct;

11.4.1.7 Delays not contemplated by the parties;

11.4.1.8 Delays so unreasonable that they constitute an intentional abandonment of the **Contract** by the **City**; and

11.4.1.9 Delays resulting from the **City's** breach of a fundamental obligation of the **Contract**.

11.4.2 No claim may be made for any alleged delay in **Substantial Completion** of the **Work** if the **Work** will be or is substantially completed by the date of **Substantial Completion** provided for in Schedule A unless acceleration has been directed by the **Commissioner** to meet the date of **Substantial Completion** set forth in Schedule A, or unless there is a provision in the **Contract** providing for additional compensation for early completion.

11.4.3 The provisions of this Article 11 apply only to claims for additional costs attributable to delay and do not preclude determinations by the **Commissioner** allowing reimbursements for additional costs for **Extra Work** pursuant to Articles 25 and 26 of this **Contract**. To the extent that any cost attributable to delay is reimbursed as part of a change order, no additional claim for compensation under this Article 11 shall be allowed.

11.5 Non-Compensable Delays. The **Contractor** agrees to make no claim for, and is deemed to have included in its bid prices for the various items of the **Contract**, the extra/additional costs attributable to any delays caused by or attributable to the items set forth below. For such items, the **Contractor** shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**, in accordance with the provisions of Article 13. Such extensions of time will be granted, if at all, pursuant to the grounds set forth in Article 13.3.

11.5.1 The acts or omissions of any third parties, including but not limited to **Other Contractors**, public/ governmental bodies (other than **City Agencies**), utilities or private enterprises, who are disclosed in the **Contract Documents** or are ordinarily encountered or generally recognized as related to the **Work**;

11.5.2 Any situation which was within the contemplation of the parties at the time of entering into the **Contract**, including any delay indicated or disclosed in the **Contract Documents** or that would be generally recognized by a reasonably prudent contractor as related to the nature of the **Work**, and/or the existence of any facility or appurtenance owned, operated or maintained by any third party, as indicated or disclosed in the **Contract Documents** or ordinarily encountered or generally recognized as related to the nature of the **Work**;

11.5.3 Restraining orders, injunctions or judgments issued by a court which were caused by a Contractor's submission, action or inaction or by a Contractor's **Means and Methods of Construction**, or by third parties, unless such order, injunction or judgment was the result of an act or omission by the **City**;

11.5.4 Any labor boycott, strike, picketing, lockout or similar situation;

11.5.5 Any shortages of supplies or materials, or unavailability of equipment, required by the **Contract Work**;

11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God, or acts of war or of the public enemy or terrorist acts, including the **City's** reasonable responses thereto; and

11.5.7 **Extra Work** which does not significantly affect the overall completion of the **Contract**, reasonable delays in the review or issuance of change orders or field orders and/or in shop drawing reviews or approvals.

11.6 Required Content of Submission of Statement of Delay Damages

11.6.1 In the verified written statement of delay damages required by Article 11.1.2, the following information shall be provided by the **Contractor**:

11.6.1.1 For each delay, the start and end dates of the claimed periods of delay and, in addition, a description of the operations that were delayed, an explanation of how they were delayed, and the reasons for the delay, including identifying the applicable act or omission of the City listed in Article 11.4.

11.6.1.2 A detailed factual statement of the claim providing all necessary dates, locations and items of **Work** affected by the claim.

11.6.1.3 The estimated amount of additional compensation sought and a breakdown of that amount into categories as described in Article 11.7.

11.6.1.4 Any additional information requested by the **Commissioner**.

11.7 Recoverable Costs

11.7.1 Delay damages may be recoverable for the following costs actually and necessarily incurred in the performance of the **Work**:

11.7.1.1 Direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits, based on time and materials records;

11.7.1.2 Necessary materials (including transportation to the **Site**), based on time and material records;

11.7.1.3 Reasonable rental value of necessary plant and equipment other than small tools, plus fuel/energy costs according to the applicable formula set forth in Articles 26.2.4 and/or 26.2.8, based on time and material records;

11.7.1.4 Additional insurance and bond costs;

11.7.1.5 Extended **Site** overhead, field office rental, salaries of field office staff, on-site project managers and superintendents, field office staff vehicles, **Project**-specific storage, field office utilities and telephone, and field office consumables;

11.7.1.6 Labor escalation costs based on actual costs;

11.7.1.7 Materials and equipment escalation costs based on applicable industry indices unless documentation of actual increased cost is provided;

11.7.1.8 Additional material and equipment storage costs based on actual documented costs and additional costs necessitated by extended manufacturer warranty periods; and

11.7.1.9 Extended home office overhead calculated based on the following formula:

(1) Subtract from the original **Contract** amount the amount earned by original contractual **Substantial Completion** date (not including change orders);

(2) Remove 15% overhead and profit from the calculation in item (1) by dividing the results of item (1) by 1.15;

(3) Multiply the result of item (2) by 7.25% for the total home office overhead;

(4) Multiply the result of item (3) by 7.25% for the total profit; and

(5) The total extended home office overhead will be the total of items (3) and (4).

11.7.2 Recoverable Subcontractor Costs. When the **Work** is performed by a **Subcontractor**, the **Contractor** may be paid the actual and necessary costs of such subcontracted **Work** as outlined above in Articles 11.7.1.1 through 11.7.1.8, and an additional overhead of 5% of the costs outlined in Articles 11.7.1.1 through 11.7.1.3.

11.7.3 Non-Recoverable Costs. The parties agree that the **City** will have no liability for the following items and the **Contractor** agrees it shall make no claim for the following items:

11.7.3.1 Profit, or loss of anticipated or unanticipated profit, except as provided in Article 11.7.1.9;

11.7.3.2 Consequential damages, including, but not limited to, construction or bridge loans or interest paid on such loans, loss of bonding capacity, bidding opportunities, or interest in investment, or any resulting insolvency;

11.7.3.3 Indirect costs or expenses of any nature except those included in Article 11.7.1;

11.7.3.4 Direct or indirect costs attributable to performance of **Work** where the **Contractor**, because of situations or conditions within its control, has not progressed the **Work** in a satisfactory manner; and

11.7.3.5 Attorneys' fees and dispute and claims preparation expenses.

11.8 Any claims for delay under this Article 11 are not subject to the jurisdiction of the Contract Dispute Resolution Board pursuant to the dispute resolution process set forth in Article 27.

11.9 Any compensation provided to the **Contractor** in accordance with this Article 11 will be made pursuant to a claim filed with the **Comptroller**. Nothing in this Article 11 extends the time for the **Contractor** to file an action with respect to a claim within six months after **Substantial Completion** pursuant to Article 56.

ARTICLE 12. COORDINATION WITH OTHER CONTRACTORS

12.1 During the progress of the **Work**, **Other Contractors** may be engaged in performing other work or may be awarded other contracts for additional work on this **Project**. In that event, the **Contractor** shall coordinate the **Work** to be done hereunder with the work of such **Other Contractors** and the **Contractor** shall fully cooperate with such **Other Contractors** and carefully fit its own **Work** to that provided under other contracts as may be directed by the **Engineer**. The **Contractor** shall not commit or permit any act which will interfere with the performance of work by any **Other Contractors**.

12.2 If the **Engineer** determines that the **Contractor** is failing to coordinate its **Work** with the work of **Other Contractors** as the **Engineer** has directed, then the **Commissioner** shall have the right to withhold any payments otherwise due hereunder until the **Contractor** completely complies with the **Engineer's** directions.

12.3 The **Contractor** shall notify the **Engineer** in writing if any **Other Contractor** on this **Project** is failing to coordinate its work with the **Work** of this **Contract**. If the **Engineer** finds such charges to be true, the **Engineer** shall promptly issue such directions to the **Other Contractor** with respect thereto as the situation may require. The **City** shall not, however, be liable for any damages suffered by any **Other Contractor's** failure to coordinate its work with the **Work** of this **Contract** or by reason of the **Other Contractor's** failure to promptly comply with the directions so issued by the **Engineer**, or by reason of any **Other Contractor's** default in performance, it being understood that the **City** does not guarantee the responsibility or continued efficiency of any contractor. The **Contractor** agrees to make no claim against the **City** for any damages relating to or arising out of any directions issued by the **Engineer** pursuant to this Article 12 (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to the **Contractor's** failure to comply with the **Engineer's** directions promptly. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.5 Should the **Contractor** sustain any damage through any act or omission of any **Other Contractor** having a contract with the **City** for the performance of work upon the **Site** or of work which may be necessary to be performed for the proper prosecution of the **Work** to be performed hereunder, or through any act or omission of a subcontractor of such **Other Contractor**, the **Contractor** shall have no claim against the **City** for such damage, but shall have a right to recover such damage from the **Other**

Contractor under the provision similar to the following provisions which apply to this **Contract** and have been or will be inserted in the contracts with such **Other Contractors**:

> 12.5.1 Should any **Other Contractor** having or who shall hereafter have a contract with the **City** for the performance of work upon the **Site** sustain any damage through any act or omission of the **Contractor** hereunder or through any act or omission of any **Subcontractor** of the **Contractor**, the **Contractor** agrees to reimburse such **Other Contractor** for all such damages and to defend at its own expense any action based upon such claim and if any judgment or claim (even if the allegations of the action are without merit) against the **City** shall be allowed the **Contractor** shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and agrees to indemnify and hold the **City** harmless from all such claims. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.6 The **City's** right to indemnification hereunder shall in no way be diminished, waived or discharged by its recourse to assessment of liquidated damages as provided in Article 15, or by the exercise of any other remedy provided for by **Contract** or by **Law**.

ARTICLE 13. EXTENSION OF TIME FOR PERFORMANCE

13.1 If performance by the **Contractor** is delayed for a reason set forth in Article 13.3, the **Contractor** may be allowed a reasonable extension of time in conformance with this Article 13 and the **PPB** Rules.

13.2 Any extension of time may be granted only by the **ACCO** or by the Board for the Extension of Time (hereafter "Board") (as set forth below) upon written application by the **Contractor**.

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

> 13.3.1 By the acts or omissions of the **City**, its officials, agents or employees; or
>
> 13.3.2 By the act or omissions of **Other Contractors** on this **Project**; or
>
> 13.3.3 By supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, excessive inclement weather, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the **Contractor**).
>
> 13.3.4 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

13.4 The **Contractor** shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the **Work** as determined by the **ACCO** or the Board, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the **Contractor** or of its **Subcontractors** or **Materialmen**, and would of itself (irrespective

of the concurrent causes) have delayed the **Work**, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.

13.5 The determination made by the **ACCO** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The **ACCO** or the Board acting entirely within their discretion may grant an application for an extension of time for causes of delay other than those herein referred.

13.7 Permitting the **Contractor** to continue with the **Work** after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the **Contractor** after such time, shall in no way operate as a waiver on the part of the **City** of any of its rights under this **Contract**.

13.8 Application for Extension of Time:

13.8.1 Before the **Contractor's** time extension request will be considered, the **Contractor** shall notify the **ACCO** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **ACCO** identifying:

13.8.1(a) The **Contractor**; the registration number; and **Project** description;

13.8.1(b) Liquidated damage assessment rate, as specified in the **Contract**;

13.8.1(c) Original total bid price;

13.8.1(d) The original **Contract** start date and completion date;

13.8.1(e) Any previous time extensions granted (number and duration); and

13.8.1(f) The extension of time requested.

13.8.2 In addition, the application for extension of time shall set forth in detail:

13.8.2(a) The nature of each alleged cause of delay in completing the **Work**;

13.8.2(b) The date upon which each such cause of delay began and ended and the number of **Days** attributable to each such cause;

13.8.2(c) A statement that the **Contractor** waives all claims except for those delineated in the application, and the particulars of any claims which the **Contractor** does not agree to waive. For time extensions for **Substantial Completion** and final completion payments, the application shall include a detailed statement of the dollar amounts of each element of claim item reserved; and

13.8.2(d) A statement indicating the **Contractor's** understanding that the time extension is granted only for purposes of permitting continuation of **Contract** performance and payment for **Work** performed and that the **City** retains its right to conduct an investigation and assess liquidated damages as appropriate in the future.

13.9 Analysis and Approval of Time Extensions:

13.9.1 For time extensions for partial payments, a written determination shall be made by the **ACCO** who may, for good and sufficient cause, extend the time for the performance of the **Contract** as follows:

13.9.1(a) If the **Work** is to be completed within six (6) months, the time for performance may be extended for sixty (60) **Days**;

13.9.1(b) If the **Work** is to be completed within less than one (1) year but more than six (6) months, an extension of ninety (90) **Days** may be granted;

13.9.1(c) If the **Contract** period exceeds one (1) year, besides the extension granted in Article 13.9.1(b), an additional thirty (30) **Days** may be granted for each multiple of six (6) months involved beyond the one (1) year period; or

13.9.1(d) If exceptional circumstances exist, the **ACCO** may extend the time for performance beyond the extensions in Articles 13.9.1(a), 13.9.1(b), and 13.9.1(c). In that event, the **ACCO** shall file with the Mayor's Office of Contract Services a written explanation of the exceptional circumstances.

13.9.2 For extensions of time for **Substantial Completion** and final completion payments, the **Engineer**, in consultation with the **ACCO**, shall prepare a written analysis of the delay (including a preliminary determination of the causes of delay, the beginning and end dates for each such cause of delay, and whether the delays are excusable under the terms of this **Contract**). The report shall be subject to review by and approval of the Board, which shall have authority to question its analysis and determinations and request additional facts or documentation. The report as reviewed and made final by the Board shall be made a part of the **Agency** contract file. Neither the report itself nor anything contained therein shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

13.9.3 Approval Mechanism for Time Extensions for **Substantial Completion** or Final Completion Payments: An extension shall be granted only with the approval of the Board which is comprised of the **ACCO** of the **Agency**, the **City** Corporation Counsel, and the **Comptroller**, or their authorized representatives.

13.9.4 Neither the granting of any application for an extension of time to the **Contractor** or any **Other Contractor** on this **Project** nor the papers, records or reports related to any application for or grant of an extension of time or determination related thereto shall be referred to or offered in evidence by the **Contractor** or its attorneys in any action or proceeding.

13.10 No Damage for Delay: The **Contractor** agrees to make no claim for damages for delay in the performance of this **Contract** occasioned by any act or omission to act of the **City** or any of its representatives, except as provided for in Article 11.

ARTICLE 14. COMPLETION AND FINAL ACCEPTANCE OF THE WORK

14.1 Date for **Substantial Completion**: The **Contractor** shall substantially complete the **Work** within the time fixed in Schedule A of the General Conditions, or within the time to which such **Substantial Completion** may be extended.

14.2 Determining the Date of **Substantial Completion**: The **Work** will be deemed to be substantially complete when the two conditions set forth below have been met.

14.2.1 Inspection: The **Engineer** or **Resident Engineer**, as applicable, has inspected the **Work** and has made a written determination that it is substantially complete.

14.2.2 Approval of **Final Approved Punch List** and Date for **Final Acceptance**: Following inspection of the **Work**, the **Engineer/Resident Engineer** shall furnish the **Contractor** with a final punch list, specifying all items of **Work** to be completed and proposing dates for the completion of each specified item of **Work**. The **Contractor** shall then submit in writing to the **Engineer/Resident Engineer** within ten (10) **Days** of the **Engineer/Resident Engineer** furnishing the final punch list either acceptance of the dates or proposed alternative dates for the completion of each specified item of **Work**. If the **Contractor** neither accepts the dates nor proposes alternative dates within ten (10) **Days**, the schedule proposed by the **Engineer/Resident Engineer** shall be deemed accepted. If the **Contractor** proposes alternative dates, then, within a reasonable time after receipt, the **Engineer/Resident Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, the **Engineer/Resident Engineer** shall establish dates for the completion of each item of **Work**. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 Date of **Substantial Completion**. The date of approval of the **Final Approved Punch List**, shall be the date of **Substantial Completion**. The date of approval of the **Final Approved Punch List** shall be either (a) if the **Contractor** approves the final punch list and proposed dates for completion furnished by the **Engineer/Resident Engineer**, the date of the **Contractor**'s approval; or (b) if the **Contractor** neither accepts the dates nor proposes alternative dates, ten (10) **Days** after the **Engineer/Resident Engineer** furnishes the **Contractor** with a final punch list and proposed dates for completion; or (c) if the **Contractor** proposes alternative dates, the date that the **Engineer/Resident Engineer** sends written notification to the **Contractor** either approving the **Contractor**'s proposed alternative dates or establishing dates for the completion for each item of **Work**.

14.4 Determining the Date of **Final Acceptance**: The **Work** will be accepted as final and complete as of the date of the **Engineer's/Resident Engineer**'s inspection if, upon such inspection, the **Engineer/Resident Engineer** finds that all items on the **Final Approved Punch List** are complete and no further **Work** remains to be done. The **Commissioner** will then issue a written determination of **Final Acceptance**.

14.5 Request for Inspection: Inspection of the **Work** by the **Engineer/Resident Engineer** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within fourteen (14) **Days** after receipt of the **Contractor's** written request therefor.

14.6 Request for Re-inspection: If upon inspection for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** determines that there are items of **Work** still to be performed, the **Contractor** shall promptly perform them and then request a re-inspection. If upon re-inspection, the **Engineer/Resident Engineer** determines that the **Work** is substantially complete or finally accepted, the date of such re-inspection shall be the date of **Substantial Completion** or **Final Acceptance**. Re-inspection by the **Engineer/Resident Engineer** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.7 Initiation of Inspection by the **Engineer/Resident Engineer**: If the **Contractor** does not request inspection or re-inspection of the **Work** for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** may initiate such inspection or re-inspection.

ARTICLE 15. LIQUIDATED DAMAGES

15.1 In the event the **Contractor** fails to substantially complete the **Work** within the time fixed for such **Substantial Completion** in Schedule A of the General Conditions, plus authorized time extensions, or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the sum fixed in Schedule A of the General Conditions, for each and every **Day** that the time consumed in substantially completing the **Work** exceeds the time allowed therefor; which said sum, in view of the difficulty of accurately ascertaining the loss which the **City** will suffer by reason of delay in the **Substantial Completion** of the **Work** hereunder, is hereby fixed and agreed as the liquidated damages that the **City** will suffer by reason of such delay, and not as a penalty. This Article 15 shall also apply to the **Contractor** whether or not the **Contractor** is defaulted pursuant to Chapter X of this **Contract**. Neither the failure to assess liquidated damages nor the granting of any time extension shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

15.2 Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the **City's** right to indemnification, or the **Contractor's** obligation to indemnify the **City**, or to any other remedy provided for in this **Contract** or by **Law**.

15.3 The **Commissioner** may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the **City**, the **Contractor** shall be liable to pay the difference.

ARTICLE 16. OCCUPATION OR USE PRIOR TO COMPLETION

16.1 Unless otherwise provided for in the **Specifications**, the **Commissioner** may take over, use, occupy or operate any part of the **Work** at any time prior to **Final Acceptance**, upon written notification to the **Contractor**. The **Engineer** or **Resident Engineer**, as applicable, shall inspect the part of the **Work** to be taken over, used, occupied, or operated, and will furnish the **Contractor** with a written statement of the **Work**, if any, which remains to be performed on such part. The **Contractor** shall not object to, nor interfere with, the **Commissioner's** decision to exercise the rights granted by Article 16. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work:**

16.1.1 the **Engineer/Resident Engineer** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

16.1.2 the **Contractor** shall be relieved of its absolute obligation to protect such part of the unfinished **Work** in accordance with Article 7;

16.1.3 the **Contractor's** guarantee on such part of the **Work** shall begin on the date of such use by the **City**; and;

16.1.4 the **Contractor** shall be entitled to a return of so much of the amount retained in accordance with Article 21 as it relates to such part of the **Work**, except so much thereof as may be retained under Articles 24 and 44.

CHAPTER IV: SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

17.1 The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price fixed in Schedule A of the General Conditions, without prior written permission from the **Commissioner**. All subcontracts made by the **Contractor** shall be in writing. No **Work** may be performed by a **Subcontractor** prior to the **Contractor** entering into a written subcontract with the **Subcontractor** and complying with the provisions of this Article 17.

17.2 Before making any subcontracts, the **Contractor** shall submit a written statement to the **Commissioner** giving the name and address of the proposed **Subcontractor**; the portion of the **Work** and materials which it is to perform and furnish; the cost of the subcontract; the VENDEX questionnaire if required; the proposed subcontract if requested by the **Commissioner**; and any other information tending to prove that the proposed **Subcontractor** has the necessary facilities, skill, integrity, past experience, and financial resources to perform the **Work** in accordance with the terms and conditions of this **Contract**.

17.3 In addition to the requirements in Article 17.2, **Contractor** is required to list the **Subcontractor** in the web based Subcontractor Reporting System through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip.[1] For each **Subcontractor** listed, **Contractor** is required to provide the following information: maximum contract value, description of **Subcontractor's** Work, start and end date of the subcontract and identification of the **Subcontractor**'s industry. Thereafter, **Contractor** will be required to report in the system the payments made to each **Subcontractor** within 30 days of making the payment. If any of the required information changes throughout the Term of the **Contract**, **Contractor** will be required to revise the information in the system.

Failure of the **Contractor** to list a **Subcontractor** and/or to report **Subcontractor** payments in a timely fashion may result in the **Commissioner** declaring the **Contractor** in default of the **Contract** and will subject **Contractor** to liquidated damages in the amount of $100 per day for each day that the **Contractor** fails to identify a **Subcontractor** along with the required information about the **Subcontractor** and/or fails to report payments to a **Subcontractor**, beyond the time frames set forth herein or in the notice from the **City**. Article 15 shall govern the issue of liquidated damages.

17.4 If an approved **Subcontractor** elects to subcontract any portion of its subcontract, the proposed sub-subcontract shall be submitted in the same manner as directed above.

17.5 The **Commissioner** will notify the **Contractor** in writing whether the proposed **Subcontractor** is approved. If the proposed **Subcontractor** is not approved, the **Contractor** may submit another proposed **Subcontractor** unless the **Contractor** decides to do the **Work**. No **Subcontractor** shall be permitted to enter or perform any work on the **Site** unless approved.

17.6 Before entering into any subcontract hereunder, the **Contractor** shall provide the proposed **Subcontractor** with a complete copy of this document and inform the proposed **Subcontractor** fully and completely of all provisions and requirements of this **Contract** relating either directly or indirectly to the **Work** to be performed and the materials to be furnished under such subcontract, and every such

[1] In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at www.nyc.gov/pip. Additional assistance with PIP may be obtained by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

Subcontractor shall expressly stipulate that all labor performed and materials furnished by the **Subcontractor** shall strictly comply with the requirements of this **Contract**.

17.7 Documents given to a prospective **Subcontractor** for the purpose of soliciting the **Subcontractor's** bid shall include either a copy of the bid cover or a separate information sheet setting forth the **Project** name, the **Contract** number (if available), the **Agency** (as noted in Article 2.1.6), and the **Project's** location.

17.8 The **Commissioner's** approval of a **Subcontractor** shall not relieve the **Contractor** of any of its responsibilities, duties, and liabilities hereunder. The **Contractor** shall be solely responsible to the **City** for the acts or defaults of its **Subcontractor** and of such **Subcontractor's** officers, agents, and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the **Contractor** to the extent of its subcontract.

17.9 If the **Subcontractor** fails to maintain the necessary facilities, skill, integrity, past experience, and financial resources (other than due to the **Contractor's** failure to make payments where required) to perform the **Work** in accordance with the terms and conditions of this **Contract**, the **Contractor** shall promptly notify the **Commissioner** and replace such **Subcontractor** with a newly approved **Subcontractor** in accordance with this Article 17.

17.10 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** maintain all insurance required by **Law**.

17.11 The **Contractor** shall promptly, upon request, file with the **Engineer** a conformed copy of the subcontract and its cost. The subcontract shall provide the following:

17.11.1 Payment to **Subcontractors**: The agreement between the **Contractor** and its **Subcontractor** shall contain the same terms and conditions as to method of payment for **Work**, labor, and materials, and as to retained percentages, as are contained in this **Contract**.

17.11.2 Prevailing Rate of Wages: The agreement between the **Contractor** and its **Subcontractor** shall include the prevailing wage rates and supplemental benefits to be paid in accordance with Labor Law Section 220.

17.11.3 Section 6-123 of the Administrative Code: Pursuant to the requirements of Section 6-123 of the Administrative Code, every agreement between the **Contractor** and a **Subcontractor** in excess of fifty thousand ($50,000) dollars shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in Title VIII of the Administrative Code (Section 8-101 *et seq.*).

17.11.4 All requirements required pursuant to federal and/or state grant agreement(s), if applicable to the **Work**.

17.12 The **Commissioner** may deduct from the amounts certified under this **Contract** to be due to the **Contractor**, the sum or sums due and owing from the **Contractor** to the **Subcontractors** according to the terms of the said subcontracts, and in case of dispute between the **Contractor** and its **Subcontractor**, or **Subcontractors**, as to the amount due and owing, the **Commissioner** may deduct and withhold from the amounts certified under this **Contract** to be due to the **Contractor** such sum or sums as may be claimed by such **Subcontractor**, or **Subcontractors**, in a sworn affidavit, to be due and owing until such time as such claim or claims shall have been finally resolved.

17.13 On contracts where performance bonds and payment bonds are executed, the **Contractor** shall include on each requisition for payment the following data: **Subcontractor's** name, value of the subcontract, total amount previously paid to **Subcontractor** for **Work** previously requisitioned, and the amount, including retainage, to be paid to the **Subcontractor** for **Work** included in the requisition.

17.14 On **Contracts** where performance bonds and payment bonds are not executed, the **Contractor** shall include with each requisition for payment submitted hereunder, a signed statement from each and every **Subcontractor** and/or **Materialman** for whom payment is requested in such requisition. Such signed statement shall be on the letterhead of the **Subcontractor** and/or **Materialman** for whom payment is requested and shall (i) verify that such **Subcontractor** and/or **Materialman** has been paid in full for all **Work** performed and/or material supplied to date, exclusive of any amount retained and any amount included on the current requisition, and (ii) state the total amount of retainage to date, exclusive of any amount retained on the current requisition.

ARTICLE 18. ASSIGNMENTS

18.1 The **Contractor** shall not assign, transfer, convey or otherwise dispose of this **Contract**, or the right to execute it, or the right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise any of the monies due or to become due under this **Contract**, unless the previous written consent of the **Commissioner** shall first be obtained thereto, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments.

18.2 Such assignment, transfer, conveyance or other disposition of this **Contract** shall not be valid until filed in the office of the **Commissioner** and the **Comptroller**, with the written consent of the **Commissioner** endorsed thereon or attached thereto.

18.3 Failure to obtain the previous written consent of the **Commissioner** to such an assignment, transfer, conveyance or other disposition, may result in the revocation and annulment of this **Contract**. The **City** shall thereupon be relieved and discharged from any further liability to the **Contractor**, its assignees, transferees or sublessees, who shall forfeit and lose all monies therefor earned under the **Contract**, except so much as may be required to pay the **Contractor's** employees.

18.4 The provisions of this clause shall not hinder, prevent, or affect an assignment by the **Contractor** for the benefit of its creditors made pursuant to the **Laws** of the State of New York.

18.5 This **Contract** may be assigned by the **City** to any corporation, agency or instrumentality having authority to accept such assignment.

CHAPTER V: CONTRACTOR'S SECURITY AND GUARANTEE

ARTICLE 19. SECURITY DEPOSIT

19.1 If performance and payment bonds are required, the **City** shall retain the bid security to ensure that the successful bidder executes the **Contract** and furnishes the required payment and performance security within ten (10) **Days** after notice of the award of the **Contract**. If the successful bidder fails to execute the **Contract** and furnish the required payment and performance security, the **City** shall retain such bid security as set forth in the Information for Bidders. If the successful bidder executes the

Contract and furnishes the required payment and performance security, the **City** shall return the bid security within a reasonable time after the furnishing of such bonds and execution of the **Contract** by the **City**.

19.2 If performance and payment bonds are not required, the bid security shall be retained by the **City** as security for the **Contractor**'s faithful performance of the **Contract**. If partial payments are provided, the bid security will be returned to the **Contractor** after the sum retained under Article 21 equals the amount of the bid security, subject to other provisions of this **Contract**. If partial payments are not provided, the bid security will be released when final payment is certified by the **City** for payment.

19.3 If the **Contractor** is declared in default under Article 48 prior to the return of the deposit, or if any claim is made such as referred to in Article 23, the amount of such deposit, or so much thereof as the **Comptroller** may deem necessary, may be retained and then applied by the **Comptroller**:

19.3.1 To compensate the **City** for any expense, loss or damage suffered or incurred by reason of or resulting from such default, including the cost of re-letting and liquidated damages; or

19.3.2 To indemnify the **City** against any and all claims.

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where one hundred (100%) percent performance bonds and payment bonds are executed, this Article 20 does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond or where the **Contract** does not require a payment bond for one hundred (100%) percent of the **Contract** price, the **City** shall, in accordance with the terms of this Article 20, guarantee payment of all lawful claims for:

20.2.1 Wages and compensation for labor performed and/or services rendered; and

20.2.2 Materials, equipment, and supplies provided, whether incorporated into the **Work** or not, when demands have been filed with the **City** as provided hereinafter by any person, firm, or corporation which furnished labor, material, equipment, supplies, or any combination thereof, in connection with the **Work** performed hereunder (hereinafter referred to as the "beneficiary") at the direction of the **City** or the **Contractor**.

20.3 The provisions of Article 20.2 are subject to the following limitations and conditions:

20.3.1 If the **Contractor** provides a payment bond for a value that is less than one hundred (100%) percent of the value of the **Contract Work**, the payment bond provided by the **Contractor** shall be primary (and non-contributing) to the payment guarantee provided under this Article 20.

20.3.2 The guarantee is made for the benefit of all beneficiaries as defined in Article 20.2 provided that those beneficiaries strictly adhere to the terms and conditions of Article 20.3.4 and 20.3.5.

20.3.3 Nothing in this Article 20 shall prevent a beneficiary providing labor, services or material for the **Work** from suing the **Contractor** for any amounts due and owing the beneficiary by the **Contractor**.

20.3.4 Every person who has furnished labor or material, to the **Contractor** or to a **Subcontractor** of the **Contractor**, in the prosecution of the **Work** and who has not been paid in full therefor before the expiration of a period of ninety (90) **Days** after the date on which the last of the labor was performed or material was furnished by him/her for which the claim is made, shall have the right to sue on this payment guarantee in his/her own name for the amount, or the balance thereof, unpaid at the time of commencement of the action; provided, however, that a person having a direct contractual relationship with a **Subcontractor** of the **Contractor** but no contractual relationship express or implied with the **Contractor** shall not have a right of action upon the guarantee unless he/she shall have given written notice to the **Contractor** within one hundred twenty (120) **Days** from the date on which the last of the labor was performed or the last of the material was furnished, for which his/her claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or for whom the labor was performed. The notice shall be served by delivering the same personally to the **Contractor** or by mailing the same by registered mail, postage prepaid, in an envelope addressed to the **Contractor** at any place where it maintains an office or conducts its business; provided, however, that where such notice is actually received by the **Contractor** by other means, such notice shall be deemed sufficient.

20.3.5 Except as provided in Labor Law Section 220-g, no action on this payment guarantee shall be commenced after the expiration of the one-year limitations period set forth in Section 137(4)(b) of the State Finance Law.

20.3.6 The **Contractor** shall promptly forward to the **City** any notice or demand received pursuant to Article 20.3.4. The **Contractor** shall inform the **City** of any defenses to the notice or demand and shall forward to the **City** any documents the **City** requests concerning the notice or demand.

20.3.7 All demands made against the **City** by a beneficiary of this payment guarantee shall be presented to the **Engineer** along with all written documentation concerning the demand which the **Engineer** deems reasonably appropriate or necessary, which may include, but shall not be limited to: the subcontract; any invoices presented to the **Contractor** for payment; the notarized statement of the beneficiary that the demand is due and payable, that a request for payment has been made of the **Contractor** and that the demand has not been paid by the **Contractor** within the time allowed for such payment by the subcontract; and copies of any correspondence between the beneficiary and the **Contractor** concerning such demand. The **City** shall notify the **Contractor** that a demand has been made. The **Contractor** shall inform the **City** of any defenses to the demand and shall forward to the **City** any documents the **City** requests concerning the demand.

20.3.8 The **City** shall make payment only if, after considering all defenses presented by the **Contractor**, it determines that the payment is due and owing to the beneficiary making the demand.

20.3.9 No beneficiary shall be entitled to interest from the **City**, or to any other costs, including, but not limited to, attorneys' fees, except to the extent required by State Finance Law Section 137.

20.4 Upon the receipt by the **City** of a demand pursuant to this Article 20, the **City** may withhold from any payment otherwise due and owing to the **Contractor** under this **Contract** an amount sufficient to satisfy the demand.

20.4.1 In the event the **City** determines that the demand is valid, the **City** shall notify the **Contractor** of such determination and the amount thereof and direct the **Contractor** to immediately pay such amount to the beneficiary. In the event the **Contractor**, within seven (7) **Days** of receipt of such notification from the **City**, fails to pay the beneficiary, such failure shall constitute an automatic and irrevocable assignment of payment by the **Contractor** to the beneficiary for the amount of the demand determined by the **City** to be valid. The **Contractor**, without further notification or other process, hereby gives its unconditional consent to such assignment of payment to the beneficiary and authorizes the **City**, on its behalf, to take all necessary actions to implement such assignment of payment, including without limitation the execution of any instrument or documentation necessary to effectuate such assignment.

20.4.2In the event that the amount otherwise due and owing to the **Contractor** by the **City** is insufficient to satisfy such demand, the **City** may, at its option, require payment from the **Contractor** of an amount sufficient to cover such demand and exercise any other right to require or recover payment which the **City** may have under **Law** or **Contract**.

20.4.3 In the event the **City** determines that the demand is invalid, any amount withheld pending the **City**'s review of such demand shall be paid to the **Contractor**; provided, however, no lien has been filed. In the event a claim or an action has been filed, the terms and conditions set forth in Article 23 shall apply. In the event a lien has been filed, the parties will be governed by the provisions of the Lien Law of the State of New York.

20.5 The provisions of this Article 20 shall not prevent the **City** and the **Contractor** from resolving disputes in accordance with the **PPB** Rules, where applicable.

20.6 In the event the **City** determines that the beneficiary is entitled to payment pursuant to this Article 20, such determination and any defenses and counterclaims raised by the **Contractor** shall be taken into account in evaluating the **Contractor's** performance.

20.7 Nothing in this Article 20 shall relieve the **Contractor** of the obligation to pay the claims of all persons with valid and lawful claims against the **Contractor** relating to the **Work**.

20.8 The **Contractor** shall not require any performance, payment or other bonds of any **Subcontractor** if this **Contract** does not require such bonds of the **Contractor**.

20.9 The payment guarantee made pursuant to this Article 20 shall be construed in a manner consistent with Section 137 of the State Finance Law and shall afford to persons furnishing labor or materials to the **Contractor** or its **Subcontractors** in the prosecution of the **Work** under this **Contract** all of the rights and remedies afforded to such persons by such section, including but not limited to, the right to commence an action against the **City** on the payment guarantee provided by this Article 20 within the one-year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires one hundred (100%) percent performance and payment security, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and

retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.2 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded does not exceed one million ($1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded exceeds one million ($1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, up to ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher. The percentage to be retained is set forth in Schedule A of the General Conditions.

ARTICLE 22. INSURANCE

22.1 Types of Insurance: The **Contractor** shall procure and maintain the following types of insurance if, and as indicated, in Schedule A of the General Conditions (with the minimum limits and special conditions specified in Schedule A). Such insurance shall be maintained from the date the **Contractor** is required to provide Proof of Insurance pursuant to Article 22.3.1 through the date of completion of all required **Work** (including punch list work as certified in writing by the **Resident Engineer**), except for insurance required pursuant to Article 22.1.4, which may terminate upon **Substantial Completion** of the **Contract**. All insurance shall meet the requirements set forth in this Article 22. Wherever this Article requires that insurance coverage be "at least as broad" as a specified form (including all ISO forms), there is no obligation that the form itself be used, provided that the **Contractor** can demonstrate that the alternative form or endorsement contained in its policy provides coverage at least as broad as the specified form.

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide Commercial General Liability Insurance covering claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this insurance shall be at least as broad as that provided by the latest edition of Insurance Services Office ("ISO") Form CG 0001. Such insurance shall be "occurrence" based rather than "claims-made" and include, without limitation, the following types of coverage: premises operations; products and completed operations; contractual liability (including the tort liability of another assumed in a contract); broad form property damage; independent contractors; explosion, collapse and underground (XCU); construction means and methods; and incidental malpractice. Such insurance shall contain a "per project" aggregate limit, as specified in Schedule A, that applies separately to operations under this **Contract**.

22.1.1(a) Such Commercial General Liability Insurance shall name the **City** as an Additional Insured. Coverage for the City shall specifically include the **City's** officials and employees, be at least as broad as the latest edition of ISO Form CG 20 10 and provide completed operations coverage at least as broad as the latest edition of ISO Form CG 20 37.

22.1.1(b) Such Commercial General Liability Insurance shall name all other entities designated as additional insureds in Schedule A but only for claims arising from the

Contractor's operations under this **Contract**, with coverage at least as broad as the latest edition of ISO Form CG 20 26.

22.1.1(c) If the **Work** requires a permit from the Department of Buildings pursuant to 1 RCNY Section 101-08, the **Contractor** shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08 or greater limits required by the Agency in accordance with Schedule A. If the **Work** does not require such a permit, the minimum limits shall be those provided for in Schedule A.

22.1.1(d) If any of the **Work** includes repair of a waterborne vessel owned by or to be delivered to the **City**, such Commercial General Liability shall include, or be endorsed to include, Ship Repairer's Legal Liability Coverage to protect against, without limitation, liability arising from navigation of such vessels prior to delivery to and acceptance by the **City**.

22.1.2 Workers' Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance: The **Contractor** shall provide, and shall cause its **Subcontractors** to provide, Workers Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance in accordance with the **Laws** of the State of New York on behalf of all employees providing services under this **Contract** (except for those employees, if any, for which the **Laws** require insurance only pursuant to Article 22.1.3).

22.1.3 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: If specified in Schedule A of the General Conditions or if required by **Law**, the **Contractor** shall provide insurance in accordance with the United States Longshoremen's and Harbor Workers Act and/or the Jones Act, on behalf of all qualifying employees providing services under this **Contract**.

22.1.4 Builders Risk Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall provide Builders Risk Insurance on a completed value form for the total value of the **Work** through **Substantial Completion** of the **Work** in its entirety. Such insurance shall be provided on an All Risk basis and include coverage, without limitation, for windstorm (including named windstorm), storm surge, flood and earth movement. Unless waived by the **Commissioner**, it shall include coverage for ordinance and law, demolition and increased costs of construction, debris removal, pollutant clean up and removal, and expediting costs. Such insurance shall cover, without limitation, (a) all buildings and/or structures involved in the **Work**, as well as temporary structures at the **Site**, and (b) any property that is intended to become a permanent part of such building or structure, whether such property is on the **Site**, in transit or in temporary storage. Policies shall name the **Contractor** as Named Insured and list the **City** as both an Additional Insured and a Loss Payee as its interest may appear.

22.1.4(a) Policies of such insurance shall specify that, in the event a loss occurs at an occupied facility, occupancy of such facility is permitted without the consent of the issuing insurance company.

22.1.4(b) Such insurance may be provided through an Installation Floater, at the **Contractor's** option, if it otherwise conforms with the requirements of this Article 22.1.4.

22.1.5 Commercial Automobile Liability Insurance: The **Contractor** shall provide Commercial Automobile Liability Insurance for liability arising out of ownership,

maintenance or use of any owned (if any), non-owned and hired vehicles to be used in connection with this **Contract**. Coverage shall be at least as broad as the latest edition of ISO Form CA0001. If vehicles are used for transporting hazardous materials, the Automobile Liability Insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90.

22.1.6 Contractors Pollution Liability Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Contractors Pollution Liability Insurance covering bodily injury and property damage. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, action, or proceedings arising from the operations under this **Contract**. Such insurance shall be in the **Contractor's** name and list the **City** as an Additional Insured and any other entity specified in Schedule A. Coverage shall include, without limitation, (a) loss of use of damaged property or of property that has not been physically injured, (b) transportation, and (c) non-owned disposal sites.

22.1.6(a) Coverage for the **City** as Additional Insured shall specifically include the **City's** officials and employees and be at least as broad as provided to the **Contractor** for this **Project.**

22.1.6(b) If such insurance is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this **Contract**, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three (3) years from the time the **Work** under this **Contract** is completed.

22.1.7 Marine Insurance:

22.1.7(a) Marine Protection and Indemnity Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Protection and Indemnity Insurance with coverage at least as broad as Form SP-23. The insurance shall provide coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured for bodily injury and property damage arising from marine operations under this **Contract**. Coverage shall include, without limitation, injury or death of crew members (if not fully provided through other insurance), removal of wreck, damage to piers, wharves and other fixed or floating objects and loss of or damage to any other vessel or craft, or to property on such other vessel or craft.

22.1.7(b) Hull and Machinery Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Hull and Machinery Insurance with coverage for the **Contractor** or **Subcontractor** (whichever is doing this Work) and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the latest edition of American Institute Tug Form for all tugs used under this

Contract and Collision Liability at least as broad as the latest edition of American Institute Hull Clauses.

22.1.7(c) Marine Pollution Liability Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Pollution Liability Insurance covering itself (or the Subcontractor doing such Work) as Named Insured and the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured. Coverage shall be at least as broad as that provided by the latest edition of Water Quality Insurance Syndicate Form and include, without limitation, liability arising from the discharge or substantial threat of a discharge of oil, or from the release or threatened release of a hazardous substance including injury to, or economic losses resulting from, the destruction of or damage to real property, personal property or natural resources.

22.1.8 The **Contractor** shall provide such other types of insurance, at such minimum limits and with such conditions, as are specified in Schedule A of the General Conditions.

22.2 General Requirements for Insurance Coverage and Policies:

22.2.1 All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A-/VII or a Standard and Poor's rating of at least A, unless prior written approval is obtained from the **City** Corporation Counsel.

22.2.2 The **Contractor** shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the **City** is an insured under the policy.

22.2.3 In his/her sole discretion, the **Commissioner** may, subject to the approval of the **Comptroller** and the **City** Corporation Counsel, accept Letters of Credit and/or custodial accounts in lieu of required insurance.

22.2.4 The **City's** limits of coverage for all types of insurance required pursuant to Schedule A of the General Conditions shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the **Contractor** as Named Insured under all primary, excess, and umbrella policies of that type of coverage.

22.2.5 The **Contractor** may satisfy its insurance obligations under this Article 22 through primary policies or a combination of primary and excess/umbrella policies, so long as all policies provide the scope of coverage required herein.

22.2.6 Policies of insurance provided pursuant to this Article 22 shall be primary and non-contributing to any insurance or self-insurance maintained by the **City**.

22.3 Proof of Insurance:

22.3.1 For all types of insurance required by Article 22.1 and Schedule A, except for insurance required by Articles 22.1.4 and 22.1.7, the **Contractor** shall file proof of insurance in accordance with this Article 22.3 within ten (10) **Days** of award. For insurance

provided pursuant to Articles 22.1.4 and 22.1.7, proof shall be filed by a date specified by the **Commissioner** or ten (10) **Days** prior to the commencement of the portion of the **Work** covered by such policy, whichever is earlier.

22.3.2 For Workers' Compensation Insurance provided pursuant to Article 22.1.2, the **Contractor** shall submit one of the following forms: C-105.2 Certificate of Workers' Compensation Insurance; U-26.3 - State Insurance Fund Certificate of Workers' Compensation Insurance; Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. For Disability Benefits Insurance provided pursuant to Article 22.1.2, the Contractor shall submit DB-120.1 - Certificate Of Insurance Coverage Under The NYS Disability Benefits Law, Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. ACORD forms are not acceptable.

22.3.3 For policies provided pursuant to all of Article 22.1 other than Article 22.1.2, the **Contractor** shall submit one or more Certificates of Insurance on forms acceptable to the **Commissioner**. All such Certificates of Insurance shall certify (a) the issuance and effectiveness of such policies of insurance, each with the specified minimum limits (b) for insurance secured pursuant to Article 22.1.1 that the **City** and any other entity specified in Schedule A is an Additional Insured thereunder; (c) in the event insurance is required pursuant to Article 22.1.6 and/or Article 22.1.7, that the City is an Additional Insured thereunder; (d) the company code issued to the insurance company by the National Association of Insurance Commissioners (the NAIC number); and (e) the number assigned to the **Contract** by the **City**. All such Certificates of Insurance shall be accompanied by either a duly executed "Certification by Insurance Broker or Agent" in the form contained in Part III of Schedule A or copies of all policies referenced in such Certificate of Insurance as certified by an authorized representative of the issuing insurance carrier. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

22.3.4 Documentation confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such proofs of insurance shall comply with the requirements of Articles 22.3.2 and 22.3.3.

22.3.5 The **Contractor** shall be obligated to provide the **City** with a copy of any policy of insurance provided pursuant to this Article 22 upon the demand for such policy by the **Commissioner** or the **City** Corporation Counsel.

22.4 Operations of the **Contractor**:

22.4.1 The **Contractor** shall not commence the **Work** unless and until all required certificates have been submitted to and accepted by the **Commissioner**. Acceptance by the **Commissioner** of a certificate does not excuse the **Contractor** from securing insurance consistent with all provisions of this Article 22 or of any liability arising from its failure to do so.

22.4.2 The **Contractor** shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this **Contract** and shall be authorized to perform **Work** only during the effective period of all required coverage.

22.4.3 In the event that any of the required insurance policies lapse, are revoked, suspended or otherwise terminated, for whatever cause, the **Contractor** shall immediately stop all **Work**, and shall not recommence **Work** until authorized in writing to do so by the **Commissioner**. Upon quitting the **Site**, except as otherwise directed by the **Commissioner**, the **Contractor** shall leave all plant, materials, equipment, tools, and supplies on the **Site**. **Contract** time shall continue to run during such periods and no extensions of time will be granted. The **Commissioner** may also declare the **Contractor** in default for failure to maintain required insurance.

22.4.4 In the event the **Contractor** receives notice, from an insurance company or other person, that any insurance policy required under this Article 22 shall be cancelled or terminated (or has been cancelled or terminated) for any reason, the **Contractor** shall immediately forward a copy of such notice to both the **Commissioner** and the New York City Comptroller, attn: Office of Contract Administration, Municipal Building, One Centre Street, room 1005, New York, New York 10007. Notwithstanding the foregoing, the **Contractor** shall ensure that there is no interruption in any of the insurance coverage required under this Article 22.

22.4.5 Where notice of loss, damage, occurrence, accident, claim or suit is required under an insurance policy maintained in accordance with this Article 22, the **Contractor** shall notify in writing all insurance carriers that issued potentially responsive policies of any such event relating to any operations under this **Contract** (including notice to Commercial General Liability insurance carriers for events relating to the **Contractor**'s own employees) no later than 20 days after such event. For any policy where the **City** is an Additional Insured, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Insured as well as the Named Insured." Such notice shall also contain the following information: the number of the insurance policy, the name of the named insured, the date and location of the damage, occurrence, or accident, and the identity of the persons or things injured, damaged or lost. The **Contractor** shall simultaneously send a copy of such notice to the City of New York c/o Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

22.4.6 In the event of any loss, accident, claim, action, or other event that does or can give rise to a claim under any insurance policy required under this Article 22, the **Contractor** shall at all times fully cooperate with the **City** with regard to such potential or actual claim.

22.5 **Subcontractor** Insurance: In the event the **Contractor** requires any **Subcontractor** to procure insurance with regard to any operations under this **Contract** and requires such **Subcontractor** to name the **Contractor** as an **Additional Insured** thereunder, the **Contractor** shall ensure that the **Subcontractor** name the **City**, including its officials and employees, as an Additional Insured with coverage at least as broad as the most recent edition of ISO Form CG 20 26.

22.6 Wherever reference is made in Article 7 or this Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth in Schedule A of the General Conditions. In the event no address is set forth in Schedule A, such documents are to be sent to the **Commissioner's** address as provided elsewhere in this **Contract**.

22.7 Apart from damages or losses covered by insurance provided pursuant to Articles 22.1.2, 22.1.3, or 22.1.5, the **Contractor** waives all rights against the **City**, including its officials and employees, for any damages or losses that are covered under any insurance required under this Article 22 (whether or

not such insurance is actually procured or claims are paid thereunder) or any other insurance applicable to the operations of the **Contractor** and/or its employees, agents, or **Subcontractors**.

22.8 In the event the **Contractor** utilizes a self-insurance program to satisfy any of the requirements of this Article 22, the **Contractor** shall ensure that any such self-insurance program provides the **City** with all rights that would be provided by traditional insurance under this Article 22, including but not limited to the defense and indemnification obligations that insurers are required to undertake in liability policies.

22.9 Materiality/Non-Waiver: The **Contractor's** failure to secure policies in complete conformity with this Article 22, or to give an insurance company timely notice of any sort required in this **Contract** or to do anything else required by this Article 22 shall constitute a material breach of this **Contract**. Such breach shall not be waived or otherwise excused by any action or inaction by the **City** at any time.

22.10 Pursuant to General Municipal Law Section 108, this **Contract** shall be void and of no effect unless **Contractor** maintains Workers' Compensation Insurance for the term of this **Contract** to the extent required and in compliance with the New York State Workers' Compensation Law.

22.11 Other Remedies: Insurance coverage provided pursuant to this Article 22 or otherwise shall not relieve the **Contractor** of any liability under this **Contract**, nor shall it preclude the **City** from exercising any rights or taking such other actions available to it under any other provisions of this **Contract** or **Law**.

ARTICLE 23. MONEY RETAINED AGAINST CLAIMS

23.1 If any claim shall be made by any person or entity (including **Other Contractors** with the **City** on this **Project**) against the **City** or against the **Contractor** and the **City** for any of the following:

(a) An alleged loss, damage, injury, theft or vandalism of any of the kinds referred to in Articles 7 and 12, plus the reasonable costs of defending the **City**, which in the opinion of the **Comptroller** may not be paid by an insurance company (for any reason whatsoever); or

(b) An infringement of copyrights, patents or use of patented articles, tools, etc., as referred to in Article 57; or

(c) Damage claimed to have been caused directly or indirectly by the failure of the **Contractor** to perform the **Work** in strict accordance with this **Contract,**

the amount of such claim, or so much thereof as the **Comptroller** may deem necessary, may be withheld by the **Comptroller**, as security against such claim, from any money due hereunder. The **Comptroller**, in his/her discretion, may permit the **Contractor** to substitute other satisfactory security in lieu of the monies so withheld.

23.2 If an action on such claim is timely commenced and the liability of the **City**, or the **Contractor**, or both, shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the **Contractor** to be valid, the **Comptroller** shall pay such judgment or admitted claim out of the monies retained by the **Comptroller** under the provisions of this Article 23, and return the balance, if any, without interest, to the **Contractor**.

ARTICLE 24. MAINTENANCE AND GUARANTY

24.1 The **Contractor** shall promptly repair, replace, restore or rebuild, as the **Commissioner** may determine, any finished **Work** in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of **Substantial Completion** (or use and occupancy in accordance with Article 16), except where other periods of maintenance and guaranty are provided for in Schedule A.

24.2 As security for the faithful performance of its obligations hereunder, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to one (1%) percent of the price (or the amount fixed in Schedule A of the General Conditions) in cash or certified check upon a state or national bank and trust company or a check of such bank and trust company signed by a duly authorized officer thereof and drawn to the order of the **Comptroller**, or obligations of the **City**, which the **Comptroller** may approve as of equal value with the sum so required.

24.3 In lieu of the above, the **Contractor** may make such security payment to the **City** by authorizing the **Commissioner** in writing to deduct the amount from the **Substantial Completion** payment which shall be deemed the deposit required above.

24.4 If the **Contractor** has faithfully performed all of its obligations hereunder the **Commissioner** shall so certify to the **Comptroller** within five (5) **Days** after the expiration of one (1) year from the date of **Substantial Completion** and acceptance of the **Work** or within thirty (30) **Days** after the expiration of the guarantee period fixed in the **Specifications**. The security payment shall be repaid to the **Contractor** without interest within thirty (30) **Days** after certification by the **Commissioner** to the **Comptroller** that the **Contractor** has faithfully performed all of its obligations hereunder.

24.5 Notice by the **Commissioner** to the **Contractor** to repair, replace, rebuild or restore such defective or damaged **Work** shall be timely, pursuant to this article, if given not later than ten (10) **Days** subsequent to the expiration of the one (1) year period or other periods provided for herein.

24.6 If the **Contractor** shall fail to repair, replace, rebuild or restore such defective or damaged **Work** promptly after receiving such notice, the **Commissioner** shall have the right to have the **Work** done by others in the same manner as provided for in the completion of a defaulted **Contract**, under Article 51.

24.7 If the security payment so deposited is insufficient to cover the cost of such **Work**, the **Contractor** shall be liable to pay such deficiency on demand by the **Commissioner**.

24.8 The **Engineer's** certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective **Work** when performed by one other than the **Contractor**, shall be binding and conclusive upon the **Contractor** as to the amount thereof.

24.9 The **Contractor** shall obtain all manufacturers' warranties and guaranties of all equipment and materials required by this **Contract** in the name of the **City** and shall deliver same to the **Commissioner**. All of the **City's** rights and title and interest in and to said manufacturers' warranties and guaranties may be assigned by the **City** to any subsequent purchasers of such equipment and materials or lessees of the premises into which the equipment and materials have been installed.

CHAPTER VI: CHANGES, EXTRA WORK, AND DOCUMENTATION OF CLAIM

ARTICLE 25. CHANGES

25.1 Changes may be made to this **Contract** only as duly authorized in writing by the **Commissioner** in accordance with the **Law** and this **Contract**. All such changes, modifications, and amendments will become a part of the **Contract**. **Work** so ordered shall be performed by the **Contractor**.

25.2 **Contract** changes will be made only for **Work** necessary to complete the **Work** included in the original scope of the **Contract** and/or for non-material changes to the scope of the **Contract**. Changes are not permitted for any material alteration in the scope of **Work** in the **Contract**.

25.3 The **Contractor** shall be entitled to a price adjustment for **Extra Work** performed pursuant to a written change order. Adjustments to price shall be computed in one or more of the following ways:

25.3.1 By applicable unit prices specified in the **Contract**; and/or

25.3.2 By agreement of a fixed price; and/or

25.3.3 By time and material records; and/or

25.3.4 In any other manner approved by the **CCPO**.

25.4 All payments for change orders are subject to pre-audit by the **Engineering Audit Officer** and may be post-audited by the **Comptroller** and/or the **Agency**.

ARTICLE 26. METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK

26.1 Overrun of Unit Price Item: An overrun is any quantity of a unit price item which the **Contractor** is directed to provide which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule.

26.1.1For any unit price item, the **Contractor** will be paid at the unit price bid for any quantity up to one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule. If during the progress of the **Work**, the actual quantity of any unit price item required to complete the **Work** approaches the estimated quantity for that item, and for any reason it appears that the actual quantity of any unit price item necessary to complete the **Work** will exceed the estimated quantity for that item by twenty-five (25%) percent, the **Contractor** shall immediately notify the **Engineer** of such anticipated overrun. The **Contractor** shall not be compensated for any quantity of a unit price item provided which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule without written authorization from the **Engineer**.

26.1.2 If the actual quantity of any unit price item necessary to complete the **Work** will exceed one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule, the **City** reserves the right and the **Contractor** agrees to negotiate a new unit price for such item. In no event shall such negotiated new unit price exceed the unit bid price. If the **City** and **Contractor** cannot agree on a new unit price, then the **City** shall order the **Contractor** and the **Contractor** agrees to provide additional quantities of

the item on the basis of time and material records for the actual and reasonable cost as determined under Article 26.2, but in no event at a unit price exceeding the unit price bid.

26.2 **Extra Work:** For **Extra Work** where payment is by agreement on a fixed price in accordance with Article 25.3.2, the price to be paid for such **Extra Work** shall be based on the fair and reasonable estimated cost of the items set forth below. For **Extra Work** where payment is based on time and material records in accordance with Article 25.3.3, the price to be paid for such **Extra Work** shall be the actual and reasonable cost of the items set forth below, calculated in accordance with the formula specified therein, if any.

26.2.1 Necessary materials (including transportation to the **Site**); plus

26.2.2 Necessary direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits; plus

26.2.3 Sales and personal property taxes, if any, required to be paid on materials not incorporated into such **Extra Work**; plus

26.2.4 Reasonable rental value of **Contractor**-owned (or **Subcontractor**-owned, as applicable), necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per operating hour: (.035) x (HP rating) x (Fuel cost/gallon). Reasonable rental value is defined as the lower of either seventy-five percent of the monthly prorated rental rates established in "The AED Green Book, Rental Rates and Specifications for Construction Equipment" published by Equipment Watch (the "Green Book"), or seventy-five percent of the monthly prorated rental rates established in the "Rental Rate Blue Book for Construction Equipment" published by Equipment Watch (the "Blue Book") (the applicable Blue Book rate being for rental only without the addition of any operational costs listed in the Blue Book). The reasonable rental value is deemed to be inclusive of all operating costs except for fuel/energy consumption and equipment operator's wages/costs. For multiple shift utilization, reimbursement shall be calculated as follows: first shift shall be seventy-five (75%) percent of such rental rates; second shift shall be sixty (60%) percent of the first shift rate; and third shift shall be forty (40%) percent of the first shift rate. Equipment on standby shall be reimbursed at one-third (1/3) the prorated monthly rental rate. **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment includes equipment from rental companies affiliated with or controlled by the **Contractor** (or **Subcontractor**, as applicable), as determined by the **Commissioner**. In establishing cost reimbursement for non-operating **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment (scaffolding, sheeting systems, road plates, etc.), the **City** may restrict reimbursement to a purchase-salvage/life cycle basis if less than the computed rental costs; plus

26.2.5 Necessary installation and dismantling of such plant and equipment, including transportation to and from the **Site**, if any, provided that, in the case of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) equipment rented from a third party, the cost of installation and dismantling are not allowable if such costs are included in the rental rate; plus

26.2.6 Necessary fees charged by governmental entities; plus

26.2.7 Necessary construction-related service fees charged by non-governmental entities, such as landfill tipping fees; plus

26.2.8 Reasonable rental costs of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per hour of operation: (.035) x (HP rating) x (Fuel cost/gallon). In lieu of renting, the **City** reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs; plus

26.2.9 Workers' Compensation Insurance, and any insurance coverage expressly required by the **City** for the performance of the **Extra Work** which is different than the types of insurance required by Article 22 and Schedule A of the General Conditions. The cost of Workers' Compensation Insurance is subject to applicable payroll limitation caps and shall be based upon the carrier's Manual Rate for such insurance derived from the applicable class Loss Cost ("LC") and carrier's Lost Cost Multiplier ("LCM") approved by the New York State Department of Financial Services, and with the exception of experience rating, rate modifiers as promulgated by the New York Compensation Insurance Rating Board ("NYCIRB"); plus

26.2.10 Additional costs incurred as a result of the **Extra Work** for performance and payment bonds; plus

26.2.11 Twelve percent (12%) percent of the total of items in Articles 26.2.1 through 26.2.5 as compensation for overhead, except that no percentage for overhead will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes. Overhead shall include without limitation, all costs and expenses in connection with administration, management superintendence, small tools, and insurance required by Schedule A of the General Conditions other than Workers' Compensation Insurance; plus

26.2.12 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus the items in Article 26.2.11, as compensation for profit, except that no percentage for profit will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes; plus

26.2.13 Five (5%) percent of the total of items in Articles 26.2.6 through 26.2.10 as compensation for overhead and profit.

26.3 Where the **Extra Work** is performed in whole or in part by other than the **Contractor's** own forces pursuant to Article 26.2, the **Contractor** shall be paid, subject to pre-audit by the **Engineering Audit Officer**, the cost of such **Work** computed in accordance with Article 26.2 above, plus an additional allowance of five (5%) percent to cover the **Contractor's** overhead and profit.

26.4 Where a change is ordered, involving both **Extra Work** and omitted or reduced **Contract Work,** the **Contract** price shall be adjusted, subject to pre-audit by the **EAO**, in an amount based on the difference between the cost of such **Extra Work** and of the omitted or reduced **Work**.

26.5 Where the **Contractor** and the **Commissioner** can agree upon a fixed price for **Extra Work** in accordance with Article 25.3.2 or another method of payment for **Extra Work** in accordance with

Article 25.3.4, or for **Extra Work** ordered in connection with omitted **Work**, such method, subject to pre-audit by the **EAO**, may, at the option of the **Commissioner**, be substituted for the cost plus a percentage method provided in Article 26.2; provided, however, that if the **Extra Work** is performed by a **Subcontractor**, the **Contractor** shall not be entitled to receive more than an additional allowance of five (5%) percent for overhead and profit over the cost of such **Subcontractor's Work** as computed in accordance with Article 26.2.

ARTICLE 27. RESOLUTION OF DISPUTES

27.1 All disputes between the **City** and the **Contractor** of the kind delineated in this Article 27.1 that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this Article 27 and the **PPB** Rules. This procedure for resolving all disputes of the kind delineated herein shall be the exclusive means of resolving any such disputes.

27.1.1 This Article 27 shall not apply to disputes concerning matters dealt with in other sections of the **PPB** Rules, or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

27.1.2 This Article 27 shall apply only to disputes about the scope of **Work** delineated by the **Contract**, the interpretation of **Contract** documents, the amount to be paid for **Extra Work** or disputed work performed in connection with the **Contract**, the conformity of the **Contractor's Work** to the **Contract**, and the acceptability and quality of the **Contractor's Work**; such disputes arise when the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** makes a determination with which the **Contractor** disagrees.

27.2 All determinations required by this Article 27 shall be made in writing clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this Article 27 shall be deemed a non-determination without prejudice that will allow application to the next level.

27.3 During such time as any dispute is being presented, heard, and considered pursuant to this Article 27, the **Contract** terms shall remain in force and the **Contractor** shall continue to perform **Work** as directed by the **ACCO** or the **Engineer**. Failure of the **Contractor** to continue **Work** as directed shall constitute a waiver by the **Contractor** of its claim.

27.4 Presentation of Disputes to **Commissioner**.

Notice of Dispute and Agency Response. The **Contractor** shall present its dispute in writing ("Notice of Dispute") to the **Commissioner** within thirty (30) Days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the **Contract**. The Notice of Dispute shall include all the facts, evidence, documents, or other basis upon which the **Contractor** relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the **Contractor** in the dispute was arrived at. Within thirty (30) Days after receipt of the detailed written submission comprising the complete Notice of Dispute, the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** shall submit to the **Commissioner** all materials he or she deems pertinent to the dispute. Following initial submissions to the **Commissioner**, either party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise

protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the **Commissioner** whose decision shall be final. Willful failure of the **Contractor** to produce any requested material whose relevancy the **Contractor** has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the **Contractor** of its claim.

27.4.1 **Commissioner** Inquiry. The **Commissioner** shall examine the material and may, in his or her discretion, convene an informal conference with the **Contractor**, the **ACCO**, and the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** to resolve the issue by mutual consent prior to reaching a determination. The **Commissioner** may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The **Commissioner's** ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the dispute presented, whether or not the **Commissioner** participated therein. The **Commissioner** may or, at the request of any party to the dispute, shall compel the participation of any **Other Contractor** with a contract related to the **Work** of this **Contract**, and that **Contractor** shall be bound by the decision of the **Commissioner**. Any **Other Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this Article 27 as the **Contractor** initiating the dispute.

27.4.2 **Commissioner** Determination. Within thirty (30) **Days** after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the **Commissioner** shall make his or her determination and shall deliver or send a copy of such determination to the **Contractor**, the **ACCO,** and **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner**, as applicable, together with a statement concerning how the decision may be appealed.

27.4.3 Finality of **Commissioner's** Decision. The **Commissioner's** decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board pursuant to this Article 27. The **City** may not take a petition to the Contract Dispute Resolution Board. However, should the **Contractor** take such a petition, the **City** may seek, and the Contract Dispute Resolution Board may render, a determination less favorable to the **Contractor** and more favorable to the **City** than the decision of the **Commissioner**.

27.5 Presentation of Dispute to the **Comptroller**. Before any dispute may be brought by the **Contractor** to the Contract Dispute Resolution Board, the **Contractor** must first present its claim to the **Comptroller** for his or her review, investigation, and possible adjustment.

27.5.1 Time, Form, and Content of Notice. Within thirty (30) **Days** of its receipt of a decision by the **Commissioner,** the **Contractor** shall submit to the **Comptroller** and to the **Commissioner** a Notice of Claim regarding its dispute with the **Agency**. The Notice of Claim shall consist of (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written decision of the **Commissioner**; and (iii) a copy of all materials submitted by the **Contractor** to the **Agency**, including the Notice of Dispute. The **Contractor** may not present to the **Comptroller** any material not presented to the **Commissioner**, except at the request of the **Comptroller**.

27.5.2 Response. Within thirty (30) **Days** of receipt of the Notice of Claim, the **Agency** shall make available to the **Comptroller** a copy of all material submitted by the **Agency** to the **Commissioner** in connection with the dispute. The **Agency** may not present to the **Comptroller** any material not presented to the **Commissioner** except at the request of the **Comptroller**.

27.5.3 **Comptroller** Investigation. The **Comptroller** may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in Sections 7-201 and 7-203 of the Administrative Code. In addition, the **Comptroller** may demand of either party, and such party shall provide, whatever additional material the **Comptroller** deems pertinent to the claim, including original business records of the **Contractor**. Willful failure of the **Contractor** to produce within fifteen (15) **Days** any material requested by the **Comptroller** shall constitute a waiver by the **Contractor** of its claim. The **Comptroller** may also schedule an informal conference to be attended by the **Contractor**, **Agency** representatives, and any other personnel desired by the **Comptroller**.

27.5.4 Opportunity of **Comptroller** to Compromise or Adjust Claim. The **Comptroller** shall have forty-five (45) **Days** from his or her receipt of all materials referred to in Article 27.5.3 to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the **Contractor** and the **Comptroller**, to a maximum of ninety (90) **Days** from the **Comptroller's** receipt of all materials. The **Contractor** may not present its petition to the Contract Dispute Resolution Board until the period for investigation and compromise delineated in this Article 27.5.4 has expired. In compromising or adjusting any claim hereunder, the **Comptroller** may not revise or disregard the terms of the **Contract** between the parties.

27.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

27.6.1 The chief administrative law judge of the Office of Administrative Trials and Hearings (OATH) or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this Article 27 as may be necessary in the execution of the Contract Dispute Resolution Board's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

27.6.2 The **CCPO** or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated; and

27.6.3 A person with appropriate expertise who is not an employee of the **City**. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH with appropriate background to act as decision-makers in a dispute. Such individual may not have a contract or dispute with the **City** or be an officer or employee of any company or organization that does, or regularly represents persons, companies, or organizations having disputes with the **City**.

27.7 Petition to the Contract Dispute Resolution Board. In the event the claim has not been settled or adjusted by the **Comptroller** within the period provided in this Article 27, the **Contractor**,

within thirty (30) **Days** thereafter, may petition the Contract Dispute Resolution Board to review the **Commissioner's** determination.

27.7.1 Form and Content of Petition by **Contractor**. The **Contractor** shall present its dispute to the Contract Dispute Resolution Board in the form of a petition, which shall include (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written Decision of the **Commissioner,** (iii) copies of all materials submitted by the **Contractor** to the Agency; (iv) a copy of the written decision of the **Comptroller**, if any, and (v) copies of all correspondence with, or written material submitted by the **Contractor**, to the **Comptroller**. The **Contractor** shall concurrently submit four (4) complete sets of the Petition: one set to the **City** Corporation Counsel (Attn: Commercial and Real Estate Litigation Division) and three (3) sets to the Contract Dispute Resolution Board at OATH's offices with proof of service on the **City** Corporation Counsel. In addition, the **Contractor** shall submit a copy of the written statement of the substance of the dispute, cited in (i) above, to both the **Commissioner** and the **Comptroller**.

27.7.2 **Agency** Response. Within thirty (30) **Days** of its receipt of the Petition by the **City** Corporation Counsel, the **Agency** shall respond to the brief written statement of the **Contractor** and make available to the Contract Dispute Resolution Board all material it submitted to the **Commissioner** and **Comptroller**. Three (3) complete copies of the **Agency** response shall be provided to the Contract Dispute Resolution Board and one to the **Contractor**. Extensions of time for submittal of the **Agency** response shall be given as necessary upon a showing of good cause or, upon consent of the parties, for an initial period of up to thirty (30) Days.

27.7.3 Further Proceedings. The Contract Dispute Resolution Board shall permit the **Contractor** to present its case by submission of memoranda, briefs, and oral argument. The Contract Dispute Resolution Board shall also permit the **Agency** to present its case in response to the **Contractor** by submission of memoranda, briefs, and oral argument. If requested by the **City** Corporation Counsel, the **Comptroller** shall provide reasonable assistance in the preparation of the **Agency's** case. Neither the **Contractor** nor the **Agency** may support its case with any documentation or other material that was not considered by the **Comptroller**, unless requested by the Contract Dispute Resolution Board. The Contract Dispute Resolution Board, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on its own or upon application of a party, any such additional material from any party as it deems fit. The Contract Dispute Resolution Board, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

27.7.4 Contract Dispute Resolution Board Determination. Within forty-five (45) **Days** of the conclusion of all written submissions and oral arguments, the Contract Dispute Resolution Board shall render a written decision resolving the dispute. In an unusually complex case, the Contract Dispute Resolution Board may render its decision in a longer period, not to exceed ninety (90) **Days**, and shall so advise the parties at the commencement of this period. The Contract Dispute Resolution Board's decision must be consistent with the terms of the **Contract**. Decisions of the Contract Dispute Resolution Board shall only resolve matters before the Contract Dispute Resolution Board and shall not have precedential effect with respect to matters not before the Contract Dispute Resolution Board.

27.7.5 Notification of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board shall send a copy of its decision to the **Contractor**, the **ACCO**, the Engineer, the **Comptroller**, the **City** Corporation Counsel, the CCPO, and the **PPB**. A decision in favor of the **Contractor** shall be subject to the prompt payment provisions of the **PPB** Rules. The Required Payment Date shall be thirty (30) Days after the date the parties are formally notified of the Contract Dispute Resolution Board's decision.

27.7.6 Finality of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board's decision shall be final and binding on all parties. Any party may seek review of the Contract Dispute Resolution Board's decision solely in the form of a challenge, filed within four (4) months of the date of the Contract Dispute Resolution Board's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Law and Rules. Such review by the court shall be limited to the question of whether or not the Contract Dispute Resolution Board's decision was made in violation of lawful procedure, was affected by an error of **Law**, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the Contract Dispute Resolution Board in accordance with this Article 27.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this Article 27 shall not affect or impair the ability of the **Commissioner** or Contract Dispute Resolution Board to make a binding and final decision pursuant to this Article 27.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK OR WORK ON A TIME & MATERIALS BASIS

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Work** on a time and material basis or **Extra Work** on a time and material basis ordered by the **Commissioner** under Article 25, or where the **Contractor** believes that it or any of its **Subcontractors** is performing **Extra Work** but a final determination by **Agency** has not been made, or the **Contractor** or any of its **Subcontractors** is performing disputed **Work** (whether on or off the **Site**), or complying with a determination or order under protest in accordance with Articles 11, 27, and 30, in each such case the **Contractor** shall furnish the **Resident Engineer** daily with three (3) copies of written statements signed by the **Contractor's** representative at the **Site** showing:

28.1.1 The name, trade, and number of each worker employed on such **Work** or engaged in complying with such determination or order, the number of hours employed, and the character of the **Work** each is doing; and

28.1.2 The nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such **Work** or compliance with such determination or order, and from whom purchased or rented.

28.2 A copy of such statement will be countersigned by the **Resident Engineer**, noting thereon any items not agreed to or questioned, and will be returned to the **Contractor** within two (2) **Days** after submission.

28.3 The **Contractor** and its **Subcontractors**, when required by the **Commissioner**, or the **Comptroller**, shall also produce for inspection, at the office of the **Contractor** or **Subcontractor**, any and all of its books, bid documents, financial statements, vouchers, records, daily job diaries and reports,

and cancelled checks, and any other documents relating to showing the nature and quantity of the labor, materials, plant and equipment actually used in the performance of such **Work**, or in complying with such determination or order, and the amounts expended therefor, and shall permit the **Commissioner** and the **Comptroller** to make such extracts therefrom, or copies thereof, as they or either of them may desire.

28.4 In connection with the examination provided for herein, the **Commissioner**, upon demand therefor, will produce for inspection by the **Contractor** such records as the **Agency** may have with respect to such **Extra Work** or disputed **Work** performed under protest pursuant to order of the **Commissioner**, except those records and reports which may have been prepared for the purpose of determining the accuracy and validity of the **Contractor's** claim.

28.5 Failure to comply strictly with these requirements shall constitute a waiver of any claim for extra compensation or damages on account of the performance of such **Work** or compliance with such determination or order.

ARTICLE 29. OMITTED WORK

29.1 If any **Contract Work** in a lump sum **Contract**, or if any part of a lump sum item in a unit price, lump sum, or percentage-bid **Contract** is omitted by the **Commissioner** pursuant to Article 33, the **Contract** price, subject to audit by the EAO, shall be reduced by a pro rata portion of the lump sum bid amount based upon the percent of **Work** omitted subject to Article 29.4. For the purpose of determining the pro rata portion of the lump sum bid amount, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be the determining factor.

29.2 If the whole of a lump sum item or units of any other item is so omitted by the **Commissioner** in a unit price, lump sum, or percentage-bid **Contract**, then no payment will be made therefor except as provided in Article 29.4.

29.3 For units that have been ordered but are only partially completed, the unit price shall be reduced by a pro rata portion of the unit price bid based upon the percentage of **Work** omitted subject to Article 29.4.

29.4 In the event the **Contractor**, with respect to any omitted **Work**, has purchased any non-cancelable material and/or equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated into the **Work**, the **Contractor** shall be paid for such material and/or equipment in accordance with Article 64.2.1(b); provided, however, such payment is contingent upon the **Contractor's** delivery of such material and/or equipment in acceptable condition to a location designated by the **City**.

29.5 The **Contractor** agrees to make no claim for damages or for loss of overhead and profit with regard to any omitted **Work**.

ARTICLE 30. NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS

30.1 If the **Contractor** shall claim to be sustaining damages by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter to the extent additional damages are being incurred for the same condition, verified statements of the details and the amounts of such

damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to strictly comply with the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action or dispute resolution procedure arising under or by reason of this **Contract** shall not be different from or in excess of the statements and documentation made pursuant to this Article 30. This Article 30.1 does not apply to claims submitted to the **Commissioner** pursuant to Article 11 or to claims disputing a determination under Article 27.

30.2 In addition to the foregoing statements, the **Contractor** shall, upon notice from the **Commissioner**, produce for examination at the **Contractor's** office, by the **Engineer**, **Architect** or **Project Manager**, all of its books of account, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**, and submit itself and persons in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.3 In addition to the statements required under Article 28 and this Article 30, the **Contractor** and/or its **Subcontractor** shall, within thirty (30) **Days** upon notice from the **Commissioner** or **Comptroller**, produce for examination at the **Contractor's** and/or **Subcontractor's** office, by a representative of either the **Commissioner** or **Comptroller**, all of its books of account, bid documents, financial statements, accountant workpapers, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**. Further, the **Contractor** and/or its **Subcontractor** shall submit any person in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.4 Unless the information and examination required under Article 30.3 is provided by the **Contractor** and/or its **Subcontractor** upon thirty (30) **Days'** notice from the **Commissioner** or **Comptroller**, or upon the **Commissioner's** or **Comptroller's** written authorization to extend the time to comply, the **City** shall be released from all claims arising under, relating to or by reason of this **Contract**, except for sums certified by the **Commissioner** to be due under the provisions of this **Contract**. It is further stipulated and agreed that no person has the power to waive any of the foregoing provisions and that in any action or dispute resolution procedure against the **City** to recover any sum in excess of the sums certified by the **Commissioner** to be due under or by reason of this **Contract**, the **Contractor** must allege in its complaint and prove, at trial or during such dispute resolution procedure, compliance with the provisions of this Article 30.

30.5 In addition, after the commencement of any action or dispute resolution procedure by the **Contractor** arising under or by reason of this **Contract**, the **City** shall have the right to require the **Contractor** to produce for examination under oath, up until the trial of the action or hearing before the Contract Dispute Resolution Board, the books and documents described in Article 30.3 and submit itself and all persons in its employ for examination under oath. If this Article 30 is not complied with as required, then the **Contractor** hereby consents to the dismissal of the action or dispute resolution procedure.

CHAPTER VII: POWERS OF THE RESIDENT ENGINEER,THE ENGINEER OR ARCHITECT AND THE COMMISSIONER

ARTICLE 31. THE RESIDENT ENGINEER

31.1 The **Resident Engineer** shall have the power to inspect, supervise, and control the performance of the **Work**, subject to review by the **Commissioner**. The **Resident Engineer** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 32. THE ENGINEER OR ARCHITECT OR PROJECT MANAGER

32.1 The **Engineer** or **Architect** or **Project Manager**, in addition to those matters elsewhere herein delegated to the **Engineer** and expressly made subject to his/her determination, direction or approval, shall have the power, subject to review by the **Commissioner**:

32.1.1 To determine the amount, quality, and location of the **Work** to be paid for hereunder; and

32.1.2 To determine all questions in relation to the **Work**, to interpret the **Contract Drawings**, **Specifications**, and **Addenda**, and to resolve all patent inconsistencies or ambiguities therein; and

32.1.3 To determine how the **Work** of this **Contract** shall be coordinated with **Work** of **Other Contractors** engaged simultaneously on this **Project**, including the power to suspend any part of the **Work**, but not the whole thereof; and

32.1.4 To make minor changes in the **Work** as he/she deems necessary, provided such changes do not result in a net change in the cost to the **City** or to the **Contractor** of the **Work** to be done under the **Contract**; and

32.1.5 To amplify the **Contract Drawings**, add explanatory information and furnish additional **Specifications** and drawings, consistent with this **Contract**.

32.2 The foregoing enumeration shall not imply any limitation upon the power of the **Engineer** or **Architect** or **Project Manager**, for it is the intent of this **Contract** that all of the **Work** shall generally be subject to his/her determination, direction, and approval, except where the determination, direction or approval of someone other than the **Engineer** or **Architect** or **Project Manager** is expressly called for herein.

32.3 The **Engineer** or **Architect** or **Project Manager** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 33. THE COMMISSIONER

33.1 The **Commissioner**, in addition to those matters elsewhere herein expressly made subject to his/her determination, direction or approval, shall have the power:

33.1.1 To review and make determinations on any and all questions in relation to this **Contract** and its performance; and

33.1.2 To modify or change this **Contract** so as to require the performance of **Extra Work** (subject, however, to the limitations specified in Article 25) or the omission of **Contract Work**; and

33.1.3 To suspend the whole or any part of the **Work** whenever in his/her judgment such suspension is required:

33.1.3(a) In the interest of the **City** generally; or

33.1.3(b) To coordinate the **Work** of the various contractors engaged on this **Project** pursuant to the provisions of Article 12; or

33.1.3(c) To expedite the completion of the entire **Project** even though the completion of this particular **Contract** may thereby be delayed.

ARTICLE 34. NO ESTOPPEL

34.1 Neither the **City** nor any **Agency**, official, agent or employee thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this **Contract** by the **City**, the **Commissioner**, the **Engineer**, the **Resident Engineer**, or any other official, agent or employee of the **City**, either before or after the final completion and acceptance of the **Work** and payment therefor:

34.1.1 From showing the true and correct classification, amount, quality or character of the **Work** actually done; or that any such determination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular, or that the **Work**, or any part thereof, does not in fact conform to the requirements of this **Contract**; and

34.1.2 From demanding and recovering from the **Contractor** any overpayment made to it, or such damages as the **City** may sustain by reason of the **Contractor's** failure to perform each and every part of its **Contract**.

CHAPTER VIII: LABOR PROVISIONS

ARTICLE 35. EMPLOYEES

35.1 The **Contractor** and its **Subcontractors** shall not employ on the **Work**:

35.1.1 Anyone who is not competent, faithful and skilled in the **Work** for which he/she shall be employed; and whenever the **Commissioner** shall inform the **Contractor**, in writing, that any employee is, in his/her opinion, incompetent, unfaithful or disobedient, that employee shall be discharged from the **Work** forthwith, and shall not again be employed upon it; or

35.1.2 Any labor, materials or means whose employment, or utilization during the course of this **Contract**, may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of **Work** or similar troubles by workers employed by the **Contractor** or its **Subcontractors**, or by any of the trades working in or about the buildings and premises where **Work** is being performed under this **Contract**, or by **Other Contractors** or their **Subcontractors** pursuant to other contracts, or on any other building or premises owned or operated by the **City**, its **Agencies**, departments, boards or authorities. Any violation by the **Contractor** of this requirement may, upon certification of the **Commissioner**, be considered as proper and sufficient cause for declaring the **Contractor** to be in default, and for the **City** to take action against it as set forth in Chapter X of this **Contract**, or such other article of this **Contract** as the Commissioner may deem proper; or

35.1.3 In accordance with Section 220.3-e of the Labor Law of the State of New York (hereinafter "Labor Law"), the **Contractor** and its **Subcontractors** shall not employ on the **Work** any apprentice, unless he/she is a registered individual, under a bona fide program registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the **Contractor** as to its work force on any job under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the **Comptroller** of the **City** for the classification of **Work** actually performed. The **Contractor** or **Subcontractor** will be required to furnish written evidence of the registration of its program and apprentices as well as all the appropriate ratios and wage rates, for the area of the construction prior to using any apprentices on the **Contract Work**.

35.2 If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand ($250,000) dollars, all laborers, workers, and mechanics employed in the performance of the **Contract** on the public work site, either by the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by the **Contract**, shall be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

35.3 In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the Administrative Code, respectively,

35.3.1 The **Contractor** shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this **Contract** to (a) the Commissioner of the Department of Investigation, (b) a member of the New York City Council, the Public Advocate, or the **Comptroller**, or (c) the **CCPO**, **ACCO**, **Agency** head, or **Commissioner**.

35.3.2 If any of the **Contractor**'s officers or employees believes that he or she has been the subject of an adverse personnel action in violation of Article 35.3.1, he or she shall be entitled to bring a cause of action against the **Contractor** to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (a) an injunction to restrain continued retaliation, (b) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (c) reinstatement of full fringe benefits and seniority rights, (d) payment of two times back

pay, plus interest, and (e) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.

35.3.3 The **Contractor** shall post a notice provided by the **City** in a prominent and accessible place on any site where work pursuant to the **Contract** is performed that contains information about:

35.3.3(a) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising out of or in connection with the **Contract**; and

35.3.3(b) the rights and remedies afforded to its employees under Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection with the reporting of allegations of fraud, false claims, criminality or corruption in connection with the **Contract**.

35.3.4 For the purposes of this Article 35.3, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

35.3.5 This Article 35.3 is applicable to all of the **Contractor**'s **Subcontractors** having subcontracts with a value in excess of $100,000; accordingly, the **Contractor** shall include this rider in all subcontracts with a value a value in excess of $100,000.

35.4 Article 35.3 is not applicable to this **Contract** if it is valued at $100,000 or less. Articles 35.3.1, 35.3.2, 35.3.4, and 35.3.5 are not applicable to this **Contract** if it was solicited pursuant to a finding of an emergency.

35.5 Paid Sick Leave Law.

35.5.1 Introduction and General Provisions.

35.5.1(a) The Earned Sick Time Act, also known as the Paid Sick Leave Law ("PSLL"), requires covered employees who annually perform more than 80 hours of work in New York City to be provided with paid sick time.[2] Contractors of the **City** or of other governmental entities may be required to provide sick time pursuant to the PSLL.

35.5.1(b) The PSLL became effective on April 1, 2014, and is codified at Title 20, Chapter 8, of the New York City Administrative Code. It is administered by the City's Department of Consumer Affairs ("DCA"); DCA's rules promulgated under the PSLL are codified at Chapter 7 of Title 6 of the Rules of the City of New York ("Rules").

[2] Pursuant to the PSLL, if fewer than five employees work for the same employer, as determined pursuant to New York City Administrative Code § 20-912(g), such employer has the option of providing such employees uncompensated sick time.

35.5.1(c) The **Contractor** agrees to comply in all respects with the PSLL and the Rules, and as amended, if applicable, in the performance of this **Contract**. The **Contractor** further acknowledges that such compliance is a material term of this **Contract** and that failure to comply with the PSLL in performance of this **Contract** may result in its termination.

35.5.1(d) The **Contractor** must notify the **Agency Chief Contracting Officer** of the **Agency** with whom it is contracting in writing within ten (10) days of receipt of a complaint (whether oral or written) regarding the PSLL involving the performance of this **Contract**. Additionally, the **Contractor** must cooperate with DCA's education efforts and must comply with DCA's subpoenas and other document demands as set forth in the PSLL and Rules.

35.5.1(e) The PSLL is summarized below for the convenience of the **Contractor**. The **Contractor** is advised to review the PSLL and Rules in their entirety. On the website www.nyc.gov/PaidSickLeave there are links to the PSLL and the associated Rules as well as additional resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which the **Contractor** can get more information about how to comply with the PSLL. The **Contractor** acknowledges that it is responsible for compliance with the PSLL notwithstanding any inconsistent language contained herein.

35.5.2 Pursuant to the PSLL and the Rules: Applicability, Accrual, and Use.

35.5.2(a) An employee who works within the City of New York for more than eighty hours in any consecutive 12-month period designated by the employer as its "calendar year" pursuant to the PSLL ("Year") must be provided sick time. Employers must provide a minimum of one hour of sick time for every 30 hours worked by an employee and compensation for such sick time must be provided at the greater of the employee's regular hourly rate or the minimum wage. Employers are not required to provide more than 40 hours of sick time to an employee in any Year.

35.5.2(b) An employee has the right to determine how much sick time he or she will use, provided that employers may set a reasonable minimum increment for the use of sick time not to exceed four hours per **Day**. In addition, an employee may carry over up to 40 hours of unused sick time to the following Year, provided that no employer is required to allow the use of more than forty hours of sick time in a Year or carry over unused paid sick time if the employee is paid for such unused sick time and the employer provides the employee with at least the legally required amount of paid sick time for such employee for the immediately subsequent Year on the first **Day** of such Year.

35.5.2(c) An employee entitled to sick time pursuant to the PSLL may use sick time for any of the following:

i. such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;
ii. such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild or grandparent, or the child or parent of an employee's spouse or domestic partner) who has a mental

illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;

iii. closure of such employee's place of business by order of a public official due to a public health emergency; or

iv. such employee's need to care for a child whose school or childcare provider has been closed due to a public health emergency.

35.5.2(d) An employer must not require an employee, as a condition of taking sick time, to search for a replacement. However, an employer may require an employee to provide: reasonable notice of the need to use sick time; reasonable documentation that the use of sick time was needed for a reason above if for an absence of more than three consecutive work days; and/or written confirmation that an employee used sick time pursuant to the PSLL. However, an employer may not require documentation specifying the nature of a medical condition or otherwise require disclosure of the details of a medical condition as a condition of providing sick time and health information obtained solely due to an employee's use of sick time pursuant to the PSLL must be treated by the employer as confidential.

35.5.2(e) If an employer chooses to impose any permissible discretionary requirement as a condition of using sick time, it must provide to all employees a written policy containing those requirements, using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny sick time to an employee because of non-compliance with such a policy.

35.5.2(f) Sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the sick time was used.

35.5.3 Exemptions and Exceptions. Notwithstanding the above, the PSLL does not apply to any of the following:

35.5.3(a) an independent contractor who does not meet the definition of employee under section 190(2) of the New York State Labor Law;

35.5.3(b) an employee covered by a valid collective bargaining agreement in effect on April 1, 2014, until the termination of such agreement;

35.5.3(c) an employee in the construction or grocery industry covered by a valid collective bargaining agreement if the provisions of the PSLL are expressly waived in such collective bargaining agreement;

35.5.3(d) an employee covered by another valid collective bargaining agreement if such provisions are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the PSLL for such employee;

35.5.3(e) an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines his or her own schedule, has the ability to reject or accept any assignment referred to him or her, and is paid an average hourly wage that is at least four times the federal minimum wage;

35.5.3(f) an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;

35.5.3(g) an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or

35.5.3(h) a participant in a Work Experience Program (WEP) under section 336-c of the New York State Social Services Law.

35.5.4 Retaliation Prohibited. An employer may not threaten or engage in retaliation against an employee for exercising or attempting in good faith to exercise any right provided by the PSLL. In addition, an employer may not interfere with any investigation, proceeding, or hearing pursuant to the PSLL.

35.5.5 Notice of Rights.

35.5.5(a) An employer must provide its employees with written notice of their rights pursuant to the PSLL. Such notice must be in English and the primary language spoken by an employee, provided that DCA has made available a translation into such language. Downloadable notices are available on DCA's website at http://www.nyc.gov/html/dca/html/law/PaidSickLeave.shtml.

35.5.5(b) Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed fifty dollars for each employee who was not given appropriate notice.

35.5.6 Records. An employer must retain records documenting its compliance with the PSLL for a period of at least three years, and must allow DCA to access such records in furtherance of an investigation related to an alleged violation of the PSLL.

35.5.7 Enforcement and Penalties.

35.5.7(a) Upon receiving a complaint alleging a violation of the PSLL, DCA has the right to investigate such complaint and attempt to resolve it through mediation. Within 30 **Days** of written notification of a complaint by DCA, or sooner in certain circumstances, the employer must provide DCA with a written response and such other information as DCA may request. If DCA believes that a violation of the PSLL has occurred, it has the right to issue a notice of violation to the employer.

35.5.7(b) DCA has the power to grant an employee or former employee all appropriate relief as set forth in New York City Administrative Code § 20-924(d). Such relief may include, among other remedies, treble damages for the wages that should have been paid, damages for unlawful retaliation, and damages and reinstatement for unlawful discharge. In addition, DCA may impose on an employer found to have violated the PSLL civil penalties not to exceed $500 for a first violation, $750 for a second violation within two years of the first violation, and $1,000 for each succeeding violation within two years of the previous violation.

35.5.8 More Generous Polices and Other Legal Requirements. Nothing in the PSLL is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous sick time policy, or the obligation of an employer to comply with any contract,

collective bargaining agreement, employment benefit plan or other agreement providing more generous sick time. The PSLL provides minimum requirements pertaining to sick time and does not preempt, limit or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of sick leave or time, whether paid or unpaid, or that extends other protections to employees. The PSLL may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

35.6 HireNYC: Hiring and Reporting Requirements. This Article 35.6 applies to construction contracts of $1,000,000 or more. The **Contractor** shall comply with the requirements of Articles 35.6.1-35.6.5 for all non-trades jobs (e.g., for an administrative position arising out of **Work** ant located in New York City). The **Contractor** shall reasonably cooperate with SBS and the **City** on specific outreach events, including "Hire-on-the-Spot" events, for the hiring of trades workers in connection with the **Work**. If provided elsewhere in this **Contract,** this **Contract** is subject to a project labor agreement.

35.6.1 Enrollment. The **Contractor** shall enroll with the HireNYC system, found at www.nyc.gov/sbs, within thirty (30) days after the registration of this **Contract** pursuant to Section 328 of the New York City Charter. The **Contractor** shall provide information about the business, designate a primary contact and say whether it intends to hire for any entry to mid-level job opportunities arising from this **Contract** and located in New York City, and, if so, the approximate start date of the first hire.

35.6.2 Job Posting Requirements.

35.6.2(a) Once enrolled in HireNYC, the **Contractor** agrees to update the HireNYC portal with all entry to mid-level job opportunities arising from this **Contract** and located in New York City, if any, which shall be defined as jobs requiring no more than an associate degree, as provided by the New York State Department of Labor (see Column F of https://labor.ny.gov/stats/2012-2022- NYS-Employment-Prospects.xls). The information to be updated includes the types of entry and mid-level positions made available from the work arising from the **Contract** and located in New York City, the number of positions, the anticipated schedule of initiating the hiring process for these positions, and the contact information for the **Contractor's** representative charged with overseeing hiring. The **Contractor** must update the HireNYC portal with any hiring needs arising from the contract and located in New York City, and the requirements of the jobs to be filled, no less than three weeks prior to the intended first day of employment for each new position, except with the permission of SBS, not to be unreasonably withheld, and must also update the HireNYC portal as set forth below.

35.6.2(b) After enrollment through HireNYC and submission of relevant information, SBS will work with the **Contractor** to develop a recruitment plan which will outline the candidate screening process, and will provide clear instructions as to when, where, and how interviews will take place. HireNYC will screen applicants based on employer requirements and refer applicants whom it believes are qualified to the **Contractor** for interviews. The **Contractor** must interview referred applicants whom it believes are qualified.

35.6.2(c) After completing an interview of a candidate referred by HireNYC, the **Contractor** must provide feedback via the portal within twenty (20) business days to indicate which candidates were interviewed and hired, if any. In addition, the **Contractor** shall provide the start date of new hires, and additional information

reasonably related to such hires, within twenty (20) business days after the start date. In the event the **Contractor** does not have any job openings covered by this Rider in any given year, the **Contractor** shall be required to provide an annual update to HireNYC to that effect. For this purpose, the reporting year shall run from the date of the registration of the **Contract** pursuant to Charter section 328 and each anniversary date.

35.6.2(d) These requirements do not limit the **Contractor's** ability to assess the qualifications of prospective workers, and to make final hiring and retention decisions. No provision of this Article 35.6 shall be interpreted so as to require the **Contractor** to employ any particular worker.

35.6.2(e) In addition, the provisions of this Article 35.6 shall not apply to positions that the **Contractor** intends to fill with employees employed pursuant to the job retention provision of Section 22-505 of the Administrative Code of the City of New York. The **Contractor** shall not be required to report such openings with HireNYC. However, the **Contractor** shall enroll with the HireNYC system pursuant to Article 35.6.1, above, and, if such positions subsequently become open, then the remaining provisions of this Article 35.6 will apply.

35.6.3 Breach and Liquidated Damages. If the **Contractor** fails to comply with the terms of the **ContrSact** and this Article 35.6 (l) by not enrolling its business with HireNYC; (2) by not informing HireNYC, as required, of open positions; or (3) by failing to interview a qualified candidate, the **Agency** may assess liquidated damages in the amount of two-thousand five hundred dollars ($2,500) per breach. For all other events of noncompliance with the terms of this Article 35.6, the **Agency** may assess liquidated damages in the amount of five hundred dollars ($500) per breach. Furthermore, in the event the **Contractor** breaches the requirements of this Article 35.6 during the term of the **Contract**, the **City** may hold the **Contractor** in default of this **Contract**.

35.6.4 Audit Compliance. In addition to the auditing requirements set forth in other parts of the **Contract**, the **Contractor** shall permit SBS and the **City** to inspect any and all records concerning or relating to job openings or the hiring of individuals for work arising from the **Contract** and located in New York City. The **Contractor** shall permit an inspection within seven (7) business days of the request.

35.6.5 Other Reporting Requirements. The **Contractor** shall report to the **City**, on a monthly basis, all information reasonably requested by the **City** that is necessary for the **City** to comply with any reporting requirements imposed by **Law**, including any requirement that the **City** maintain a publicly accessible database. In addition, the **Contractor** agrees to comply with all reporting requirements imposed by **Law**, or as otherwise requested by the **City**.

35.6.6 Federal Hiring Requirements. If this **Contract** is federally funded (as indicated elsewhere in this Contract), the **Contractor** shall comply with all federal hiring requirements as may be set forth in this **Contract**, including, as applicable: (a) Section 3 of the HUD Act of 1968, which requires, to the greatest extent feasible, economic opportunities for 30 percent of new hires be given to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing and Executive Order 11246, which prohibits discrimination in employment due to race, color, religion, sex or national origin, and requires the implementation of goals for minority and female participation for work involving any construction trade.

ARTICLE 36. NO DISCRIMINATION

36.1 The **Contractor** specifically agrees, as required by Labor Law Section 220-e, as amended, that:

36.1.1 In the hiring of employees for the performance of **Work** under this **Contract** or any subcontract hereunder, neither the **Contractor**, **Subcontractor**, nor any person acting on behalf of such **Contractor** or **Subcontractor**, shall by reason of race, creed, color or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the **Work** to which the employment relates;

36.1.2 Neither the **Contractor**, **Subcontractor**, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of **Work** under this **Contract** on account of race, creed, color or national origin;

36.1.3 There may be deducted from the amount payable to the **Contractor** by the **City** under this **Contract** a penalty of fifty ($50.00) dollars for each person for each **Day** during which such person was discriminated against or intimidated in violation of the provisions of this **Contract**; and

36.1.4 This **Contract** may be cancelled or terminated by the **City** and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this Article 36.

36.1.5 This Article 36 covers all construction, alteration and repair of any public building or public work occurring in the State of New York and the manufacture, sale, and distribution of materials, equipment, and supplies to the extent that such operations are performed within the State of New York pursuant to this **Contract**.

36.2 The **Contractor** specifically agrees, as required by Section 6-108 of the Administrative Code, as amended, that:

36.2.1 It shall be unlawful for any person engaged in the construction, alteration or repair of buildings or engaged in the construction or repair of streets or highways pursuant to a **Contract** with the **City** or engaged in the manufacture, sale or distribution of materials, equipment or supplies pursuant to a **Contract** with the **City** to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

36.2.2 It shall be unlawful for any person or any servant, agent or employee of any person, described in Article 36.1.2, to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color or creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

36.2.3 Breach of the foregoing provisions shall be deemed a violation of a material provision of this **Contract**.

36.2.4 Any person, or the employee, manager or owner of or officer of such firm or corporation who shall violate any of the provisions of this Article 36.2 shall, upon

conviction thereof, be punished by a fine of not more than one hundred ($100.00) dollars or by imprisonment for not more than thirty (30) **Days**, or both.

36.3 This **Contract** is subject to the requirements of Executive Order No. 50 (1980) ("E.O. 50"), as revised, and the rules and regulations promulgated thereunder. No contract will be awarded unless and until these requirements have been complied with in their entirety. By signing this **Contract**, the **Contractor** agrees that it:

36.3.1 Will not engage in any unlawful discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, marital status or sexual orientation with respect to all employment decisions including, but not limited to, recruitment, hiring, upgrading, demotion, downgrading, transfer, training, rates of pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment; and

36.3.2 Will not engage in any unlawful discrimination in the selection of **Subcontractors** on the basis of the owner's race, color, creed, national origin, sex, age, disability, marital status or sexual orientation; and

36.3.3 Will state in all solicitations or advertisements for employees placed by or on behalf of the **Contractor** that all qualified applicants will receive consideration for employment without unlawful discrimination based on race, creed, color, national origin, sex, age, citizens status, disability, marital status, sexual orientation, or that it is an equal employment opportunity employer; and

36.3.4 Will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or memorandum of understanding, written notification of its equal employment opportunity commitments under E.O. 50 and the rules and regulations promulgated thereunder; and

36.3.5 Will furnish, before the award of the **Contract**, all information and reports, including an employment report, that are required by E.O. 50, the rules and regulations promulgated thereunder, and orders of the **City** Department of Business Services, Division of Labor Services (**DLS**) and will permit access to its books, records, and accounts by the **DLS** for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

36.4 The **Contractor** understands that in the event of its noncompliance with the nondiscrimination clauses of this **Contract** or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this **Contract** and noncompliance with E.O. 50 and the rules and regulations promulgated thereunder. After a hearing held pursuant to the rules of the **DLS**, the Director of the **DLS** may direct the **Commissioner** to impose any or all of the following sanctions:

36.4.1 Disapproval of the **Contractor**; and/or

36.4.2 Suspension or termination of the **Contract**; and/or

36.4.3 Declaring the **Contractor** in default; and/or

36.4.4 In lieu of any of the foregoing sanctions, the Director of the **DLS** may impose an employment program.

In addition to any actions taken under this **Contract**, failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in a **City Agency** declaring the **Contractor** to be non-responsible in future procurements. The **Contractor** further agrees that it will refrain from entering into any **Contract** or **Contract** modification subject to E.O. 50 and the rules and regulations promulgated thereunder with a **Subcontractor** who is not in compliance with the requirements of E.O. 50 and the rules and regulations promulgated thereunder.

36.5 The **Contractor** specifically agrees, as required by Section 6-123 of the Administrative Code, that:

36.5.1 The **Contractor** will not engage in any unlawful discriminatory practice in violation of Title 8 of the Administrative Code; and

36.5.2 Any failure to comply with this Article 36.5 may subject the **Contractor** to the remedies set forth in Section 6-123 of the Administrative Code, including, where appropriate, sanctions such as withholding of payment, imposition of an employment program, finding the **Contractor** to be in default, cancellation of the **Contract**, or any other sanction or remedy provided by **Law** or **Contract**.

ARTICLE 37. LABOR LAW REQUIREMENTS

37.1 The **Contractor** shall strictly comply with all applicable provisions of the Labor Law, as amended. Such compliance is a material term of this **Contract**.

37.2 The **Contractor** specifically agrees, as required by Labor Law Sections 220 and 220-d, as amended, that:

37.2.1 Hours of **Work**: No laborer, worker, or mechanic in the employ of the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by this **Contract** shall be permitted or required to work more than eight (8) hours in any one (1) **Day**, or more than five (5) **Days** in any one (1) week, except as provided in the Labor Law and in cases of extraordinary emergency including fire, flood, or danger to life or property, or in the case of national emergency when so proclaimed by the President of the United States of America.

37.2.2 In situations in which there are not sufficient laborers, workers, and mechanics who may be employed to carry on expeditiously the **Work** contemplated by this **Contract** as a result of such restrictions upon the number of hours and **Days** of labor, and the immediate commencement or prosecution or completion without undue delay of the **Work** is necessary for the preservation of the **Site** and/or for the protection of the life and limb of the persons using the same, such laborers, workers, and mechanics shall be permitted or required to work more than eight (8) hours in any one (1) **Day**; or five (5) **Days** in any one (1) week; provided, however, that upon application of any **Contractor**, the **Commissioner** shall have first certified to the Commissioner of Labor of the State of New York (hereinafter "Commissioner of Labor") that such public **Work** is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public; and provided, further, that such Commissioner of Labor shall have determined that such an emergency does in fact exist as provided in Labor Law Section 220.2.

37.2.3 Failure of the **Commissioner** to make such a certification to the Commissioner of Labor shall not entitle the **Contractor** to damages for delay or for any cause whatsoever.

37.2.4 Prevailing Rate of Wages: The wages to be paid for a legal day's **Work** to laborers, workers, or mechanics employed upon the **Work** contemplated by this **Contract** or upon any materials to be used thereon shall not be less than the "prevailing rate of wage" as defined in Labor Law Section 220, and as fixed by the **Comptroller** in the attached Schedule of Wage Rates and in updated schedules thereof. The prevailing wage rates and supplemental benefits to be paid are those in effect at the time the **Work** is being performed.

37.2.5 Requests for interpretation or correction in the Information for Bidders includes all requests for clarification of the classification of trades to be employed in the performance of the **Work** under this **Contract**. In the event that a trade not listed in the **Contract** is in fact employed during the performance of this **Contract**, the **Contractor** shall be required to obtain from the **Agency** the prevailing wage rates and supplementary benefits for the trades used and to complete the performance of this **Contract** at the price at which the **Contract** was awarded.

37.2.6 Minimum Wages: Except for employees whose wage is required to be fixed pursuant to Labor Law Section 220, all persons employed by the **Contractor** and any **Subcontractor** in the manufacture or furnishing of the supplies, materials, or equipment, or the furnishing of work, labor, or services, used in the performance of this **Contract**, shall be paid, without subsequent deduction or rebate unless expressly authorized by **Law**, not less than the sum mandated by **Law**.

37.3 Working Conditions: No part of the **Work**, labor or services shall be performed or rendered by the **Contractor** in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this **Contract**. Compliance with the safety, sanitary, and factory inspection **Laws** of the state in which the **Work** is to be performed shall be prima facie evidence of compliance with this Article 37.3.

37.4 Prevailing Wage Enforcement: The **Contractor** agrees to pay for all costs incurred by the **City** in enforcing prevailing wage requirements, including the cost of any investigation conducted by or on behalf of the **Agency** or the **Comptroller,** where the **City** discovers a failure to comply with any of the requirements of this Article 37 by the **Contractor** or its **Subcontractor(s)**. The **Contractor** also agrees that, should it fail or refuse to pay for any such investigation, the **Agency** is hereby authorized to deduct from a **Contractor's** account an amount equal to the cost of such investigation.

37.4.1 The Labor Law Section 220 and Section 220-d, as amended, provide that this **Contract** shall be forfeited and no sum paid for any **Work** done hereunder on a second conviction for willfully paying less than:

37.4.1(a) The stipulated prevailing wage scale as provided in Labor Law section 220, as amended, or

37.4.1(b) The stipulated minimum hourly wage scale as provided in Labor Law section 220-d, as amended.

37.4.2 For any breach or violation of either working conditions (Article 37.3) or minimum wages (Article 37.2.6) provisions, the party responsible therefor shall be liable to the **City** for liquidated damages, which may be withheld from any amounts due on any contracts with the **City** of such party responsible, or may be recovered in actions brought by the **City**

Corporation Counsel in the name of the **City**, in addition to damages for any other breach of this **Contract**, for a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of this **Contract**. In addition, the **Commissioner** shall have the right to cancel contracts and enter into other contracts for the completion of the original contract, with or without public letting, and the original **Contractor** shall be liable for any additional cost. All sums withheld or recovered as deductions, rebates, refunds, or underpayment of wages hereunder, shall be held in a special deposit account and shall be paid without interest, on order of the **Comptroller**, directly to the employees who have been paid less than minimum rates of pay as set forth herein and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within two (2) years from the date of actual notice to the **Contractor** of the withholding or recovery of such sums by the **City**.

37.4.3 A determination by the **Comptroller** that a **Contractor** and/or its **Subcontractor** willfully violated Labor Law Section 220 will be forwarded to the **City's** five District Attorneys for review.

37.4.4 The **Contractor's** or **Subcontractor's** noncompliance with this Article 37.4 and Labor Law Section 220 may result in an unsatisfactory performance evaluation and the **Comptroller** may also find and determine that the **Contractor** or **Subcontractor** willfully violated the New York Labor **Law**.

37.4.4(a) An unsatisfactory performance evaluation for noncompliance with this Article 37.4 may result in a determination that the **Contractor** is a non-responsible bidder on subsequent procurements with the **City** and thus a rejection of a future award of a contract with the **City**, as well as any other sanctions provided for by **Law**.

37.4.4(b) Labor Law Section 220-b, as amended, provides that when two (2) final determinations have been rendered against a **Contractor** or **Subcontractor** within any consecutive six (6) year period determining that such **Contractor** or **Subcontractor** has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with the Labor Law and this Article 37.4, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public works projects are rendered simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the second final determination. If the final determination involves the falsification of payroll records or the kickback of wages or supplements, the **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the first final determination.

37.4.4(c) Labor Law Section 220, as amended, provides that the **Contractor** or **Subcontractor** found to have violated this Article 37.4 may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

37.5 The **Contractor** and its **Subcontractors** shall within ten (10) **Days** after mailing of a Notice of Award or written order, post in prominent and conspicuous places in each and every plant, factory, building, and structure where employees of the **Contractor** and its **Subcontractors** engaged in the

performance of this **Contract** are employed, notices furnished by the **City**, in relation to prevailing wages and supplements, minimum wages, and other stipulations contained in Sections 220 and 220-h of the Labor Law, and the **Contractor** and its **Subcontractors** shall continue to keep such notices posted in such prominent and conspicuous places until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services required to be furnished or rendered under this **Contract**.

37.6 The **Contractor** shall strictly comply with all of the provisions of Articles 37.6.1 through 37.6.5, and provide for all workers, laborers or mechanics in its employ, the following:

37.6.1 Notices Posted At **Site**: Post, in a location designated by the **City**, schedules of prevailing wages and supplements for this **Project**, a copy of all re-determinations of such schedules for the **Project**, the Workers' Compensation **Law** Section 51 notice, all other notices required by **Law** to be posted at the **Site**, the **City** notice that this **Project** is a public works project on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the **City** directs the **Contractor** to post. The **Contractor** shall provide a surface for such notices which is satisfactory to the **City**. The **Contractor** shall maintain and keep current such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The **Contractor** shall post such notices before commencing any **Work** on the **Site** and shall maintain such notices until all **Work** on the **Site** is complete; and

37.6.2 Daily **Site** Sign-in Sheets: Maintain daily **Site** sign-in sheets, and require that **Subcontractors** maintain daily **Site** sign-in sheets for its employees, which include blank spaces for an employee's name to be both printed and signed, job title, date started and Social Security number, the time the employee began work and the time the employee left work, until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services to be furnished or rendered under this **Contract** unless exception is granted by the **Comptroller** upon application by the **Agency**. In the alternative, subject to the approval of the **CCPO**, the **Contractor** and **Subcontractor** may maintain an electronic or biometric sign-in system, which provides the information required by this Article 37.6.2; and

37.6.3 Individual Employee Information Notices: Distribute a notice to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public works project on which each worker, laborer or mechanic is entitled to receive the prevailing rate of wages and supplements for the occupation at which he or she is working. If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand ($250,000) dollars, such notice shall also include a statement that each worker, laborer or mechanic must be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration. Such notice shall be distributed to each worker before he or she starts performing any **Work** of this **Contract** and with the first paycheck after July first of each year. "Worker, laborer or mechanic" includes employees of the **Contractor** and all **Subcontractors** and all employees of suppliers entering the **Site**. At the time of distribution, the **Contractor** shall have each worker, laborer or mechanic sign a statement, in a form provided by the **Agency**, certifying that the worker has received the notice required by this Article 37.6.3, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3(a) The **Contractor** and each **Subcontractor** shall notify each worker, laborer or mechanic employed under this **Contract** in writing of the prevailing rate of

wages for their particular job classification. Such notification shall be given to every worker, laborer, and mechanic on their first pay stub and with every pay stub thereafter; and

37.6.4 **Site** Laminated Identification Badges: The **Contractor** shall provide laminated identification badges which include a photograph of the worker's, laborer's or mechanic's face and indicate the worker's, laborer's or mechanic's name, trade, employer's name, and employment starting date (month/day/year). Further, the **Contractor** shall require as a condition of employment on the **Site**, that each and every worker, laborer or mechanic wear the laminated identification badge at all times and that it may be seen by any representative of the **City**. The **Commissioner** may grant a written waiver from the requirement that the laminated identification badge include a photograph if the **Contractor** demonstrates that the identity of an individual wearing a laminated identification badge can be easily verified by another method; and

37.6.5 Language Other Than English Used On **Site**: Provide the **ACCO** notice when three (3) or more employees (worker and/or laborer and/or mechanic) on the **Site**, at any time, speak a language other than English. The **ACCO** will then provide the **Contractor** the notices described in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under this Article 37; and

37.6.6 Provision of Records: The **Contractor** and **Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller,** such records as are required to be kept by this Article 37.6; and

37.6.7 The **Contractor** and **Subcontractor(s)** shall pay employees by check or direct deposit. If this **Contract** is for an amount greater than one million ($1,000,000) dollars, checks issued by the **Contractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**). For any subcontract for an amount greater than seven hundred fifty thousand ($750,000) dollars, checks issued by a **Subcontractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**); and

37.6.8 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 37.6.1 through 37.6.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

37.7 The **Contractor** and its **Subcontractors** shall keep such employment and payroll records as are required by Section 220 of the Labor Law. The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of this Article 37.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract.**

37.8 At the time the **Contractor** makes application for each partial payment and for final payment, the **Contractor** shall submit to the **Commissioner** a written payroll certification, in the form provided by this **Contract**, of compliance with the prevailing wage, minimum wage, and other provisions and stipulations required by Labor Law Section 220 and of compliance with the training requirements of Labor Law Section 220-h set forth in Article 35.2. This certification of compliance shall be a condition precedent to payment and no payment shall be made to the **Contractor** unless and until each such certification shall have been submitted to and received by the **Commissioner**.

37.9 This **Contract** is executed by the **Contractor** with the express warranty and representation that the **Contractor** is not disqualified under the provisions of Section 220 of the Labor Law from the award of the **Contract**.

37.10 Any breach or violation of any of the foregoing shall be deemed a breach or violation of a material provision of this **Contract**, and grounds for cancellation thereof by the **City**.

ARTICLE 38. PAYROLL REPORTS

38.1 The **Contractor** and its **Subcontractor(s)** shall maintain on the **Site** during the performance of the **Work** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain and shall submit such original payrolls or transcripts, subscribed and affirmed by it as true, within thirty (30) **Days** after issuance of its first payroll, and every thirty (30) **Days** thereafter, pursuant to Labor Law Section 220(3-a)(a)(iii). The **Contractor** and **Subcontractor(s)** shall submit such original payrolls or transcripts along with each and every payment requisition. If payment requisitions are not submitted at least once a month, the **Contractor** and its **Subcontractor(s)** shall submit original payrolls and transcripts both along with its payment requisitions and independently of its payment requisitions.

38.2 The **Contractor** shall maintain payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract**. If such payrolls and transcripts are maintained outside of New York City after the completion of the **Work** and their production is required pursuant to this Article 38, the **Contractor** shall produce such records in New York City upon request by the City.

38.3 The **Contractor** and **Subcontractor(s)** shall comply with any written order, direction, or request made by the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)**, or the **Comptroller**, to provide to the requesting party any of the following information and/or records within five (5) **Days** of such written order, direction, or request:

38.3.1 Such original payrolls or transcripts thereof subscribed and affirmed by it as true and the statements signed by each worker pursuant to this Chapter VIII; and/or

38.3.2 Attendance sheets for each **Day** on which any employee of the **Contractor** and/or any of the **Subcontractor(s)** performed **Work** on the **Site**, which attendance sheet shall be in a form acceptable to the **Agency** and shall provide information acceptable to the **Agency** to identify each such employee; and/or

38.3.3 Any other information to satisfy the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)** or the **Comptroller**, that this Chapter VIII and the Labor Law, as to the hours of employment and prevailing rates of wages and/or supplemental benefits, are being observed.

38.4 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 38.1 and/or 38.2 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

ARTICLE 39. DUST HAZARDS

39.1 Should a harmful dust hazard be created in performing the **Work** of this **Contract**, for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals

of the City of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this **Contract** voidable at the sole discretion of the **City**.

CHAPTER IX: PARTIAL AND FINAL PAYMENTS

ARTICLE 40. CONTRACT PRICE

40.1 The **City** shall pay, and the **Contractor** agrees to accept, in full consideration for the **Contractor's** performance of the **Work** subject to the terms and conditions hereof, the lump sum price or unit prices for which this **Contract** was awarded, plus the amount required to be paid for any **Extra Work** ordered by the **Commissioner** under Article 25, less credit for any **Work** omitted pursuant to Article 29.

ARTICLE 41. BID BREAKDOWN ON LUMP SUM

41.1 Within fifteen (15) **Days** after the commencement date specified in the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Resident Engineer**, the **Contractor** shall submit to the **Resident Engineer** a breakdown of its bid price, or of lump sums bid for items of the **Contract**, showing the various operations to be performed under the **Contract**, as directed in the progress schedule required under Article 9, and the value of each of such operations, the total of such items to equal the lump sum price bid. Said breakdown must be approved in writing by the **Resident Engineer**.

41.2 No partial payment will be approved until the **Contractor** submits a bid breakdown that is acceptable to the **Resident Engineer**.

41.3 The **Contractor** shall also submit such other information relating to the bid breakdown as directed by the **Resident Engineer**. Thereafter, the breakdown may be used only for checking the **Contractor's** applications for partial payments hereunder, but shall not be binding upon the **City**, the **Commissioner**, or the **Engineer** for any purpose whatsoever.

ARTICLE 42. PARTIAL PAYMENTS

42.1 From time to time as the **Work** progresses satisfactorily, but not more often than once each calendar month (except where the **Commissioner** approves in writing the submission of invoices on a more frequent basis and for invoices relating to **Work** performed pursuant to a change order), the **Contractor** may submit to the **Engineer** a requisition for a partial payment in the prescribed form, which shall contain an estimate of the quantity and the fair value of the **Work** done during the payment period.

42.2 Partial payments may be made for materials, fixtures, and equipment in advance of their actual incorporation in the **Work**, as the **Commissioner** may approve, and upon the terms and conditions set forth in the General Conditions.

42.3 The **Contractor** shall also submit to the **Commissioner** in connection with every application for partial payment a verified statement in the form prescribed by the **Comptroller** setting forth the information required under Labor Law Section 220-a.

42.4 Within thirty (30) **Days** after receipt of a satisfactory payment application, and within sixty (60) **Days** after receipt of a satisfactory payment application in relation to **Work** performed pursuant to a change order, the **Engineer** will prepare and certify, and the **Commissioner** will approve, a voucher for a partial payment in the amount of such approved estimate, less any and all deductions authorized to be made by the **Commissioner** under the terms of this **Contract** or by **Law**.

ARTICLE 43. PROMPT PAYMENT

43.1 The Prompt Payment provisions of the **PPB** Rules in effect at the time of the bid will be applicable to payments made under this **Contract**. The provisions require the payment to the **Contractor** of interest on payments made after the required payment date, except as set forth in the **PPB** Rules.

43.2 The **Contractor** shall submit a proper invoice to receive payment, except where the **Contract** provides that the **Contractor** will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

43.3 Determination of interest due will be made in accordance with the **PPB** Rules.

43.4 If the **Contractor** is paid interest, the proportionate share(s) of that interest shall be forwarded by the **Contractor** to its **Subcontractor(s)**.

43.5 The **Contractor** shall pay each **Subcontractor** or **Materialman** not later than seven (7) **Days** after receipt of payment out of amounts paid to the **Contractor** by the **City** for **Work** performed by the **Subcontractor** or **Materialman** under this **Contract**.

> 43.5.1 If **Contractor** fails to make any payment to any **Subcontractor** or **Materialman** within seven (7) **Days** after receipt of payment by the **City** pursuant to this Article 43.5, then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at the rate of interest in effect on the date such payment is made by the **Contractor** computed in accordance with Section 756-b (1)(b) of the New York General Business Law. Accrual of interest shall commence on the **Day** immediately following the expiration of the seventh **Day** following receipt of payment by the **Contractor** from the **City** and shall end on the date on which payment is made.

43.6 The **Contractor** shall include in each of its subcontracts a provision requiring each **Subcontractor** to make payment to each of its **Subcontractors** or **Materialmen** for **Work** performed under this **Contract** in the same manner and within the same time period set forth above.

ARTICLE 44. SUBSTANTIAL COMPLETION PAYMENT

44.1 The **Contractor** shall submit with the **Substantial Completion** requisition:

> 44.1.1 A final verified statement of any pending Article 27 disputes in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the

Contractor claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay.

44.1.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 44.1.1(a) is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor** upon acceptance of the **Substantial Completion** payment pursuant to this Article 44, will have waived any such claims.

44.1.2 A **Final Approved Punch List**.

44.1.3 Where required, a request for an extension of time to achieve **Substantial Completion** or final extension of time.

44.2 The **Commissioner** shall issue a voucher calling for payment of any part or all of the balance due for **Work** performed under the **Contract**, including monies retained under Article 21, less any and all deductions authorized to be made by the **Commissioner**, under this **Contract** or by **Law**, and less twice the amount the **Commissioner** considers necessary to ensure the completion of the balance of the **Work** by the **Contractor**. Such a payment shall be considered a partial and not a final payment. No **Substantial Completion** payment shall be made under this Article 44 where the **Contractor** failed to complete the **Work** within the time fixed for such completion in the Schedule A of the General Conditions, or within the time to which completion may have been extended, until an extension or extensions of time for the completion of **Work** have been acted upon pursuant to Article 13.

44.3 No further partial payments shall be made to the **Contractor** after **Substantial Completion**, except the **Substantial Completion** payment and payment pursuant to any **Contractor's** requisition that were properly filed with the **Commissioner** prior to the date of **Substantial Completion**; however, the **Commissioner** may grant a waiver for further partial payments after the date of **Substantial Completion** to permit payments for change order **Work** and/or release of retainage and deposits pursuant to Articles 21 and 24. Such waiver shall be in writing.

44.4 The **Contractor** acknowledges that nothing contained in this Article 44 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 45. FINAL PAYMENT

45.1 After completion and **Final Acceptance** of the **Work**, the **Contractor** shall submit all required certificates and documents, together with a requisition for the balance claimed to be due under the **Contract**, less the amount authorized to be retained for maintenance under Article 24. Such submission shall be within 90 days of the date of the **Commissioner's** written determination of **Final Acceptance**, or within such additional time as may be granted by the **Commissioner** in writing. If the **Contractor** fails to submit all required certificates and documents within the time allowed, no payment of the balance claimed shall be made to the **Contractor** and the **Contractor** shall be deemed to have forfeited its right to payment of any balance claimed. A verified statement similar to that required in connection with applications for partial payments shall also be submitted to the **Commissioner**.

45.2 Amended Verified Statement of Claims: The **Contractor** shall also submit with the final requisition any amendments to the final verified statement of any pending dispute resolution procedures in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) that have occurred subsequent to **Substantial Completion**, setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each such item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay. With reference to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 45.2, is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor**, upon acceptance of the Final Payment pursuant to Article 46, will have waived any such claims.

45.3 Preparation of Final Voucher: Upon determining the balance due hereunder other than on account of claims, the **Engineer** will prepare and certify, for the Commissioner's approval, a voucher for final payment in that amount less any and all deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**. In the case of a lump sum **Contract**, the **Commissioner** shall certify the voucher for final payment within thirty (30) **Days** from the date of completion and acceptance of the **Work**, provided all requests for extensions of time have been acted upon.

45.3.1 All prior certificates and vouchers upon which partial payments were made, being merely estimates made to enable the **Contractor** to prosecute the **Work** more advantageously, shall be subject to correction in the final voucher, and the certification of the **Engineer** thereon and the approval of the **Commissioner** thereof, shall be conditions precedent to the right of the **Contractor** to receive any money hereunder. Such final voucher shall be binding and conclusive upon the **Contractor**.

45.3.2 Payment pursuant to such final voucher, less any deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**, shall constitute the final payment, and shall be made by the **Comptroller** within thirty (30) **Days** after the filing of such voucher in his/her office.

45.4 The **Contractor** acknowledges that nothing contained in this Article 45 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 46. ACCEPTANCE OF FINAL PAYMENT

46.1 The acceptance by the **Contractor**, or by anyone claiming by or through it, of the final payment, whether such payment be made pursuant to any judgment of any court, or otherwise, shall constitute and operate as a release of the **City** from any and all claims of and liability to the **Contractor** for anything heretofore done or furnished for the **Contractor** relating to or arising out of this **Contract** and the **Work** done hereunder, and for any prior act, neglect or default on the part of the **City** or any of its officials, agents or employees, excepting only a claim against the **City** for the amounts deducted or retained in accordance with the terms and provisions of this **Contract** or by **Law**, and excepting any claims, not otherwise waived, or any pending dispute resolution procedures which are contained in the

verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45.

46.2 The **Contractor** is warned that the execution by it of a release, in connection with the acceptance of the final payment, containing language purporting to reserve claims other than those herein specifically excepted from the operation of this Article 46, or those for amounts deducted by the **Commissioner** from the final requisition or from the final payment as certified by the **Engineer** and approved by the **Commissioner**, shall not be effective to reserve such claims, anything stated to the **Contractor** orally or in writing by any official, agent or employee of the **City** to the contrary notwithstanding.

46.3 Should the **Contractor** refuse to accept the final payment as tendered by the **Comptroller**, it shall constitute a waiver of any right to interest thereon.

46.4 The **Contractor**, however, shall not be barred by this Article 46 from commencing an action for breach of **Contract** to the extent permitted by **Law** and by the terms of the **Contract** for any claims that are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45 or that arose after submission of the final payment requisition, provided that a detailed and verified statement of claim is served upon the contracting **Agency** and **Comptroller** not later than forty (40) **Days** after the making of such final payment by electronic funds transfer (EFT) or the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items.

ARTICLE 47. APPROVAL BY PUBLIC DESIGN COMMISSION

47.1 All works of art, including paintings, mural decorations, stained glass, statues, bas-reliefs, and other sculptures, monuments, fountains, arches, and other structures of a permanent character intended for ornament or commemoration, and every design of the same to be used in the performance of this **Contract**, and the design of all bridges, approaches, buildings, gates, fences, lamps, or structures to be erected, pursuant to the terms of this **Contract**, shall be submitted to the Art Commission, d/b/a the Public Design Commission of the City of New York, and shall be approved by the Public Design Commission prior to the erection or placing in position of the same. The final payment shall not become due or payable under this **Contract** unless and until the Public Design Commission shall certify that the design for the **Work** herein contracted for has been approved by the said Public Design Commission, and that the same has been executed in substantial accordance with the design so approved, pursuant to the provisions of Chapter 37, Section 854 of the **City** Charter, as amended.

CHAPTER X: CONTRACTOR'S DEFAULT

ARTICLE 48. COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT

48.1 In addition to those instances specifically referred to in other Articles herein, the **Commissioner** shall have the right to declare the **Contractor** in default of this **Contract** if:

48.1.1 The **Contractor** fails to commence **Work** when notified to do so by the **Commissioner**; or if

48.1.2 The **Contractor** shall abandon the **Work**; or if

48.1.3 The **Contractor** shall refuse to proceed with the **Work** when and as directed by the **Commissioner**; or if

48.1.4 The **Contractor** shall, without just cause, reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the **Commissioner**, to complete the **Work** in accordance with the progress schedule; or if

48.1.5 The **Contractor** shall fail or refuse to increase sufficiently such working force when ordered to do so by the **Commissioner**; or if

48.1.6 The **Contractor** shall sublet, assign, transfer, convert or otherwise dispose of this **Contract** other than as herein specified; or sell or assign a majority interest in the **Contractor**; or if

48.1.7 The **Contractor** fails to secure and maintain all required insurance; or if

48.1.8 A receiver or receivers are appointed to take charge of the **Contractor's** property or affairs; or if

48.1.9 The **Commissioner** shall be of the opinion that the **Contractor** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the **Work**, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

48.1.10 The **Commissioner** shall be of the opinion that the **Contractor** is or has been willfully or in bad faith violating any of the provisions of this **Contract**; or if

48.1.11 The **Commissioner** shall be of the opinion that the **Work** cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the **Commissioner's** opinion, attributable to conditions within the **Contractor's** control; or if

48.1.12 The **Work** is not completed within the time herein provided therefor or within the time to which the **Contractor** may be entitled to have such completion extended; or if

48.1.13 Any statement or representation of the **Contractor** in the **Contract** or in any document submitted by the **Contractor** with respect to the **Work**, the **Project**, or the **Contract** (or for purposes of securing the **Contract**) was untrue or incorrect when made; or if

48.1.14 The **Contractor** or any of its officers, directors, partners, five (5%) percent shareholders, principals, or other persons substantially involved in its activities, commits any of the acts or omissions specified as the grounds for debarment in the **PPB** Rules.

48.2 Before the **Commissioner** shall exercise his/her right to declare the **Contractor** in default, the **Commissioner** shall give the **Contractor** an opportunity to be heard, upon not less than two (2) **Days'** notice.

ARTICLE 49. EXERCISE OF THE RIGHT TO DECLARE DEFAULT

49.1 The right to declare the **Contractor** in default for any of the grounds specified or referred to in Article 48 shall be exercised by sending the **Contractor** a notice, signed by the **Commissioner**, setting forth the ground or grounds upon which such default is declared (hereinafter referred to as a "Notice of Default").

49.2 The **Commissioner's** determination that the **Contractor** is in default shall be conclusive, final, and binding on the parties and such a finding shall preclude the **Contractor** from commencing a plenary action for any damages relating to the **Contract**. If the **Contractor** protests the determination of the **Commissioner**, the **Contractor** may commence an action in a court of competent jurisdiction of the State of New York under Article 78 of the New York Civil Practice Law and Rules.

ARTICLE 50. QUITTING THE SITE

50.1 Upon receipt of such notice the **Contractor** shall immediately discontinue all further operations under this **Contract** and shall immediately quit the **Site**, leaving untouched all plant, materials, equipment, tools, and supplies then on the **Site**.

ARTICLE 51. COMPLETION OF THE WORK

51.1 The **Commissioner**, after declaring the **Contractor** in default, may then have the **Work** completed by such means and in such manner, by contract with or without public letting, or otherwise, as he/she may deem advisable, utilizing for such purpose such of the **Contractor's** plant, materials, equipment, tools, and supplies remaining on the **Site**, and also such **Subcontractors**, as he/she may deem advisable.

51.2 After such completion, the **Commissioner** shall make a certificate stating the expense incurred in such completion, which shall include the cost of re-letting and also the total amount of liquidated damages (at the rate provided for in the **Contract**) from the date when the **Work** should have been completed by the **Contractor** in accordance with the terms hereof to the date of actual completion of the **Work**. Such certificate shall be binding and conclusive upon the **Contractor**, its sureties, and any person claiming under the **Contractor**, as to the amount thereof.

51.3 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, and any liquidated damages assessed against the **Contractor**, shall be charged against and deducted out of monies which are earned by the **Contractor** prior to the date of default. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

ARTICLE 52. PARTIAL DEFAULT

52.1 In case the **Commissioner** shall declare the **Contractor** in default as to a part of the **Work** only, the **Contractor** shall discontinue such part, shall continue performing the remainder of the **Work** in strict conformity with the terms of this **Contract**, and shall in no way hinder or interfere with any **Other Contractor(s)** or persons whom the **Commissioner** may engage to complete the **Work** as to which the **Contractor** was declared in default.

52.2 The provisions of this Chapter relating to declaring the **Contractor** in default as to the entire **Work** shall be equally applicable to a declaration of partial default, except that the **Commissioner** shall be entitled to utilize for completion of the part of the **Work** as to which the **Contractor** was declared in default only such plant, materials, equipment, tools, and supplies as had been previously used by the **Contractor** on such part.

ARTICLE 53. PERFORMANCE OF UNCOMPLETED WORK

53.1 In completing the whole or any part of the **Work** under the provisions of this Chapter X, the **Commissioner** shall have the power to depart from or change or vary the terms and provisions of this **Contract**, provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the **Commissioner's** certificate of the cost of completion referred to in Article 51, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the **Contractor** hereunder but for its default.

ARTICLE 54. OTHER REMEDIES

54.1 In addition to the right to declare the **Contractor** in default pursuant to this Chapter X, the **Commissioner** shall have the absolute right, in his/her sole discretion and without a hearing, to complete or cause to be completed in the same manner as described in Articles 51 and 53, any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List**. A written notice of the exercise of this right shall be sent to the **Contractor** who shall immediately quit the **Site** in accordance with the provisions of Article 50.

54.2 The expense of completion permitted under Article 54.1, including any and all related and incidental costs, as so certified by the **Commissioner**, shall be charged against and deducted out of monies which have been earned by the **Contractor** prior to the date of the exercise of the right set forth in Article 54.1; the balance of such monies, if any, subject to the other provisions of this **Contract**, to be paid to the **Contractor** without interest after such completion. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

54.3 The previous provisions of this Chapter X shall be in addition to any and all other remedies available under **Law** or in equity.

54.4 The exercise by the **City** of any remedy set forth herein shall not be deemed a waiver by the **City** of any other legal or equitable remedy contained in this **Contract** or provided under **Law**.

CHAPTER XI: MISCELLANEOUS PROVISIONS

ARTICLE 55. CONTRACTOR'S WARRANTIES

55.1 In consideration of, and to induce, the award of this **Contract** to the **Contractor**, the **Contractor** represents and warrants:

55.1.1 That it is financially solvent, sufficiently experienced and competent to perform the **Work**; and

55.1.2 That the facts stated in its bid and the information given by it pursuant to the Information for Bidders is true and correct in all respects; and

55.1.3 That it has read and complied with all requirements set forth in the **Contract**.

ARTICLE 56. CLAIMS AND ACTIONS THEREON

56.1 Any claim, that is not subject to dispute resolution under the **PPB** Rules or this **Contract**, against the **City** for damages for breach of **Contract** shall not be made or asserted in any action, unless the **Contractor** shall have strictly complied with all requirements relating to the giving of notice and of information with respect to such claims, as herein before provided.

56.2 Nor shall any action be instituted or maintained on any such claims unless such action is commenced within six (6) months after **Substantial Completion**; except that:

56.2.1 Any claims arising out of events occurring after **Substantial Completion** and before **Final Acceptance** of the **Work** shall be asserted within six (6) months of **Final Acceptance** of the **Work**;

56.2.2 If the **Commissioner** exercises his/her right to complete or cause to complete any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List** pursuant to Article 54, any such action shall be commenced within six (6) months from the date the **Commissioner** notifies the **Contractor** in writing that he/she has exercised such right. Any claims for monies deducted, retained or withheld under the provisions of this **Contract** shall be asserted within six (6) months after the date when such monies otherwise become due and payable hereunder; and

56.2.3 If the **Commissioner** exercises his/her right to terminate the **Contract** pursuant to Article 64, any such action shall be commenced within six (6) months of the date the **Commissioner** exercises said right.

ARTICLE 57. INFRINGEMENT

57.1 The **Contractor** shall be solely responsible for and shall defend, indemnify, and hold the **City** harmless from any and all claims (even if the allegations of the lawsuit are without merit) and judgments for damages and from costs and expenses to which the **City** may be subject to or which it may suffer or incur allegedly arising out of or in connection with any infringement by the **Contractor** of any copyright, trade secrets, trademark or patent rights or any other property or personal right of any third party by the **Contractor** and/or its **Subcontractors** in the performance or completion of the **Work**. Insofar as the facts or **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent permitted by **Law**.

ARTICLE 58. NO CLAIM AGAINST OFFICIALS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any official, agent or employee of the **City** for, or on account of, anything done or omitted to be done in connection with this **Contract.**

ARTICLE 59. SERVICE OF NOTICES

59.1 The **Contractor** hereby designates the business address, fax number, and email address specified in its bid, as the place where all notices, directions or other communications to the **Contractor** may be delivered, or to which they may be mailed. Any notice, direction, or communication from either party to the other shall be in writing and shall be deemed to have been given when (i) delivered personally; (ii) sent by certified mail, return receipt requested; (iii) delivered by overnight or same day courier service in a properly addressed envelope with confirmation; or (iv) sent by fax or email and, unless receipt of the fax or e-mail is acknowledged by the recipient by fax or e-mail, deposited in a post office box regularly maintained by the United States Postal Service in a properly addressed, postage pre-paid envelope.

59.2 **Contractor's** notice address, email address, or fax number may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor**, and delivered to the **Commissioner.**

59.3 Nothing herein contained shall, however, be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the **Contractor** personally, or, if the **Contractor** is a corporation, upon any officer thereof.

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

60.1 If this **Contract** contains any unlawful provision not an essential part of the **Contract** and which shall not appear to have been a controlling or material inducement to the making thereof, the same shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the **Contract** without affecting the binding force of the remainder.

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

61.1 It is the intent and understanding of the parties to this **Contract** that each and every provision of **Law** required to be inserted in this **Contract** shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted, or is not inserted in correct form, then this **Contract** shall forthwith upon the application of either party be amended by such insertion so as to comply strictly with the **Law** and without prejudice to the rights of either party hereunder.

ARTICLE 62. TAX EXEMPTION

62.1 The **City** is exempt from payment of Federal, State, and local taxes, including sales and compensating use taxes of the State of New York and its cities and counties on all tangible personal property sold to the **City** pursuant to the provisions of this **Contract.** These taxes are not to be included in bids. However, this exemption does not apply to tools, machinery, equipment or other property leased by or to the **Contractor**, **Subcontractor** or **Materialman** or to tangible personal property which, even

though it is consumed, is not incorporated into the completed **Work** (consumable supplies) and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**. The **Contractor** and its **Subcontractors** and **Materialmen** shall be responsible for and pay any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property and upon all such consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all tangible personal property, other than consumable supplies and other tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**, that is required, necessary or proper for or incidental to the construction of the **Project** covered by this **Contract**. The sum paid under this **Contract** for such tangible personal property shall be in full payment and consideration for the sale of such tangible personal property.

62.2.1 The **Contractor** agrees to construct the **Project** and to perform all **Work**, labor and services rendered, necessary, proper or incidental thereto for the sum shown in the bid for the performance of such **Work**, labor, and services, and the sum so paid pursuant to this **Contract** for such **Work**, labor, and services, shall be in full consideration for the performance by the **Contractor** of all its duties and obligations under this **Contract** in connection with said **Work,** labor, and services.

62.3 20 NYCRR Section 541.3(d) provides that a **Contractor**'s purchases of tangible personal property that is either incorporated into real property owned by a governmental entity or purchased for and sold to a governmental entity are exempt from sales and use tax. The **City** shall not pay sales tax for any such tangible personal property that it purchases from the **Contractor** pursuant to the **Contract.** With respect to such tangible personal property, the **Contractor**, at the request of the **City**, shall furnish to the **City** such bills of sale and other instruments as may be required by the **City**, properly executed, acknowledged and delivered assuring to the **City** title to such tangible personal property, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such tangible personal property as the property of the **City**.

62.4 Title to all tangible personal property to be sold by the **Contractor** to the **City** pursuant to the provisions of the **Contract** shall immediately vest in and become the sole property of the **City** upon delivery of such tangible personal property to the **Site.** Notwithstanding such transfer of title, the **Contractor** shall have the full and continuing responsibility to install such tangible personal property in accordance with the provisions of this **Contract**, protect it, maintain it in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional tangible personal property in place of any that may be lost, stolen or rendered unusable, without cost to the **City**, until such time as the **Work** covered by the **Contract** is fully accepted by the **City**. Such transfer of title shall in no way affect any of the **Contractor's** obligations hereunder. In the event that, after title has passed to the **City**, any of the tangible personal property is rejected as being defective or otherwise unsatisfactory, title to all such tangible personal property shall be deemed to have been transferred back to the **Contractor.**

62.5 The purchase by **Subcontractors** or **Materialmen** of tangible personal property to be sold hereunder shall be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid sales and compensating use taxes, provided that the subcontracts and purchase agreements provide for the resale of such tangible personal property and that such subcontracts and purchase agreements are in a form similar to this **Contract** with respect to the separation of the sale of consumable supplies and tangible personal property that the

Contractor is required to remove from the **Site** during or upon completion of the **Work** from the **Work** and labor, services, and any other matters to be provided, and provided further that the subcontracts and purchase agreements provide separate prices for tangible personal property and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for tangible personal property from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and **Materialmen** shall furnish a **Contractor** Exempt Purchase Certificate to all persons, firms or corporations from which they purchase tangible personal property for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this Article 62 shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this Article 62 shall control.

ARTICLE 63. INVESTIGATION(S) CLAUSE

63.1 The parties to this **Contract** agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a United States, a State of New York (State) or a **City** governmental agency or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental agency that is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit or license that is the subject of the investigation, audit or inquiry.

63.2 If any person who has been advised that his/her statement, and any information from such statement, will not be used against him/her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision or public authority thereof, or the Port Authority of New York and New Jersey, or any local development corporation within the **City**, or any public benefit corporation organized under the **Laws** of the State of New York, or;

63.3 If any person refuses to testify for a reason other than the assertion of his/her privilege against self incrimination in an investigation, audit or inquiry conducted by a **City** or State governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental agency that is a party in interest in, and is seeking testimony concerning the award of, or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision thereof or any local development corporation within the **City**, then;

63.4 The **Commissioner** whose **Agency** is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license shall convene a hearing, upon not less than five (5) **Days'** written notice to the parties involved to determine if any penalties should attach for the failure of a person to testify.

63.5 If any non-governmental party to the hearing requests an adjournment, the **Commissioner** who convened the hearing may, upon granting the adjournment, suspend any contract, lease, permit, or license, pending the final determination pursuant to Article 63.7 without the **City** incurring any penalty or damages for delay or otherwise.

63.6 The penalties which may attach after a final determination by the **Commissioner** may include but shall not exceed:

63.6.1 The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any contract, lease, permit or license with or from the **City**; and/or

63.6.2 The cancellation or termination of any and all such existing **City** contracts, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this **Contract**, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the **City** incurring any penalty or damages on account of such cancellation or termination; monies lawfully due for goods delivered, work done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the **City**.

63.7 The **Commissioner** shall consider and address in reaching his/her determination and in assessing an appropriate penalty the factors in Articles 63.7.1 and 63.7.2. The **Commissioner** may also consider, if relevant and appropriate, the criteria established in Articles 63.7.3 and 63.7.4, in addition to any other information which may be relevant and appropriate:

63.7.1 The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

63.7.2 The relationship of the person who refused to testify to any entity that is a party to the hearing, including but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility the person has within the entity.

63.7.3 The nexus of the testimony sought to the subject entity and its contracts, leases, permits or licenses with the **City**.

63.7.4 The effect a penalty may have on an unaffiliated and unrelated party or entity that has a significant interest in an entity subject to penalties under Article 63.6, provided that the party or entity has given actual notice to the **Commissioner** upon the acquisition of the interest, or at the hearing called for in Article 63.4, gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity shall present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

63.8 Definitions:

63.8.1 The term "license" or "permit" as used in this Article 63 shall be defined as a license, permit, franchise or concession not granted as a matter of right.

63.8.2 The term "person" as used in this Article 63 shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

63.8.3 The term "entity" as used in this Article 63 shall be defined as any firm, partnership, corporation, association, joint venture, or person that receives monies, benefits, licenses, leases, or permits from or through the **City** or otherwise transacts business with the **City**.

63.8.4 The term "member" as used in this Article 63 shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

63.9 In addition to and notwithstanding any other provision of this **Contract**, the **Commissioner** may in his/her sole discretion terminate this **Contract** upon not less than three (3) **Days'** written notice in the event the **Contractor** fails to promptly report in writing to the **Commissioner** of the Department of Investigations ("DOI") of the **City** any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the **City** or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this **Contract** by the **Contractor**, or affecting the performance of this **Contract**.

ARTICLE 64. TERMINATION BY THE CITY

64.1 In addition to termination pursuant to any other article of this **Contract**, the **Commissioner** may, at any time, terminate this **Contract** by written notice to the **Contractor**. In the event of termination, the **Contractor** shall, upon receipt of such notice, unless otherwise directed by the **Commissioner**:

64.1.1 Stop **Work** on the date specified in the notice;

64.1.2 Take such action as may be necessary for the protection and preservation of the **City's** materials and property;

64.1.3 Cancel all cancelable orders for material and equipment;

64.1.4 Assign to the **City** and deliver to the **Site** or another location designated by the **Commissioner**, any non-cancelable orders for material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract** and not incorporated in the **Work**;

64.1.5 Take no action which will increase the amounts payable by the **City** under this **Contract**.

64.2 In the event of termination by the **City** pursuant to this Article 64, payment to the **Contractor** shall be in accordance with Articles 64.2.1, 64.2.2 or 64.2.3, to the extent that each respective article applies.

64.2.1 Lump Sum Contracts or Items: On all lump sum **Contracts**, or on lump sum items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.1(a) and 64.2.1(b), less all payments previously made pursuant to this **Contract**. On lump sum **Contracts** only, the **City** will also pay the **Contractor** an additional sum as provided in Article 64.2.1(c).

64.2.1(a) For **Work** completed prior to the notice of termination, the **Contractor** shall be paid a pro rata portion of the lump sum bid amount, plus approved change orders, based upon the percent completion of the **Work**, as determined by the

Commissioner. For the purpose of determining the pro rata portion of the lump sum bid amount to which the **Contractor** is entitled, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be dispositive. The **Commissioner's** determination hereunder shall be final, binding, and conclusive.

64.2.1(b) For non-cancelable material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated in the **Work**, the **Contractor** shall be paid the lesser of the following, less salvage value:

64.2.1(b)(i) The Direct Cost, as defined in Article 64.2.4; or

64.2.1(b)(ii) The fair and reasonable value, if less than Direct Cost, of such material and equipment, plus necessary and reasonable delivery costs.

64.2.1(b)(iii) In addition, the **Contractor** shall be paid five (5%) percent of the amount described in Article 64.2.1(b)(i) or Article 64.2.1(b)(ii), whichever applies.

64.2.1(c) Except as otherwise provided in Article 64.2.1(d), on all lump sum **Contracts**, the **Contractor** shall be paid the percentage indicated below applied to the difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to Articles 64.2.1(a) and 64.2.1(b):

64.2.1(c)(i) Five (5%) percent of the first five million ($5,000,000) dollars; and

64.2.1(c)(ii) Three (3%) percent of any amount between five million ($5,000,000) dollars and fifteen million ($15,000,000) dollars; plus

64.2.1(c)(iii) One (1%) percent of any amount over fifteen million ($15,000,000) dollars.

64.2.1(d) In the event the **City** terminates a lump sum **Contract** pursuant to this Article 64 within ninety (90) **Days** after registration of the **Contract** with the **Comptroller**, the **Contractor** shall be paid one (1%) percent of the difference between the lump sum bid amount and the total of all payments made pursuant to this Article 64.2.

64.2.2 Unit Price Contracts or Items: On all unit price **Contracts**, or on unit price items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.2(a) and 64.2.2(b), less all payments previously made pursuant to this **Contract**:

64.2.2(a) For all completed units, the unit price stated in the **Contract**, and

64.2.2(b) For units that have been ordered but are only partially completed, the **Contractor** will be paid:

64.2.2(b)(i) A pro rata portion of the unit price stated in the **Contract** based upon the percent completion of the unit and

64.2.2(b)(ii) For non-cancelable material and equipment, payment will be made pursuant to Article 64.2.1(b).

64.2.3 Time and Materials Contracts or Items Based on Time and Material Records: On all **Contracts** or items in a **Contract** where payment for the **Work** is based on time and material records, the **Contractor** shall be paid in accordance with Article 26, less all payments previously made pursuant to this **Contract**.

64.2.4 Direct Costs: Direct Costs as used in this Article 64.2 shall mean:

64.2.4(a) The actual purchase price of material and equipment, plus necessary and reasonable delivery costs,

64.2.4(b) The actual cost of labor involved in construction and installation at the **Site**, and

64.2.4(c) The actual cost of necessary bonds and insurance purchased pursuant to requirements of this **Contract** less any amounts that have been or should be refunded by the **Contractor's** sureties or insurance carriers.

64.2.4(d) Direct Costs shall not include overhead.

64.3 In no event shall any payments under this Article 64 exceed the **Contract** price for such items.

64.4 All payments pursuant to Article 64 shall be in the nature of liquidated damages and shall be accepted by the **Contractor** in full satisfaction of all claims against the **City**.

64.5 The **City** may deduct or set off against any sums due and payable pursuant to this Article 64, any deductions authorized by this **Contract** or by **Law** (including but not limited to liquidated damages) and any claims it may have against the **Contractor**. The **City's** exercise of the right to terminate the **Contract** pursuant to this Article 64 shall not impair or otherwise effect the **City's** right to assert any claims it may have against the **Contractor** in a plenary action.

64.6 Where the **Work** covered by the **Contract** has been substantially completed, as determined in writing by the **Commissioner**, termination of the **Work** shall be handled as an omission of **Work** pursuant to Articles 29 and 33, in which case a change order will be issued to reflect an appropriate reduction in the **Contract** sum, or if the amount is determined after final payment, such amount shall be paid by the **Contractor**.

ARTICLE 65. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

65.1 This **Contract** shall be deemed to be executed in the **City** regardless of the domicile of the **Contractor**, and shall be governed by and construed in accordance with the **Laws** of the State of New York and the **Laws** of the United States, where applicable.

65.2 The parties agree that any and all claims asserted against the **City** arising under this **Contract** or related thereto shall be heard and determined in the courts of the State of New York ("New York State Courts") located in the **City** and County of New York. To effect this **Contract** and intent, the **Contractor** agrees:

65.2.1 If the **City** initiates any action against the **Contractor** in Federal court or in a New York State Court, service of process may be made on the **Contractor** either in person, wherever such **Contractor** may be found, or by registered mail addressed to the **Contractor** at its address as set forth in this **Contract**, or to such other address as the **Contractor** may provide to the **City** in writing; and

65.2.2 With respect to any action between the **City** and the **Contractor** in a New York State Court, the **Contractor** hereby expressly waives and relinquishes any rights it might otherwise have:

65.2.2(a) To move to dismiss on grounds of forum non conveniens;

65.2.2(b) To remove to Federal Court; and

65.2.2(c) To move for a change of venue to a New York State Court outside New York County.

65.2.3 With respect to any action brought by the **City** against the **Contractor** in a Federal Court located in the **City**, the **Contractor** expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a Federal Court outside the **City**.

65.2.4 If the **Contractor** commences any action against the **City** in a court located other than in the **City** and County of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a New York State Court of competent jurisdiction located in the **City** and County of New York or, if the Court where the action is initially brought will not or cannot transfer the action, the **Contractor** shall consent to dismiss such action without prejudice and may thereafter reinstate the action in a New York State Court of competent jurisdiction in New York County.

65.3 If any provision(s) of this Article 65 is held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

66.1 The **Contractor** agrees that neither the **Contractor** nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the Federal Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce (Commerce Department) promulgated thereunder.

66.2 Upon the final determination by the Commerce Department or any other agency of the United States as to, or conviction of the **Contractor** or a substantially-owned affiliated company thereof for participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the **Comptroller** may, at his/her option, render forfeit and void this **Contract**.

66.3 The **Contractor** shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code and the rules and regulations issued by the **Comptroller** thereunder.

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

67.1 This **Contract** is subject to the requirements of Section 6-108.1 of the Administrative Code and regulations promulgated thereunder. No construction contract shall be awarded unless and until these requirements have been complied with in their entirety; however, compliance with this Article 67 is not required if the Agency sets Subcontractor Participation Goals for Minority- and Women-Owned Business Enterprises (M/WBEs).

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the **City** Department of Business Services, if any portion of the **Contract** is subcontracted, not less than ten (10%) percent of the total dollar amount of the **Contract** shall be awarded to locally based enterprises (LBEs); except that where less than ten (10%) percent of the total dollar amount of the **Contract** is subcontracted, such lesser percentage shall be so awarded.

67.3 The **Contractor** shall not require performance and payment bonds from LBE **Subcontractors**.

67.4 If the **Contractor** has indicated prior to award that no **Work** will be subcontracted, no **Work** shall be subcontracted without the prior approval of the **Commissioner**, which shall be granted only if the **Contractor** makes a good faith effort beginning at least six (6) weeks before the **Work** is to be performed to obtain LBE **Subcontractors** to perform the **Work**.

67.5 If the **Contractor** has not identified sufficient LBE **Subcontractors** prior to award, it shall sign a letter of compliance stating that it complies with Section 6-108.1 of the Administrative Code, recognizes that achieving the LBE requirement is a condition of its **Contract**, and shall submit documentation demonstrating its good faith efforts to obtain LBEs. After award, the **Contractor** shall begin to solicit LBE's to perform subcontracted **Work** at least six (6) weeks before the date such **Work** is to be performed and shall demonstrate that a good faith effort has been made to obtain LBEs on each subcontract until it meets the required percentage.

67.6 Failure of the **Contractor** to comply with the requirements of Section 6-108.1 of the Administrative Code and the regulations promulgated thereunder shall constitute a material breach of this **Contract**. Remedy for such breach may include the imposition of any or all of the following sanctions:

67.6.1 Reducing the **Contractor's** compensation by an amount equal to the dollar value of the percentage of the LBE subcontracting requirement not complied with;

67.6.2 Declaring the **Contractor** in default;

67.6.3 If the **Contractor** is an LBE, de-certifying and declaring the **Contractor** ineligible to participate in the LBE program for a period of up to three (3) years.

ARTICLE 68. ANTITRUST

68.1 The **Contractor** hereby assigns, sells, and transfers to the **City** all right, title, and interest in and to any claims and causes of action arising under the antitrust **Laws** of New York State or of the United States relating to the particular goods or services purchased or procured by the **City** under this **Contract**.

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective **Contractors**:

69.1.1 Local Law No. 34 of 1991 became effective on September 10, 1991 and added Section 6-115.1 of the Administrative Code. The local **Law** provides for certain restrictions on **City Contracts** to express the opposition of the people of the **City** to employment discrimination practices in Northern Ireland to promote freedom of work-place opportunity.

69.1.2 Pursuant to Section 6-115.1, prospective **Contractors** for **Contracts** to provide goods or services involving an expenditure of an amount greater than ten thousand ($10,000.) dollars, or for construction involving an amount greater than fifteen thousand ($15,000.) dollars, are asked to sign a rider in which they covenant and represent, as a material condition of their **Contract**, that any business operations in Northern Ireland conducted by the **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** will be conducted in accordance with the MacBride Principles of nondiscrimination in employment.

69.1.3 Prospective **Contractors** are not required to agree to these conditions. However, in the case of **Contracts** let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five (5%) percent of the lowest responsible bid for a **Contract** to supply goods, services or contraction of comparable quality, the **Agency** shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable **Law**, that it is in the best interest of the **City** that the **Contract** be awarded to other than the lowest responsible pursuant to Section 313(b)(2) of the **City** Charter.

69.1.4 In the case of **Contracts** let by other than competitive sealed bidding, if a prospective **Contractor** does not agree to these conditions, no **Agency**, elected official or the **City** Council shall award the **Contract** to that bidder unless the **Agency** seeking to use the goods, services or construction certifies in writing that the **Contract** is necessary for the **Agency** to perform its functions and there is no other responsible **Contractor** who will supply goods, services or construction of comparable quality at a comparable price.

69.2 In accordance with Section 6-115.1 of the Administrative Code, the **Contractor** stipulates that such **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** either:

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling to and from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall, and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade, and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to asses, identify, and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article 69 is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another **Contractor** or **Contractors**. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. ELECTRONIC FILING/NYC DEVELOPMENT HUB

70.1 The **Contractor** shall electronically file all alteration type-2 and alteration type-3 applications via the New York City Development Hub Web site, except applications for the following types of minor alterations: enlargements, curb cuts, legalizations, fire alarms, builders pavement plans, and jobs filed on Landmark Preservation Commission calendared properties. All such filings must be professionally certified. Information about electronic filing via the New York City Development Hub is available on the **City** Department of Buildings Web site at www.nyc.gov/buildings.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance Law (Finance Law), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance Law.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the **City** Charter and other related provisions of the **City** Charter, the Administrative Code, and the Penal Law are applicable under the terms of this **Contract** in relation to conflicts of interest and shall be extended to **Subcontractors** authorized to perform **Work**, labor and services pursuant to this **Contract** and further, it shall be the duty and responsibility of the **Contractor** to so inform its respective **Subcontractors**. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The written **Contract** herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this **Contract** shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Specifications** and **Addenda** thereto, numbered as shown in Schedule A.

ARTICLE 75. COMPENSATION TO BE PAID TO CONTRACTOR

75.1 The **City** will pay and the **Contractor** will accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein, the total sum shown in Schedule A, this said sum being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the Administrative Code, the **Contractor** agrees to accept payments under this **Contract** from the **City** by electronic funds transfer (EFT). An EFT is any

transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this **Contract**, the **Contractor** shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of the **City** Department of Finance with information necessary for the **Contractor** to receive electronic funds transfer payments through a designated financial institution or authorized payment agent. The crediting of the amount of a payment to the appropriate account on the books of a financial institution or other authorized payment agent designated by the **Contractor** shall constitute full satisfaction by the **City** for the amount of the payment under this **Contract**. The account information supplied by the **Contractor** to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by **Law**.

76.2 The **Commissioner** may waive the application of the requirements of this Article 76 to payments on contracts entered into pursuant to Section 315 of the **City** Charter. In addition, the Commissioner of the Department of Finance and the Comptroller may jointly issue standards pursuant to which the **Agency** may waive the requirements of this Article 76 for payments in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the **City**.

ARTICLE 77. RECORDS RETENTION

77.1 The **Contractor** agrees to retain all books, records, and other documents relevant to this **Contract** for six years after the final payment or termination of this **Contract**, whichever is later. **City**, state, and federal auditors and any other persons duly authorized by the **City** shall have full access to and the right to examine any such books, records, and other documents during the retention period.

ARTICLE 78. EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS

78.1 Pre-Bidding (Investigation) Viewing of Site – Bidders must carefully view and examine the **Site** of the proposed **Work**, as well as its adjacent area, and seek other usual sources of information, for they will be conclusively presumed to have full knowledge of any and all conditions and hazards on, about or above the **Site** relating to or affecting in any way the performance of the **Work** to be done under the **Contract** that were or should have been known by a reasonably prudent bidder. To arrange a date for visiting the **Site**, bidders are to contact the **Agency** contact person specified in the bid documents.

78.2 Should the **Contractor** encounter during the progress of the Work site conditions or environmental hazards at the **Site** materially differing from any shown on the **Contract Drawings** or indicated in the **Specifications** or such conditions or environmental hazards as could not reasonably have been anticipated by the **Contractor**, which conditions or hazards will materially affect the cost of the **Work** to be done under the **Contract**, the attention of the **Commissioner** must be called immediately to such conditions or hazards before they are disturbed. The **Commissioner** shall thereupon promptly investigate the conditions or hazards. If the **Commissioner** finds that they do so materially differ, and that they could not have been reasonably anticipated by the **Contractor**, the **Contract** may be modified with the **Commissioner**'s written approval.

ARTICLE 79. PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT

NOTICE TO ALL PROSPECTIVE CONTRACTORS

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter "Section 6-129"). Section 6-129 establishes the program for participation in City procurement ("M/WBE Program") by minority- owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan"), and are detailed below. The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129. Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts. Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

1. The **MBE and/or WBE Participation Goals** established for this Contract or Task Orders issued pursuant to this Contract, ("**Participation Goals**"), as applicable, are set forth on Schedule B, Part I to this Contract (see Page 1, line 1 Total Participation Goals) or will be set forth on Schedule B, Part I to Task Orders issued pursuant to this Contract, as applicable.

The **Participation Goals** represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with New York City Department of Small Business Services as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If **Participation Goals** have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the **Participation Goals**, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If **Participation Goals** have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant **Participation Goal**, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant **Participation Goal**. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If **Participation Goals** have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals**, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre- award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE **Participation Goals**, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part II (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified **Participation Goals** by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals** that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed nonresponsive.

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART II). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS (SEE SECTION V OF PART II) WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART III). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multiyear contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work.** In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the

firms' commencement of work. A list of MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include, but not be limited to,: the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's **M/WBE** Utilization Plan, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its **M/WBE** Utilization Plan in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an **M/WBE** Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or $500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the **Participation Goals** should be modified.

10. Pre-award waiver of the **Participation Goals**. (a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the **Participation Goals** in accordance with Section 6-129, which requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part III (Page 5) of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at poped@ddc.nyc.gov or via facsimile at (718) 391-1886. Bidders, proposers, or contractors, as applicable, who have submitted requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its **M/WBE** Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the **M/WBE** Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of **M/WBE** Utilization Plan. (a) A Contractor may request a modification of its **M/WBE** Utilization Plan after award of this Contract. **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission.** The Agency may grant a request for Modification of a Contractor's **M/WBE** Utilization Plan if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the **Participation Goals.** In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the M/WBE Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;
(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
(vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
(vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
(viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's M/WBE officer shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the **Participation Goals** when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its **M/WBE** Utilization Plan would be awarded to subcontractors.

12. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an **M/WBE** Utilization Plan and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Participation Goals**, the Contractor will not be deemed in violation of the M/WBE Program requirements for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

13. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its M/WBE Utilization Plan, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

14. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B: MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of an **M/WBE** Utilization Plan, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the **M/WBE** Utilization Plan.

2. Pursuant to DSBS rules, construction contracts that include a requirement for an **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:

(a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
(b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
(c) making a finding that the Contractor is in default of the Contract;
(d) terminating the Contract;
(e) declaring the Contractor to be in breach of Contract;
(f) withholding payment or reimbursement;
(g) determining not to renew the Contract;
(h) assessing actual and consequential damages;
(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
(k) taking any other appropriate remedy.

4. If an **M/WBE** Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its **Participation Goals** contained in its **M/WBE** Utilization Plan or the **Participation Goals** as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the **Participation Goals** and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the **Participation Goals**, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6- 129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its **M/WBE** Utilization Plan shall be a factor in the evaluation of its performance. Whenever Agency determines that a Contractor's compliance with an **M/WBE** Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in VENDEX as caution data.

IN WITNESS WHEREOF, the Deputy Commissioner, on behalf of the City of New York, and the Contractor, have executed this agreement in quadruplicate, two parts of which are to remain with the Commissioner, another to be filed with the Comptroller of the City, and the fourth to be delivered to the Contractor.

THE CITY OF NEW YORK

By: _____
Deputy Commissioner

CONTRACTOR: PERFETTO CONTRACTING CO. INC.

By: _____
(Member of Firm or Officer of Corporation)

Title: Pres

(Where Contractor is a Corporation, add):
Attest:

_____
Secretary

(Seal)

_____

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of Queens ss:

On this 27 day of April, 2018 before me personally came Cesare Perfetto to me known who, being by me duly sworn did depose and say that he resides at 152-41st Brooklyn, N.Y. that he is the Pres. of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

BRENDA A. BARREIRO
Notary Public, State of New York
No. 01BA6351073
Qualified in Kings County
Commission Expires Nov. 28, 2020

Brenda A Barreiro
Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be one of the members of the firm of _____ _____ described in and who executed the foregoing instrument; and he acknowledged to me that he executed the same as and for the act and deed of said firm.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

_____
Notary Public or Commissioner of Deeds

DEPUTY

ACKNOWLEDGEMENT BY COMMISSIONER

State of New York County of Queens ss:

On this 27th day of April, 2018, before me personally came Eric Macfarlane to me known, and known to be the Deputy Commissioner of the Department of Design and Construction of The City of New York, the person described as such in and who as such executed the foregoing instrument and acknowledged to me that he executed the same as Deputy Commissioner for the purposes therein mentioned.

Brenda A Barreiro

Notary Public or Commissioner of Deeds

BRENDA A. BARREIRO
Notary Public, State of New York
No. 01BA6351073
Qualified in Kings County
Commission Expires Nov. 28, 2020

AUTHORITY

MAYOR'S CERTIFICATE NO. CBX DATED
BUDGET DIRECTOR'S CERTIFICATE NO. DATED

APPROPRIATION
COMMISSIONER'S CERTIFICATE

In conformity with the provisions of Section 6-101 of the Administrative Code of the City of New York, it is hereby certified that the estimated cost of the work, materials and supplies required by the within Contract, amounting to

Five million, nine hundred thirty-one thousand, two hundred four dollars and thirty-six cents.

Dollars ($ 5,931,204.36)

is chargeable to the fund of the Department of Design and Construction entitled Code

_____

_____

_____
Department of Design and Construction

I hereby certify that the specifications contained herein comply with the terms and conditions of the BUDGET.

_____
Deputy Commissioner

COMPTROLLER'S CERTIFICATE

The City of New York_____

Pursuant to the provisions of Section 6-101 of the Administrative Code of the City of New York, I hereby certify that there remains unapplied and unexpended a balance of the above mentioned fund applicable to this Contract sufficient to pay the estimated expense of executing the same viz:

$_____

_____
Comptroller

MAYOR'S CERTIFICATE OR CERTIFICATE OF THE DIRECTOR OF THE BUDGET

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is $5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

PERFORMANCE BOND #1

KNOW ALL PERSONS BY THESE PRESENTS:,
That we, _____

_____

_____

hereinafter referred to as the "Principal,"
and, _____

_____

_____

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns in the penal sum
of _____

_____

_____

($_____) Dollars, lawful money of the United States for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

_____

_____

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is $5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

good any such default and shall protect the said City of New York against, and pay any and all amounts, damages, cost and judgments which may or shall be recovered against said City or its officers or agents or which the said City of New York may be called upon to pay any person or corporation by reason of any damages arising or growing out of the Principal's default of the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety (Sureties), for value received, hereby stipulates and agrees, upon written notice from the City that the City has determined that the Principal is in default of the Contract, to (1) pay the City the cost to complete the contract as determined by the City in excess of the balance of the Contract held by the City, plus any damages or costs to which the City is entitled, up to the full amount of the above penal sum, (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof, or (3) tender a completion Contractor that is acceptable to the City. The Surety (Sureties) further agrees, at its option, either to notify the City that it elects to pay the city the cost of completion plus any applicable damages and costs under option (1) above, or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereof from the City and, if the Surety elects to fully perform and complete the Work, then to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. If the Surety elects to tender payment pursuant to (1) above, then the Surety shall tender such amount within fifteen (15) business days notification from the City of the cost of completion. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to pay the City the cost of completion, to commence and complete all Work as provided herein, or to tender a completion contractor.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or to the said Contract or the Work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, and waivers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to subcontractors shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal. Notwithstanding the above, if the City makes payments to the Principal before the time required by the contract that in the aggregate exceed $100,000 or 10% of the Contract price, whichever is less, and that have not become earned prior to the Principal being found to be in default, then all payments made to the Principal before the time required by the Contract shall be added to the remaining contract value available to be paid for the completion of the Contract as if such sums had not been paid to the Principal, but shall not provide a basis for non-performance of its obligation to pay the City the cost of completion, to commence and to complete all Work as provided herein, or to tender a completion contractor.

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is $5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

IN WITNESS WHEREOF, The Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this

_____ day of _____, 20_____.

(Seal)

_____(L.S.)
Principal

By:_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.

Bond Premium Rate _____.

Bond Premium Cost _____.

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is $5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.m.

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, 20_____ before me personally came _____,
to me known, who, being by me duly sworn did depose and say that he/she resides at _____
_____; that he/she is the _____
of the corporation described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, 20 _____ before me personally came _____,
to me known, who, being by me duly sworn did dispose and say that he/she resides at _____
_____; that he/she is _____ partner of
_____, a limited/general partnership existing under the laws of the State of
_____, the partnership described in and which executed the foregoing instrument;
and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, 20_____ before me personally came _____,
to me known, who,.being by me duly sworn did depose and say that he/she resides at _____
_____, and that he/she is the individual whose name is subscribed to the within instrument and acknowledged to me that by his/her signature on the instrument, said individual executed the instrument.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

Bond No. PRF9282708

Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than $5 Million.

PERFORMANCE BOND #2

KNOW ALL PERSONS BY THESE PRESENTS:,
That we, PERFETTO CONTRACTING CO., INC.

152 41st Street, BROOKLYN, NY 11232

hereinafter referred to as the "Principal,"
and, Fidelity and Deposit Company of Maryland

1299 Zurich Way, 5th Floor , Schaumburg, IL 60196-1056

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns in the penal sum of Five Million Nine Hundred Thirty One Thousand Two Hundred Four Dollars and 36/100

($ 5,931,204.36) Dollars, lawful money of the United States for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

RECONSTRUCTION OF EAST 25TH STREET PLAZE BETWEEN LEXINGTON AND 3RD AVENUE AT BARUCH COLLEGE - BOROUGH OF MANHATTAN

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than $5 Million.

good any such default and shall protect the said City of New York against, and pay any and all amounts, damages, cost and judgments which may or shall be recovered against said City or its officers or agents or which the said City of New York may be called upon to pay any person or corporation by reason of any damages arising or growing out of the Principal's default of the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety (Sureties), for value received, hereby stipulates and agrees, upon written notice from the City that the City has determined that the Principal is in default of the Contract, to either (1) pay the full amount of the above penal sum in complete discharge and exoneration of this bond and of all the liabilities of the Surety relating to this bond, or (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof. The Surety (Sureties) further agrees, at its option, either to tender the penal sum or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereof from the City and to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to commence and to complete all Work as provided herein.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or to the said Contract or the Work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any Work to be performed or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal.

Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than $5 Million.

IN WITNESS WHEREOF, The Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this 17th day of April, 2018.

(Seal)

PERFETTO CONTRACTING CO., INC. (L.S.)
Principal

By: _____

(Seal)

Fidelity and Deposit Company of Maryland
Surety

By: _____
William D. Haas Attorney-In-Fact

(Seal)

_____
Surety

By: _____

(Seal)

_____
Surety

By: _____

(Seal)

_____
Surety

By: _____

(Seal)

_____
Surety

By: _____

Bond Premium Rate $18.75 SLIDE

Bond Premium Cost $86,053.00

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than $5 Million.

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of New York County of Richmond ss:

On this 17th day of April, 2018 before me personally came Cesare Perfetto,
to me known, who,.being by me duly sworn did depose and say that he/she resides
at 12 Gorge Road
, Staten Island, NY 10304; that he/she is the President
of the corporation described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

Notary Public or Commissioner of Deeds

JOFFRE R. VALENCIA
NOTARY PUBLIC-STATE OF NEW YORK
No. 01VA6249566
Qualified in Richmond County
My Commission Expires October 01, 2019

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, _____ before me personally came _____,
to me known, who,.being by me duly sworn did depose and say that he/she resides
at _____
, _____; that he/she is _____ partner of _____, a limited/general partnership existing under the laws of the State of _____, the partnership described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, _____ before me personally came _____,
to me known, who,.being by me duly sworn did depose and say that he/she resides
at _____
, _____, and that he/she is the individual whose name is subscribed to the within instrument and acknowledged to me that by his/her signature on the instrument, said individual executed the instrument.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

ACKNOWLEDGMENT OF PRINCIPAL - IF A CORPORATION

STATE OF
COUNTY OF } ss

On this .....day of ....., ... before me personally appeared

.....to be known, who, being by me duly sworn, did depose and

say; that he/she resides at....., that he/she is the .....

.....of .....the corporation described in and which executed the within insurance instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

.....

ACKNOWLEDGMENT OF PRINCIPAL - IF INDIVIDUAL OR FIRM

STATE OF
COUNTY OF } ss

On this .....day of ....., ... before me personally appeared

.....to me know to be (the individual) (one of the firm

of.....), described in and who executed the within instrument and he/she thereupon acknowledged to me that he/she executed the same (as the act and deed of said firm).

.....

ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF NEW YORK
COUNTY OF WESTCHESTER } ss

On this 4/17/18, before me personally came WILLIAM D. HAAS

to me known, who, being by me duly sworn, did depose and say; that he/she resides in

RYE, NEW YORK; that he/she is the Attorney-in-Fact of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to ...WILLIAM D. HAAS..... his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ALICE McCARTHY
NOTARY PUBLIC, State of New York
No. 01MC5079342
Qualified in Dutchess County
Commission Expires June 02, 2019

Alice McCarthy
Notary Public

THE FIDELITY AND DEPOSIT COMPANY

OF MARYLAND

600 Red Brook Blvd., Suite 600, Owings Mills, MD 21117

Statement of Financial Condition

As Of December 31, 2017

ASSETS

Bonds		$ 131,463,323
Stocks		23,365,385
Cash and Short Term Investments		15,943,690
Reinsurance Recoverable		7,520,824
Federal Income Tax Recoverable		62,266
Other Accounts Receivable		35,672,323
TOTAL ADMITTED ASSETS		$ 214,027,811

LIABILITIES, SURPLUS AND OTHER FUNDS

Reserve for Taxes and Expenses		$ 580,990
Ceded Reinsurance Premiums Payable		42,235,595
Securities Lending Collateral Liability		0
TOTAL LIABILITIES		$ 42,816,584
Capital Stock, Paid Up	$ 5,000,000	
Surplus	166,211,227	
Surplus as regards Policyholders		171,211,226
TOTAL		$ 214,027,811

Securities carried at $62,198,396 in the above statement are deposited with various states as required by law.

Securities carried on the basis prescribed by the National Association of Insurance Commissioners. On the basis of market quotations for all bonds and stocks owned, the Company's total admitted assets at December 31, 2017 would be $213,515,173 and surplus as regards policyholders $170,698,588.

I, DENNIS F. KERRIGAN, Corporate Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing statement is a correct exhibit of the assets and liabilities of the said Company on the 31st day of December, 2017.

Corporate Secretary

State of Illinois
City of Schaumburg } SS:

Subscribed and sworn to, before me, a Notary Public of the State of Illinois, in the City of Schaumburg, this 9th day of March, 2018.

Notary Public

OFFICIAL SEAL
DARRYL JOINER
Notary Public - State of Illinois
My Commission Expires 2/24/2022

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **DAVID MCVICKER, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **William D. HAAS, Dennis M. O'BRIEN and Benedict J. TOCKARSHEWSKY, all of White Plains, New York, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND,** this 6th day of April, A.D. 2018.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: _____
Assistant Secretary
Dawn E. Brown

_____
Vice President
David McVicker

State of Maryland
County of Baltimore

On this 6th day of April, A.D. 2018, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **DAVID MCVICKER, Vice President, and DAWN E. BROWN, Assistant Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____
Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 17 day of April, 2018.

Michael Bond, Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT ALL REQUIRED INFORMATION TO:

Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

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This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

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Michael Bond, Vice President

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Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056

Bond No. PRF9282708

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, PERFETTO CONTRACTING CO., INC. 152 41st Street, BROOKLYN, NY 11232

hereinafter referred to as the "Principal", and Fidelity and Deposit Company of Maryland 1299 Zurich Way, 5th Floor , Schaumburg, IL 60196-1056

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns, in the penal sum of

Five Million Nine Hundred Thirty One Thousand Two Hundred Four Dollars and 36/100

($ 5,931,204.36) Dollars, lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

RECONSTRUCTION OF EAST 25TH STREET PLAZE BETWEEN LEXINGTON AND 3RD AVENUE AT BARUCH COLLEGE - BOROUGH OF MANHATTAN

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns and other Subcontractors to whom Work under this Contract is sublet and his or their successors and assigns shall promptly pay or cause to be paid all lawful claims for

(a) Wages and compensation for labor performed and services rendered by all persons engaged in the prosecution of the Work under said Contract, and any amendment or extension thereof or addition thereto, whether such persons be agents servants or employees of the Principal or any such Subcontractor, including all persons so engaged who perform the work of laborers or mechanics at or in the vicinity of the site

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the project; and

(b) Materials and supplies (whether incorporated in the permanent structure or not), as well as teams, fuels, oils, implements or machinery furnished, used or consumed by said Principal or any subcontractor at or in the vicinity of the site of the Project in the prosecution of the Work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void, otherwise to remain in full force and effect.

This bond is subject to the following additional conditions, limitations and agreements:

(a) The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialmen or laborer having a just claim, as well as the City itself.

(b) All persons who have performed labor, rendered services or furnished materials and supplies, as aforesaid, shall have a direct right of action against the Principal and his, its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other persons as party plaintiff.

(c) The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs of otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.

(d) The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workmen's Compensation Law.

(e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the right of the City to require a bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be place in this bond.

And the Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties), and its bonds shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or of the said Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any part thereof, or of any Work to be performed, or any moneys due to become due thereunder and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, Subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done or in relation to said Principal.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

IN WITNESS WHEREOF, the Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this 17th day of April, 2018.

(Seal)

PERFETTO CONTRACTING CO., INC. (L.S.)
Principal

By: _____

(Seal)

Fidelity and Deposit Company of Maryland
Surety

By: _____
William D. Haas, Attorney-in-Fact

(Seal)

_____
Surety

By: _____

(Seal)

_____
Surety

By: _____

(Seal)

_____
Surety

By: _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of Richmond ss:

On this 17th day of April, 2018, before me personally came Cesare Perfetto to me known, who, being by me duly sworn did depose and say that he resides at 12 Gorge Road, Staten Island, NY 10304 that he is the President of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

Joffre Valencia
Notary Public or Commissioner of Deeds

JOFFRE R. VALENCIA
NOTARY PUBLIC-STATE OF NEW YORK
No. 01VA6249566
Qualified in Richmond County
My Commission Expires October 03, 2019

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be one of the members of the firm of _____ _____ described in and who executed the foregoing instrument; and he acknowledged to me that he executed the same as and for the act and deed of said firm.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

ACKNOWLEDGMENT OF PRINCIPAL - IF A CORPORATION

STATE OF
COUNTY OF } ss

On this .....day of ....., ... before me personally appeared

.....to be known, who, being by me duly sworn, did depose and

say; that he/she resides at....., that he/she is the .....

.....of .....the corporation described in and which executed the within insurance instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

.....

ACKNOWLEDGMENT OF PRINCIPAL - IF INDIVIDUAL OR FIRM

STATE OF
COUNTY OF } ss

On this .....day of ....., ... before me personally appeared

.....to me know to be (the individual) (one of the firm

of.....), described in and who executed the within instrument and he/she thereupon acknowledged to me that he/she executed the same (as the act and deed of said firm).

.....

ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF NEW YORK
COUNTY OF WESTCHESTER } ss

On this 4/17/18, before me personally came WILLIAM D. HAAS

to me known, who, being by me duly sworn, did depose and say; that he/she resides in

RYE, NEW YORK; that he/she is the Attorney-in-Fact of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to WILLIAM D. HAAS his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.

ALICE McCARTHY
NOTARY PUBLIC, State of New York
No. 01MC5079342
Qualified in Dutchess County
Commission Expires June 02, 2019

.....
Notary Public

THE FIDELITY AND DEPOSIT COMPANY

OF MARYLAND
600 Red Brook Blvd., Suite 600, Owings Mills, MD 21117

Statement of Financial Condition
As Of December 31, 2017

ASSETS

Bonds		$ 131,463,323
Stocks		23,365,385
Cash and Short Term Investments		15,943,690
Reinsurance Recoverable		7,520,824
Federal Income Tax Recoverable		62,266
Other Accounts Receivable		35,672,323
TOTAL ADMITTED ASSETS		$ 214,027,811

LIABILITIES, SURPLUS AND OTHER FUNDS

Reserve for Taxes and Expenses		$ 580,990
Ceded Reinsurance Premiums Payable		42,235,595
Securities Lending Collateral Liability		0
TOTAL LIABILITIES		$ 42,816,584
Capital Stock, Paid Up	$ 5,000,000	
Surplus	166,211,227	
Surplus as regards Policyholders		171,211,226
TOTAL		$ 214,027,811

Securities carried at $62,198,396 in the above statement are deposited with various states as required by law.

Securities carried on the basis prescribed by the National Association of Insurance Commissioners. On the basis of market quotations for all bonds and stocks owned, the Company's total admitted assets at December 31, 2017 would be $213,515,173 and surplus as regards policyholders $170,698,588.

I, DENNIS F. KERRIGAN, Corporate Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing statement is a correct exhibit of the assets and liabilities of the said Company on the 31st day of December, 2017.

Corporate Secretary

State of Illinois
City of Schaumburg } SS:

Subscribed and sworn to, before me, a Notary Public of the State of Illinois, in the City of Schaumburg, this 9th day of March, 2018.

Notary Public

OFFICIAL SEAL
DARRYL JOINER
Notary Public - State of Illinois
My Commission Expires 2/24/2022

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **GERALD F. HALEY, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **William D. HAAS, Dennis M. O'BRIEN and Benedict J. TOCKARSHEWSKY, all of White Plains, New York, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 21st day of April, A.D. 2017.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Dawn E. Brown

Assistant Secretary
Dawn E. Brown

Gerald F. Haley

Vice President
Gerald F. Haley

State of Maryland
County of Baltimore

On this 21st day of April, A.D. 2017, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **GERALD F. HALEY, Vice President, and DAWN E. BROWN, Assistant Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Constance A Dunn

Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

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RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 17 day of April, 2018.



Michael Bond, Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT ALL REQUIRED INFORMATION TO:

Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 04/17/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER 1-908-566-1010 Construction Risk Partners a JLT Group Company Campus View Plaza 1250 Route 28, Suite 201 Branchburg, NJ 08876	CONTACT NAME: Cathy Maldonado PHONE (A/C, No, Ext): 516-962-8170 FAX (A/C, No): 516-962-8180 E-MAIL ADDRESS: certs@constructionriskpartners.com
INSURED Perfetto Contracting Co., Inc. 152 41st Street Brooklyn, NY 11232	INSURER(S) AFFORDING COVERAGE — NAIC# INSURER A : TRAVELERS IND CO — 25658 INSURER B : PHOENIX INS CO — 25623 INSURER C : STARR IND & LIAB CO — 38318 INSURER D : AMERICAN GUAR INS CO — 35521 INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 52593852 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [ ] LOC OTHER:			DT-CO-5K319302-IND-17	12/22/17	12/22/18	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 2,000,000 $ 300,000 $ 5,000 $ 2,000,000 $ 4,000,000 $ 4,000,000 $
B	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY			DT-810-2K980739-PHX-17	12/22/17	12/22/18	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$ 1,000,000 $ $ $ $
C	UMBRELLA LIAB [X] OCCUR X EXCESS LIAB [ ] CLAIMS-MADE DED RETENTION $			1000584846171	12/22/17	12/22/18	EACH OCCURRENCE AGGREGATE $	$ 3,000,000 $ 3,000,000 $
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $
D	Excess Liability			AEC0230553-02	12/22/17	12/22/18	Occurrence Aggregate	9,000,000 9,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Contract # HWBARUCH - Reconstruction of East 25th Street Plaza between 3rd Ave. and Baruch College
The City of New York, including its Officials and employees, Consolidated Edison and The City University of the State of New York, an instrumentality of the State of New York are an additional insured as required by written contract.

CERTIFICATE HOLDER

The City of New York
Department of Design and Construction
30-30 Thomson Avenue
Long Island City, NY 11101
USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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NEW YORK STATE | Workers' Compensation Board

CERTIFICATE OF NYS WORKERS' COMPENSATION INSURANCE COVERAGE

1a. Legal Name & Address of Insured (use street address only) Perfetto Contracting Co., Inc. 152 41st Street Brooklyn, NY 11232 Work Location of Insured *(Only required if coverage is specifically limited to certain locations in New York State, i.e., a Wrap-Up Policy)*	1b. Business Telephone Number of Insured 718-858-8600 1c. NYS Unemployment Insurance Employer Registration Number of Insured 1d. Federal Employer Identification Number of Insured or Social Security Number 112814026
2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder) NYC Department of Design & Construction 30-30 Thomson Avenue, 4th Floor Long Island City, NY 11101	3a. Name of Insurance Carrier Phoenix Insurance Company 3b. Policy Number of Entity Listed in Box "1a" UB-5K340244-17-26-G 3c. Policy effective period 12/22/17 to 12/22/18 3d. The Proprietor, Partners or Executive Officers are ☒ included. (Only check box if all partners/officers included) ☐ all excluded or certain partners/officers excluded.

This certifies that the insurance carrier indicated above in box "3" insures the business referenced above in box "1a" for workers' compensation under the New York State Workers' Compensation Law. **(To use this form, New York (NY) must be listed under Item 3A on the INFORMATION PAGE of the workers' compensation insurance policy).** The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed above as the certificate holder in box "2".

Will the carrier notify the certificate holder within 10 days of a policy being cancelled for non-payment of premium or within 30 days if cancelled for any other reason or if the insured is otherwise eliminated from the coverage indicated on this certificate prior to the end of the policy effective period? ☐ YES ☒ NO

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Workers' Compensation contract of insurance only while the underlying policy is in effect.

Please Note: Upon cancellation of the workers' compensation policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of Workers' Compensation Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Workers' Compensation Law.

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has the coverage as depicted on this form.

Approved by: Allison Schmidt
(Print name of authorized representative or licensed agent of insurance carrier)

Approved by: _____ 4/17/18
(Signature) (Date)

Title: Account Executive

Telephone Number of authorized representative or licensed agent of insurance carrier: 516-962-8170

Please Note: Only insurance carriers and their licensed agents are authorized to issue Form C-105.2. Insurance brokers are NOT authorized to issue it.

Workers' Compensation Law

Section 57. Restriction on issue of permits and the entering into contracts unless compensation is secured.

1. The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, and notwithstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any compensation to any such employee if so employed.

2. The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter.

NEW YORK STATE | Workers' Compensation Board

CERTIFICATE OF INSURANCE COVERAGE UNDER THE NYS DISABILITY BENEFITS LAW

PART 1. To be completed by Disability Benefits Carrier or Licensed Insurance Agent of that Carrier

1a. Legal Name & Address of Insured (use street address only)

PERFETTO CONTRACTING CO INC.
152 41ST STREET
BROOKLYN, NY 11232

1b Business Telephone Number of Insured

718-858-8600

1c NYS Unemployment Insurance Employer Registration Number of Insured

4850945

Work Location of Insured(*Only required if coverage is specifically limited to certain locations in New York State, i.e., a Wrap-Up Policy*)

1d Federal Employer Identification Number of Insured or Social Security Number

112814026

2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder)

NYC Department of Design & Construction
30-30 Thomson Avenue - 4th Floor
Long Island City, NY 11101

3a Name of Insurance Carrier

HARTFORD LIFE AND ACCIDENT

3b Policy Number of Entity Listed in Box"1a"

LNY617471

3c Policy effective period:

10-01-2017 to 09-30-2018

4. Policy covers:

A. [✓] All of the employer's employees eligible under the New York Disability Benefits Law
B. [ ] Only the following class or classes of employer's employees:

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has NYS Disability Benefits insurance coverage as described above.

Date Signed: 12-19-2017 By: Keri Miller

(Signature of insurance carrier's authorized representative or NYS Licensed Insurance Agent of that insurance carrier)

Telephone Number (800) 454-7020 Title: Manager

IMPORTANT: If Box "4a" is checked, and this form is signed by the insurance carrier's authorized representative or NYS Licensed Insurance carrier, this certificate is COMPLETE. Mail it directly to the certificate holder.
If Box "4b" is checked, this certificate is NOT COMPLETE for purposes of Section 220, Subd. 8 of the Disability Benefits Law. mailed for completion to the Workers' Compensation Board, DB Plans Acceptance Unit, 328 State Street, Schenectady, NY 1

PART 2. To be completed by the NYS Workers' Compensation Board (Only if Box "4b" of Part 1 has been checked)

State of New York
Workers' Compensation Board

According to information maintained by the NYS Workers' Compensation Board, the above-named employer has complied with the NYS Disability Benefits Law with respect to all of his/her employees.

Date Signed By

(Signature of NYS Workers' Compensation Board Employee)

Telephone Number Title

Please Note: *Only insurance carriers licensed to write NYS disability benefits insurance policies and NYS licensed insurance agents of those insurance carriers are authorized to issue Form DB-120.1.* ***Insurance brokers are NOT authorized to issue this form.***

Additional Instructions for Form DB-120.1

By signing this form, the insurance carrier identified in box "3" on this form is certifying that it is insuring the business referenced in box "1a" for disability benefits under the New York State Disability Benefits Law. The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed as the certificate holder in box "2".

Will the carrier notify the certificate holder within 10 days of a policy being cancelled for non-payment of premium or within 30 days if cancelled for any other reason or if the insured is otherwise eliminated from the coverage indicated on this certificate prior to the end of the policy effective period? YES NO

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Disability Benefits contract of insurance only while the underlying policy is in effect.

Please Note: Upon the cancellation of the disability benefits policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of NYS Disability Benefits Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Disability Benefits Law.

DISABILITY BENEFITS LAW

§220. Subd. 8

(a) The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in employment as defined in this article, and not withstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that the payment of disability benefits for all employees has been secured as provided by this article. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any disability benefits to any such employee if so employed.

(b) The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in employment as defined in this article and notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that the payment of disability benefits for all employees has been secured as provided by this article.

Project ID: HWBARUCH

CITY OF NEW YORK

CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker or agent represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

_Construction Risk Partners_____
[Name of broker or agent (typewritten)]

_1250 Route 28, Suite 201, Branchburg, NJ 08876____
[Address of broker or agent (typewritten)]

_aschmidt@constructionriskpartners.com_____
[Email address of broker or agent (typewritten)]

_516-962-8170/516-962-8180_____
[Phone number/Fax number of broker or agent (typewritten)]

[Signature of authorized official, broker, or agent]

__Allison Schmidt, Account Executive_____
[Name and title of authorized official, broker, or agent (typewritten)]

State of New York .....)
)ss.:
County of …Suffolk….)

Sworn to before me this 17 day of April 2018

LISA J. OLIVER
NOTARY PUBLIC, STATE OF NEW YORK
NO 01OL6334718
QUALIFIED IN NASSAU COUNTY
MY COMMISSION EXPIRES DEC 21 2019

NOTARY PUBLIC FOR THE STATE OF ___New York_____

good any such default and shall protect the said City of New York against, and pay any and all amounts, damages, cost and judgments which may or shall be recovered against said City or its officers or agents or which the said City of New York may be called upon to pay any person or corporation by reason of any damages arising or growing out of the Principal's default of the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety (Sureties), for value received, hereby stipulates and agrees, upon written notice from the City that the City has determined that the Principal is in default of the Contract, to either (1) pay the full amount of the above penal sum in complete discharge and exoneration of this bond and of all the liabilities of the Surety relating to this bond, or (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof. The Surety (Sureties) further agrees, at its option, either to tender the penal sum or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereof from the City and to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to commence and to complete all Work as provided herein.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or to the said Contract or the Work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any Work to be performed or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal.

Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than $5 Million.

IN WITNESS WHEREOF, The Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this

_____ day of _____ 20 _____ .

(Seal)

_____(L.S.)
Principal

By:_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.

(Seal)

Surety

By:_____.

Bond Premium Rate _____.

Bond Premium Cost _____.

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than $5 Million.

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, 20 _____ before me personally came _____,
to me known, who, being by me duly sworn did depose and say that he resides at _____
_____ ; that he/she is the _____
of the corporation described in and which executed the foregoing instrument; that he/she signed his/her name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, 20 _____ before me personally came _____,
to me known, who, being by me duly sworn did depose and say that he/she resides at_____

_____; that he/she is _____ partner of _____, a limited/general partnership existing under the laws of the State of _____, the partnership described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, 20_____ before me personally came _____,
to me known, who, being by me duly sworn did depose and say that he/she resides at_____
_____, and that he/she is the individual whose name is subscribed to the within instrument and acknowledged to me that by his/her signature on the instrument, said individual executed the instrument.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

_____

_____

_____

hereinafter referred to as the "Principal", and _____

_____

_____

_____

_____

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns, in the penal sum of

_____

_____

_____

($_____) Dollars, lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

_____

_____

_____

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns and other Subcontractors to whom Work under this Contract is sublet and his or their successors and assigns shall promptly pay or cause to be paid all lawful claims for

(a) Wages and compensation for labor performed and services rendered by all persons engaged in the prosecution of the Work under said Contract, and any amendment or extension thereof or addition thereto, whether such persons be agents servants or employees of the Principal or any such Subcontractor, including all persons so engaged who perform the work of laborers or mechanics at or in the vicinity of the site

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the project; and

(b) Materials and supplies (whether incorporated in the permanent structure or not), as well as teams, fuels, oils, implements or machinery furnished, used or consumed by said Principal or any subcontractor at or in the vicinity of the site of the Project in the prosecution of the Work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void, otherwise to remain in full force and effect.

This bond is subject to the following additional conditions, limitations and agreements:

(a) The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialmen or laborer having a just claim, as well as the City itself.

(b) All persons who have performed labor, rendered services or furnished materials and supplies, as aforesaid, shall have a direct right of action against the Principal and his, its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other persons as party plaintiff.

(c) The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs of otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.

(d) The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workmen's Compensation Law.

(e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the right of the City to require a bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be place in this bond.

And the Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties), and its bonds shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or of the said Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any part thereof, or of any Work to be performed, or any moneys due to become due thereunder and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, Subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done or in relation to said Principal.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

IN WITNESS WHEREOF, the Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this _____ day of _____, _____.

(Seal) _____(L.S.)
Principal

By:_____

(Seal) _____
Surety

By:_____

(Seal) _____
Surety

By:_____

(Seal) _____
Surety

By:_____

(Seal) _____
Surety

By:_____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally came _____ to me known, who, being by me duly sworn did depose and say that he resides at _____ _____ that he is the _____ of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be one of the members of the firm of _____ _____ described in and who executed the foregoing instrument; and he acknowledged to me that he executed the same as and for the act and deed of said firm.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

(NO TEXT ON THIS PAGE)

LABOR LAW §220 PREVAILING WAGE SCHEDULE

Workers, Laborers and Mechanics employed on a public work project must receive not less than the prevailing rate of wage and benefits for the classification of work performed by each upon such public work. Pursuant to Labor Law §220 the Comptroller of the City of New York has promulgated this schedule solely for Workers, Laborers and Mechanics engaged by private contractors on New York City public work contracts.

This schedule is a compilation of separate determinations of the prevailing rate of wage and supplements made by the Comptroller for each trade classification listed herein pursuant to New York State Labor Law section 220 (5). The source of the wage and supplement rates, whether a collective bargaining agreement, survey data or other, is listed at the end of each classification.

Agency Chief Contracting Officers should contact the Bureau of Labor Law's Classification Unit with any questions concerning trade classifications, prevailing rates or prevailing practices with respect to procurement on New York City public works contracts. Contractors are advised to review the Comptroller's Prevailing Wage Schedule before bidding on public works contracts. Contractors with questions concerning trade classifications, prevailing rates or prevailing practices with respect to public works contracts in the procurement stage must contact the contracting agency responsible for the procurement.

Any error as to compensation under the prevailing wage law or other information as to trade classification, made by the contracting agency in the contract documents or in any other communication, will not preclude a finding against the contractor of prevailing wage violation.

Any questions concerning trade classifications, prevailing rates or prevailing practices on New York City public works contracts that have already been awarded may be directed to the Bureau of Labor Law's Classification Unit by calling (212) 669-4443. All callers must have the agency name and contract registration number available when calling with questions on public works contracts. Please direct all other compliance issues to: Bureau of Labor Law, Attn: Wasyl Kinach, P.E., Office of the Comptroller, 1 Centre Street, Room 651, New York, N.Y. 10007; Fax (212) 669-4002.

The appropriate schedule of prevailing wages and benefits must be posted at all public work sites pursuant to Labor Law §220 (3-a) (a).

This schedule is applicable to work performed during the effective period, unless otherwise noted. Changes to this schedule are published on our web site www.comptroller.nyc.gov. Contractors must pay the wages and supplements in effect when the worker, laborer, mechanic performs the work. Preliminary schedules for future one-year periods appear in the City Record on or about June 1 each succeeding year. Final schedules appear on or about July 1 in the City Record and on our web site www.comptroller.nyc.gov.

The Comptroller's Office has attempted to include all overtime, shift and night differential, Holiday, Saturday, Sunday or other premium time work. However, this schedule does not set forth every prevailing practice with respect to such rates with which employers must comply. All such practices are nevertheless part of the employer's prevailing wage obligation and contained in the collective bargaining agreements of the prevailing wage unions. These collective bargaining agreements are available for inspection by appointment. Requests for appointments may be made by calling (212) 669-4443, Monday through Friday between the hours of 9 a.m. and 5 p.m.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Prevailing rates and ratios for apprentices are attached to this schedule in the Appendix. Pursuant to Labor Law §220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant, registered with the New York State Department of Labor, may be employed on a public work project. Workers who are not journey persons or not registered apprentices pursuant to Labor Law §220 (3-e) may not be substituted for apprentices and must be paid as journey persons.

Public Work construction, reconstruction, demolition, excavation, rehabilitation, repair, renovation, alteration, or improvement contracts awarded pursuant to a Project Labor Agreement ("PLA") in accordance with Labor Law section 222 may have different labor standards for shift, premium and overtime work. Please refer to the PLA's pre-negotiated labor agreements for wage and benefit rates applicable to work performed outside of the regular workday. More information is available at the Mayor's Office of Contract Services (MOCS) web page at http://www.nyc.gov/html/mocs/html/vendors/pla.shtml.

All the provisions of Labor Law section 220 remain applicable to PLA work including, but not limited to, the enforcement of prevailing wage requirements by the Comptroller; however, we will enforce shift, premium, overtime and other non-standard rates as they appear in a project's pre-negotiated labor agreement.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

1) **Provide bona fide fringe benefits which cost the employer no less than the prevailing supplemental benefits rate; or**
2) **Supplement the employee's hourly wage by an amount no less than the prevailing supplemental benefits rate; or**
3) **Provide a combination of bona fide fringe benefits and wage supplements which cost the employer no less than the prevailing supplemental benefits rate in total.**

Although prevailing wage laws do not require employers to provide bona fide fringe benefits (as opposed to wage supplements) to their employees, other laws may. For example, the Employee Retirement Income Security Act, 29 U.S.C. § 1001 et seq., the Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 et seq., and the New York City Paid Sick Leave Law, N.Y.C. Admin. Code § 20-911 et seq., require certain employers to provide certain benefits to their employees. Labor agreements to which employers are a party may also require certain benefits. The Comptroller's Office does not enforce these laws or agreements.

Employers must provide prevailing supplemental benefits at the straight time rate for <u>each hour worked</u> unless otherwise noted in the classification.

Wasyl Kinach, P.E.
Director of Classifications
Bureau of Labor Law

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ASBESTOS HANDLER
(Hazardous Material; Disturbs, removes, encapsulates, repairs, or encloses friable asbestos material)

Asbestos Handler

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $36.00
Supplemental Benefit Rate per Hour: $16.45

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Sunday.
Time and one half the regular hourly rate after 40 hours in any work week.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day
Easter

Paid Holidays
None

(Local #78 and Local #12A)

BLASTER

Blaster

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.27
Supplemental Benefit Rate per Hour: $47.99

Blaster (Hydraulic)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: $47.15
Supplemental Benefit Rate per Hour: $47.99

Blaster - Trac Drill Hydraulic

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.29
Supplemental Benefit Rate per Hour: $47.99

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $40.46
Supplemental Benefit Rate per Hour: $47.99

Blaster - Operators of Jack Hammers

Chippers: Spaders: Concrete Breakers: and all other pneumatic tools of like usage: Walk Behind Self Propelled Hydraulic Asphalt and Concrete Breakers: Hydro (Water) Demolition

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $39.34
Supplemental Benefit Rate per Hour: $47.99

Blaster - Powder Carriers

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $35.17
Supplemental Benefit Rate per Hour: $47.99

Blaster - Hydraulic Trac Drill Chuck Tender

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $33.81
Supplemental Benefit Rate per Hour: $47.99

Blaster - Chuck Tender & Nipper

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $33.00
Supplemental Benefit Rate per Hour: $47.99

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $18.22
Supplemental Benefit Rate per Hour: $47.99

Overtime Description

Magazine Keepers:
Time and one half for work performed in excess of forty (40) hours per week and for work performed on Saturdays, Sundays and Holidays.

All Other Employees:
Time and one-half for the first two hours of overtime Monday through Friday, the first ten hours, the first ten hours of work on Saturday and for Make-up Time. Double time for all hours over ten Monday through Saturday (except make-up hours) and for all hours worked on Sunday and Holidays.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

Shift Rates

A single shift shall be 8 hours plus an unpaid lunch, starting at 8:00 A.M (or between 6:00 A.M. and 10:00 A.M. on weekdays). When two (2) shifts are employed, each shift shall be 8 hours plus ½ hour unpaid lunch. When three (3) shifts are employed, each shift will work seven and one-half (7 ½) hours, but will be paid for eight (8) hours, since only one-half (½) hour is allowed for mealtime. When two (2) or more shifts are employed, single time will be paid for each shift. The first 8 hours of any and all work performed Monday through Friday inclusive of any off-shift shall be at the single time rate.

(Local #29)

BOILERMAKER

Boilermaker

Effective Period: 7/1/2017 - 12/31/2017
Wage Rate per Hour: $55.23
Supplemental Benefit Rate per Hour: $42.96
Supplemental Note: For time and one half overtime - $63.82 For double overtime - $84.68

Effective Period: 1/1/2018 - 6/30/2018
Wage Rate per Hour: $57.17
Supplemental Benefit Rate per Hour: $43.62
Supplemental Note: For time and one half overtime - $64.81 For double overtime - $86.00

Overtime Description

For Repair and Maintenance work:
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
For New Construction work:
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Quadruple time the regular rate for work on the following holiday(s).
Labor Day

Paid Holidays

Good Friday
Day after Thanksgiving
Day before Christmas
Day before New Year's Day

Shift Rates

When shifts are required, the first shift shall work eight (8) hours at the regular straight-time hourly rate. The second shift shall work seven and one-half (7 ½) hours and receive eight hours at the regular straight time hourly rate plus twenty-five cents ($0.25) per hour. The third shift shall work seven (7) hours and receive eight hours at the regular straight time hourly rate plus fifty cents ($0.50) per hour. A thirty (30) minute lunch period shall not be considered as time worked. Work in excess of the above shall be paid overtime at the appropriate new construction work or repair work overtime wage and supplemental benefit hourly rate.

(Local #5)

BRICKLAYER

Bricklayer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $55.10

Supplemental Benefit Rate per Hour: $31.20

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Overtime rates to be paid outside the regular scheduled work day.

(Bricklayer District Council)

CARPENTER - BUILDING COMMERCIAL

Building Commercial

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $52.50
Supplemental Benefit Rate per Hour: $46.28

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday

Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
The second shift will receive one hour at the double time rate of pay for the last hour of the shift; eight hours pay for seven hours of work, nine hours pay for eight hours of work. There must be a first shift in order to work a second shift.

(Carpenters District Council)

CARPENTER - HEAVY CONSTRUCTION WORK
(Construction of Engineering Structures and Building Foundations)

Heavy Construction Work

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $52.63
Supplemental Benefit Rate per Hour: $49.66

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS
(Excludes Engineering Structures and Building Foundations)

Carpenter High Rise A

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $50.78
Supplemental Benefit Rate per Hour: $41.49

Carpenter High Rise B

Carpenter High Rise B worker is excluded from high risk operations such as erection decking, perimeter debris netting, leading edge work, self-climbing form systems, and the installation of cocoon systems unless directly supervised by a Carpenter High Rise A worker.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $39.07
Supplemental Benefit Rate per Hour: $16.65

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day

Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
The second shift wage rate shall be 113% of the straight time hourly wage rate. There must be a first shift in order to work a second shift.

(Carpenters District Council)

CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST

Carpenter - Hod Hoist

(Assisted by Mason Tender)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $50.50
Supplemental Benefit Rate per Hour: $39.46

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
The second shift will receive one hour at the double time rate of pay for the last hour of the shift; eight hours pay for seven hours of work, nine hours pay for eight hours of work. There must be a first shift in order to work a second shift.

(Carpenters District Council)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.48
Supplemental Benefit Rate per Hour: $26.00
Supplemental Note: $29.50 on Saturdays; $33.00 on Sundays & Holidays

Cement & Concrete Worker - (Hired after 2/6/2016)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $32.00
Supplemental Benefit Rate per Hour: $18.00
Supplemental Note: $19.50 on Saturdays; $21.00 on Sundays & Holidays

Overtime Description
Time and one half the regular rate after 7 hour day (time and one half the regular rate after an 8 hour day when working with Dockbuilders on pile cap forms and for work below street level to the top of the foundation wall, not to exceed 2 feet or 3 feet above the sidewalk-brick shelf, when working on the foundation and structure.)

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day before Christmas Day
1/2 day before New Year's Day

Shift Rates
On shift work extending over a twenty-four hour period, all shifts are paid at straight time.

(Cement Concrete Workers District Council)

CEMENT MASON

Cement Mason

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.62
Supplemental Benefit Rate per Hour: $38.96
Supplemental Note: For time and one half overtime - $48.21; For double overtime - $57.46

Overtime Description
Time and one-half the regular rate after an 8 hour day, double time the regular rate after 10 hours. Time and one-half the regular rate on Saturday, double time the regular rate after 10 hours. Double time the regular rate on Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

Shift Rates
For an off shift day, (work at times other than the regular 7:00 A.M. to 3:30 P.M. work day) a cement mason shall be paid at the regular hourly rate plus a 25% per hour differential. Four Days a week at Ten (10)hour day.

(Local #780) (BCA)

CORE DRILLER

Core Driller

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $38.82
Supplemental Benefit Rate per Hour: $24.66

Core Driller Helper

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $30.96
Supplemental Benefit Rate per Hour: $24.66

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $27.86
Supplemental Benefit Rate per Hour: $24.66

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $24.77
Supplemental Benefit Rate per Hour: $24.66

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $21.67
Supplemental Benefit Rate per Hour: $24.66

Overtime Description
Time and one half the regular rate for work on a holiday plus Holiday pay when worked.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Memorial Day
Independence Day

Labor Day
Thanksgiving Day
Christmas Day

Shift Rates

The shift day shall be the continuous eight and one-half (8½) hours from 6:00 A.M. to 2:30 P.M. and from 2:30 P.M. to 11:00 P.M., including one-half (½) hour of employees regular rate of pay for lunch. When two (2) or more shifts are employed, single time shall be paid for each shift, but those employees employed on a shift other than from 8:00 A.M. to 5:00 P.M. shall, in addition, receive seventy-five cents ($0.75) per hour differential for each hour worked. When three (3) shifts are needed, each shift shall work seven and one-half (7 ½) hours paid for eight (8) hours of labor and be permitted one-half (½) hour for mealtime.

(Carpenters District Council)

DERRICKPERSON AND RIGGER

Derrick Person & Rigger

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.86
Supplemental Benefit Rate per Hour: $51.40
Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. $52.82 - For work performed in Staten Island.

Derrick Person & Rigger - Site Work

Assists the Stone Mason-Setter in the setting of stone

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $40.29
Supplemental Benefit Rate per Hour: $39.23

Overtime Description

The first two hours of overtime on weekdays and the first seven hours of work on Saturdays are paid at time and one half for wages and supplemental benefits. All additional overtimes is paid at double time for wages and supplemental benefits. Deduct $1.42 from the Staten Island hourly benefits rate before computing overtime.

Overtime

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Memorial Day

Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.

(Local #197)

DIVER

Diver (Marine)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $66.66
Supplemental Benefit Rate per Hour: $49.66

Diver Tender (Marine)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.34
Supplemental Benefit Rate per Hour: $49.66

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When three shifts are utilized each shift shall work seven and one half-hours (7 1/2 hours) and paid for 8 hours, allowing for one half hour for lunch.

(Carpenters District Council)

DOCKBUILDER - PILE DRIVER

Dockbuilder - Pile Driver

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $52.63
Supplemental Benefit Rate per Hour: $49.66

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

DRIVER: TRUCK (TEAMSTER)

Driver - Dump Truck

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.18
Supplemental Benefit Rate per Hour: $44.79
Supplemental Note: Over 40 hours worked: at time and one half rate - $19.94; at double time rate - $26.58

Driver - Tractor Trailer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.22
Supplemental Benefit Rate per Hour: $45.40
Supplemental Note: Over 40 hours worked: at time and one half rate - $17.55; at double time rate - $23.40

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.78
Supplemental Benefit Rate per Hour: $45.40
Supplemental Note: Over 40 hours worked: at time and one half rate - $17.55 at double time rate - $23.40

Overtime Description
For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay. For Thanksgiving week, the prorated share shall be 5 1/3 hours of holiday pay for each day worked in Thanksgiving week.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
New Year's Day
President's Day
Memorial Day

Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Off single shift work commencing between 6:00 P.M. and 5:00 A.M. shall work eight and one half hours allowing for one half hour for lunch and receive 9 hours pay for 8 hours of work.

Driver Redi-Mix (Sand & Gravel)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $38.40
Supplemental Benefit Rate per Hour: $42.12
Supplemental Note: Over 40 hours worked: time and one half rate $15.99, double time rate $21.33

Overtime Description

For Paid Holidays: Employees working two (2) days in the calendar week in which the holiday falls are to paid for these holidays, provided they shape each remaining workday during that calendar week.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
President's Day
Columbus Day
Veteran's Day

Triple time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day

Election Day
Thanksgiving Day
Christmas Day

(Local #282)

ELECTRICIAN

(Including all low voltage cabling carrying data; video; and voice in combination with data and or video.)

Electrician "A" (Regular Day / Day Shift)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $54.35

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $55.72

Electrician "A" (Regular Day Overtime after 7 hrs / Day Shift Overtime after 8 hrs)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $84.00
Supplemental Benefit Rate per Hour: $57.86

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $84.00
Supplemental Benefit Rate per Hour: $59.23

Electrician "A" (Swing Shift)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $65.71
Supplemental Benefit Rate per Hour: $61.94

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $65.71
Supplemental Benefit Rate per Hour: $63.52

Electrician "A" (Swing Shift Overtime After 7.5 hours)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: $98.57
Supplemental Benefit Rate per Hour: $66.05

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $98.57
Supplemental Benefit Rate per Hour: $67.64

Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $73.60
Supplemental Benefit Rate per Hour: $68.33

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $73.60
Supplemental Benefit Rate per Hour: $70.09

Electrician "A" (Graveyard Shift Overtime After 7 hours)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $110.40
Supplemental Benefit Rate per Hour: $72.95

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $110.40
Supplemental Benefit Rate per Hour: $74.70

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on a holiday.
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates

When so elected by the Employer, one or more shifts of at least five days duration may be scheduled as follows: Day Shift: 8:00 am to 4:30 pm, Swing Shift 4:30 pm to 12:30 am, Graveyard Shift: 12:30 am to 8:00 am.

For multiple shifts of temporary light and/or power, the temporary light and/or power employee shall be paid for 8 hours at the straight time rate. For three or less workers performing 8 hours temporary light and/or power the supplemental benefit rate is $25.67 and effective 5/10/18 $25.92.

Electrician "M" (First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $28.50
Supplemental Benefit Rate per Hour: $22.10
First and Second Year "M" Wage Rate Per Hour: $24.00
First and Second Year "M" Supplemental Rate: $19.80

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $29.00
Supplemental Benefit Rate per Hour: $22.65
First and Second Year "M" Wage Rate Per Hour: $24.50
First and Second Year "M" Supplemental Rate: $20.30

Electrician "M" (Overtime After First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $42.75
Supplemental Benefit Rate per Hour: $23.89
First and Second Year "M" Wage Rate Per Hour: $36.00
First and Second Year "M" Supplemental Rate: $21.30

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $43.50
Supplemental Benefit Rate per Hour: $24.47
First and Second Year "M" Wage Rate Per Hour: $36.75
First and Second Year "M" Supplemental Rate: $21.84

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #3)

ELECTRICIAN - ALARM TECHNICIAN
(Scope of Work - Inspect, test, repair, and replace defective, malfunctioning, or broken devices, components and controls of Fire, Burglar and Security Systems)

Alarm Technician

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $32.40
Supplemental Benefit Rate per Hour: $16.10
Supplemental Note: $14.60 only after 8 hours worked in a day

Overtime Description
Time and one half the regular rate for work on the following holidays: Columbus Day, Veterans Day, Day after Thanksgiving.
Double time the regular rate for work on the following holidays: New Year's day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Paid Holidays
New Year's Day

Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Night Differential is based upon a ten percent (10%) differential between the hours of 4:00 P.M. and 12:30 A.M. and a fifteen percent (15%) differential for the hours 12:00 A.M. to 8:00 A.M.

Vacation

At least 1 year of employment.....ten (10) days
5 years or more of employment.....fifteen (15) days
10 years of employment.....twenty (20) days
Plus one Personal Day per year

Sick Days:
One day per Year. Up to 4 vacation days may be used as sick days.

(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2017 - 5/15/2018
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $56.26

Effective Period: 5/16/2018 - 6/30/2018
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $57.63

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2017 - 5/15/2018
Wage Rate per Hour: $41.54
Supplemental Benefit Rate per Hour: $41.02

Effective Period: 5/16/2018 - 6/30/2018
Wage Rate per Hour: $42.16
Supplemental Benefit Rate per Hour: $42.19

Electrician - Electro Pole Maintainer

Effective Period: 7/1/2017 - 5/16/2018
Wage Rate per Hour: $35.58
Supplemental Benefit Rate per Hour: $36.89

Effective Period: 5/17/2018 - 6/30/2018
Wage Rate per Hour: $36.11
Supplemental Benefit Rate per Hour: $37.93

Overtime Description

Electrician - Electro Pole Electrician: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week.
Electrician - Electro Pole Foundation Installer: Time and one half the regular rate after 8 hours within a 24 hour period and Saturday and Sunday.
Electrician - Electro Pole Maintainer: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week. Saturdays and Sundays may be used as a make-up day at straight time when a day is lost during the week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Local #3)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate per Hour: $62.64
Supplemental Benefit Rate per Hour: $34.25

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate per Hour: $64.48
Supplemental Benefit Rate per Hour: $35.85

Overtime Description
For New Construction: work performed after 7 or 8 hour day, Saturday, Sunday or between 4:30pm and 7:00am shall be paid at double time rate.

Existing buildings: work performed after an 8 hour day, Saturday, Sunday or between 5:30pm and 7:00 am shall be paid time and one half.

Overtime
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Vacation
Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate per Hour: $49.14
Supplemental Benefit Rate per Hour: $34.11

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate per Hour: $50.49
Supplemental Benefit Rate per Hour: $35.71

Overtime Description
For Scheduled Service Work: Double time - work scheduled in advance by two or more workers performed on Sundays, Holidays, and between midnight and 7:00am.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Afternoon shift - regularly hourly rate plus a (15%) fifteen percent differential. Graveyard shift - time and one half the regular rate.

Vacation
Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ENGINEER

Engineer - Heavy Construction Operating Engineer I

Cherrypickers 20 tons and over and Loaders (rubber tired and/or tractor type with a manufacturer's minimum rated capacity of six cubic yards and over).

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $67.32
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $107.71

Engineer - Heavy Construction Operating Engineer II

Backhoes, Basin Machines, Groover, Mechanical Sweepers, Bobcat, Boom Truck, Barrier Transport (Barrier Mover) & machines of similar nature. Operation of Churn Drills and machines of a similar nature, Stetco Silent Hoist and machines of similar nature, Vac-Alls, Meyers Machines, John Beam and machines of a similar nature, Ross Carriers and Travel Lifts and machines of a similar nature, Bulldozers, Scrapers and Turn-a-Pulls: Tugger Hoists (Used exclusively for handling excavated material); Tractors with attachments, Hyster and Roustabout Cranes, Cherrypickers. Austin Western, Grove and machines of a similar nature, Scoopmobiles, Monorails, Conveyors, Trenchers: Loaders-Rubber Tired and Tractor: Barber Greene and Eimco Loaders and Eimco Backhoes; Mighty Midget and similar breakers and Tampers, Curb and Gutter Pavers and Motor Patrol, Motor Graders and all machines of a similar nature. Locomotives 10 Tons or under. Mini-Max, Break-Tech and machines of a similar nature; Milling machines, robotic and demolition machines and machines of a similar nature, shot blaster, skid steer machines and machines of a similar nature including bobcat, pile rig rubber-tired excavator (37,000 lbs. and under), 2 man auger.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $65.31
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $104.50

Engineer - Heavy Construction Operating Engineer III

Minor Equipment such as Tractors, Post Hole Diggers, Ditch Witch (Walk Behind), Road Finishing Machines, Rollers five tons and under, Tugger Hoists, Dual Purpose Trucks, Fork Lifts, and Dempsey Dumpers, Fireperson.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $61.93
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $99.09

Engineer - Heavy Construction Maintenance Engineer I

Installing, Repairing, Maintaining, Dismantling and Manning of all equipment including Steel Cutting, Bending and Heat Sealing Machines, Mechanical Heaters, Grout Pumps, Bentonite Pumps & Plants, Screening Machines, Fusion Coupling Machines, Tunnel Boring Machines Moles and Machines of a similar nature, Power Packs, Mechanical Hydraulic Jacks; all drill rigs including but not limited to Churn, Rotary Caisson, Raised Bore & Drills of a similar nature; Personnel, Inspection & Safety Boats or any boats used to perform functions of same, Mine Hoists, Whirlies, all Climbing Cranes, all Tower Cranes, including but not limited to Truck Mounted and Crawler Type and machines of similar nature; Maintaining Hydraulic Drills and machines of a similar nature; Well Point System-Installation and dismantling; Burning, Welding, all Pumps regardless of size and/or motor power, except River Cofferdam Pumps and Wells Point Pumps; Motorized Buggies (three or more); equipment used in the cleaning and televising of sewers, but not limited to jet-rodder/vacuum truck, vacall/vactor, closed circuit television inspection equipment; high powered water pumps, jet pumps; screed machines and concrete finishing machines of a similar nature; vermeers.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $65.00
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $104.00

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $85.53
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $136.85

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.73
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $68.37

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $43.86
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $70.18

Engineer - Heavy Construction Oilers I

Gradalls, Cold Planer Grader, Concrete Pumps, Driving Truck Cranes, Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $58.57
Supplemental Benefit Rate per Hour: $36.87
Supplemental Note: $66.34 on overtime
Shift Wage Rate: $93.71

Engineer - Heavy Construction Oilers II

All gasoline, electric, diesel or air operated Shovels, Draglines, Backhoes, Keystones, Pavers, Gunite Machines, Battery of Compressors, Crawler Cranes, two-person Trenching Machines.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $40.36
Supplemental Benefit Rate per Hour: $36.87

Supplemental Note: $66.34 on overtime
Shift Wage Rate: $64.58

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $61.13
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $97.81

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $57.21
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $91.54

Engineer - Steel Erection Oiler II

On a Crawler Crane

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $43.54
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $69.66

Overtime Description

On jobs of more than one shift, if the next shift employee fails to report for work through any cause over which the employer has no control, the employee on duty who works the next shift continues to work at the single time rate.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day

Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

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Engineer - Building Work Maintenance Engineers I

Installing, repairing, maintaining, dismantling (of all equipment including: Steel Cutting and Bending Machines, Mechanical Heaters, Mine Hoists, Climbing Cranes, Tower Cranes, Linden Peine, Lorain, Liebherr, Mannes, or machines of a similar nature, Well Point Systems, Deep Well Pumps, Concrete Mixers with loading Device, Concrete Plants, Motor Generators when used for temporary power and lights), skid steer machines of a similar nature including bobcat.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $58.30
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Engineer - Building Work Maintenance Engineers II

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.28
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Engineer - Building Work Oilers I

All gasoline, electric, diesel or air operated Gradealls: Concrete Pumps, Overhead Cranes in Power Houses: Their duties shall be to assist the Engineer in oiling, greasing and repairing of all machines; Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks, Cherrypickers (hydraulic cranes) over 70,000 GVW, and machines of a similar nature.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $55.42
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Engineer - Building Work Oilers II

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Gunite Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: $41.16
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Overtime Description
On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates
Off Shift: double time the regular hourly rate.

(Local #15)

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $38.18
Supplemental Benefit Rate per Hour: $20.15
Supplemental Note: Overtime Benefit Rate - $27.65 per hour (time & one half) $35.15 per hour (double time).

Instrument Person

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $31.47
Supplemental Benefit Rate per Hour: $20.15

Supplemental Note: Overtime Benefit Rate - $27.65 per hour (time & one half) $35.15 per hour (double time).

Rodperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $27.24
Supplemental Benefit Rate per Hour: $20.15
Supplemental Note: Overtime Benefit Rate - $27.65 per hour (time & one half) $35.15 per hour (double time).

Overtime Description
Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays
New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (BUILDING CONSTRUCTION)
(Construction of Building Projects, Concrete Superstructures, etc.)

Field Engineer - BC Party Chief

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $60.10
Supplemental Benefit Rate per Hour: $32.15
Supplemental Note: Overtime Benefit Rate - $44.90 per hour (time & one half) $57.65 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.69
Supplemental Benefit Rate per Hour: $32.15

Supplemental Note: Overtime Benefit Rate - $44.90 per hour (time & one half) $57.65 per hour (double time).

Field Engineer - BC Rodperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $30.20
Supplemental Benefit Rate per Hour: $32.15
Supplemental Note: Overtime Benefit Rate - $44.90 per hour (time & one half) $57.65 per hour (double time).

Overtime Description
Time and one half the regular rate after a 7 hour work and time and one half the regular rate for Saturday for the first seven hours worked, Double time the regular time rate for Saturday for work performed in excess of seven hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (HEAVY CONSTRUCTION)
(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations, Engineering Structures etc.)

Field Engineer - HC Party Chief

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $70.25
Supplemental Benefit Rate per Hour: $34.18
Supplemental Note: Overtime benefit rate - $47.82 per hour (time & one half), $61.46 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $51.64

Supplemental Benefit Rate per Hour: $34.18
Supplemental Note: Overtime benefit rate - $47.82 per hour (time & one half), $61.46 per hour (double time).

Field Engineer - HC Rodperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $43.37
Supplemental Benefit Rate per Hour: $34.18
Supplemental Note: Overtime benefit rate - $47.82 per hour (time & one half), $61.46 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (STEEL ERECTION)

Field Engineer - Steel Erection Party Chief

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $63.64
Supplemental Benefit Rate per Hour: $33.04
Supplemental Note: Overtime benefit rate - $46.11 per hour (time & one half), $59.18 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $49.59
Supplemental Benefit Rate per Hour: $33.04
Supplemental Note: Overtime benefit rate - $46.11 per hour (time & one half), $59.18 per hour (double time).

Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $33.20
Supplemental Benefit Rate per Hour: $33.04
Supplemental Note: Overtime benefit rate - $46.11 per hour (time & one half), $59.18 per hour (double time).

Overtime Description
Time and one half the regular rate for Saturday for the first eight hours worked.
Double time the regular rate for Saturday for work performed in excess of eight hours.

Overtime
Time and one half the regular rate after an 8 hour day.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - OPERATING

Operating Engineer - Road & Heavy Construction I

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $76.60
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $122.56

Operating Engineer - Road & Heavy Construction II

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $79.28
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $126.85

Operating Engineer - Road & Heavy Construction III

Mine Hoists, Cranes, etc. (Used as Mine Hoists)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $81.80
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $130.88

Operating Engineer - Road & Heavy Construction IV

Gradealls, Keystones, Cranes on land or water (with digging buckets), Bridge Cranes, Vermeer Cutter and machines of a similar nature, Trenching Machines.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $79.85
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $127.76

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (employing Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $78.29
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $125.26

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $74.42
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $119.07

Operating Engineer - Road & Heavy Construction VII

Barrier Movers , Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $60.22
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $96.35

Operating Engineer - Road & Heavy Construction VIII

Utility Compressors

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.88
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $58.92

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $70.79
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $113.26

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $65.12
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $104.19

Operating Engineer - Road & Heavy Construction XI

Compressors (Portable 3 or more in battery), Driving of Truck Mounted Compressors, Well-point Pumps, Tugger Machines Well Point Pumps, Churn Drill.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $50.73
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $81.17

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $75.19
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $120.30

Operating Engineer - Road & Heavy Construction XIII

Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $72.84
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $116.54

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $69.67
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $111.47

Operating Engineer - Road & Heavy Construction XV

Compressors (Portable Single or two in Battery, not over 100 feet apart), Pumps (River Cofferdam) and Welding Machines, Push Button Machines, All Engines Irrespective of Power (Power-Pac) used to drive auxiliary equipment, Air, Hydraulic, etc.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.18
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $75.49

Operating Engineer - Road & Heavy Construction XVI

Concrete Breaking Machines, Hoists (Single Drum), Load Masters, Locomotives (over ten tons) and Dinkies over ten tons, Hydraulic Crane-Second Engineer.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $66.56
Supplemental Benefit Rate per Hour: $31.10

Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $106.50

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $67.07
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $107.31

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $95.98
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $153.57

Operating Engineer - Paving I

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $74.42
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $119.07

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $72.50
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $116.00

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $61.43

Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $98.29

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $79.50
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Concrete II

Compressors

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.54
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $63.66
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $82.23
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $131.57

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $79.04
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $126.46

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.14
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $75.42

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $44.91
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $71.86

Operating Engineer - Building Work I

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $62.87
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work II

Compressors, Welding Machines (Cutting Concrete-Tank Work), Paint Spraying, Sandblasting, Pumps (with the exclusion of Concrete Pumps), All Engines irrespective of Power (Power-Pac) used to drive Auxiliary Equipment, Air, Hydraulic, Jacking System, etc.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.01
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $71.60
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $75.87
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $69.88
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $69.14
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work VII

Rack & Pinion and House Cars

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $54.92
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
For New House Car projects Wage Rate per Hour $43.77

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

For House Cars and Rack & Pinion only: Overtime paid at time and one-half for all hours in excess of eight hours in a day, Saturday, Sunday and Holidays worked.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

For Steel Erection Only: Shifts may be worked at the single time rate at other than the regular working hours (8:00 A.M. to 4:30 P.M.) on the following work ONLY: Heavy construction jobs on work below the street level, over railroad tracks and on building jobs.

(Operating Engineer Local #14)

FLOOR COVERER

(Interior vinyl composition tile, sheath vinyl linoleum and wood parquet tile including site preparation and synthetic turf not including site preparation)

Floor Coverer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $50.50
Supplemental Benefit Rate per Hour: $45.88

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day

Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates
Two shifts may be utilized with the first shift working 8:00 A.M. to the end of the shift at the straight time of pay. The second shift will receive one hour at double time rate for the last hour of the shift. (eight for seven, nine for eight).

(Carpenters District Council)

GLAZIER
(New Construction, Remodeling, and Alteration)

Glazier

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $44.70
Supplemental Benefit Rate per Hour: $40.99
Supplemental Note: Supplemental Benefit Overtime Rate: $50.09

Overtime Description
An optional 8th hour can be worked at straight time rate. If 9th hour is worked, then both hours or more (8th & 9th or more) will be at the double time rate of pay.

Overtime
Double time the regular rate after a 7 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Shifts shall be any 7 hours beyond 4:00 P.M. for which the glazier shall receive 8 hours pay for 7 hours worked.

(Local #1281)

GLAZIER - REPAIR & MAINTENANCE
(For the Installation of Glass - All repair and maintenance work on a particular building, whenever performed, where the total cumulative contract value is under $127,628. Except where enumerated (i.e. plate glass windows) does not apply to non-residential buildings.)

Craft Jurisdiction for repair, maintenance and fabrication

Plate glass replacement, Residential glass replacement, Residential mirrors and shower doors, Storm windows and storm doors, Residential replacement windows, Herculite door repairs, Door closer repairs, Retrofit apartment house (non commercial buildings), Glass tinting.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $24.13
Supplemental Benefit Rate per Hour: $21.12

Overtime
Time and one half the regular rate after an 8 hour day.
Double time the regular rate for Sunday.
Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

(Local #1281)

HEAT AND FROST INSULATOR

Heat & Frost Insulator

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $58.38
Supplemental Benefit Rate per Hour: $39.46

Overtime Description
Double time shall be paid for supplemental benefits during overtime work.
8th hour paid at time and one half.

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Triple time the regular rate for work on the following holiday(s).
Labor Day

Paid Holidays
None

Shift Rates
The first shift shall work seven hours at the regular straight time rate. The second and third shift shall work seven hours the regular straight time hourly rate plus a fourteen percent wage and benefit premium.
Off hour work in occupied or retail buildings may be worked on weekdays with an increment of $1.00 per hour and eight hours pay for seven (7) hours worked. Double time will apply for over seven (7) hours worked on weekdays, weekends or holidays.

(Local #12) (BCA)

HOUSE WRECKER
(TOTAL DEMOLITION)

House Wrecker - Tier A

On all work sites the first, second, eleventh and every third House Wrecker thereafter will be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). Other House Wreckers may be Tier B House Wreckers.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $36.33
Supplemental Benefit Rate per Hour: $29.22

House Wrecker - Tier B

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $25.56
Supplemental Benefit Rate per Hour: $21.63

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL

Iron Worker - Ornamental

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: $44.20
Supplemental Benefit Rate per Hour: $51.57
Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description
Time and one half the regular rate after a 7 hour day for a maximum of two hours on any regular work day (the 8th and 9th hour) and double time shall be paid for all work on a regular work day thereafter, time and one half the regular rate for Saturday for the first seven hours of work and double time shall be paid for all work on a Saturday thereafter.

Overtime
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
For off shift work - 8 hours pay for 7 hours of work. When two or three shifts are employed on a job, Monday through Friday, the workday for each shift shall be seven hours and paid for ten and one-half hours at the single time rate. When two or three shifts are worked on Saturday, Sunday or holidays, each shift shall be seven hours and paid fifteen and three-quarters hours.

(Local #580)

IRON WORKER - STRUCTURAL

Iron Worker - Structural

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $50.05
Supplemental Benefit Rate per Hour: $72.53
Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description

Monday through Friday- the first eight hours are paid at straight time, the 9th and 10th hours are paid at time and one-half the regular rate, all additional weekday overtime is paid at double the regular rate. Saturdays- the first eight hours are paid at time and one-half the regular rate, double time thereafter. Sunday-all shifts are paid at double time.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

Monday through Friday - First Shift: First eight hours are paid at straight time, the 9th & 10th hours are paid at time and a half, double time paid thereafter. Second and third Shifts: First eight hours are paid at time and one-half, double time thereafter. Saturdays: All shifts, first eight hours paid at time and one-half, double time thereafter: Sunday all shifts are paid at double time.

(Local #40 & #361)

LABORER
(Foundation, Concrete, Excavating, Street Pipe Layer and Common)

Laborer

Excavation and foundation work for buildings, heavy construction, engineering work, and hazardous waste removal in connection with the above work. Landscaping tasks in connection with heavy construction work, engineering work and building projects. Projects include, but are not limited to pollution plants, sewers, parks, subways, bridges, highways, etc.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.50
Supplemental Benefit Rate per Hour: $40.63

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Labor Day
Thanksgiving Day

Shift Rates
When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

LANDSCAPING
(Landscaping tasks, as well as tree pruning, tree removing, spraying and maintenance in connection with the planting of street trees and the planting of trees in city parks but not when such activities are performed as part of, or in connection with, other construction or reconstruction projects.)

Landscaper (Above 6 years experience)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $28.75
Supplemental Benefit Rate per Hour: $15.55

Landscaper (3 - 6 years experience)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $27.75
Supplemental Benefit Rate per Hour: $15.55

Landscaper (up to 3 years experience)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $25.25
Supplemental Benefit Rate per Hour: $15.55

Groundperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $25.25
Supplemental Benefit Rate per Hour: $15.55

Tree Remover / Pruner

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $33.75
Supplemental Benefit Rate per Hour: $15.55

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $23.75
Supplemental Benefit Rate per Hour: $15.55

Watering - Plant Maintainer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $18.72
Supplemental Benefit Rate per Hour: $15.55

Overtime Description

For all overtime work performed, supplemental benefits shall include an additional seventy-five ($0.75) cents per hour.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Shift Rates

Work performed on a 4pm to 12am shift has a 15% differential. Work performed on a 12am to 8am shift has a 20% differential.

(Local #175)

MARBLE MECHANIC

Marble Setter

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $52.74
Supplemental Benefit Rate per Hour: $38.67

Marble Finisher

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.46
Supplemental Benefit Rate per Hour: $36.64

Marble Polisher

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $37.93
Supplemental Benefit Rate per Hour: $28.33

Overtime Description

Supplemental Benefit contributions are to be made at the applicable overtime rates. Time and one half the regular rate after a 7 hour day or time and one half the regular rate after an 8 hour day - chosen by Employer at the start of the project and then would last for the full duration of the project.

Overtime

Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving

Christmas Day

Paid Holidays
None

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $37.90
Supplemental Benefit Rate per Hour: $30.59

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
The Employer may work two (2) shifts with the first shift at the straight time wage rate and the second shift receiving eight (8) hours paid for seven (7) hours work at the straight time wage rate.

(Local #79)

MASON TENDER (INTERIOR DEMOLITION WORKER)

Mason Tender Tier A

Tier A Interior Demolition Worker performs all burning, chopping, and other technically skilled tasks related to interior demolition work.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $36.19
Supplemental Benefit Rate per Hour: $24.25

Mason Tender Tier B

Tier B Interior Demolition Worker performs manual work and work incidental to demolition work, such as loading and carting of debris from the work site to an area where it can be loaded in to bins/trucks for removal. Also performs clean-up of the site when demolition is completed.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $25.38
Supplemental Benefit Rate per Hour: $18.57

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Local #79)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: $46.28
Supplemental Benefit Rate per Hour: $42.92
Supplemental Note: Supplemental benefits for overtime are paid at the appropriate overtime rate.

Overtime Description
Overtime would be time and one half the regular rate after a seven (7) or eight (8) hours workday, which would be set at the start of the job.

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates
There will be no shift differential paid on the first shift if more than one shift is employed. The shift differential will remain $12/hour on the second and third shift for the first eight (8) hours if worked. There will be no pyramiding on overtime worked on second and third shifts. The time and one half (1.5x) rate will be against the base wage rate, not the shift differential

(Local #46)

MILLWRIGHT

Millwright

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $51.50
Supplemental Benefit Rate per Hour: $52.41

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

The first shift shall receive the straight time rate of pay. The second shift receives the straight time rate of pay plus fifteen (15%) per cent. Members of the second shift shall be allowed one half hour to eat, with this time being included in the hours of the workday established. There must be a first shift to work a second shift. All additional hours worked shall be paid at the time and one-half rate of pay plus fifteen (15%) per cent for weekday hours.

(Local #740)

MOSAIC MECHANIC

Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.86
Supplemental Benefit Rate per Hour: $40.65
Supplemental Note: Supplemental benefits for overtime to be paid at the rate of $51.67 per hour.

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.26
Supplemental Benefit Rate per Hour: $40.63
Supplemental Note: Supplemental benefits for overtime to be paid at the rate of $51.65 per hour.

Mosaic Mechanic - Machine Operator Grinder

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.26
Supplemental Benefit Rate per Hour: $40.63
Supplemental Note: Supplemental benefits for overtime to be paid at the rate of $51.65 per hour.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.50
Supplemental Benefit Rate per Hour: $28.62
Supplemental Note: $ 33.25 on overtime

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.50
Supplemental Benefit Rate per Hour: $28.62
Supplemental Note: $ 33.25 on overtime

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(District Council of Painters #9)

PAINTER - METAL POLISHER

METAL POLISHER

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $29.73
Supplemental Benefit Rate per Hour: $7.06

METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $30.68
Supplemental Benefit Rate per Hour: $7.06

METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $33.23
Supplemental Benefit Rate per Hour: $7.06

Overtime Description
All work performed on Saturdays shall be paid at time-in-a half. The exception being; for suspended scaffold work and work deemed as a construction project; an eight (8) hour shift lost during the week due to

circumstances beyond the control of the employer, up to amaximumof eight (8) hours per week, may be worked on Saturday at the straight time rate.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.
Triple time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Four Days a week at Ten (10) hours straight a day.

Local 8A-28A

PAINTER - STRIPER

Striper (paint)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $35.00
Supplemental Benefit Rate per Hour: $12.37
Supplemental Note: Overtime Supplemental Benefit rate - $8.02; New Hire Rate (0-3 months) - $0.00

Lineperson (thermoplastic)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $39.00
Supplemental Benefit Rate per Hour: $12.37
Supplemental Note: Overtime Supplemental Benefit rate - $8.02; New Hire Rate (0-3 months) - $0.00

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Employees hired before April 1, 2003: 15% night shift premium differential for work commenced at 9:00 PM or later.

Vacation

Employees with one to two years service shall accrue vacation based on hours worked: 250 hours worked - 1 day vacation; 500 hours worked - 2 days vacation; 750 hours worked - 3 days vacation; 900 hours worked - 4 days vacation; 1,000 hours worked - 5 days vacation. Employees with two to five years service receive two weeks vacation. Employees with five to twenty years service receive three weeks vacation. Employees with twenty to twenty-five years service receive four weeks vacation. Employees with 25 or more years service receive five weeks vacation. Vacation must be taken during winter months. 2 Personal Days except employees hired after 4/1/12 who do not have 2 years of service.

(Local #917)

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2017 - 9/30/2017
Wage Rate per Hour: $49.50
Supplemental Benefit Rate per Hour: $37.08

Effective Period: 10/1/2017 - 6/30/2018
Wage Rate per Hour: $50.00
Supplemental Benefit Rate per Hour: $38.33

Painter - Power Tool

Effective Period: 7/1/2017 - 9/30/2017
Wage Rate per Hour: $55.50

Supplemental Benefit Rate per Hour: $37.08
Overtime Wage Rate: $6.00 above the "Painters on Structural Steel" overtime rate.

Effective Period: 10/1/2017 - 6/30/2018
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $38.33
Overtime Wage Rate: $6.00 above the "Painters on Structural Steel" overtime rate.

Overtime Description
Supplemental Benefits shall be paid for each hour worked, up to forty (40) hours per week for the period of May 1st to November 15th or up to fifty (50) hours per week for the period of November 16th to April 30th.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Regular hourly rates plus a ten per cent (10%) differential

(Local #806)

PAPERHANGER

Paperhanger

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $44.89
Supplemental Benefit Rate per Hour: $31.13
Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

Evening shift - 4:30 P.M. to 12:00 Midnight (regular rate of pay); any work performed before 7:00 A.M. shall be at time and one half the regular base rate of pay.

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.85
Supplemental Benefit Rate per Hour: $40.98

Paver & Roadbuilder - Laborer

Paving and road construction work, regardless of material used, including but not limited to preparation of job sites, removal of old surfaces, asphalt and/or concrete, by whatever method, including but not limited to milling; laying of concrete; laying of asphalt for temporary, patchwork, and utility paving (but not production paving); site preparation and incidental work before the installation of rubberized materials and similar surfaces; installation and repair of temporary construction fencing; slurry seal coating, maintenance of safety surfaces; play equipment installation, and other related work.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.98
Supplemental Benefit Rate per Hour: $40.98

Production Paver & Roadbuilder - Screed Person

(Production paving is asphalt paving when using a paving machine or on a project where a paving machine is traditionally used)

Adjustment of paving machinery on production paving jobs.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.45
Supplemental Benefit Rate per Hour: $40.98

Production Paver & Roadbuilder - Raker

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.85
Supplemental Benefit Rate per Hour: $40.98

Production Paver & Roadbuilder - Shoveler

General laborer (except removal of surfaces - see Paver and Roadbuilder-Laborer) including but not limited to tamper, AC paint and liquid tar work.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.37
Supplemental Benefit Rate per Hour: $40.98

Overtime Description

If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day

Shift Rates

When two shifts are employed, the work period for each shift shall be a continuous eight (8) hours. When three shifts are employed, each shift will work seven and one half (7 ½) hours but will be paid for eight (8) hours since only one half (1/2) hour is allowed for meal time.
When two or more shifts are employed, single time will be paid for each shift.

Night Work - On night work, the first eight (8) hours of work will be paid for at the single time rate, except that production paving work shall be paid at 10% over the single time rate for the screed person, rakers and shovelers directly involved only. This differential is to be paid when there is only one shift and the shift works at night. All other workers will be exempt. Hours worked over eight (8) hours during said shift shall be paid for at the time and one-half rate.

(Local #1010)

PLASTERER

Plasterer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $44.93
Supplemental Benefit Rate per Hour: $25.15

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When it is not possible to conduct alteration work during regular work hours, in a building occupied by tenants, said work shall proceed on a shift basis: however work over seven (7) hours in any twenty four (24) hour period, the time after seven (7) hours shall be considered overtime.
The second shift shall start at a time between 3:30 p.m. and 7:00 p.m. and shall consist of seven (7) working hours and shall receive eight (8) hours of wages and benefits at the straight time rate. The workers on the second shift shall be allowed one-half (½) hour to eat with this time being included in the seven (7) hours of work.

(Local #262)

PLASTERER - TENDER

Plasterer - Tender

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $37.90
Supplemental Benefit Rate per Hour: $30.59

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When work commences outside regular work hours, workers receive an hour additional (differential) wage and supplement payment. Eight hours pay for seven hours work or nine hours pay for eight hours work.

(Mason Tenders District Council)

PLUMBER

Plumber

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $67.25
Supplemental Benefit Rate per Hour: $31.80
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Plumber - Temporary Services

Temporary Services - When there are no Plumbers on the job site, there may be three shifts designed to cover the entire twenty-four hour period, including weekends if necessary, at the following rate straight time.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $53.88
Supplemental Benefit Rate per Hour: $25.36

Overtime Description
Double time the regular rate after a 7 hour day - unless for new construction site work where the plumbing contract price is $1.5 million or less, the hours of labor can be 8 hours per day at the employers option. On Alteration jobs when other mechanical trades at the site are working an eighth hour at straight time, then the plumber shall also work an eighth hour at straight time.

Overtime
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Shift work, when directly specified in public agency or authority documents where plumbing contract is $8 million or less, will be permitted. 30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER (MECHNICAL EQUIPMENT AND SERVICE)
(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Plumber

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.20
Supplemental Benefit Rate per Hour: $15.41

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Plumbers Local # 1)

PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $46.66
Supplemental Benefit Rate per Hour: $22.95

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day

Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER: PUMP & TANK
Oil Trades (Installation and Maintenance)

Plumber - Pump & Tank

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $64.22
Supplemental Benefit Rate per Hour: $23.21

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates

All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER
(Exterior Building Renovation)

Journeyperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $52.57
Supplemental Benefit Rate per Hour: $25.80

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
All work outside the regular work day (an eight hour workday between the hours of 6:00 A.M. and 4:30 P.M.) is to be paid at time and one half the regular rate.

(Bricklayer District Council)

ROOFER

Roofer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.50
Supplemental Benefit Rate per Hour: $32.27

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Second shift - Regular hourly rate plus a 10% differential. Third shift - Regular hourly rate plus a 15% differential.

(Local #8)

SHEET METAL WORKER

Sheet Metal Worker

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $48.90
Supplemental Benefit Rate per Hour: $48.00
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Fan Maintenance

(The temporary operation of fans or blowers in new or existing buildings for heating and/or ventilation, and/or air conditioning prior to the completion of the project.)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $39.12
Supplemental Benefit Rate per Hour: $48.00

Sheet Metal Worker - Duct Cleaner

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $12.90
Supplemental Benefit Rate per Hour: $8.07

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Work that can only be performed outside regular working hours (eight hours of work between 7:30 A.M. and 3:30 P.M.) - First shift (work between 3:30 P.M. and 11:30 P.M.) - 10% differential above the established hourly rate. Second shift (work between 11:30 P.M. and 7:30 A.M.) - 15% differential above the established hourly rate.

For Fan Maintenance: On all full shifts of fan maintenance work the straight time hourly rate of pay will be paid for each shift, including nights, Saturdays, Sundays, and holidays.

(Local #28)

SHEET METAL WORKER - SPECIALTY
(Decking & Siding)

Sheet Metal Specialty Worker

The first worker to perform this work must be paid at the rate of the Sheet Metal Worker. The second and third workers shall be paid the Specialty Worker Rate. The ratio of One Sheet Metal Worker, then Two Specialty Workers shall be utilized thereafter.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $44.57
Supplemental Benefit Rate per Hour: $25.02
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Local #28)

SHIPYARD WORKER

Shipyard Mechanic - First Class

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $28.12
Supplemental Benefit Rate per Hour: $3.03

Shipyard Mechanic - Second Class

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: $23.35
Supplemental Benefit Rate per Hour: $2.85

Shipyard Laborer - First Class

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $20.96
Supplemental Benefit Rate per Hour: $2.76

Shipyard Laborer - Second Class

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $15.24
Supplemental Benefit Rate per Hour: $2.54

Shipyard Dockhand - First Class

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $22.89
Supplemental Benefit Rate per Hour: $2.83

Shipyard Dockhand - Second Class

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $16.51
Supplemental Benefit Rate per Hour: $2.58

Overtime Description
Work performed on holiday is paid double time the regular hourly wage rate plus holiday pay.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays
New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Based on Survey Data

SIGN ERECTOR
(Sheet Metal, Plastic, Electric, and Neon)

Sign Erector

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.67
Supplemental Benefit Rate per Hour: $50.67

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Time and one half the regular hourly rate is to be paid for all hours worked outside the regular workday either (7:00 A.M. through 2:30 P.M.) or (8:00 A.M. through 3:30 P.M.)

(Local #137)

STEAMFITTER

Steamfitter I

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $55.50
Supplemental Benefit Rate per Hour: $55.29

Supplemental Note: Overtime supplemental benefit rate: $109.84

Steamfitter -Temporary Services

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.18
Supplemental Benefit Rate per Hour: $44.84

Overtime
Double time the regular rate after a 7 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Work performed between 3:30 P.M. and 7:00 A.M. and on Saturdays, Sundays and Holidays shall be at double time the regular hourly rate and paid at the overtime supplemental benefit rate above.

Steamfitter II

For heating, ventilation, air conditioning and mechanical public works contracts with a dollar value not to exceed $15,000,000 and for fire protection/sprinkler public works contracts not to exceed $1,500,000.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $55.50
Supplemental Benefit Rate per Hour: $55.29
Supplemental Note: Overtime supplemental benefit rate: $109.84

Steamfitter -Temporary Services

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $42.18
Supplemental Benefit Rate per Hour: $44.84

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
May be performed outside of the regular workday except Saturday, Sunday and Holidays. A shift shall consist of eight working hours. All work performed in excess of eight hours shall be paid at double time. No shift shall commence after 7:00 P.M. on Friday or 7:00 P.M. the day before holidays. All work performed after 12:01 A.M. Saturday or 12:01 A.M. the day before a Holiday will be paid at double time. When shift work is performed the wage rate for regular time worked is a thirty percent premium together with fringe benefits.

On Transit Authority projects, where work is performed in the vicinity of tracks all shift work on weekends and holidays may be performed at the regular shift rates.

Local #638

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER
(Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $39.50
Supplemental Benefit Rate per Hour: $15.81

Refrigeration and Air Conditioner Service Person V

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $32.46
Supplemental Benefit Rate per Hour: $14.16

Refrigeration and Air Conditioner Service Person IV

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.89
Supplemental Benefit Rate per Hour: $12.80

Refrigeration and Air Conditioner Service Person III

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $23.08
Supplemental Benefit Rate per Hour: $11.79

Refrigeration and Air Conditioner Service Person II

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $19.14
Supplemental Benefit Rate per Hour: $10.85

Refrigeration and Air Conditioner Service Person I

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $14.00
Supplemental Benefit Rate per Hour: $9.76

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day
Christmas Day

Double time and one half the regular rate for work on the following holiday(s).
Martin Luther King Jr. Day
President's Day
Memorial Day
Columbus Day

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #638B)

STONE MASON - SETTER

Stone Mason - Setter

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $53.62
Supplemental Benefit Rate per Hour: $41.65

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday

Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates
For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $47.82
Supplemental Benefit Rate per Hour: $22.68

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

(Local #1974)

TELECOMMUNICATION WORKER
(Voice Installation Only)

Telecommunication Worker

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $40.35
Supplemental Benefit Rate per Hour: $13.19
Supplemental Note: The above rate applies for Manhattan, Bronx, Brooklyn, Queens. $12.64 for Staten Island only.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays
New Year's Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees have the option of observing either Martin Luther King's Birthday or the day after Thanksgiving instead of Lincoln's Birthday

Shift Rates

For any workday that starts before 8A.M. or ends after 6P.M. there is a 10% differential for the applicable worker's hourly rate.

Vacation

After 6 months.....one week.
After 12 months but less than 7 years.....two weeks.
After 7 or more but less than 15 years.....three weeks.
After 15 years or more but less than 25 years.....four weeks.

(C.W.A.)

TILE FINISHER

Tile Finisher

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.13
Supplemental Benefit Rate per Hour: $31.18

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $53.19
Supplemental Benefit Rate per Hour: $35.35

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TIMBERPERSON

Timberperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $48.00
Supplemental Benefit Rate per Hour: $49.16

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.
Time and one half the regular hourly rate after 40 hours in any work week.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Local #1536)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $62.37
Supplemental Benefit Rate per Hour: $52.39

Tunnel Workers (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $60.21
Supplemental Benefit Rate per Hour: $50.65

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: $59.11
Supplemental Benefit Rate per Hour: $49.74

Outside Lock Tender, Outside Gauge Tender,Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $58.04
Supplemental Benefit Rate per Hour: $48.81

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $58.04
Supplemental Benefit Rate per Hour: $48.81

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $50.87
Supplemental Benefit Rate per Hour: $46.11

Blasters (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $59.52
Supplemental Benefit Rate per Hour: $50.03

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $56.97
Supplemental Benefit Rate per Hour: $47.89

All Others (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $52.63
Supplemental Benefit Rate per Hour: $44.29

Microtunneling (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $45.58
Supplemental Benefit Rate per Hour: $38.31

Overtime Description

For Repair-Maintenance Work on Existing Equipment and Facilities - Time and one half the regular rate after a 7 hour day, or for Saturday, or for Sunday. Double time the regular rate for work on a holiday.
For Small-Bore Micro Tunneling Machines - Time and one-half the regular rate shall be paid for all overtime.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #147)

WELDER

TO BE PAID AT THE RATE OF THE JOURNEYPERSON IN THE TRADE PERFORMING THE WORK.

(NO TEXT ON THIS PAGE)

OFFICE OF THE COMPTROLLER

CITY OF NEW YORK

220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

APPENDIX

Pursuant to Labor Law §220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant and registered with the New York State Department of Labor, may be employed on a public work project.

Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the journey person wage rate for the classification of work he actually performed.

Apprentice ratios are established to ensure the proper safety, training and supervision of apprentices. A ratio establishes the number of journey workers required for each apprentice in a program and on a job site. Ratios are interpreted as follows: in the case of a 1:1, 1:4 ratio, there must be one journey worker for the first apprentice, and four additional journey workers for each subsequent apprentice.

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ASBESTOS HANDLER
(Ratio of Apprentice Journeyperson: 1 to 1, 1 to 3)

Asbestos Handler (First 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 78% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $14.25

Asbestos Handler (Second 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $14.25

Asbestos Handler (Third 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 83% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $14.25

Asbestos Handler (Fourth 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 89% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $14.25

(Local #78)

BOILERMAKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Boilermaker (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $30.84
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: $31.26

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $32.57
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: $33.02

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $34.29
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: $34.78

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $36.03
Effective 1/1/2018- Supplemental Benefit Rate Per Hour: $36.56

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $37.76
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: $38.32

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $39.51
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: $40.09

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $41.22
Effective 1/1/2018- Supplemental Benefit Rate Per Hour: $41.84

(Local #5)

BRICKLAYER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Bricklayer (First 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.80

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.80

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.80

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.80

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.80

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.80

(Bricklayer District Council)

CARPENTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Carpenter (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: $33.03

Carpenter (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $33.03

Carpenter (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $33.03

Carpenter (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $33.03

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS
(Ratio of Apprentice to Journeyperson: 1 to 1, 2 to 5)

Carpenter - High Rise (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $16.86
Supplemental Benefit Rate per Hour: $16.20

Carpenter - High Rise (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $23.16
Supplemental Benefit Rate per Hour: $16.33

Carpenter - High Rise (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $29.61

Supplemental Benefit Rate per Hour: $16.46

Carpenter - High Rise (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $37.07
Supplemental Benefit Rate per Hour: $16.61

(Carpenters District Council)

CEMENT MASON
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Cement Mason (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

Cement Mason (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

Cement Mason (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's Rate

(Local #780)

CEMENT AND CONCRETE WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Cement & Concrete Worker (First 1333 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $17.75

Cement & Concrete Worker (Second 1333 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.03

Cement & Concrete Worker (Last 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $24.30

Cement & Concrete Worker (Hired after 2/6/2016 - First 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: $16.96
Supplemental Benefit Rate Per Hour: $11.80

Cement & Concrete Worker (Hired after 2/6/2016 - Second 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: $22.08
Supplemental Benefit Rate Per Hour: $16.49

Cement & Concrete Worker (Hired after 2/6/2016 - Last 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: $27.20
Supplemental Benefit Rate Per Hour: $17.33

(Cement Concrete Workers District Council)

DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 50% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

DOCKBUILDER/PILE DRIVER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $33.03

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $33.03

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $33.03

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $33.03

(Carpenters District Council)

ELECTRICIAN
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Electrician (First Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $14.00
Supplemental Benefit Rate per Hour: $12.37
Overtime Supplemental Rate Per Hour: $13.29

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $14.50
Supplemental Benefit Rate per Hour: $12.63
Overtime Supplemental Rate Per Hour: $13.58

Electrician (First Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $15.00
Supplemental Benefit Rate per Hour: $12.88
Overtime Supplemental Rate Per Hour: $13.87

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $15.50
Supplemental Benefit Rate per Hour: $13.14
Overtime Supplemental Rate Per Hour: $14.16

Electrician (Second Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $16.00
Supplemental Benefit Rate per Hour: $13.39
Overtime Supplemental Rate Per Hour: $14.44

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $16.50
Supplemental Benefit Rate per Hour: $13.64
Overtime Supplemental Rate Per Hour: $14.73

Electrician (Second Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $17.00
Supplemental Benefit Rate per Hour: $13.90

Overtime Supplemental Rate Per Hour: $15.02

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $17.50
Supplemental Benefit Rate per Hour: $14.15
Overtime Supplemental Rate Per Hour: $15.31

Electrician (Third Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $18.00
Supplemental Benefit Rate per Hour: $14.41
Overtime Supplemental Rate Per Hour: $15.59

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $18.50
Supplemental Benefit Rate per Hour: $14.66
Overtime Supplemental Rate Per Hour: $15.88

Electrician (Third Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $19.00
Supplemental Benefit Rate per Hour: $14.92
Overtime Supplemental Rate Per Hour: $16.17

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $19.50
Supplemental Benefit Rate per Hour: $15.17
Overtime Supplemental Rate Per Hour: $16.45

Electrician (Fourth Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $20.00
Supplemental Benefit Rate per Hour: $15.43
Overtime Supplemental Rate Per Hour: $16.74

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $20.50
Supplemental Benefit Rate per Hour: $15.68
Overtime Supplemental Rate Per Hour: $17.03

Electrician (Fourth Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $22.00
Supplemental Benefit Rate per Hour: $16.44
Overtime Supplemental Rate Per Hour: $17.89

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $22.50
Supplemental Benefit Rate per Hour: $16.70
Overtime Supplemental Rate Per Hour: $18.18

Electrician (Fifth Term: 0-12 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $24.00
Supplemental Benefit Rate per Hour: $19.80
Overtime Supplemental Rate Per Hour: $21.30

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $24.50
Supplemental Benefit Rate per Hour: $20.30
Overtime Supplemental Rate Per Hour: $21.84

Electrician (Fifth Term: 13-18 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: $28.50
Supplemental Benefit Rate per Hour: $22.10
Overtime Supplemental Rate Per Hour: $23.89

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: $29.00
Supplemental Benefit Rate per Hour: $22.65
Overtime Supplemental Rate Per Hour: $24.47

Overtime Description
Overtime Wage paid at time and one half the regular rate

(Local #3)

ELEVATOR CONSTRUCTOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator (Constructor) - First Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $29.88

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $31.35

Elevator (Constructor) - Second Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $30.31

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $31.80

Elevator (Constructor) - Third Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $31.19

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $32.70

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $32.07

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $33.60

(Local #1)

ELEVATOR REPAIR & MAINTENANCE
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator Service/Modernization Mechanic (First Year)

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: $29.80

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Benefit Per Hour: $31.28

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: $30.23

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: $31.72

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: $31.09

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: $32.60

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: $31.95

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: $33.49

(Local #1)

ENGINEER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Engineer - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $24.77
Supplemental Benefit Rate per Hour: $24.62

Engineer - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $30.97
Supplemental Benefit Rate per Hour: $24.62

Engineer - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $34.06
Supplemental Benefit Rate per Hour: $24.62

Engineer - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $37.16
Supplemental Benefit Rate per Hour: $24.62

(Local #15)

ENGINEER - OPERATING
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Operating Engineer - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour 40% of Journeyperson's Rate
Supplemental Benefit Per Hour: $20.85

Operating Engineer - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's Rate
Supplemental Benefit Per Hour: $20.85

Operating Engineer - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's Rate
Supplemental Benefit Per Hour: $20.85

(Local #14)

FLOOR COVERER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Floor Coverer (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

Floor Coverer (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

Floor Coverer (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

Floor Coverer (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

(Carpenters District Council)

GLAZIER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Glazier (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $15.26

Glazier (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Rate Per Hour: $25.36

Glazier (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $28.62

Glazier (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $34.67

(Local #1281)

HEAT & FROST INSULATOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #12)

HOUSE WRECKER
(TOTAL DEMOLITION)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

House Wrecker - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $21.17
Supplemental Benefit Rate per Hour: $18.54

House Wrecker - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $22.32
Supplemental Benefit Rate per Hour: $18.54

House Wrecker - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $23.97
Supplemental Benefit Rate per Hour: $18.54

House Wrecker - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.53
Supplemental Benefit Rate per Hour: $18.54

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Iron Worker (Ornamental) - 1st Ten Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $39.40

Iron Worker (Ornamental) - 11 -16 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $40.62

Iron Worker (Ornamental) - 17 - 22 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $41.83

Iron Worker (Ornamental) - 23 - 28 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $44.27

Iron Worker (Ornamental) - 29 - 36 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $46.70

(Local #580)

IRON WORKER - STRUCTURAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.12
Supplemental Benefit Rate per Hour: $50.22

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.72
Supplemental Benefit Rate per Hour: $50.22

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $27.32

Supplemental Benefit Rate per Hour: $50.22

(Local #40 and #361)

LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)

(Ratio Apprentice to Journeyperson: 1 to 1, 1 to 3)

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - First 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $40.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Second 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $40.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Third 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $40.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Fourth 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: $40.63

(Local #731)

MARBLE MECHANICS
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Cutters & Setters - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

Polishers & Finishers - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Polishers & Finishers - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Polishers & Finishers - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Polishers & Finishers - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

MASON TENDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Mason Tender - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $21.39
Supplemental Benefit Rate per Hour: $19.65

Mason Tender - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $22.54
Supplemental Benefit Rate per Hour: $19.65

Mason Tender - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $24.29
Supplemental Benefit Rate per Hour: $19.70

Mason Tender - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.95
Supplemental Benefit Rate per Hour: $19.70

(Local #79)

METALLIC LATHER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metallic Lather (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $28.38
Supplemental Benefit Rate per Hour: $10.96

Metallic Lather (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $32.38
Supplemental Benefit Rate per Hour: $12.96

Metallic Lather (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $35.38
Supplemental Benefit Rate per Hour: $17.12

Metallic Lather (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $37.38
Supplemental Benefit Rate per Hour: $17.92

(Local #46)

MILLWRIGHT
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Millwright (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $28.33
Supplemental Benefit Rate per Hour: $34.28

Millwright (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $33.48
Supplemental Benefit Rate per Hour: $37.88

Millwright (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $38.63
Supplemental Benefit Rate per Hour: $42.13

Millwright (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $48.93
Supplemental Benefit Rate per Hour: $48.69

(Local #740)

PAVER AND ROADBUILDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Paver and Roadbuilder - First Year (Minimum 1000 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $27.86
Supplemental Benefit Rate per Hour: $19.25

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $29.50
Supplemental Benefit Rate per Hour: $19.25

(Local #1010)

PAINTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painter - Brush & Roller - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $17.00
Supplemental Benefit Rate per Hour: $13.42

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $21.25
Supplemental Benefit Rate per Hour: $17.43

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $25.50
Supplemental Benefit Rate per Hour: $20.50

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $34.00
Supplemental Benefit Rate per Hour: $26.20

(District Council of Painters)

PAINTER - METAL POLISHER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metal Polisher (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $11.75
Supplemental Benefit Rate per Hour: $5.13

Metal Polisher (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $13.00
Supplemental Benefit Rate per Hour: $5.13

Metal Polisher (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $15.75
Supplemental Benefit Rate per Hour: $5.13

(Local 8A-28)

PAINTER - STRUCTURAL STEEL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painters - Structural Steel (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Painters - Structural Steel (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #806)

PLASTERER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plasterer - First Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $13.59

Plasterer - First Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $14.07

Plasterer - Second Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $16.04

Plasterer - Second Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $17.12

Plasterer - Third Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $19.29

Plasterer - Third Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $20.37

(Local #530)

PLASTERER - TENDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plasterer Tender - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $21.39
Supplemental Benefit Rate per Hour: $19.65

Plasterer Tender - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $22.54

Supplemental Benefit Rate per Hour: $19.65

Plasterer Tender - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $24.29
Supplemental Benefit Rate per Hour: $19.70

Plasterer Tender - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.95
Supplemental Benefit Rate per Hour: $19.70

(Local #79)

PLUMBER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $16.28
Supplemental Benefit Rate per Hour: $5.43

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $19.28
Supplemental Benefit Rate per Hour: $6.43

Plumber - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $26.35
Supplemental Benefit Rate per Hour: $17.10

Plumber - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $28.45
Supplemental Benefit Rate per Hour: $17.10

Plumber - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $31.30
Supplemental Benefit Rate per Hour: $17.10

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $32.70
Supplemental Benefit Rate per Hour: $17.10

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $44.77
Supplemental Benefit Rate per Hour: $17.10

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER
(Exterior Building Renovation)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $25.89
Supplemental Benefit Rate per Hour: $13.64

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $28.97
Supplemental Benefit Rate per Hour: $18.15

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $34.12
Supplemental Benefit Rate per Hour: $20.90

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: $41.33
Supplemental Benefit Rate per Hour: $21.60

(Bricklayer District Council)

ROOFER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Roofer - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 35% of Journeyperson's Rate

Roofer - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

Roofer - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

Roofer - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's Rate

(Local #8)

SHEET METAL WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Sheet Metal Worker (0-6 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 25% of Journeyperson's rate
Supplemental Rate Per Hour: $6.35

Sheet Metal Worker (7-18 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: $17.12

Sheet Metal Worker (19-30 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $23.54

Sheet Metal Worker (31-36 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $27.70

Sheet Metal Worker (37-42 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $29.11

Sheet Metal Worker (43-48 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $33.96

Sheet Metal Worker (49-54 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $36.07

Sheet Metal Worker (55-60 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $38.15

(Local #28)

SIGN ERECTOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Sign Erector - First Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: $14.72

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $16.71

Sign Erector - Second Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $18.68

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $20.68

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $27.72

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $30.57

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $33.31

Sign Erector - Fourth Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $35.83

Sign Erector - Fifth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $38.32

Sign Erector - Sixth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $40.81

(Local #137)

STEAMFITTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Steamfitter - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

Steamfitter - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

Steamfitter - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate per Hour: 65% of Journeyperson's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate Per Hour: 80% of Journeyperson's rate.

Steamfitter - Fifth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate Per Hour: 85% of Journeyperson's rate.

(Local #638)

STONE MASON - SETTER
(Ratio Apprentice of Journeyperson: 1 to 1, 1 to 2)

Stone Mason - Setters - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fifth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Sixth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 100% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

(Bricklayers District Council)

TAPER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Drywall Taper - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Drywall Taper - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Drywall Taper - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #1974)

TILE LAYER - SETTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Tile Layer - Setter - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Tile Layer - Setter - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Tile Layer - Setter - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Tile Layer - Setter - Sixth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

(Local #7)

TIMBERPERSON
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Timberperson - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $32.79

Timberperson - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $32.79

Timberperson - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $32.79

Timberperson - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $32.79

(Local #1536)

THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
1 CENTRE STREET ROOM 1120
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Leonard A. Mancusi
SENIOR ASSISTANT COMPTROLLER

ALAN G. HEVESI
COMPTROLLER

MEMORANDUM

November 6, 2000

To *Agency Chief Contracting Officers*

From: *Leonard A. Mancusi*

Re: *Security at Construction Sites*

Prior to the enactment of Administrative Code §6-109, security guards on construction sites were not subject to prevailing wages. Security guards under the New York State labor law are covered under §230 which provides that prevailing wages are to be paid for security guards in existing buildings. §6-109 of the Administrative Code which was enacted in 1996 closed this loophole by including all security guards working pursuant to a city contract as a prevailing wage trade.

Although some construction contract boilerplate language has been amended to include §6-109, sub-contractors performing security services have advised us that they were not aware of this provision and, since traditionally, security guards were not a covered trade on construction sites, and they were not advised by a prime contractor that they would have to pay prevailing wages, they have not been doing so.

To avoid the possibility of issuing stop payments against prime contractors for the failure of their security service sub-contractors to pay

prevailing wages, we suggest that you write to all your existing security guard sub-contractors and their primes and in the future, upon approval of a security guard sub-contractor, advise the contractors of their obligation to pay prevailing wages under §6-109 of the Administrative Code.

As always, your cooperation is appreciated.

LAM:er
ACCO.SECURITY AT SITES

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 2 OF 4

_____

Contractor.

_____

Dated _____, **20**____

_____

APPROVED AS TO FORM
CERTIFIED AS TO LEGAL AUTHORITY

_____

Acting Corporation Counsel

_____

Dated _____, **20**____

_____

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 2 OF 4

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE
INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND
TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

Perfetto Contracting Co. Inc.

Contractor.

Dated April 27, 20 18

APPROVED AS TO FORM
CERTIFIED AS TO LEGAL AUTHORITY

Acting Corporation Counsel

10/12/16

Dated October 12, 20 16

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000
WEBSITE www1.nyc.gov/site/ddc/index.page

VOLUME 3 OF 4

SCHEDULE A
SPECIFICATIONS AND
REVISIONS TO STANDARD SPECIFICATIONS

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

FOR THE DEPARTMENT OF TRANSPORTATION
PREPARED BY MATHEWS NIELSEN LANDSCAPE ARCHITECTS, P.C.

AUGUST 26, 2016

SPECIFICATIONS AND STANDARDS OF NEW YORK CITY

The following New York City Department of Transportation (NYCDOT) reference documents are available on-line at:
http://www1.nyc.gov/site/ddc/resources/publications.page or for purchase between 9:00 A.M. and 3:00 P.M. at 55 Water St., Ground Floor, NYC, N.Y. 10041. Contact: Ms. Vivian Valdez, Tel. (212) 839-9434

1. NYCDOT Standard Highway Specifications, August 1, 2015
2. NYCDOT Standard Highway Details of Construction, July 1, 2010

The following New York City Department of Transportation (NYCDOT) reference documents are available on-line at:
http://www.nyc.gov/html/dot/html/about/dotlibrary.shtml#spec or for purchase between 9:00 A.M. and 3:00 P.M. at 55 Water St., Ground Floor, NYC, N.Y. 10041. Contact: Ms. Vivian Valdez, Tel. (212) 839-9434

1. Specifications for furnishing all labor and material necessary and required for the installation, removal or relocation of street lighting equipment in the City of New York, 1992.
2. Standard Drawings, Division of Street Lighting
3. Specifications for Traffic Signals and Intelligent Transportation Systems Construction and Equipment
4. Standard Drawings for Traffic Signals

The following reference documents for New York City Department of Environmental Protection (NYCDEP) are available on-line at:
http://www1.nyc.gov/site/ddc/resources/publications.page or for pick up between 8:00 A.M. and 4:00 P.M. at 30-30 Thomson Avenue, 3rd Floor, Division of Infrastructure, Long Island City, N.Y. 11101.
Contact: Mr. Nader Soliman, Tel. (718) 391-1179

1. NYCDEP Standard Sewer and Water Main Specifications, July 1, 2014
2. NYCDEP Instructions for Concrete Specifications, Jan. 92
3. NYCDEP General Specification 11-Concrete, November 1991
4. NYCDEP Sewer Design Standards, (September 2007) Revised January 2009

The following reference documents for New York City Department of Environmental Protection (NYCDEP) are available on-line at:
http://www1.nyc.gov/site/ddc/resources/publications.page or for pick up between 8:00 A.M. and 4:00 P.M. at 30-30 Thomson Avenue, 3rd Floor, Division of Infrastructure, Long Island City, N.Y. 11101.
Contact: Mr. Robert Kuhlmann, Tel. (718) 391-2145

1. NYCDEP Water Main Standard Drawings, November 2010
2. Specifications for Trunk Main Work, July 2014
3. Standards for Green Infrastructure, latest version, available only on-line at:
http://www.nyc.gov/html/dep/html/stormwater/green_infrastructure_standards.shtml

Water main work material specifications are available at the Department of Environmental Protection, 59-17 Junction Boulevard, 3rd Floor Low-Rise Building, Flushing, N.Y. 11373-5108.
Contact: Mr. Tarlock Sahansra, P.E., Tel. (718) 595-5302
E-mail: TSAHANSRA@DEP.NYC.GOV

SPECIFICATIONS AND STANDARDS OF NEW YORK CITY

Standard Specifications and Drawings for New York City Fire Department Communications facilities are available from the FDNY Facilities Management Bureau, Plant Operations Engineering, 316 Sgt. Beers Avenue Cluster 1 Box 16, Fort Totten, N.Y. 11359.
Contact: Mr. Ed Durkin, Tel. (718) 281-3933

Tree Planting Standards of the City of New York Parks & Recreation are available at the following Department of Parks & Recreation website:
http://www.nycgovparks.org/pagefiles/53/Tree-Planting-Standards.pdf

SPECIFICATIONS AND STANDARDS OF PRIVATE UTILITIES

The Following reference document for Private Utility Work is available for pick up between 8:30 A.M. and 4:00 P.M. at 30-30 Thomson Avenue, First Floor Bid Procurement Room, L.I.C., N.Y. 11101.

1. CET SPECIFICATIONS AND SKETCHES dated November 2010

VOLUME 3 OF 4

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I - PAGES	NEW SECTIONS	I-1 to I-88
S – PAGES	SPECIAL PROVISIONS	S-1 to S-12
SW - PAGES	SEWER AND WATER MAIN SPECIFICATIONS	SW-1 to SW-4
EP7 - PAGES	GAS COST SHARING (EP-7) STANDARD SPECIFICATIONS	EP7-1 to EP7-28A
HAZ - PAGES	SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS	HAZ-1 to HAZ-477
U - PAGES	SECTION U (VERSION 2.0)	U-1 to U-16

(NO TEXT ON THIS PAGE)

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT (INCLUDING GENERAL CONDITIONS RELATED TO ARTICLE 22 – INSURANCE)

PART I. REQUIRED INFORMATION

INFORMATION FOR BIDDERS SECTION 26 BID SECURITY The **Contractor** shall obtain a bid security in the amount indicated to the right.	Required provided the TOTAL BID PRICE set forth on the Bid Form is $1,000,000. or more. Certified Check: 2% of Bid Amount or Bond: 10% of Bid Amount
INFORMATION FOR BIDDERS SECTION 26 PERFORMANCE AND PAYMENT BONDS The **Contractor** shall obtain performance and payment bonds in the amount indicated to the right.	Required for contracts in the amount of $1,000,000 or more. Performance Security and Payment Security shall each be in an amount equal to 100% of the Contract Price.
INFORMATION FOR BIDDERS DEPARTMENT OF DESIGN AND CONSTRUCTION SAFETY REQUIREMENTS The **Contractor** shall provide the safety personnel as indicated to the right.	■ Project Safety Representative ■ Dedicated, full-time Project Safety Manager
CONTRACT ARTICLE 14 DATE FOR SUBSTANTIAL COMPLETION The **Contractor** shall substantially complete the **Work** in the number of calendar days indicated to the right.	See Page SA-4
CONTRACT ARTICLE 15 LIQUIDATED DAMAGES If the **Contractor** fails to substantially complete the **Work** within the time fixed for substantial completion plus authorized time extensions or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the amount indicated to the right.	$1,500. for each consecutive calendar day over substantial completion time
CONTRACT ARTICLE 17. SUB-CONTRACTOR The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price indicated to the right.	Not to exceed 50 % of the **Contract** price

CONTRACT ARTICLE 21. RETAINAGE The **Commissioner** shall deduct and retain until the substantial completion of the **Work** the percent value of the **Work** indicated to the right.	5 % of the value of the **Work**
CONTRACT ARTICLE 22. (Per Directions Below)	See pages SA-5 through SA-12
CONTRACT ARTICLE 24. DEPOSIT GUARANTEE As security for the faithful performance of its obligations, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to the percentage of the **Contract** price indicated to the right.	1% of **Contract** price
CONTRACT ARTICLE 24. PERIOD OF GUARANTEE Periods of maintenance and guarantee other than the period set forth in Article 24.1 are indicated to the right.	Twenty-four (24) Months for Tree Planting
CONTRACT ARTICLE 74. STATEMENT OF WORK The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Contract Drawings**, **Specifications**, and all **Addenda** thereto, as **shown in the column to the right.**	**Addenda**, numbered: 1
CONTRACT ARTICLE 75. COMPENSATION TO BE PAID TO CONTRACTOR The **City** shall pay and the **Contractor** shall accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein, the total sum **shown in the column to the right,** being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract.**	Amount for which the **Contract** was Awarded: Five million, nine hundred thirty-one thousand, two hundred four Dollars and thirty-six cents ($ 5,931,204.36)
CONTRACT ARTICLE 79. PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT	See M/WBE Utilization Plan in the Bid Booklet

STANDARD HIGHWAY SPECIFICATIONS SECTION 6.40 LIQUIDATED DAMAGES FOR ENGINEER'S FIELD OFFICE If the Contractor fails to satisfactorily provide the field office and all equipment specified in **Section 6.40 - Engineer's Field Office**, and/or if a cited deficiency exceed seventy two (72) hours after notice from the Engineer in writing, or is permitted to recur, liquidated damages will be assessed in the amount specified herein for each subsequent calendar day or part thereof that a cited deficiency resulting in nonpayment, as described in **Section 6.40.5**, is not corrected.	$ 250.00 for each calendar day of deficiency
STANDARD HIGHWAY SPECIFICATIONS SECTION 6.70 LIQUIDATED DAMAGES FOR MAINTENANCE AND PROTECTION OF TRAFFIC	$ 250.00 for each instance of failure to comply with the Maintenance and Protection of Traffic requirements within three (3) hours after written notice from the Engineer. $ 500.00 for each and every hour of failing to open the entire width of roadway to traffic the morning following a night/weekend work operation.
STANDARD HIGHWAY SPECIFICATIONS SECTION 7.13 LIQUIDATED DAMAGES FOR MAINTENANCE OF SITE If the Contractor fails to comply, within three (3) consecutive hours after written notice from the Engineer, with the requirements of **Section 7.13 - Maintenance of Site**, the Contractor shall pay to the City of New York, until such notice has been complied with or rescinded, the sum specified above per calendar day, for each instance of such failure, as liquidated damages and not as a penalty, for such default.	$ 250.00 for each calendar day, for each occurrence

Date for Substantial Completion (Reference: Article 14)

The Contractor shall substantially complete the Work within the Final Contract Duration determined in accordance with the terms and conditions set forth herein.

The Base Contract Duration for this project is 730 consecutive calendar days ("ccds").

The Final Contract Duration shall be the Base Contract Duration when a check mark is indicated before the word "NO", below, and shall be the Base Contract Duration adjusted by the table set forth below when a check mark is indicated before the word "YES", below.

√ YES _____ NO

When the Final Contract Duration is indicated above to be adjusted by the table below, the table may increase the Base Contract Duration depending on the date of scheduled substantial completion to avoid a scheduled substantial completion of the Work during the winter months. The date of scheduled substantial completion shall be determined by adding the Base Contract Duration to the date specified to commence work in the written Notice to Proceed. The Final Contract Duration shall then be determined as follows:

(a) Find the row that corresponds to the month of substantial completion based on the Base Contract Duration added to the date specified to commence work in the written Notice to Proceed.

(b) Find the number of days to be added to the Base Contract Duration in the table below. Add that number of days to the Base Contract Duration to obtain the Final Contract Duration in consecutive calendar days.

Month of Substantial Completion based on the Base Contract Duration	Number of Days of adjustment
January	150
February	120
March	90
April	60
May	30
June	0
July	0
August	0
September	0
October	0
November –December 15	0
December 16 – December 31	180

In addition, should Item No. 9.30, "Storm Water Pollution Prevention," exist in the Contract and the required Storm Water Pollution Prevention Plan (SWPPP) does not conform to NYSDEC's recommended Standards, an additional 60 ccd shall be added to the above Final Contract Duration.

(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART II. TYPES OF INSURANCE, MINIMUM LIMITS AND SPECIAL CONDITIONS

Note: All certificate(s) of insurance submitted pursuant to Contract Article 22.3. 3 must be accompanied by a Certification by Broker consistent with Part III below and include the following information:

- **For each insurance policy, the name and NAIC number of issuing company, number of policy, and effective dates;**
- **Policy limits consistent with the requirements listed below;**
- **Additional insureds or loss payees consistent with the requirements listed below; and**
- **The number assigned to the Contract by the City (in the "Description of Operations" field).**

Insurance indicated by a blackened box (■) or by X in a □ to left will be required under this contract

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
■ Commercial General Liability Art. 22.1.1	The minimum limits shall be $ 3,000,000 per occurrence and $ 6,000,000 per project aggregate applicable to this **Contract.** Additional Insureds: 1. City of New York, including its officials and employees, with coverage at least as broad as ISO Form CG 20 10 and CG 20 37, 2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the **Contract** requires to be named as Additional Insured(s), with coverage at least as broad as ISO Form CG 20 26. The Additional Insured endorsement shall either specify the entity's name, if known, or the entity's title (e.g., Project Manager), 3. Consolidated Edison 4. The City University of the State of New York, an instrumentality of the State of New York

■ Workers' Compensation Art. 22.1.2 ■ Disability Benefits Insurance Art. 22.1.2 ■ Employers' Liability Art. 22.1.2 ☐ Jones Act Art. 22.1.3 ☐ U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.3	Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction. **Note:** The following forms are acceptable: (1) New York State Workers' Compensation Board Form No. C-105.2, (2) State Insurance Fund Form No. U-26.3, (3) New York State Workers' Compensation Board Form No. DB-120.1 and (4) Request for WC/DB Exemption Form No. CE-200. The City will not accept an ACORD form as proof of Workers' Compensation or Disability Insurance. Jones Act and U.S. Longshoremen's and Harbor Workers' Compensation Act: Statutory per U.S. Law. ☐ Additional Requirements:
■ Builders' Risk Art. 22.1.4	☐ Required: 100% of total bid amount ■ Required: 100 % of total bid amount for Item(s): BVM11-PL, BVM11-ST, BVM11-WP **Contractor** the Named Insured; the **City** both an Additional Insured and one of the loss payees as its interests may appear. If the **Work** does not involve construction of a new building or gut renovation work, the **Contractor** may provide an installation floater in lieu of Builders Risk insurance. Note: Builders Risk Insurance may terminate upon **Substantial Completion** of the **Work** in its entirety.

☐ Commercial Auto Liability Art. 22.1.5	$ 2,000,000 per accident combined single limit If vehicles are used for transporting hazardous materials, the **Contractor** shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90 Additional Insureds:
☐Contractors Pollution Liability Art. 22.1.6	$ 5,000,000 per occurrence $ 5,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Marine Protection and Indemnity Art. 22.1.7(a)	$_____ each occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Hull and Machinery Insurance Art. 22.1.7(b)	$_____ per occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

☐ Marine Pollution Liability Art. 22.1.7(c)	$ 1,000,000 per occurrence $ 1,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
[OTHER] Art. 22.1.8 ☐ Railroad Protection Liability Policy (ISO-RIMA or equivalent form) approved by Permittor covering the work to be performed at the designated site and affording protection for damages arising out of bodily injury or death, physical damage to or destruction of property, including damage to the Insured's own property and conforming to the following: • Policy Endorsement CG 28 31 - Pollution Exclusion Amendment is required to be endorsed onto the policy when environmental-related work and/or exposures exist. • Indicate the Name and address of the Contractor to perform the work, the Contract # and the name of the railroad property where the work is being performed and the Agency Permit. • Evidence of Railroad Protective Liability Insurance, must be provided in the form of the Original Policy. A detailed Insurance Binder (ACORD or Manuscript Form) will be accepted pending issuance of the Original Policy, which must be provided within 30 days of the Binder Approval.	$ 2,000,000 per occurrence $ 6,000,000 annual aggregate Named Insureds: 1. New York City Transit Authority (NYCTA), the Manhattan and Bronx Surface Transit Operation Authority (MaBSTOA), the Staten Island Rapid Transit Operation Authority (SIRTOA), MTA Capital Construction Co., the Metropolitan Transportation Authority (MTA) including its subsidiaries and affiliates, and the City of New York (as Owner) and all other indemnified parties. 2. The AMTRAK, its subsidiaries and affiliated companies.

[OTHER] Art. 22.1.8

■ Professional Liability

A. The Contractor's Professional Engineer shall maintain and submit evidence of Professional Liability Insurance in the minimum amount of $1,000,000 per claim. The policy or policies shall include an endorsement to cover the liability assumed by the Contractor under this Contract arising out of the negligent performance of professional services or caused by an error, omission or negligent act of the Contractor's Professional Engineer or anyone employed by the Contractor's Professional Engineer.

B. Claims-made policies will be accepted for Professional Liability Insurance. All such policies shall have an extended reporting period option or automatic coverage of not less than two (2) years. If available as an option, the Contractor's Professional Engineer shall purchase extended reporting period coverage effective on cancellation or termination of such insurance unless a new policy is secured with a retroactive date, including at least the last policy year.

[OTHER] Art. 22.1.8 ■ Engineer's Field Office **Section 6.40, Standard Highway Specifications**	Fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of $40,000

[OTHER] Art. 22.1.8

☐ The Following Additional Insurance Must Be Provided:

Umbrella/Excess Liability Insurance - The Contractor shall provide Umbrella/Excess Liability Insurance in the minimum amount of $10,000,000 per Occurrence and $10,000,000 in Aggregate. The policy terms and condition should be at least as broad as the underlying policies. The underlying policies should comply with the insurance provision as outlined by the contract. Defense cost should be in addition to the limit of liability. The City of New York, including its officials and employees, should be included as additional insured as respects to the noted project.

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)
(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART III. CERTIFICATES OF INSURANCE

All certificates of insurance (except certificates of insurance solely evidencing Workers' Compensation Insurance, Employer's Liability Insurance, and/or Disability Benefits Insurance) must be accompanied by one of the following:

(1) the Certification by Insurance Broker or Agent on the following page setting forth the required information and signatures;

-- OR --

(2) copies of all policies as certified by an authorized representative of the issuing insurance carrier that are referenced in such certificate of insurance. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

CITY OF NEW YORK

CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

_____
[Name of broker or agent (typewritten)]

_____
[Address of broker or agent (typewritten)]

_____
[Email address of broker or agent (typewritten)]

_____
[Phone number/Fax number of broker or agent (typewritten)]

_____
[Signature of authorized official, broker, or agent]

_____
[Name and title of authorized official, broker, or agent (typewritten)]

State of .....)
) ss.:
County of .....)

Sworn to before me this _____ day of _____, 20____

_____
NOTARY PUBLIC FOR THE STATE OF _____

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)

PART IV. ADDRESS OF COMMISSIONER

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

DDC Director, Insurance Risk Manager

30 – 30 Thomson Avenue, 4th Floor (IDCNY Building)

Long Island City, NY 11101

(NO FURTHER TEXT ON THIS PAGE)

R - PAGES

REVISIONS TO STANDARD SPECIFICATIONS

NOTICE

The Specification Bulletin(s) ("SB(s)") contained in this Section (R-Pages) may consist of revisions to the following Standard Specifications:

- New York City Department of Transportation ("NYC DOT") Standard Highway Specifications, dated 8/1/2015;
- New York City Department of Environmental Protection ("NYC DEP") Standard Sewer and Water Main Specifications, dated 7/1/2014; and
- NYC DEP Specifications for Trunk Main Work, dated 7/2014.

The SB(s) modify and supersede portions of the applicable Standard Specifications. The provisions contained in this Contract's I-Pages, S-Pages and SW-Pages may further modify the applicable Standard Specifications.

The following SB(s) are included as part of this contract:

- SB 16-001 – REVISIONS TO THE NYC DOT STANDARD HIGHWAY SPECIFICATIONS.
- SB 16-002 – REVISIONS TO THE NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS.
- SB 17-001 – UV CURED-IN-PLACE-PIPE (CIPP) LINING METHOD
- SB 17-002 – RODENT AND WATERBUG PEST CONTROL
- SB 17-003 – ENGINEERS FIELD OFFICE
- SB 17-004 – FIRE DEPARTMENT FACILITIES
- SB 17-005 – DIGITAL PHOTOGRAPHS
- SB 17-006 – RECORDS OF SUBSURFACE STRUCTURES
- SB 17-007 – MOBILIZATION
- SB 17-008 – QUALIFICATION CARDS
- SB 17-009 – SALVAGEABLE MATERIALS

(NO TEXT ON THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 16-001

Title: **REVISIONS TO NYC DOT STANDARD HIGHWAY SPECIFICATIONS**

Prepared:	Approved:
6/29/2016	6/29/2016
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 7/11/16.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) Refer to Page 3, Subsection 1.06.3;
Delete the third paragraph;
Substitute the following new paragraph:
"Any doubt as to the meaning of this contract or the specifications thereof, or any obscurity as to the wording of them, or any discrepancy between them, or any discrepancy between figures and drawings will be explained by the Engineer."

b) Refer to Page 5, Subsection 1.06.8;
Delete the words "tentative" wherever it occurs in the last paragraph.

c) Refer to Page 17, Subsection 1.06.23.(G), last paragraph;
Delete the word "asbestos" wherever it occurs.

d) Refer to Page 26, Subsection 1.06.29, line number four (4);
Delete the words and punctuation mark ", and at the prices fixed herein" in its entirety.

e) Refer to Page 41 Subsection 1.06.48.(C), 2nd paragraph, 1st line;
Delete from the first line starting from "have maximum grade of one (1) vertical on three (3) horizontal", in its entirety;
Substitute the following:
"have a maximum grade of one (1) vertical on twelve (12) horizontal, for pedestrian ramp and one (1) vertical on six (6) horizontal, for driveway ramp".

f) Refer to Page 87, Subsection 2.18.3(A), 4th paragraph;
Change "." to "," after "... and Appeals";
Add the following words: "and the health standards of OSHA of the U.S. Department of Labor."

g) Refer to Page 104, Subsection 3.01.3.(C).1.(c), 4th paragraph:
Delete the words "to a maximum of 70%"

h) Refer to Page 120, Subsection 3.05.5.(A), 2nd Table 3.05-V;
Delete the sentence: "Concrete of Type IA, IIA and IIIA shall have an air entrainment of 4 to 7 percent when the coarse aggregate is 1 1/2" stone and 5 to 7 percent when the coarse aggregate is 3/4" stone, with 6.5 percent desired in either case."
Substitute the following:
"Concrete of classes shown in Table 3.05-II shall have an air entrainment of 4 to 7 percent for size 357 coarse aggregate and 5 to 7 percent for size 67 or 57 aggregate, with 6.5 percent desired in either case. If concrete is pumped, air entrainment shall be measured after the pump."

i) Refer to Page 135, Subsection 3.05.9, 4th paragraph;
Add the following words to the end of the 4th paragraph: "Dosing of accelerators and retarders shall be per the manufacturer's published recommendations. Addition of an accelerator or retarder per this subsection will not require a separate mix design, unless requested by the Engineer."

j) Refer to Page 192, Subsection 4.06.12;
Delete the Subsection 4.06.12, in its entirety and substitute the words "4.06.12. (NO TEXT)." The use of rubble aggregate will not be permitted.

k) Refer to Page 282, Subsection 5.02.2.(C), 2nd paragraph;
Add the following words: "6 in x 12 in" after "At least four (4)"

I) Refer to Page 282, Subsection 5.02.2.(C), 2nd paragraph;
Delete the sentence: "Curing boxes shall be furnished in good operating condition, capable of maintaining cylinders under water at a curing temperature of 72°F. ±5°F."
Substitute the following:
"Curing boxes meeting the requirements of ASTM C31 and C511 shall be furnished in good operating condition, and shall maintain cylinders under water at a curing temperature of 73.5°F ±3.5°F. Curing boxes with rusted or corroded interior surfaces shall not be used."

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

No Changes.

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 16-002

Title: **REVISIONS TO THE NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS**

Prepared:	Approved:
10/11/2016	10/11/2016
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 11/14/16.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 40.05 – SHEETING AND BRACING
  Pages A1-1 through A1-7
- **ATTACHMENT 2:** Revised Section 70.91 – SHEETING
  Pages A2-1 through A2-3

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIROMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Page III-6, Subsection 30.03.1;
Add the text ", C780 Annex 6" to line (2) after the words "C109".

b) **Refer** to Pages IV-12 through IV-18, Section 40.05 – SHEETING AND BRACING;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (7 pages).

c) **Refer** to Page V-60, Subsection 50.72.5.(A);
Delete in its entirety the Subsection;
Substitute the revised Subsection:

"(A) Cement shall be either Type V cement meeting the requirements of ASTM C150 or blended cement containing 8% microsilica that meets the requirements of NYS Department of Transportation Standard Specification 701-03, Type IP (8)".

d) **Refer** to Page V-65, Subsection 50.72.7.(N);
Delete the second sentence "The test cubes shall be 4"x4"x4"."

e) **Refer** to Page V-66, Subsection 50.72.7.(N);
Delete the text:

Test cubes will be made and stored in accordance with ASTM C31 and tested in accordance with ASTM C39, except as otherwise modified by the Engineer. Each test will consist of three (3) cubes; one (1) to be tested at seven (7) days, the other two (2) at twenty-eight (28) days.

Substitute the revised text:

"Test cores will be made, cured, and tested in accordance with ASTM C42, except as otherwise modified by the Engineer. Test cores will be made from a shotcrete test board, where the shotcrete thickness matches the placed thickness. Each test will consist of three (3) cores; one (1) to be tested at seven (7) days, the other two (2) at twenty-eight (28) days."

f) **Refer** to Pages V-65, V-66, and V-67, Subsections 50.72.7.(N), 50.72.9, and 50.72.10;
Delete the text "Test Cube" wherever it appears;
Substitute the text "Test Core".

g) **Refer** to Page VII-25, Subsection 70.12.5.(B).(2);
Delete the text "and C492";
Substitute the replacement text "or C780 Annex 6"

h) **Refer** to Page VII-29, Subsection 70.13.4;
Add the text " or C780 Annex 6" after the words "C109".

i) **Refer** to Pages VII-48 through VII-51, Section 70.91 – SHEETING;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 2 (3 pages).

SECTION 40.05
SHEETING AND BRACING

40.05.1 SHEETING AND BRACING

(A) The sides of the trenches and excavations shall be supported by adequate sheeting and properly braced. All sheeting and bracing systems the Contractor elects to use or are ordered by the Engineer or the Department shall comply with these specifications and must receive the approvals stated herein. Timber sheeting and bracing shall be vertical sheeting with rangers and braces or horizontal sheeting supported by vertical steel soldier beams and the necessary bracing.

(B) Where the material to be excavated is of such character as to render it necessary, the sheeting shall be tongued and grooved and driven to such depths below the subgrade as may be directed.

(C) Where the nature of the material encountered or the safety of the adjacent structure render it necessary, the Contractor may resort to the use of steel sheet piling with prestressed bracing or the Contractor may underpin the structure or buildings.

(D) Other sheeting systems may be permitted upon approval of the Department of Design and Construction. (Trench Boxes will not be permitted for use in trenches and excavations that exceed twelve (12) feet in depth. (See **Subsection 40.05.4(E)**.))

(E) In general, sheeting and bracing in trenches and excavations shall be designed and installed so that the sheeting shall not be braced or blocked against any part of the new structure, or manholes, or chambers. When conditions warrant, bracing against such structures may be permitted following the approval of drawings prepared and submitted by a Professional Engineer licensed in the State of New York, showing the assumed design loads and stresses, and details of such bracing.

(F) If, in the opinion of the Engineer, any of the approved temporary or permanent supporting structures are inadequate or unsuitable for the actual conditions in the field, the Engineer may direct the Contractor to strengthen the supporting structures at no additional cost to the City. The Contractor shall be responsible for the sufficiency of all temporary and permanent supporting structures whether or not directed by the Engineer to strengthen them.

(G) Unless otherwise specified in the plans or these specifications, the Contractor shall remove all sheeting and bracing throughout this project as per **Subsection 40.05.7**.

40.05.2 SHEETING LEFT IN PLACE

When sheeting is specifically shown on the plans or specifically described in the specifications or specifically ordered in writing by the Engineer to be left in place, it refers to all sheeting and bracing in trench excavations for water main pipe and sewer conduit including manholes, valves and chambers. Excavations for catch basins, basin connections, house services and other excavations not considered part of the trench excavation for water main pipe and sewer conduit shall have their sheeting and bracing removed entirely.

When sheeting is to be left in place, all elements such as rangers and braces, of the sheeting used, must be left in place, except for such temporary braces that require removal in order to make way for the structure. Where it is necessary to remove such temporary braces, the sheeting shall be rebraced in a manner approved by the Engineer; however, in no case shall the sheeting be braced against the side of the structure unless approved in writing by the Engineer. Where lagging and soldier beams are used, the soldier beams and all the rangers and braces shall also be left in place. Where steel sheeting is used, the rangers and braces shall also be left in place.

When sheeting is to be left in place, the Contractor shall cut sheeting at the elevations ordered in writing by the Engineer; however, in general such cutoffs shall not be less than four (4) feet below the final

grade. Timber sheeting shall be cut off by sawing. Steel sheeting or soldier beams shall be cut off by burning. Breaking off of sheeting will not be permitted. The Contractor shall remove from the trench and away from the site of work, to the Contractor's own place of disposal, all cut sheeting and soldier beams together with all rangers, lagging and braces above the ordered elevation of cut. Where the removal of rangers and braces above the ordered elevation of cut is determined by the Engineer to render the sheeting system unstable, rangers and braces shall be placed prior to cutting at a level below the ordered elevation of cut and left in place.

(A) FOR SHEETING OF WATER MAIN TRENCHES AND EXCAVATIONS

Additional payment will be made for sheeting and bracing that is specifically shown on the plans or specifically described in the specifications or ordered in writing by the Engineer, to be left in place in water main trenches and excavations. Payment will be made in accordance with **Section 70.91**.

(B) FOR SHEETING OF SEWER TRENCHES AND EXCAVATIONS

No separate or additional payment will be made for sheeting and bracing that is specifically shown on the plans or specifically described in the specifications to be left in place in sewer trenches and excavations, regardless of the type used nor for the removal from the trench and excavation and the disposal away from the job site of the cut sheeting, bracing and rangers. The cost thereof shall be included in the prices bid for all sewer contract items of work, except when separate payment for sheeting and bracing is provided, in this case the cost shall be included therein. When sheeting is specifically ordered by the Engineer, to be left in place in sewer trenches and excavations, the cost for all labor, materials, cutting, removal, disposal, insurance and work required to leave sheeting in place shall be determine in accordance with **Articles 25 and 26** of the Contract.

40.05.3 MATERIALS

(A) Timber sheeting and bracing shall be of new or acceptable used timber free from injurious defects.

(B) Steel soldier beams shall comply with the requirements of **Section 23.05 - Structural, Reinforcing And Miscellaneous Steel**, except that approved used material will be permitted. Steel sheet piling shall comply with the requirements of **Section 24.01 - Steel Sheeting**, except that approved used materials will be permitted. Timber and lumber for bracing, shoring, fencing, bridging, and decking shall conform to the requirements of **Section 23.06 - Timber And Lumber**. Steel used for sheeting systems or for any other purposes herein shall conform to the requirements of the ASTM A36 and all other applicable requirements of ASTM.

(C) Steel Plates for use as sheeting will be permitted provided that they are properly installed and supported. The use of steel bracing frames which partially support the steel plates will be permitted up to a depth of twelve (12) feet. The use of steel plates in conjunction with trench boxes will not be permitted (trench boxes can not be considered as steel bracing frames).

(D) Steel Sheeting shall conform to the requirements of **Section 24.01** and shall be installed with continuous interlock.

40.05.4 CONSTRUCTION METHODS

(A) GENERAL - Timber sheeting and bracing and other sheeting systems shall be of sufficient dimensions and strength, and steel sheeting shall be of sufficient type, size and weight, to support adequately the sides of the trenches and excavations and insure the safety of adjacent structures and shall be installed in accordance with the approved sheeting details. The Contractor shall be solely responsible for the adequacy and sufficiency of all sheeting and bracing used.

(B) SHEETING - Unless otherwise specified, timber sheeting and bracing shall be driven or placed ahead of the excavation in such a manner as to prevent the loss or slippage of ground in order to

safeguard adjacent surface and subsurface structures. The sheeting shall be driven to adequate depth below subgrade. As the work progresses, any voids back of the sheeting shall be filled and compacted in accordance with **Section 40.06** and as directed by the Engineer.

(C) Sheeting can be used as forms for concrete work. Whenever sheeting is used as formwork as specified or approved by the Engineer only timber sheeting will be permitted unless otherwise approved or specified in writing by the Engineer. When sheeting is used as formwork, an approved protection shall be placed between the sheeting, bracing or soldier beams and the concrete. In addition, when sheeting is used as formwork for any structure or portion thereof, the thickness of that structure or portion of such structure shall be increased be three (3) inches beyond the original neat line of such structure or portion thereof. In no case shall the sheeting, soldier beams or other bracing encroach upon the original neat line of the structure. In such instances when sheeting, soldier beams or other bracing is found to encroach upon the neat line of the structure, the Engineer shall direct the Contractor to remove such sheeting, soldier beams or other braces and redrive and/or replace the sheeting, soldier beams or other braces outside the neat line of the structure. All sheeting used as formwork shall be removed.

(D) All open cuts shall be excavated with vertical sides and properly supported with close sheeting and bracing in conformity with the requirements of **Section 40.03 - Earth Excavation** and with 23 NYCRR - "Protection of Persons Employed in Construction and Demolition Work" and 16 NYCRR Part 753 - "Protection of Underground Facilities" of the State of New York, Department of Labor, Board of Standards and Appeals.

(E) The Contractor is advised that trench boxes will be permitted for use as a sheeting system provided that the depth of trench does not exceed twelve (12) feet. The use of trench boxes to partially sheet trenches that are greater than twelve (12) feet in depth, will be strictly prohibited.

Should trench boxes meeting the above requirements be utilized, the trench will not have to be sheeted completely to subgrade. The trench box will be permitted to "hang up" to a maximum of two (2) feet above subgrade provided that the existing soil in the area of the subgrade can "stand up" on its own without sheeting. Should running ground be encountered or should the soil in the subgrade area begin to slough off, the Contractor will be required to extend the trench box to subgrade. The Engineer shall always maintain the right to order the Contractor to lower the trench box to subgrade as required.

No deductions will be made from any payment for not sheeting the bottom two (2) feet of trench if approved by the Engineer and no additional payment will be made should the Contractor be directed to sheet completely to subgrade.

All sheeting and bracing drawings submitted for approval which indicate trench boxes must be designed for the full depth of trench (to subgrade) and shall show the trench box extending to subgrade.

(F) SLOPED SIDES OF TRENCHES OR EXCAVATIONS - Where the Contractor requests permission not to sheet a trench or excavation, and offers to slope the sides of such trench or excavation in accordance with OSHA Regulations in lieu of such sheeting, the Contractor's request shall be reviewed by the Engineer.

If the Engineer deems such sloping to be acceptable the Engineer shall so notify the Contractor in writing.

Pavement excavation and restoration requirements shall be governed by the width of the trench measured at the bottom of the pavement foundation. Pavement excavation and restoration in excess of those required in connection with standard trench excavation, as specified, shall not be paid for.

In those cases where the Contractor does not request permission to side slope, but the Engineer determines that side sloping is in the best interests of the City, the Engineer shall order the Contractor to proceed using such side sloping. In these cases, the additional pavement excavation and restoration will be paid for at the appropriate bid unit price.

In both of the above cases it shall be presumed that side sloping a trench or excavation is done to obtain a lower cost for the work to be performed. The City shall, therefore, take an appropriate credit to cover the difference in overall costs resulting from the use of side sloping instead of timber sheeting.

(G) SHEETING METHODS

The following methods of sheeting trenches are acceptable:

(a) Vertical Wood Sheeting
(b) Steel Soldier Beams with Horizontal Wood Lagging
(c) Interlocking Steel Sheeting
(d) Trench Boxes for trench depths up to twelve (12) feet
(e) Steel Soldier Beams with Steel Plates continually supported
(f) Steel Frames with Steel Plates for trench depths up to twelve (12) feet
(g) Krings and Icon Type Sheeting Frames and Plates

40.05.5 SHOP DRAWINGS

The Contractor will be required to submit Shop Drawings detailing the sheeting system whenever the depth of cut exceeds five (5) feet.

(A) Before commencing any excavating operation the Contractor shall have approved drawings from the Department of Design and Construction for all types of sheeting and bracing systems, cofferdams, shoring, underpinning, bridging, decking and all other temporary or permanent supporting structures required.

(B) The Contractor shall submit for approval five (5) copies of sheeting and bracing drawings, and other structures (i.e. decking, bridging) drawings that the Contractor proposes to use for the work.

(C) The Contractor shall have these drawings prepared by a Licensed Professional Engineer, currently registered in the State of New York. Such drawings shall be submitted together with design calculations, references, tables and charts. Both drawings and design calculations shall bear the imprint of the Licensed Professional Engineer's seal and signature.

(D) In designing the sheeting stated above, the Contractor's Engineer shall take note of the standard minimum load diagram requirements for Watertight and Non-Watertight sheeting structures. (See Sewer Design Standards.)

(E) The following notes shall be required on all sheeting detail submissions:

(1) If the actual surcharge is in excess of three hundred thirty (330) pounds per square foot the Contractor shall adequately reinforce the sheeting and bracing as required at no additional cost to the City.

(2) Maximum pilot cut shall be five (5) feet.

The sheeting and bracing drawings shall also include but not be limited to the following: the density of the soil, the internal angle of friction of the soil, the stress grade and type of lumber, the allowable steel stresses and the sequence of construction operation where required.

(F) Shop drawings of sheeting, bracing and other structures used by the Contractor shall be signed by and carry the seal of a Professional Engineer licensed in the State of New York. These drawings shall be submitted together with proper design computations bearing the same seal and signature. Shop drawings shall be on sheets twenty-seven (27) inches by forty (40) inches with a one-half (1/2) inch marginal space on three (3) sides and a two (2) inch marginal space for binding on the left side.

Shop drawings shall be numbered consecutively and shall accurately and distinctly present the following:

(1) All working and erection dimensions.
(2) Arrangement and sectional views.
(3) Necessary details, including complete information for making connections between work under this contract and work under other contracts.
(4) Kinds of materials.

(G) Each shop drawing shall be dated and contain:

(1) The name of this project and this contract number.
(2) The description name of classified contract item number or numbers under which it is or they are required.
(3) The locations or points at which the sheeting is to be installed in the work.

(H) All sheeting submissions shall reflect the means and methods chosen by the Contractor and approved by the Engineer. Whenever steel sheeting systems (including trench boxes, frames and plates, etc.) are submitted which would render the crossing of Utilities (i.e. water mains and sewers) impossible the Contractor shall also submit, for approval, a system which can be utilized to permit such crossings (i.e. wood sheeting).

(I) The submission of multiple sheeting systems shall be kept to a minimum. Whenever the Contractor submits multiple systems they must be accompanied with a Location Plan shop drawing to indicate the exact location where these various systems are to be installed. Since the approval of multiple systems will delay the sheeting approval process the Contractor is requested to submit a schedule indicating the time frame that these systems are required. In addition the Contractor will be required to install these multiple systems at the locations indicated on the submitted Location Plan. Should the Contractor request to change the sheeting system at any particular location the Contractor will be required to resubmit the sheeting drawing, for approval, even though the revised sheeting system may have been approved at another location within the project area. The Contractor is reminded that the approval time for any given sheeting system may require up to four (4) weeks.

40.05.6 DESIGN CRITERIA

The following criteria shall be used in calculating the required sheeting, bracing and/or decking systems.

(A) All compression members (struts) shall be designed with a factor of safety of two (2.0). The factor of safety of two (2.0) shall be a value above and beyond the allowable value for compressive stresses for steel as designated in the "AISC Manual of Steel Construction", and for wood as designated in the "National Design Specification for Stress-Grade Lumber and its Fastening". All other allowable stresses (not including compression members) may be increased by thirty-three and one-third (33-1/3) percent where sheeting and bracing is deemed a temporary structure.

(B) A factor of safety shall be used to determine the minimum embedment for sheeting as follows:

Vertical Timber - 15%
Soldier Beams - 20%
Steel Sheeting - 30%

(C) Embedment shall be calculated in accordance with the procedures and standard minimum load diagrams specified herein. The maximum allowable embedment for vertical timber sheeting shall not exceed three feet six inches (3'-6"). The minimum embedment shall be two (2) feet.

(D). The Contractor is advised that the maximum allowable bending stress (F_b) for all timber members shall not exceed one thousand seven hundred fifty (1,750) pounds per square inch. If the Contractor

elects to use a bending stress higher than F_b = 1,750-psi, written certification of bending stress test results shall be submitted to the Engineer prior to use of such material in construction.

(E) Where it is anticipated that heavier crane or equipment loads will fall within the influence line of the trench, design loads shall be increased accordingly.

(F) The Contractor shall compute and include in the Contractor's submission of drawings and calculations the following:

(1) Maximum bending stress
(2) Maximum horizontal shear in wale
(3) Compression perpendicular to grain
(4) Maximum vertical shear stress

(G) DECKING

(1) Unless otherwise specified in the contract documents or approved in writing by the Engineer, the minimum live load on decking shall be AASHTO HS20-44 or Contractor's equipment or heaviest truck loading (i.e. concrete trucks) whichever is greater plus an impact factor of thirty-three (33) percent.

(2) Unless otherwise approved, timber mats shall extend a minimum of three (3) feet from sheeting line on either side of trench.

(3) Unless otherwise approved, a minimum one thousand (1,000) pounds per square foot surcharge load shall be used for sheeting below decking.

(H) Maximum trench widths shown on sheeting details shall not exceed those allowed by the standards or specifications.

(I) The Contractor shall provide an individual cross-sectional sheeting (trench) detail for each size water main pipe and sewer conduit to be constructed unless permission to do otherwise is granted.

(J) Where the water table lies above the subgrade of trench and a well point or deep well dewatering system is not used, the Contractor shall include the effect of hydrostatic loading in calculations for both watertight and non-watertight sheeting.

(K) Sheeting details shall accurately depict actual field operations. The Contractor shall be restricted to a maximum five (5) feet deep pilot cut and all details must reflect this. Additional braces and wales may be required to install sheeting due to the five (5) feet maximum pilot cut restriction. The Contractor shall not assume that additional pilot cut depths will be allowed.

40.05.7 REMOVAL OF SHEETING

All sheeting design and requirements shall be in strict conformance with this section and all appropriate Addenda to the specifications.

Unless otherwise specified in the plans or these specifications, the Contractor shall remove all sheeting and bracing throughout this project.

(A) The sheeting shall be removed in lifts during the backfilling operation in order to permit proper placement and compaction of material against the structure and the earth bank. This work shall be accomplished in conjunction with the removal of wales and braces. In no case shall the lifts for sheeting exceed the specified or otherwise approved depth of compaction layer.

(B) The Contractor shall submit to the Engineer, for approval, the Contractor's method for installation and removal of sheeting and the method for backfilling the trench. The submission shall also specify if there are any location(s) where sheeting cannot be removed and detail the reasons why the sheeting cannot be removed. The submission shall be signed by and carry the seal of a New York State Licensed Professional Engineer. These methods must be strictly adhered to.

(C) The Contractor is advised that the Contractor will be responsible for, and shall solely at the Contractor's own expense, repair, replace and/or relocate all City owned utilities that are damaged and/or disturbed due to the Contractor's removal of sheeting operation.

(D) If the Contractor is required to leave the sheeting system in place in order to protect City owned utility crossings and structures, payment will be made in accordance with **Subsection 40.05.2(A)** and **Subsection 40.05.2(B)**.

(E) This section shall not be construed to relieve the Contractor of the Contractor's obligation under the contract to maintain, protect and support (temporarily and permanently) all City owned utilities within the influence lines of the excavated trenches. The Contractor in accordance with the standards of the agencies having jurisdiction thereof shall perform such maintenance, protection and support.

(F) The cost of maintenance, protection and support (temporarily and permanently) of City owned utilities shall be included in the prices bid for all items for which there are bid prices.

(G) If a soldier beam and lagging sheeting system is utilized then all parts of the system (i.e. soldier beams, bracing, wales and lagging) must be removed.

(H) There shall be no additional payment made for repairing, replacing and/or relocating City owned utilities that may be damaged and disturbed due to the Contractor's removal of sheeting operation, or for work performed by the Contractor as directed in **Subsection 40.05.7(E)** above.

40.05.8 COST INCLUDED

There shall be no separate payment for the sheeting and bracing of trenches and excavation of water mains larger than 20-inches in diameter and appurtenances thereto including valve chambers, regulator chambers, etc.; and for the sheeting and bracing of trenches and excavation of all sewer conduits and appurtenances thereto including manholes, chambers, catch basins, etc. The cost of all labor, material, plant, equipment and insurance necessary or required to furnish and install all timber and steel sheeting together with all necessary rangers, bracing, lagging, soldier beams, etc., excavation for the placing of sheeting, backfill and compaction behind sheeting to prevent loss of ground, cut off of sheeting as specified, together with all work incidental thereto, all in accordance with the plans and specifications and as directed by the Engineer, shall be deemed included in the prices bid for the respective contract items.

40.05.9 SEPARATE PAYMENT

Separate payment will be made for the sheeting of water mains 20-inches and smaller in diameter. Payment will be made in accordance with **Section 70.91**.

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SECTION 70.91
SHEETING

70.91.1 DESCRIPTION

This section describes the use of Sheeting in water main trenches and excavations only.

70.91.2 MATERIALS

All sheeting materials shall comply with **Subsection 40.05.3**.

70.91.3 CONSTRUCTION METHODS

To prevent injury to workmen or to avoid damaging existing water pipes, structures, and pavements and their foundations through caving or sliding of the banks of a trench or other excavation, protection shall be provided for all excavation work except where a determination is made by the Contractor, the Engineer or the Engineer's inspector at the work site that the nature of the excavation does not require protection.

Excavation protection, when required, shall be provided in accordance with the requirements of:

(1) U.S. Occupational Safety and Health Administration (OSHA) Construction Safety and Health Regulations, Part No. 1926, Subpart P;

(2) 23 NYCRR, Subpart 23-4 – Excavation Operations;

(3) 16 NYCRR, Part 753 – Protection of Underground Facilities;

(4) Special requirements detailed below.

NOTE: Whenever an interpretation difference exists as to selecting the applicable requirements, that of the most stringent one shall govern.

(A) SPECIAL REQUIREMENTS

Unless specifically ordered otherwise by the Engineer or the Engineer's inspector at the work site, the following Special Requirements shall be adhered to:

(a) Trenches For Water Main Pipe 12-Inch In Diameter And Less

In general, such trenches shall not be sheeted since, with the laying depths used, the trench bottoms will be less than five (5) feet below the ground surface. However, removal of existing pipe, or connections to existing pipe may, in some instances result in trench depths of five (5) feet or greater. In such cases, at a minimum, sheeting will be required. If sheeting is required, it shall be of sufficient length so that all ingress and egress is within the sheeted area, and shall extend at least 2 feet beyond all work locations and access points. If workmen are required to transit between sheeted areas, they must exit the trench.

If, in the opinion of the Engineer or the Engineer's inspector at the work site, sheeting is required, for whatever reason, in any trench or other excavation, the Contractor shall install it.

(b) Trenches For Water Main Pipe 16-Inch and 20-Inch In Diameter

All such trenches shall be sheeted, regardless of the depth of the trench.

(c) Trenches For Water Main Pipe Larger Than 20-Inch In Diameter; And Excavations For Chambers And Manholes

All such trenches shall be sheeted, regardless of the depth of the trench.

(d) Detailed Requirements As To Type And Size Of Sheeting

Unless specifically noted otherwise on the contract drawings or in these specifications, the sheeting required in paragraphs (a), (b), and (c) above, above, shall be furnished and installed in full compliance with the requirements of Section 1926.652 of the OSHA Regulations.

The size and spacing of sheeting, stringers, and cross bracing required for various soil conditions shall meet the latest OSHA Regulation requirements.

(B) SUBSTITUTION FOR TIMBER SHEETING

Any substitution for timber sheeting and bracing such as a self-supporting movable shield of timber or metal, etc., must be designed by and stamped with the seal of a Professional Engineer, licensed to practice in the State of New York, and must be approved by the Engineer in writing prior to its being used on the job. Submittal of proposed substitutions shall be made by the Contractor at least four (4) weeks prior to their scheduled use to allow for proper review and approval of it by the Engineer.

(C) SHEETING LEFT IN PLACE

Where the sheeting is ordered to be left in place, the full amount of the lumber so left in place will be paid for at fifty percent (50%) of the market value thereof, without any allowance for the cost of delivery or placing in the work. Sheeting left in place shall be cut off in accordance with **Subsection 40.05.2**.

When sheeting is ordered to be left in place, the cost of all work required for the cutting, removal and disposal of the cut sheeting shall be deemed included in the fifty percent (50%) compensation paid above.

70.91.4 MEASUREMENT

The quantity of sheeting incorporated into the work, complete, as shown, specified or required shall be computed as twice the depth of trench times the length of the sheeted trench. The depth of trench or excavation to be sheeted shall be from the ground surface to the bottom of the pipe. In those cases where a special foundation, such as a broken stone bed or a concrete cradle or mat is required, the depth of trench or excavation to be sheeted shall be from the ground surface to the bottom of such special foundation.

70.91.5 PRICE TO COVER

Payment for sheeting of trenches for water main pipe 12-inch in diameter and less shall be made per square foot under bid Item No. 70.91SW12 - FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS contained in the bid schedule.

Payment for sheeting of trenches for water main pipe 16-Inch and 20-inch in diameter shall be made per square foot under bid Item No. 70.91SW20 - FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 20-INCH IN DIAMETER contained in the bid schedule. Where there is no bid item for such sheeting, because the quantities of such pipe to be installed are very small, or the work involves connecting smaller size pipe to 16-Inch and 20-inch mains or larger, payment for such sheeting will be made at the unit price bid for Item No. 70.91SW12 - FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS.

The Contractor's attention is directed to the fact that the Contractor's bid price for sheeting covers the cost of extra earth excavation and other extra costs involved in laying the pipe, such as but not limited to, lesser pipe footage being installed per day, etc.

All of the above provisions are intended to apply to those instances where sheeting is required in a trench in order to lay pipe. In such instances a wider trench is required (to accommodate the sheeting) than when pipe is laid in unsheeted trenches.

When sheeting is provided in portions of a trench (to protect men inserting taps, etc.) that was originally excavated for laying a water main, and when such trench was not sheeted at the time the water main was laid, payment shall be made only for the amount of sheeting actually placed. In all such cases the payment lines for pavement excavation, pavement restoration, and satisfactory backfill shall be those specified for unsheeted trenches.

Where the OSHA Regulations do not require sheeting, but where the Contractor, for the Contractor's own convenience, installs a more limited type of trench support (stay bracing, etc.) such limited type of trench support will not be paid for. The cost of such limited trench support shall be deemed included in the various unit prices bid.

All sheeting that is to be paid for must meet all requirements of the OSHA Regulations.

70.91.6 NO SEPARATE PAYMENT

No separate payment will be made for the sheeting of water main trenches for water mains larger than 20-inches in diameter, the costs thereof shall be deemed included in the prices bid for laying these mains. No payment shall be made for sheeting at chambers and manholes, but payment thereof will be deemed to be included in the various items bid for constructing the chambers and manholes.

Payment for Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe will be made under the Item Number as calculated below:

The Item Numbers for Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe have nine characters. (The decimal point is considered a character, the third character.)

(1) The first five characters shall define Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe:

70.91

(2) The sixth and seventh characters shall define Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe:

SW - Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe

(3) The eighth and ninth characters shall define the Size of Water Main Pipe That Trench Sheeting will be provided for:

12 - 12-Inch In Diameter And Less
20 16-Inch and 20-Inch In Diameter

(4) The Item Numbers together with Description and Pay Unit as provided in the Bid Schedule are provided below:

Item No.	Description	Pay Unit
70.91SW12	FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS	S.F.
70.91SW20	FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 16-INCH AND 20-INCH IN DIAMETER	S.F.

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NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-001

Title: **UV CURED-IN-PLACE-PIPE (CIPP) LINING METHOD**

Prepared:	Approved:
1/12/2017	1/12/2017
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APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 50.71 - RECONSTRUCTION OF EXISTING SEWERS USING D.E.P. APPROVED CURED-IN-PLACE-PIPE (CIPP) LINING METHOD
  Pages A1-1 through A1-9

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Pages V-52 through V-59, Section 50.71 – RECONSTRUCTION OF EXISTING SEWERS USING D.E.P. APPROVED CURED-IN-PLACE-PIPE (CIPP) LINING METHOD;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (9 pages).

(NO TEXT THIS PAGE)

CURED-IN-PLACE-PIPE (CIPP) LINING METHOD

50.71.1 INTENT

It is the intent of this section to provide for the reconstruction of existing sewers by the installation of a resin-impregnated flexible tube that is inflated within the existing conduit to form a hard, impermeable, corrosion resistant pipe within a pipe. When cured, the cured-in-place-pipe (CIPP) will be formed to the original conduit.

50.71.2 REQUIREMENTS

(A) DESCRIPTION OF WORK

Unless otherwise specified in the contract, the Contractor shall use a Department of Environmental Protection (DEP) approved cured-in-place-pipe lining method on all existing sewers shown, specified, or ordered to be reconstructed under this contract by use of an approved lining method. All such work shall comply with the terms of this specification and with the manufacturer's standards set forth for the lining method(s) selected by the Contractor.

Under this method the Contractor shall reconstruct existing sewers by the insertion of either a flexible polyester felt or glass fiber lining tube that has been saturated with either a thermosetting or photosetting resin. The liner shall be inserted into the existing sewer either by direct inversion (ASTM F1216) using a head of water or air, or by pulling the tube into place by winching and then inflating it by inversion of a calibration hose (ASTM F1743). The thermosetting resin shall then be cured by either circulating hot water through the tube or by circulating hot air (a mixture of steam and air), or by circulating steam to cure the resin into a hard impermeable pipe. The photo-initiated resin shall be exposed to an ultraviolet light source to cure the resin into a hard impermeable pipe.

The Contractor shall make all investigations of the existing sewers to be reconstructed and shall determine and select the most effective approved lining method(s) appropriate for installation in the existing sewers to be reconstructed. The Contractor shall be responsible for the successful completion of all work required herein; failure of the Contractor's selected lining method(s) to be satisfactorily installed in the existing sewers shall not relieve the Contractor of the Contractor's responsibility to provide satisfactorily reconstructed sewers.

Any cost associated with the removal of the unsatisfactorily installed liner and the subsequent, satisfactory reinstallation of an approved liner shall be borne solely by the Contractor, and the Contractor shall not make any claim against the City for this additional required work.

Once installed, the liner shall extend from manhole to manhole in a continuous tight fitting watertight pipe-within-a-pipe, and be chemically resistant to sewage gases and materials. During the warranty period any defects that might affect the integrity or strength of the liner shall be immediately repaired or replaced by the Contractor, at the Contractor's expense, pursuant to the manufacturer's recommendations, and to the satisfaction of the Engineer.

(B) REFERENCE SPECIFICATIONS AND STANDARDS

The American Society for Testing and Materials Standard Specifications ASTM C581, D638, D790, D2990, D5813, F1216, F1743, and F2019, and the manufacturer's standards are hereby made a part of this specification.

(C) LINER SIZE AND LENGTH

The liner shall be fabricated to a size that when installed will neatly fit the internal circumference of the sewer to be lined. The liner thickness shall be designed to adequately resist all external pressures and conditions (e.g. deflection, ring bending, buckling and minimum stiffness). The length of the liner shall be

that deemed necessary to effectively span the distance and carry out the insertion and seal of the liner at the inlet and outlet manholes. The Contractor shall verify the lengths in the field before cutting the liner to length. Prior to the start of work the Contractor will be required to submit design calculations for wall thickness to the Engineer. When UV-cured liners are used, the Contractor must also submit the manufacturer's product specific data regarding the glass fiber tube, the resin and initiator cocktail system and the necessary manufacturer installation reference material detailing the type of light source and the speed in which it will be advanced to insure proper curing.
Allowance for circumferential and longitudinal stretching of the liner during installation shall be made as per the manufacturer's standards for the approved method of lining chosen. Under no circumstances shall the finished wall thickness of liner be less than six (6) millimeters in thickness.

(D) DESIGN PARAMETERS - The following design parameters shall be used in the design of pipe liners in addition to the manufacturer's standards:

(1)	Ovality of Existing Pipe	2% Minimum
(2)	Existing Pipe Condition	Fully Deteriorated
(3)	Modulus of Soil Reaction	700-psi Minimum
(4)	Factor of Safety Against Buckling	2 Minimum
(5)	Allowable Deflection	5% Maximum
(6)	Ratio of Pipe to Soil Strength	10% Minimum
(7)	Live Load	AASHTO HS20-44 Loading under Roadways AASHTO E-80 Loading under Railroads
(8)	Soil Unit Weight	120-pcf Minimum (If no Boring Data is available in vicinity.)
(9)	Creep Reduction Factor	50% Maximum

(E) LINER MATERIAL - The Contractor shall furnish, prior to use of the lining materials, satisfactory written guarantee of the Contractor's compliance with the liner manufacturer's standards for all materials (polyester felt tubing, including the polyurethane covered felt and the thermosetting resin or glass fiber tubing soaked in photosetting resin) and techniques being used in the method.

Prior to the start of work the Contractor will be required to submit to the Engineer the types of resins and the resultant cure schedules for each length and size of sewer to be lined. The finished liner shall incorporate thermosetting materials that will withstand the corrosive effects of the normal existing effluents.

(F) SAFETY - The Contractor shall carry out the Contractor's operations in strict accordance with all OSHA and manufacturer's safety requirements. Emphasis shall be placed upon safety requirements for entering confined spaces and working with hot water, steam, or resins that may cause fumes.
The Contractor shall erect such signs and other devices as are necessary for the safety of the work site and shall secure the site and conform all work to the safety requirements of all pertinent regulatory agencies.

(G) AIR QUALITY - The Contractor is advised that all liner installation work shall be carried out in full compliance with all City, State, and Federal laws, rules, and regulations regarding Air Quality and Safety. The contractor shall take all necessary precautions to minimize the release of styrene or other VOC emissions and mitigate odors generated during set and the CIPP lining process. The Contractor shall also take all necessary precautions to prevent such odors from entering structures, businesses or other types of establishments, through service connections or other plumbing fixtures.

(H) FLOW BYPASSING - Prior to the start of work the Contractor will be required to submit a fluming/bypass-pumping detail in accordance with **Subsection 10.13 - (3) Existing Flow**. The Contractor shall provide for the diversion of flow of existing sewers at existing upstream manholes (if available) and pump the flow into an existing downstream manhole. The pumps and bypass lines shall

be of adequate capacity and size to handle the flow. The proposed bypassing system shall be submitted to the Engineer for approval and no work shall commence until such approval is granted.

(I) TELEVISION INSPECTION PRIOR TO INSTALLATION - All bidders are advised that a digital audio-visual inspection was made of the sewers to be reconstructed and that this recording (the "DEP recording") is available for review prior to bid opening. All prospective bidders are urged to view this recording in order to assess the suitability of the lining methods for use on this project. The City of New York does not guarantee the successful use of any particular method on this project and the Contractor shall utilize the Contractor's judgment as to the effective use of the method(s) the Contractor selects.

The Contractor will also be required to perform another television inspection and digital audio-visual recording of the sewer a maximum of seven (7) days prior to the setting up of the liner insertion equipment at the site. This inspection will be performed, utilizing a radial eye camera, to determine the latest condition of the sewer and to accurately identify the location of active service connections. Should the results of this television inspection show a condition different than that shown on the DEP recording, the Contractor shall immediately notify the Engineer.

For each section to be lined, the Contractor shall certify in writing that the DEP approved method the Contractor intends to use is suitable.

(J) CLEANING - The Contractor shall furnish all labor, materials and equipment and shall do all work necessary to remove and dispose of all debris, sediment, silt, refuse, timber, roots, and materials of all kinds which can be removed by conventional non-excavation type pipe cleaning equipment located in the existing sewers and manholes. The Contractor shall immediately notify the Engineer if such debris, etc., cannot be removed by conventional non-excavation type pipe cleaning equipment.

Protruding service connections shall be removed and paid for consistent with **Section 52.51**.

(K) SERVICE CONNECTIONS - The Contractor shall be required to determine which service connections are active and shall be responsible for controlling (or maintaining) the flow for each active service connection along the line of the sewer to be rehabilitated. Where necessary, the flow from an active service connection shall be bypassed to a manhole downstream of the proposed work by means of pumping from the trap located in the basement of the affected building. However, should such bypassing be judged unfeasible by the Engineer, the Contractor shall excavate to the service connection outside the building area (sidewalk or roadway as determined by the Engineer) and bypass the connection from this point. The pump and bypass line for each service connection shall be of adequate capacity and size to handle the flow.

Prior to the commencement of any work, the Contractor shall make all necessary investigations and prepare a plan for the controlling (or maintaining) of the flow and, where necessary, for the bypassing of active service connections. This plan shall be submitted to the Engineer for approval and no work shall commence until such approval is granted.

(L) EQUIPMENT SPECIFICATION - The Contractor shall provide suitable temperature and pressure gauges in accordance with the manufacturer's standards and specifications. High-pressure steam hoses and fittings have to be rated in accordance with the steam generator used. Thermocouples are to be marked for each fluid to be conveyed: RED-steam; BLUE-water; GREEN-air. The pulling winch shall be equipped with a tension gauge (Type-Martin Decker or Approved Equal) - smooth running and variable speed. The cutting device shall be a Gulectron type or approved equal remote monitored device when used inside the lined pipe.

The Contractor shall prepare and inspect all necessary tools and any spare parts that are required for equipment that suffer frequent breakdowns, and shall ensure that said tools and spare parts are available at the site. Supporting equipment, such as pumps and generators, shall be provided at the site in the event there is a fluid surge and pumping is required on an emergency basis. The Contractor shall also prepare and make operable all necessary communication equipment for the Contractor's field crew.

(M) INSTALLATION OF LINER - Prior to the installation of liner, the Contractor shall fully comply with **Subsections 50.71.2(C) through 50.71.2(L)**, inclusively, and with any additional requirements set forth in the specific provisions applicable to the respective lining methods. The Contractor shall not proceed with the installation of liner until the Engineer, in writing, certifies such compliance and directs the Contractor to proceed with the lining installation. The approved liner shall be installed pursuant to the specific provisions set forth for the selected lining method. If any problem occurs during the installation operation the Contractor shall investigate with a television camera from the remote manhole.

(N) PRELIMINARY TELEVISION INSPECTION OF INSTALLED LINER - After the liner is sufficiently cool (below one hundred degrees Fahrenheit (100°F)) and before opening the service connections, a preliminary television inspection and digital audio-visual recording of the newly installed liner shall be performed to determine if the liner is properly installed.

(O) SERVICE CONNECTIONS - After the liner has been installed, the Contractor shall re-open all existing active service connections and those inactive connections ordered by the Engineer. These service connections shall be re-opened and paid for consistent with **Section 52.61**.

(P) FINAL TELEVISION INSPECTION AFTER INSTALLATION - A final television inspection and digital audio-visual recording of the newly lined sewer including the restored service connections shall be performed immediately after work is completed. Should the results of this final inspection reveal any defects, as determined by the Engineer, the Contractor will be required to repair or replace these defects as ordered by the Engineer at the sole expense of the Contractor.

Payment for this final television inspection will be made under Item No. 53.11DR - TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS.

(Q) WORK SCHEDULE - The Contractor shall be permitted to occupy the lane immediately above the sewer location and the parking lane immediately adjacent to the site of work unless otherwise specified. No further roadway or traffic restrictions shall be permitted.

50.71.3 INSTALLATION

(1) PREPARING AND INSERTING THE LINER - The Contractor shall designate a location where the uncured resin in the original containers and the un-impregnated liner will be impregnated prior to installation. The Contractor shall allow the Engineer and/or the Engineer's representative to inspect the materials and chemical impregnation "wet out" procedure. A resin and catalyst system compatible with the requirement of this method shall be used. The quantities of the liquid thermosetting materials inserted into the lining tube shall be as per manufacturer's standards so as to fully saturate the liner material and provide the lining thickness specified. The contractor shall protect, store and handle materials during transportation and delivery, while stored on-site and during installation following Manufacturer's recommendations. Liners impregnated with thermo-initiated resins shall be stored within the proper temperature range and liners impregnated with photo-initiated resins shall not be exposed to UV-light sources, to insure no premature curing occurs.

Prior to installation of liner, the downstream sewer manhole adjacent to the sewer section to be lined shall be plugged.

The chemical impregnated liner material shall be inserted into the sewer line being reconstructed through the existing manhole by either the direct inversion method or by the pull-in-place method, as recommended by the manufacturer. The head used to extend the liner tube shall be sufficient enough to fully extend the tube both circumferentially and longitudinally. The head used will fall within the manufacturer's guidelines to insure that a proper finished thickness is achieved and that the liner fit snug to the existing pipe wall producing dimples at service connections and flared ends at the entrance and exit manholes.

Winch cable shall be equipped with a tension gauge to measure tension during pull through.

Inflation of liners and heat source method used shall be accomplished in accordance with manufacturer's standards and specifications.

Curing temperatures and pressures shall be monitored so as not to overstress the liner and cause damage or failure of the liner prior to cure.

The use of a lubricant is recommended and such lubricant shall be compatible with liner and resin.

The Contractor will be required to monitor and remove styrene to acceptable levels during the inflation and curing processes. An activated carbon filtration system shall be employed to remove styrene from both the process air flow and condensed steam, prior to release into the air or an adjacent or downstream sanitary or combined sewer manhole.

(2) CURING OF LINER - After inflation or inversion is completed, the Contractor shall supply a suitable heat source. The equipment shall be capable of delivering steam or hot water to the far end of the liner to uniformly raise the temperature in the entire liner above the temperature required to initiate and effect curing of the resin system. The temperature shall be determined by the resin/catalyst system employed. The heat source shall be fitted with suitable monitors to gauge the temperature and pressure of the incoming and outgoing heat exchanger circulating heating medium. Thermocouples shall be placed between the liner and the invert at each manhole so as to determine and record the temperature of the liner and time of exotherm.Initial cure shall be deemed to be completed when inspection of the exposed portions of the liner show it to be hard and sound; and when temperature reading(s) at the interface of the liner with the host pipe indicate sufficient heating has occurred. The cure period shall be of a duration recommended by the resin manufacturer; modified for the site specific conditions at the time curing is affected. During this cure time, the temperature inside the liner will be continuously maintained in the range required.

Once the cure is complete, the Contractor shall cool the hardened liner to a temperature below one hundred degrees Fahrenheit (100°F) before relieving the internal pressure. Cool down shall be accomplished as recommended by the manufacturer. Care shall be taken in the release of the internal pressure so that a vacuum will not develop that could damage the newly installed liner.

For UV-light CIPP systems, the intensity and duration of exposure to the photo-initiator's required UV-light wavelength shall be as per the manufacturer's recommendations for the proposed size and thickness of tube, to insure that the liner has been cured completely. The UV-light source shall be fitted with multiple temperature sensors to insure that reaction temperatures stay within the Manufacturer's acceptable range and do not blister the interior liner. All lamps shall be monitored to insure that they are on and functioning properly. In the event that a lamp fails or the reaction temperatures fall below the Manufacturer's acceptable range during CIPP installation, the Contractor shall reduce the speed of the light source (increasing the exposure duration) by the Manufacturer's specified amount. The Manufacturer's recommended cooling phase shall be observed after the last lamp of the light source has been turned off. The finished lining shall be continuous over the entire length and be free from visual defects such as foreign inclusions, dry spots, pinholes and delamination. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to the inside of the lined pipe.

If due to broken or misaligned pipe at the access manhole, the lining fails to make a tight seal, the Contractor shall apply a seal of a resin mixture compatible with the liner.

After the curing has been completed, any residual water and condensation that adheres to the inner wall of the liner shall be removed. This residual water shall be collected and pumped from the channel of the downstream manhole and circulated through a separate carbon filtration unit before discharge into a downstream sanitary or combined sewer manhole. In the case of lining a storm sewer section, the collected filtered residual water and process water shall not be discharged into the downstream manhole or stream, but discharged into a nearby sanitary manhole.

50.71.4 MEASUREMENT

The quantity to be measured for payment shall be the length of reconstructed sewer, accepted by the Engineer, measured horizontally along the centerline of the sewer from inside face of manhole to inside face of manhole.

50.71.5 PRICE TO COVER

The contract price for "RECONSTRUCTION OF EXISTING SEWERS, USING D.E.P. APPROVED CIPP LINING METHOD" shall be the unit price bid per linear foot for each size sewer reconstructed by a cured-in-place-pipe DEP approved lining method and shall cover the cost of all labor, materials, plant, equipment, samples, tests and insurance required or necessary to reconstruct the sewers of the sizes shown including the cleaning of the existing sewers using conventional non-excavation type pipe cleaning equipment; television inspection prior to installation; diversion of flow of existing sewers; controlling (or maintaining) the flow for all active service connections; necessary bypassing and pumping of the existing active service connections; repair of active service connections; all necessary excavation, backfilling and compaction; complete installation of the liner; preliminary television inspection of installed liner; temporary and permanent restoration of all disturbed sidewalk and pavement areas (unless items for temporary and permanent restoration are otherwise provided in the Bid Schedule); cleaning up; and furnishing and installing all other items necessary to complete this work and do all work incidental thereto, all in accordance with the plans and specifications and as directed by the Engineer.

50.71.6 SEPARATE PAYMENT

Payment for this final television inspection will be made under Item No. 53.11DR - TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS.

Payment for Reconstruction Of Existing Sewers Using D.E.P. Approved Cured-In-Place-Pipe (CIPP) Lining Method will be made under the Item Number as calculated below:

The Item Numbers for Reconstruction Of Existing Sewers Using D.E.P. Approved Cured-In-Place-Pipe (CIPP) Lining Method have eleven characters. (The decimal point is considered a character, the third character.)

(1) The first five characters shall define Reconstruction Of Existing Sewers Using D.E.P. Approved Cured-In-Place-Pipe (CIPP) Lining Method:

50.71

(2) The sixth character shall define the Type of Sewer Effluent:

S - Sanitary Sewer
M - Storm Sewer
C - Combined Sewer
I - Interceptor Sewer

(3) The seventh and eighth characters shall define either the Diameter of the Sewer for Existing Circular Sewers or the Width of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers. (The seventh and eighth characters representing the unit of inches for either the Diameter of the Sewer for Existing Circular Sewers or the Width of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers.) See examples below:

10 - 10"
30 - 30"

(4) The ninth character shall define the Shape of the Existing Sewer:

D - Circular (Diameter)

H - Horizontal Elliptical
V - Vertical Elliptical
E - Egg-Shaped
R - Rectangular

(5) The tenth and eleventh characters shall define either Circular or the Height of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers. (The tenth and eleventh characters representing either Circular or the unit of inches for the Height of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers.) See examples below:

00 - Circular
19 - 19"
32 - 32"

(6) Examples of Item Numbers together with Description and Pay Unit as provided in the Bid Schedule are provided below:

Item No.	Description	Pay Unit
50.71S10D00	RECONSTRUCTION OF EXISTING 10" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S12D00	RECONSTRUCTION OF EXISTING 12" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S18D00	RECONSTRUCTION OF EXISTING 18" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S24D00	RECONSTRUCTION OF EXISTING 24" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S23H14	RECONSTRUCTION OF EXISTING 23"W X 14"H HORIZONTAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S30H19	RECONSTRUCTION OF EXISTING 30"W X 19"H HORIZONTAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S14V23	RECONSTRUCTION OF EXISTING 14"W X 23"H VERTICAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S19V30	RECONSTRUCTION OF EXISTING 19"W X 30"H VERTICAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S20E29	RECONSTRUCTION OF EXISTING 20"W X 29"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S24E42	RECONSTRUCTION OF EXISTING 24"W X 42"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S25E37	RECONSTRUCTION OF EXISTING 25"W X 37"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S29E40	RECONSTRUCTION OF EXISTING 29"W X 40"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M15D00	RECONSTRUCTION OF EXISTING 15" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M18D00	RECONSTRUCTION OF EXISTING 18" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M30D00	RECONSTRUCTION OF EXISTING 30" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M42D00	RECONSTRUCTION OF EXISTING 42" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M38H24	RECONSTRUCTION OF EXISTING 38"W X 24"H HORIZONTAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.

50.71M53H34	RECONSTRUCTION OF EXISTING 53"W X 34"H HORIZONTAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M24V38	RECONSTRUCTION OF EXISTING 24"W X 38"H VERTICAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M32V48	RECONSTRUCTION OF EXISTING 32"W X 48"H VERTICAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M34V53	RECONSTRUCTION OF EXISTING 34"W X 53"H VERTICAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M30E45	RECONSTRUCTION OF EXISTING 30"W X 45"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M33E48	RECONSTRUCTION OF EXISTING 33"W X 48"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M35E52	RECONSTRUCTION OF EXISTING 35"W X 52"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M40E53	RECONSTRUCTION OF EXISTING 40"W X 53"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M24R36	RECONSTRUCTION OF EXISTING 24"W X 36"H RECTANGULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M32R48	RECONSTRUCTION OF EXISTING 32"W X 48"H RECTANGULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C16D00	RECONSTRUCTION OF EXISTING 16" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C24D00	RECONSTRUCTION OF EXISTING 24" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C36D00	RECONSTRUCTION OF EXISTING 36" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C48D00	RECONSTRUCTION OF EXISTING 48" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C45H29	RECONSTRUCTION OF EXISTING 45"W X 29"H HORIZONTAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C60H38	RECONSTRUCTION OF EXISTING 60"W X 38"H HORIZONTAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C29V45	RECONSTRUCTION OF EXISTING 29"W X 45"H VERTICAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C34V53	RECONSTRUCTION OF EXISTING 34"W X 53"H VERTICAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C38V60	RECONSTRUCTION OF EXISTING 38"W X 60"H VERTICAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C32E44	RECONSTRUCTION OF EXISTING 32"W X 44"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C34E46	RECONSTRUCTION OF EXISTING 34"W X 46"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C38E50	RECONSTRUCTION OF EXISTING 38"W X 50"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C41E60	RECONSTRUCTION OF EXISTING 41"W X 60"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C42E56	RECONSTRUCTION OF EXISTING 42"W X 56"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C30R42	RECONSTRUCTION OF EXISTING 30"W X 42"H RECTANGULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C36R48	RECONSTRUCTION OF EXISTING 36"W X 48"H RECTANGULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71I36D00	RECONSTRUCTION OF EXISTING 36" DIAMETER CIRCULAR	L.F.

	INTERCEPTOR SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	
50.71I48D00	RECONSTRUCTION OF EXISTING 48" DIAMETER CIRCULAR INTERCEPTOR SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71I36R48	RECONSTRUCTION OF EXISTING 36"W X 48"H RECTANGULAR INTERCEPTOR SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-002

Title: **RODENT AND WATERBUG PEST CONTROL**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 7.88 – Rodent and Waterbug Pest Control
  Pages A1-1 through A1-6

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Pages 515 through 520, Section 7.88 – Rodent and Waterbug Pest Control;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (6 pages).

(NO TEXT THIS PAGE)

SECTION 7.88 - Rodent and Waterbug Pest Control

7.88.1. DESCRIPTION. The Contractor shall provide all labor, materials, plant and equipment, and incidentals required to survey and monitor rodent activity and control any infestation or outbreak of rodents and waterbugs (cockroaches) within the project limit.
New York City ("NYC") Local Law 37 of 2005 requires that the Contractor, or any subcontractor that the Contractor hires, shall comply with Chapter 12 of Title 17 of the NYC Administrative Code with respect to the application of pesticides to any property owned or leased by the City of New York..

7.88.2. MATERIALS. All materials shall be Registered by the New York State Department of Environmental Conservation ("NYSDEC") and comply with the NYC Health Code for the intended usage. Materials classified as Toxicity Category I, carcinogenic to humans by the US Environmental Protection Agency ("USEPA"), or classified as a developmental toxin by the State of California's Office of Environmental Health Hazard Assessment shall not be used. The Contractor shall verify that materials are:

- "NOT PROHIBITED" by the NYC Department of Health and Mental Hygiene ("NYC-DOHMH") using the NYC-DOHMH's Pesticide Product Search, available at:
  < https://a816-healthpsi.nyc.gov/ll37/ProductTestPesticide.aspx >.
- On the NYSDEC's list of Currently Registered Pesticides, available at:
  < http://pims.psur.cornell.edu/ >.

Rodenticide weatherproof (wax based) bait blocks shall be multiple dose anticoagulants such as Chlorophacinone, or single feed anticoagulants such as Brodifacoum (Weatherblok XT, Final All-Weather Blox), Bromadiolone (Contrac Blox), or an approved equivalent, registered by NYSDEC and not prohibited by NYC-DOHMH. Loose rodenticide meal or rodenticide pellet bait shall not be used.

Tamper proof bait station boxes shall be designed to exclude other mammals and shall be used with poisoned bait to attract rats. Information on "tamper proof bait station boxes" is available from the NYC-DOHMH Office of Pest Control Services (646-632-6600).

Live traps shall be of proper dimensions for trapping rats and mice, and shall not be used with poisoned bait.

Insecticide bait shall be a residual type registered by NYSDEC and not prohibited by NYC-DOHMH.

(A) SUBMITTALS

Prior to commencement of construction activities the Contractor shall submit to the Engineer manufacturer's installation instructions for all materials required for rodent and waterbug pest control work and product data which shall include illustrations, catalog data, pesticide labels, product characteristics, typical use, performance and limitation criteria of all rodent and waterbug pest control materials required. All pesticides and rodenticide submittals shall be accompanied by a printout from the NYC-DOHMH Pesticide Product Search showing that the specific brand of pesticide and rodenticide is "NOT PROHIBITED."

7.88.3. PERSONNEL. The Contractor shall employ two independent licensed exterminators: one to engage in survey and monitoring work to establish the level of infestation of rodents and insects and provide recommendations for specific Integrated Pest Management ("IPM") actions, and one to execute the rodent and waterbug pest control work to deal with such infestations. All pest control personnel employed by each exterminator company shall be licensed by NYSDEC as a Commercial Pesticide Applicator, Commercial Pesticide Technician or Commercial Pesticide Apprentice and must be supervised by an exterminator licensed by NYSDEC as a Commercial Applicator in categories 7A ("Structural & Rodent Control") & 8 ("Public Health Pest Control"). It is recommended (but not required) that all personnel engaged in survey and monitoring work or rodent control work possess a certificate of

completion from the NYC-DOHMH's half-day or three-day "Rodent Academy." The Contractor shall submit the names and license credentials of the two exterminator companies to the Engineer for approval prior to the commencement of any work under this section.

7.88.4. METHODS. Application and dosage of all materials shall be done in strict compliance with the manufacturer's recommendations. All surveying, monitoring, baiting, and/or live trapping work shall be performed in the presence of the Engineer, without which no payment will be made under this Section.

(A) GENERAL

The Contractor's construction activity is expected to disturb any established rodent and/or waterbug population that may exist within the project limits, possibly causing their dispersion. The Contractor shall take all appropriate action to eliminate and/or control these populations within the construction corridor: the construction corridor shall be defined as being the full width of streets under the contract and intersecting streets up to the limits of construction, from property line to property line, excluding buildings and under sidewalk building vaults.

Under the Maintenance of Site requirements for the contract, any unsanitary conditions, such as uncollected garbage or debris, resulting from the Contractor's activities which will provide food and shelter to the resident rodent population shall be corrected by the Contractor immediately after notification of such condition by the Engineer. Non-compliance shall be subject to the application of the "Nonconformance" provisions of the Item for Maintenance of Site, and no payment will be made for any additional application of rodenticide or insecticide needed to control resultant infestations.

(B) SURVEY AND MONITORING WORK

(1) Prior to Construction - The Contractor's designated survey and monitoring exterminator shall execute a survey of the project area and estimate the level of rodent (Norway rat, House mouse) infestation and the waterbug population within the construction corridor. An appropriate sample of utility manholes (sewer, electrical, telephone, etc.) and catch basins should be opened and surveyed to the satisfaction of the Engineer. Contractor shall maintain all survey records in the manner described in 7.88.6., Records and Reports.

(2) During Construction - The Contractor shall monitor the rodent activity through trapping (snap, glue traps or live traps), fecal count methods, and inspection of the conditions of all installed baits every week during construction activity or as otherwise directed by the Engineer. Monitoring during construction shall cover Contractor's plant and temporary facilities. Contractor shall maintain all monitoring records in the manner described in Section 7.88.6. on "Records and Reports" of this specification.

(C) RODENT CONTROL WORK

(1) Wetlands, Woodlands and Areas Within Seventy-five (75') feet of a Stream. In wetlands, woodlands and areas adjacent to a stream, special precautions must be taken to protect water quality and to ensure the safety of other wildlife. To prevent poisoned bait from entering streams, no poisoned bait shall be used in areas within seventy-five (75') feet of either streambank. Live traps must be used in these seventy-five (75') feet buffer zone areas and within wetland and woodland areas.

(2) Outside Wetland Areas, Woodland Areas and Beyond Seventy-five (75') feet of a Stream. In areas outside the seventy-five foot zone of protection adjacent to streams, and areas outside wetlands and woodlands, tamper proof bait stations with poisoned bait shall be established during the period of construction and any consumed or decomposed bait shall be replenished as directed.

Rodent control shall be achieved in two stages as follows:

Stage I. At least one month prior to initiation of the construction work, and periodically thereafter, live traps and/or rodenticide bait, as directed above, shall be placed at locations [e.g., burrows, utility manholes (sewer, electrical, phone, etc.), and catch basins] that are inaccessible to pets, human beings, children and other non-target species, particularly wildlife (e.g., birds) in the construction corridor. Locations of initial bait placement and quantities of bait shall be determined by the survey and monitoring exterminator's written report of his survey and monitoring results, or as otherwise directed by the Engineer.

Stage II. During Construction - Infested sites as determined by the survey and monitoring exterminator's monitoring report shall be baited and/or rebaited, and live traps shall be collected and replaced, the rates and quantities of which shall be determined by the written monitoring reports submitted weekly or as otherwise directed by the Engineer in consultation with the City's Office of Pest Control.

Bait may be placed in dry manholes without a tamper-proof bait station box, if the manhole configuration does not permit the use of a bait station box. If a sanitary sewer manhole has a concrete invert platform of sufficient size, a bait box shall be used. Bait placed in a manhole outside of a tamper-proof box shall be strung on a stainless-steel wire, and secured to the manhole structure. No separate payment shall be made for the wire or securing the wire to the manhole, and shall be deemed included in the bid price for Baiting of Rodent Base Stations. Rodent control personnel entering manholes shall comply with the confined space requirements required by the Occupational Safety and Health Administration ("OSHA") 29 CFR 1929 - Subpart AA – Confined Spaces in Construction.

The use of tamper proof bait station boxes shall be used with rodenticide in all other cases.

The baiting exterminator shall be responsible for collecting and disposing of all trapped and poisoned rodents found in live traps and tamper proof bait stations. Non-target species captured in live traps shall be released by the baiting exterminator within twenty-four (24) hours after notification by the Engineer. The baiting exterminator shall also be responsible for posting and maintaining signs announcing the baiting of each particular location. The signs shall be placed at least twenty-four (24) hours prior to the application of any pesticide or rodenticide, and shall meet the requirements of Local Law 37 of 2005. NYC-DOHMH provides a sample template sign for pesticide notification purposes in compliance with the law at:
< http://www1.nyc.gov/assets/doh/downloads/pdf/pesticide/notification-sign.pdf >.

The Contractor, under his maintenance of site operations, shall be responsible for the immediate collection and disposal of any visible rodent remains found on streets or sidewalk within the project limits. Any visible remains shall be placed into double plastic bags. No more than five (5) carcasses shall be placed into each bag. Each bag shall be a minimum of three (3) mils thick, black plastic. The bag shall have a note taped on with the contents (e.g., "dead rat"), and disposed as required by the NYC Department of Sanitation. No additional payment will be made for this work.

It is anticipated that public complaints will be addressed to the Engineer's Field Office. The Contractor, where directed by the Engineer, shall take appropriate Integrated Pest Management ("IPM") actions, such as baiting, trapping, proofing, etc., to remedy the source of a complaint within the next six (6) hours of normal working time, which is defined herein, for the purposes of this section, as 7 A.M. to 6 P.M. on Mondays through Saturdays.

(D) WATERBUG CONTROL

Waterbugs shall include American Cockroaches, Oriental Cockroaches, Smoky Brown Cockroaches, Madeira Cockroaches, and other similar species.

Infested sites (e.g., sewers) shall be baited at least two (2) times per month with insecticides, or as directed by the Engineer in consultation with the exterminator monitoring the work and the NYC-DOHMH Office of Pest Control Services.

7.88.5. EDUCATION & TRAINING. The Contractor shall post notices in all Construction Bulletin Boards advising workers, employees, and residents to call the Engineer's Field Office to report rodent and waterbug infestations. The Contractor shall provide and distribute literature pertaining to IPM techniques of rodent control to affected businesses and superintendents of nearby residential buildings to ensure their participation in maintaining their establishments free of unsanitary conditions, harborage removal and rodent proofing.

Prior to application of any chemicals, the Contractor shall furnish copies or sample labels for each pesticide, antidote information and Material Data Safety Sheets ("MSDS") for each chemical used.

7.88.6. RECORDS AND REPORTS.

(A) GENERAL

The Contractor shall be responsible for assigning within the construction corridor an identifying number to each manhole, catch basin, and other location where bait and/or live trap placement and/or waterbug control work is proposed by the survey and monitoring exterminator. The Contractor shall then provide that list of locations and corresponding reference numbers along with a drawing showing the locations, as a reference for the exterminator(s) performing the work, to indicate locations of bait placement and waterbug control work and rodent and waterbug activity (droppings, bait consumed, dead rodents, etc.)

(B) SURVEY AND MONITORING WORK

(1) Prior to Construction – Contractor shall submit to the Engineer, for approval, a written survey report including proposed IPM procedures, including specific materials, quantities, locations, methods and time schedule for the implementation of the exterminating work. The written report shall also include a survey with a drawing (provided by the Contractor) marked with locations indicating all signs of rodent (Norway rat, House mouse) infestation and waterbug activity discovered during the execution of the survey indicating that rodent and waterbug pest control work is necessary. The report will be developed with input from the NYC-DOHMH Rat Information Portal at: < http://maps.nyc.gov/doitt/nycitymap/template/?applicationName=DOH_RIP >.

(2) During Construction - Based on monitoring results, Contractor shall submit to the Engineer a weekly written monitoring report identifying all locations and conditions of installed bait and/or other rodent control work. The monitoring report shall also include any other recommended IPM techniques, such as baiting, trapping, proofing, etc., proposed for rodent and waterbug pest control.

The survey and monitoring exterminator shall keep a record of all rodent and waterbug infestation surveys s/he has conducted. The Contractor shall be required to submit a copy of all survey and monitoring reports to the Engineer each week, prior to payment.

(C) RODENT AND WATERBUG CONTROL WORK

The baiting exterminator shall maintain records using the NYC Pesticide Use Reporting System ("NYCPURS"). These records will be kept by the Engineer. A weekly report from NYCPURS shall be prepared, signed and certified by the approved licensed exterminator, and such reports shall be submitted to the Engineer each week, prior to payment.

7.88.7. NONCONFORMANCE. If the Contractor fails to perform as directed to control the rodent and/or waterbug population at any location within the project limits for a period of more than one week, the Engineer will correct the adverse conditions by any means he deems appropriate, including but not limited to, the use of "outside services" and shall deduct the cost of the corrective work from any monies due to the Contractor. The deducted cost of this work shall be in addition to the non-payment for rodent and waterbug pest control.

7.88.8. MEASUREMENT.

(A) RODENT INFESTATION SURVEY AND MONITORING

The quantity to be measured for payment under Item No. 7.88 AA, RODENT INFESTATION SURVEY AND MONITORING, shall be a Lump Sum measurement.

(B) RODENT BAIT STATIONS

The quantity to be measured for payment under Item No. 7.88 AB, RODENT BAIT STATIONS, shall be the number of tamper-proof rodent bait station boxes and/or live traps satisfactorily installed or reinstalled after inspection within the construction corridor, as approved by the Engineer. However, the initial baiting, and subsequent rebaiting as may be required, of any bait station will be paid for under Item No. 7.88 AC.

(C) BAITING OF RODENT BAIT STATIONS

The quantity to be measured for payment under Item No. 7.88 AC, BAITING OF RODENT BAIT STATIONS, shall be the number of tamper-proof rodent bait station boxes, utility manholes, catch basins, or other locations approved by the Engineer, satisfactorily baited or rebaited to replenish consumed or decomposed bait within the construction corridor, as approved by the Engineer.

(D) WATERBUG BAIT APPLICATION

The quantity to be measured for payment under Item No. 7.88 AD, WATERBUG BAIT APPLICATIONS, shall be the number of blocks satisfactorily treated with insecticide bait within the construction corridor, as approved by the Engineer. A block shall be defined as the area of street, measured between property lines, from intersection to intersection. Each rebaiting of any block shall be considered as a new block for measurement purposes.

7.88.9. PRICES TO COVER.

(A) RODENT INFESTATION SURVEY AND MONITORING

Payment will be made at the lump sum price bid for RODENT INFESTATION SURVEY AND MONITORING which shall include the cost of furnishing all the labor, materials, plant, equipment (traps, etc.), insurance, and other incidentals required, including but not limited to providing all required maintenance of traffic equipment, to perform a rodent infestation survey of the project area and then monitor the site each week for rodent activity, all in accordance with the specifications and the directions of the Engineer.

Ten (10%) percent of the lump sum price bid will be paid when the initial survey of the project area has been completed and the written survey report has been submitted to the satisfaction of the Engineer. The remainder will be paid in proportion to the percentage of contract completion.

(B) RODENT BAIT STATIONS

The Contract price bid for RODENT BAIT STATIONS shall be a unit price per each tamper proof bait station box and/ or live trap installed or reinstalled after inspection and shall cover the cost of furnishing

all labor, materials, plant, equipment (bait stations, etc.), insurance, and other incidentals, including but not limited to providing all required maintenance of traffic equipment, required to control the rodent population found within the project limits in accordance with the specifications and the directions of the Engineer.

In addition to the payment for Rodent Bait Stations installed or reinstalled under this Item No. 7.88 AB, the Contractor will also be paid for each baiting or rebaiting, when required, of each bait station, under Item No. 7.88 AC.

(C) BAITING OF RODENT BAIT STATIONS

The Contract price bid for BAITING OF RODENT BAIT STATIONS shall be a unit price per each bait station, utility manhole, catch basin or other location approved by the Engineer satisfactorily baited or rebaited, when required, and shall cover the cost of furnishing all labor, materials, plant, equipment (bait), insurance, NYCPURS recordkeeping, and other incidentals, in accordance with the specifications and directions of the Engineer. Installation or resetting of the bait station will be paid for under Item No. 7.88 AB.

(D) WATERBUG BAIT APPLICATION

The Contract price bid for WATERBUG BAIT APPLICATION shall be a unit price per block treated by the exterminator and shall include the cost of furnishing all the labor, materials, plant, equipment (bait, etc.), insurance, NYCPURS recordkeeping, and other incidentals, including but not limited to providing all required maintenance of traffic equipment, necessary to control the waterbug population found within the project limits for the duration of the contract in accordance with the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
7.88 AA	RODENT INFESTATION SURVEY AND MONITORING	L.S.
7.88 AB	RODENT BAIT STATIONS	EACH
7.88 AC	BAITING OF RODENT BAIT STATIONS	EACH
7.88 AD	WATERBUG BAIT APPLICATION	BLOCK

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-003

Title: **ENGINEER'S FIELD OFFICE**

Prepared:		Approved:	
1/12/2017		1/12/2017	
Richard Jones, P.E. CWI	Date	Mohsen Zargarelahi, P.E.	Date
Director, Specifications – Infrastructure Design		Assistant Commissioner – Infrastructure Design	

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 6.40 – Engineer's Field Office
  Pages A1-1 through A1-7

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Pages 372 through 379, Section 6.40 – Engineer's Field Office;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (7 pages).

(NO TEXT THIS PAGE)

SECTION 6.40 - Engineer's Field Office

6.40.1. DESCRIPTION. The Contractor shall provide, furnish and maintain a fully equipped field office (Type A, B, C, CU, D or DU, as specified) for the exclusive use of and occupancy by the Department's engineering personnel and/or Supervising Consultant (herein after called "City personnel"), and by the engineering personnel of private utilities when specified. The field office shall be at a location approved by the Engineer and shall be a commercial building, store front, or with the approval of both Office of Construction Mitigation and Coordination (OCMC) and the Community Board it may be a mobile trailer(s). If a trailer is used it shall be subject to approval by the Engineer, and all necessary permits shall be obtained by the Contractor. The Contractor may have facilities in an adjoining area separated by a lockable door, provided such facilities are in a location approved by the Engineer. The field office shall be within ½ mile of the job site. Field offices located further than ½ mile from the job site shall require approval by the Director or Assistant Commissioner for Construction.

The field office structure and occupancy thereof shall conform to the requirements of all laws, rules, regulations and orders applicable to it.

The field office and all equipment, except as otherwise specified, may be new materials or may be used materials in good condition and satisfactory to the Engineer.

6.40.2. MATERIALS.

(A) GENERAL CONSTRUCTION. The Engineer's Field Office shall be in an approved and weatherproof building. It shall have a minimum ceiling height of seven (7') feet and be partitioned to provide the number of rooms required for the type of office specified. Floor space for Field Office Types C, CU, D, and DU shall be subdivided into work areas based on a floor plan provided by the City to the Contractor upon notification of space availability.

(B) GENERAL FACILITIES. The field office shall contain or have the following facilities incorporated:

(a) Lighting - Electric light, non-glare type luminaries to provide a minimum illumination level of 100 ft.- candles at desk height level.

(b) Heating and Cooling - Adequate equipment to maintain an ambient air temperature of 70° F. $\pm 5^{o}$.

(c) Electrical Energy Outlets

(d) Toilet - A separate enclosed room, properly ventilated per code and complying with applicable sanitary codes shall contain a lavatory with a sink that provides running hot and cold water, flush-type toilet, mirror, electric hand dryer, and paper towel dispenser.

(e) Potable Water - Potable water supplied from an existing system or five (5) gallon capacity water cooler of a type to be approved by the Engineer shall be provided for use by City personnel. Replacement bottles of water shall be provided by the Contractor, when required.

(f) Signs - Store front locations shall have a window graphic sign in black and white lettering with the following inscription. Other locations shall have a wood or metal sign affixed on the outside wall of the building with the following inscription painted in black block lettering on a white background. Paints shall be approved exterior enamels.

CITY OF NEW YORK	2-1/2"
DEPARTMENT OF DESIGN AND CONSTRUCTION	3-1/2"
INFRASTRUCTURE	2-1/2"
RESIDENT ENGINEER'S FIELD OFFICE	2-1/2"

(g) Electric Refrigerator - Five (5) cubic feet minimum capacity for use by City personnel.

(h) Microwave, Toaster Oven, and Coffee Maker - Basic reheating kitchen equipment or approved appliances for use by City personnel.

(i) Windows and Doors - All windows and doors shall be weatherproof and each equipped with adequate locking devices. Each window shall be equipped with vertical blinds. Exterior doors shall be provided with two (2) separate "high security" dead bolt type cylinder locks, keyed alike, and three (3) keys shall be furnished for each lock.

(j) Partitions - Partitions for work space enclosures shall be either permanent walls or of the modular type similar to Herman Miller's standard fabric covered line.

(k) Kitchen Sink – Mechanism to provide non-drinking, hot and cold, running water.

(C) OFFICE EQUIPMENT.

(a) Pencil Sharpener - One standard pencil sharpener for use by City personnel.

(b) Telephone Answering Machine - The telephone answering machine to be provided shall be an electronic digital voice machine with emergency call forwarding capability. It shall be operable twenty four (24) hours per day and, when unattended, shall transmit to the caller the following message:

"You have reached the Field Office of the New York City Dept. of Design and Construction. No one is here now. We check our incoming messages frequently. We will get back to you as soon as possible. Please leave your name, message and phone number where you may be reached. In case of emergency, call the New York City Hotline at 311. Again, the emergency number is 311."

(c) Computer Equipment - Computers shall be provided for all contracts regardless of construction duration.

Computers furnished by the Contractor for use by City Personnel, for the duration of the contract, shall be in accordance with Table I - ADDITIONAL SPECIFIC REQUIREMENTS, contained herein, and shall meet the following minimum requirements:

(1) Personal Computer(s) - Workstation Configuration.

(a)	Make and Model:	Dell; HP; Gateway; Acer; or, an approved equivalent. (Note: an approved equivalent requires written approval of the Assistant Commissioner of ITS.)
(b)	Processor:	i5 (4MB Cache, 3.0GHz) or faster computer – Dual Processor.
(c)	System Ram:	Minimum of 16GB (Gigabytes) Dual Channel DDR3 SDRAM at 1333MHz – 2 DIMMSs
(d)	Hard Disk Drive(s):	500 GB (Gigabytes) Serial ATA (7200RPM) w/DataBurst Cache, or larger.
(e)	CD-RW:	Internal CD-RW, 48x Speed or faster.
(f)	16X DVD+/-RW	DVD Burner (with double layer write capability) 16x Speed or faster
(g)	I/O Ports:	Must have at least one (1) Serial Port, one (1) Parallel Port and three (3) USB Ports.
(h)	Video Display Card:	HD Graphics (VGA, HDMI) with a minimum of 64 MB of RAM.
(i)	Monitor:	22" W, 23.0 Inch VIS, Widescreen, VGA/DVI LCD Monitor.
(j)	Available Exp. Slots:	System as configured above shall have at least two (2) full size PCI Slots available.
(k)	Network Interface:	Integrated 10/100/1000 Ethernet card.
(l)	Other Peripherals:	Optical scroll Mouse, 101 Key Keyboard, Mouse Pad and all necessary cables.
(m)	Software Requirements:	Microsoft Windows 10 Professional, 32 or 64 bit; Microsoft Office Professional 365 ; Microsoft Project 365 ; Basic Adobe Acrobat Package ; Anti-Virus software package with 2 year updates

subscription; and, either Auto Cad LT or Microsoft Visio Standard Edition, as directed by the Engineer.

(2) All field offices requiring computers shall be provided with the following:

(a) One (1) broad-band internet service account. Wideband Internet connectivity at a minimum throughput of 15 Mbps download and 5 Mbps upload is required at each field office location with 1-5 staffers. For larger field offices see table below for minimum required upload speeds. Telephone service should be bundled together with Internet connectivity. Because of throughput requirements Verizon FIOS is the preferred connectivity provider where available.

Office Personnel #	**Upload Speeds (*Minimum*)**
1 – 5	10 Mbps
6 – 10	20 Mbps
11 – 15	25 Mbps
16 – 20	50 Mbps

This account will be active for the life of the project. The e-mail name for the account shall be the DDC Field Office/project Id (- preferably Gmail or Outlook – e.g. HWK666@gmail.com).

(b) All necessary Cabling.

(c) Storage Boxes for and Blank CDs/DVDs.

(d) UPS/Surge Suppressor combo.

(e) 10 USB Thumb (or Flash) Drive – 16GB each

(3) All computers required for use in the Engineer's Field Office shall be delivered, installed, and setup in the Field Office by the Contractor.

(4) All Computer Hardware shall come with a three (3) year warranty for on-site repair or replacement. Additionally, and notwithstanding any terms of the warranty to the contrary, the Contractor is responsible for rectifying all computer problems or equipment failures within one (1) business day.

(5) An adequate supply of blank CDs/DVDs, and paper and toner cartridges for the printer shall be provided by the Contractor, and shall be replenished by the Contractor as required by the Engineer.

(6) It is the Contractor's responsibility to ensure that electrical service and phone connections are also available at all times; that is, the Field Office Computer(s) is to be powered and turned on twenty-four (24) hours each day.

Broadband connectivity is preferred at each field office location. Please take into consideration that an extra phone line dedicated to the modem must be ordered as part of the contract unless Internet broadband connectivity, via Cable or FiOS, is available at the planned field office location. Any questions regarding this policy should be directed to the Assistant Commissioner of Information Technology Services at 718-391-1761.

(d) Data Books - A copy of The AED Green Book, latest edition, published by Machinery Information Division of K-III Directory Corporation, 1735 Technology Drive, Suite 410, San Jose, California 95110-1313, shall be provided for all contracts that have a total Consecutive Calendar Days for General Construction duration as set forth in Schedule A of greater than 365 CCD's. Contracts of lesser duration shall not require any data books.

(D) Field Testing Equipment.

(a) 2 - Air Entrainment Meters - Pressure Type, with carrying case for use by City personnel. Each meter shall be capable of producing an accurate test result in approximately five (5) minutes and shall comply with ASTM Designation C 231.

(b) 2 - Slump Test Sets - Slump cone and test sets conforming to the requirements of ASTM Designation C 143, complete with rod and scoop for use by City personnel.

(c) Thermometers: For use by City personnel.
- (1) 1 - Minimum-maximum thermometer.
- (2) 3 - Asphalt thermometers of stainless steel construction with an accuracy of 0.5% of the full scale, able to measure temperatures from 50 to 500 degrees F. in 5 degree increments.
- (3) 3 - Surface Thermometers able to measure temperatures of flat surfaces similar to Sargent-Welsh Model S81441-D, or an approved equivalent.

(d) Nonsparking Pinch Bar - For use in opening manholes.

(e) Gas Meters - For use in detecting the presence of explosive gases and vapors for use by City personnel.

(f) Straight Edge - One 10 foot long straight edge for use by City personnel in detecting pavement surface tolerance.

(g) 48" Smart Level - For use in determining pedestrian ramp and sidewalk slopes.

(h) Chlorine Test Kits – For testing residual chlorine levels following water main flushing.

(i) Green Florescent Power Trace-Dye – For testing sewer connections.

(j) One Million Candlepower Rechargable Flashlight.

(k) Distance Measuring Wheel – For measuring long distances.

6.40.3. SPECIFIC REQUIREMENTS FOR ENGINEER'S FIELD OFFICE (TYPE A, B, C, CU, D, OR DU). In addition to the general requirements, each type of Field Office shall have the minimum floor area indicated in Table 6.40-I calculated based on usable area only, excluding any loss factors. Loss factors are defined as those areas such as lobby, sidewalk window ledge, elevator shafts and stairways. The Contractor shall provide and maintain furnishings for each type of Field Office in the quantity specified in Table 6.40-I. The furnishings shall be new or used equipment satisfactory to the Engineer:

(a) Each Type shall have a minimum of one outside door and four windows.

(b) Type C shall be partitioned to provide three (3) rooms.

(c) Type CU shall be partitioned to provide four (4) rooms, one of which shall be at least 150 s.f. in area (for use by private utilities).

(d) Type D shall be partitioned to provide four (4) rooms.

(e) Type DU shall be partitioned to provide five (5) rooms, one of which shall be at least 150 s.f. in area (for use by private utilities).

TABLE 6.40-I
ADDITIONAL SPECIFIC REQUIREMENTS

SPECIFIC REQUIREMENTS	FIELD OFFICE TYPE					
	A	B	C	CU	D	DU
Minimum useable floor space (Square Feet)	400	800	1200	1200	1,800	1,800
Office desks, at least 4'-8" x 2'-8", with drawers, locks, and keys.	2	2	4	8*	8	12*
Swivel chairs, with arms, for the above.	2	2	4	8*	8	12*
Office folding chairs, metal, with padded seats and backs.	2	3	6	14**	8	16**
Steel supply cabinets (approximate size 72" high by 36" wide by 18" deep), with four adjustable shelves, tumbler lock and 3 keys.	1	1	1	1	1	1
Fire resistant cabinet, 4-drawer, legal size with lock and three (3) keys, meeting the requirements for "Filing devices, Insulated (36 E 9)" Class D Label, of the Underwriters' Laboratories, Inc. Specifications.	1	1	1	3***	4	6***
Individual lockers (17" wide x 18" deep x 72" high) with flat key locks and two (2) keys each.	1	1	4	4	4	4
Calculating machines, tape type with digital display registering at least ten (10) digits.	1	1	2	2	3	3

Waste paper baskets (metal, approximately 12" square by 16" high).	1	2	2	6*	4	8*
Fire extinguishers, non-toxic, dry chemical type meeting Underwriters Laboratories, Inc., approval for Class A, Class B and Class C fires with a minimum rating of 2A:IOB:10C.	1	1	2	3****	4	5****
First Aid Kit kept properly stocked with appropriate first aid supplies at all times.	1	1	1	1	2	2
Drafting tables (3'-0" x 5'-0") with storage drawers and stool.	1	2	2	3****	4	5****
Photocopying Machine – Stand-alone, heavy duty, electric, dry-process color photocopying type with color scan and send capability via e-mail, a minimum production rate of 70 pages per minute and an adequate supply of copy paper, toner, etc. The machine shall be capable of duplex copying paper sizes of 8-1/2 x 11 inches, 8-1/2 x 14 inches and 11 x 17 inches, and have separate trays for each paper size. It shall have a document feeder, collator, stapler, and the capability to reduce/enlarge copies between each paper size. The supply of each size copy paper, toner, etc. shall be replenished and the machines shall be maintained for the duration of the contract by the Contractor as required by the Engineer. Make and model can be Minolta, Canon, IBM, Epson, or an approved equivalent, and shall be networked to the office computers for printing capability.	1	1	1	1	1	1
Standalone networked color laser printer. (Not required if photocopying machine prints in color)	XX	XX	XX	XX	XX	XX
Vertical filing plan racks for six sets of 22"x36" plans each rack.	1	1	2	3****	4	5****
Telephone lines for calls, where one shall be dedicated for the Fax Machine, one for each computer fax/modem and the others for telephone instruments.	4	6	6	7‡	8	9‡
Telephone instruments.	2	2	3	5‡	4	6‡
Telephone answering machine.	1	1	1	1	1	1
Fax Machine - With an adequate supply of copy paper, toner, etc. The supply of copy paper, toner, etc. shall be replenished and the machines shall be maintained for the duration of the contract by the Contractor as required by the Engineer.	1	1	1	1	1	1
Personal Computer - Workstation Configuration	1	3	3	3	4	4
Bottled water with refrigerator unit-hot/cold water. (For private utilities room.)				1		1
Heavy duty commercial grade diamond cut shredder with automatic start. The shredder shall be able to receive 8-1/2 inch wide paper and shred a minimum of 15 sheets simultaneously along with CDs and staples.	1	1	1	1	1	1
Projector – 1080p LCD with a min. of 2200 ANSI Lumins, 1920 x 1080, 16:9, 40,000:1 contrast ratio, HDMI, VGA, USB, and a 10 feet diagonal, 16:9 Projection Screen.	-	-	1	1	1	1

‡ *Provide one (1) telephone line and two (2) telephone instruments for the exclusive use by private utilities personnel. The line shall interconnect the two telephone instruments by push button control.*

* *Provide four (4) each of Office Desks, Swivel Chairs and Waste Paper Baskets in private utilities room.*

** *Provide eight (8) Folding Chairs in private utilities room.*

*** *Provide two (2) Fire Resistant 4- Drawer Legal Size Cabinets in private utilities room.*

**** *Provide one (1) each of Fire Extinguisher, Drafting Table and Vertical File Rack in private utilities room.*

6.40.4. CONSTRUCTION METHODS. The building shall be fully equipped and made available for use and occupancy by the Department's personnel and/or Supervision Consultant not less than thirty (30) days prior to the start of any contract work.

The building interior (including access foyers, stairwells, etc.) shall be maintained in good, clean, and sanitary working condition by the Contractor for the duration of the contract. The Contractor shall provide and pay all costs for electrical service, telephone service for calls within New York City limits, hot and cold water, heat and fuel, and daily janitor service. Staples, such as paper towels, hand soap, toilet paper, and similar supplies, shall always be available.

Where necessary, the site for a mobile trailer(s) shall be graded and shoulder stone placed and maintained as directed by the Engineer to provide a parking area for City personnel and, if necessary, an approach road shall be provided. Plumbing work shall include all water supply, drainage and piping required for the operation of a complete installation. Temporary water service shall be provided from an existing main and extended into the trailer and all fixtures requiring water supply shall be properly connected up. All necessary soil, waste, vent and drainage piping shall be provided and connected to the existing sewer or as otherwise directed.

The office, incorporated facilities, equipment, and personal property of the Department's employees shall be protected by the Contractor against loss or damage from fire, theft, or other causes, at all hours of the day and night. The Contractor shall provide fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of forty thousand dollars ($40,000.00) for office equipment of the City of New York in the Engineer's field office and for property of City personnel that is used in the contract work and stored in the office. All insurance coverage shall be written by a company approved by the Commissioner and payable in case of loss to the City of New York. The office shall be maintained by the Contractor in first class condition until final acceptance of the work.

At the direction of the Engineer, any equipment on the above lists may be deleted. He may direct that other equipment of equivalent value be supplied by the Contractor or an appropriate credit be taken for the value of equipment not provided.

When directed by the Engineer, the Contractor shall disconnect all services and remove and dispose of all temporary installations from the site, including fencing, surfacing and utilities, the area shall then be cleaned, loamed and seeded if required and left in a neat and acceptable condition. On and after the date of the Engineer's Final Acceptance, the temporary structure and all installed equipment shall become the property of the Contractor, and shall be disposed of, by him, away from the site of the work. Engineer's Final Acceptance shall be when the Contractor has completed all punch list work and Official Completion Date has been set.

6.40.5. NONCONFORMANCE. No payment will be made under Engineer's Field Office for each calendar day during which there are deficiencies in compliance with the requirements of any subsection of this specification. The first calendar day shall commence twenty-four (24) hours after notice to the Contractor of such a deficiency. This non-payment shall be deducted from the Contractor's next estimate as a charge to the Contractor on the item. The amount of such calendar day non-payment will be determined by dividing the unit price bid per month by 30.

In addition, the Contractor may be subject to liquidated damages in accordance with Schedule A.

6.40.6. MEASUREMENT. The quantity to be measured for payment under this item shall be the number of months that the Field Office is available for occupancy by the Field Engineers during the period of the contract. Payment will begin the first month that the office is fully equipped, serviced as specified, and made available for occupancy. The Field Office is to be continuously made available and Monthly payments will continue for the duration of the contract through a period not to exceed 6 months past the substantial completion date. When directed in writing by the Commissioner, the Field Office will be provided and paid for a period of time beyond 6 months past the substantial completion date. Payment for each month's occupancy after the date of substantial completion acceptance will be made as part of the final estimate. Monthly payments may be terminated on a specified date prior to acceptance of the contract by written notification by the Engineer that such office will no longer be required on the contract.

6.40.7. PRICE TO COVER. The unit price bid per month for the item Engineer's Field Office shall include the cost of furnishing all labor, materials, equipment, ground rental, fire and theft insurance, and utility charges necessary to complete the work of providing or constructing the field office; making all necessary electrical, water, sewer, and other connections required to make the above facilities operative; payment of all rental costs; furnishing and paying for heating fuel, as required; all electrical energy;

private telephone services; staples, as specified; and all necessary incidentals to complete the work - all in accordance with the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.40 A	ENGINEER'S FIELD OFFICE (Type A)	MONTH
6.40 B	ENGINEER'S FIELD OFFICE (Type B)	MONTH
6.40 C	ENGINEER'S FIELD OFFICE (Type C)	MONTH
6.40 CU	ENGINEER'S FIELD OFFICE (Joint Use) (Type CU)	MONTH
6.40 D	ENGINEER'S FIELD OFFICE (Type D)	MONTH
6.40 DU	ENGINEER'S FIELD OFFICE (Joint Use) (Type DU)	MONTH

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-004

Title: **FIRE DEPARTMENT FACILITIES**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 332, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(A), 3rd paragraph;
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

b) **Refer** to Page 332, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(A), 9th paragraph;
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

c) **Refer** to Page 332, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(A), 9th paragraph;
Delete the words "(718) 624-4194";
Substitute the words "(718) 281-3846".

d) **Refer** to Page 333, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(E), 1st paragraph;
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

e) **Refer** to Page 339, Section 6.23 – Fire Department Facilities, Subsection 6.23.6, 1st paragraph;
Delete the words "Bureau of Communications";
Substitute the words "Bureau of Facilities Management".

f) **Refer** to Page 343, Section 6.23 – Fire Department Facilities, Subsection 6.23.6.(I);
Delete the words "steel bar reinforcement and".

g) **Refer** to Page 440, Section 6.70 – Maintenance and Protection of Traffic, Subsection 6.70.9.(D);
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

(NO FURTHER TEXT)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-005

Title: **DIGITAL PHOTOGRAPHS**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

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SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 6.43 – PHOTOGRAPHS
  Pages A1-1 through A1-4

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 37, Section 1.06.45 – Progress Photographs;
Delete in its entirety the Section;
Substitute the following: "NO TEXT."

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

b) **Refer** to Page 385, Section 6.43 - Photographs;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (4 pages).

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-005
Title: **DIGITAL PHOTOGRAPHS**		

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Page I-16, Section 10.32 – PHOTOGRAPHS;
Delete in its entirety the Section;
Substitute the revised Section:

"The Contractor shall be required to provide "PHOTOGRAPHS" in accordance with **New York City Department of Transportation (NYCDOT) Standard Highway Specifications Section 6.43 – Photographs.**"

SECTION 6.43 – Photographs

6.43.1. INTENT. This section describes the work of providing a photographic record of contract work.

6.43.2. DESCRIPTION. The work shall consist of the furnishing of all required photographic equipment and materials; the taking of digital photographs; making prints from digital files; and submitting prints and digital files to the Engineer.

6.43.3. MATERIALS.

(A) PRINTS

Prints shall be 7-1/2" x 9-1/2" image area on 8" x 10" single-weight, gloss paper, and shall be in color. Prints shall be inserted in standard weight Archival Quality clear poly sheet protectors and submitted in a hard cover three (3) ring binder. The following information shall be imprinted, or indelibly printed, on a white border measuring no more than one and one half (1-1/2") inch at the bottom of the front of each photograph:

(a) Contract Number and Job Location
(b) Photograph Number
(c) View and Description - (Indicating a general description of what the photograph represents)
(d) Photograph Type: Preconstruction Photograph or Construction Progress Photograph
(e) Date - (The date the photograph was taken.)
(f) Address – street address where photograph was taken
(g) Borough
(h) Street Segment ID
(i) Name of Photographer
(j) Department Witness

The Contractor shall furnish to the Commissioner one (1) set for each view taken, each set consisting of two (2) 8" x 10" prints and one (1) digital file.

All prints and digital files shall become the property of the Commissioner. All completed prints and digital files shall be delivered to the Engineer within two (2) weeks after the photographs have been taken. Approved binders for the clear poly sheet protectors containing all materials shall be furnished by the Contractor and delivered to the designated construction office at the time of the initial submission of prints and DVDs at such other times as may be required thereafter.

(B) DIGITAL FILES

Digital files shall be captured as 7.2 megapixel files or greater, with a minimum pixel array of 2,400 pixels by 3,000 pixels. The camera used to capture the digital files shall be a Digital SLR (Single Lens Reflex) camera or approved equal; "point and shoot" cameras or cameraphones are not acceptable. Digital cameras shall produce images using true optical resolution; "digital zoom" is not acceptable. Images shall not be resized or interpolated. The file format for digital files shall be Joint Photographic Experts Group format ("JPG"). The digital files shall not be modified or processed in any way to alter the JPG file's metadata, including the photograph's original capture date.

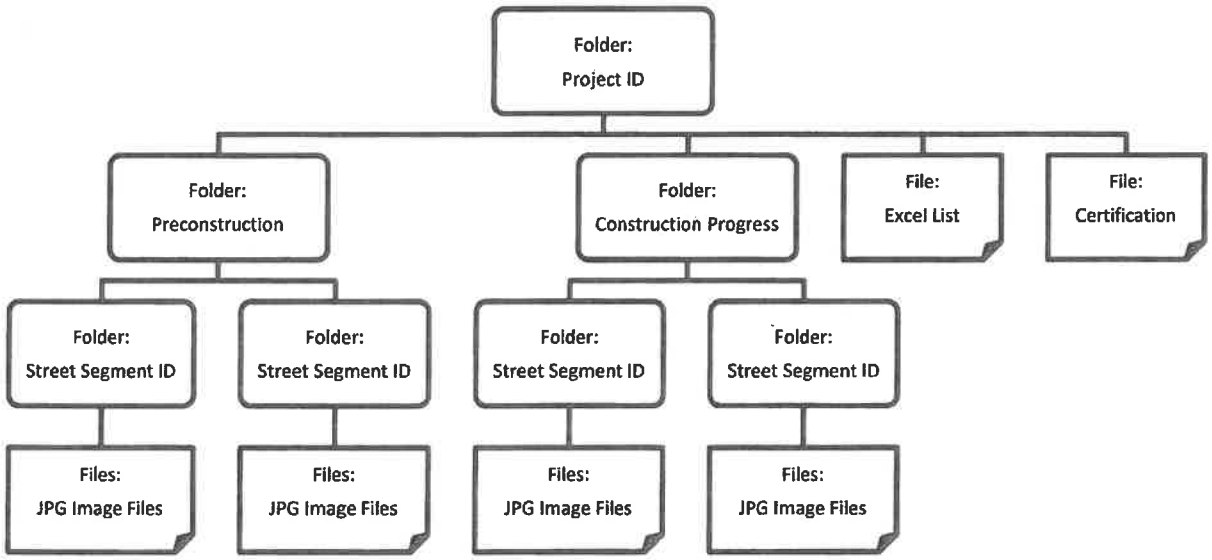
Digital files shall be submitted on Digital Versatile Disk ("DVD"). DVDs shall be inserted in standard weight Archival Quality clear poly sheet protectors, and submitted in a hard cover three (3) ring binder. The information imprinted on each print shall be provided on an Excel file included on the DVD. The DVD shall be labeled with the Project ID and the geographical area and streets depicted in the photographs. Labeling using adhesive labels is not acceptable.

Digital files shall have file names in the following format: a^b^c^d^e^f.JPG, where "a" through "f" are as follows:

(a) Contract Number
(b) Photograph Number
(c) Date, in YYYY-MM-DD format (The date the photograph was taken.)
(d) Address – street address where photograph was taken
(e) Borough
(f) Street Segment ID

A sample file name would be "HBX123^0021^2016-04-19^123 Main St^Queens^55555.JPG"

The files on the DVD shall be organized in folders by Photograph Type and Street Segment ID as follows:



(C) CERTIFICATION

The Photographer shall provide a signed certification that the files on the DVD are unaltered and are an accurate representation of the subject photographed. The original certification, in a clear poly sheet protector, shall be submitted with the prints and digital files, and a scanned copy shall be included on the DVD.

6.43.4. METHODS. The Contractor shall employ and pay for the services of a competent Professional Photographer who, at the direction of the Commissioner or his authorized representative, shall take Preconstruction Photographs and Construction Progress Photographs and such other photographs which may be required during the period of the contract.

The Photographer shall be available for taking the required photographs within forty-eight (48) hours after receiving notification from the Commissioner or his authorized representative.

Photographs shall be taken under the supervision and direction of the Engineer. The Engineer reserves the right to reject any and all views that are not reasonably clear and definitive. No separate or additional payment will be made for any additional photographs that are required as a result of the rejection of views.

6.43.5. PRECONSTRUCTION PHOTOGRAPHS. Preconstruction Photographs shall show the conditions existing on the work site prior to the commencement of the contract work. The Preconstruction Photographs will generally represent views of:

- The original surface conditions of streets, curbs and walks, and buildings;
- Evidence of damage, disrepair, or emergency situations;
- All encumbrances and/or encroachments which may be affected by the construction of the proposed work.

When there is no pay item listed in the Bid Schedule, the number of Preconstruction Photographs shall be as follows:

(A) Highway Street Reconstruction projects: 150 sets per million dollars of street reconstruction work;

(B) Highway Resurfacing projects: 4 sets per 250 linear feet of roadway for resurfacing work;

(C) Sewer and Water Main projects: 2 sets (1 set each side of street) per 25 linear foot of sewer and water main.

When there is an item listed in the Bid Schedule, the quantity to be measured for payment shall be the number of sets, each set consisting of a digital file and the two (2) prints made from the digital file, of Preconstruction Photographs including photographs showing the original condition of all encumbrances and/or encroachments which may be affected by construction of the proposed work, and which are delivered as directed by the Engineer.

6.43.6. CONSTRUCTION PROGRESS PHOTOGRAPHS. Construction Progress Photographs shall show the conditions existing during the progress of, and at the completion of the contract work. The photographs will generally represent views of the work under construction and completed work. Construction Progress Photographs shall be taken monthly and upon completion of the work.

The approximate number of Construction Progress Photographs is as follows:

(A) Highway reconstruction and resurfacing projects: Minimum 2 sets per 250 linear feet of roadway under construction or completed in the last month.

(B) Pedestrian ramps on all projects: Minimum of 1 set for every pedestrian ramp under construction or completed in the last month, in addition to other progress photographs.

(C) Sewer and Water Main projects: Minimum of 4 sets for every 100 feet of sewer or water main under construction.

No separate payment will be made for Construction Progress Photographs. The cost of taking and providing sets of Construction Progress Photographs shall be included in the prices bid for all other items of work.

6.43.8. PRICE TO COVER (PRECONSTRUCTION PHOTOGRAPHS ONLY). When there is an item listed in the Bid Schedule, the contract price bid per set shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and necessary incidentals required, including the cost of the photographer, and the cost of furnishing the required prints, digital files, DVDs, and ring binders, and completing the work in accordance with the specifications and the directions of the Engineer.

When there is no item listed in the Bid Schedule, no separate payment will be made. The cost of furnishing all labor, materials, plant, equipment, insurance, and necessary incidentals required, including the cost of the photographer, and the cost of furnishing the required prints, digital files, DVDs, and ring

binders, and completing the work in accordance with the specifications and the directions of the Engineer shall be included in the prices bid for all other items of work.

Payment will be made under:

Item No.	Item	Pay Unit
6.43 D	DIGITAL PHOTOGRAPHS	SETS

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-006

Title: **RECORDS OF SUBSURFACE STRUCTURES**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

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SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 9, Section 1.06.18 – Records of Subsurface Structures, Etc.;
Delete the first two paragraphs;
Add the following paragraph to the beginning of the Section:

"The Contractor stipulates that it has the obligation to examine and review any and all available documents and other sources of information concerning the condition of the sub-soil materials, subsurface conditions and existing subsurface structures of bridges, pipes, tunnels, conduits, sewers, foundations, bulkhead walls and other subsurface structures and stipulates that it has made such investigation and research as it deems necessary. To the extent the Contractor incurs delays or damages based on sub-soil materials, subsurface conditions and existing subsurface structures that were known or reasonably could have been known to the Contractor through such available documents or other sources of information, the Contractor will make no claim for such delays or damages."

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-007

Title: **MOBILIZATION**

Prepared:	Approved:
3/24/2017	3/24/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

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ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Pages 371 through 372, Section 6.39 – Mobilization, Subsection 6.39.4. PRICE TO COVER;
Delete in its entirety the Subsection;
Substitute the revised Subsection:

6.39.4. PRICE TO COVER. Payment will be made by lump sum. The amount bid shall include the furnishing and maintaining of any plant, services or other facilities noted under "Description" to the extent and at the time the Contractor deems them necessary for his operations, consistent with the requirements of this section and the contract. The amount bid for this lump sum item shall be payable to the Contractor whenever he shall have completed 5% of the work, provided the final contract price, which includes this item, is at least 50% of the original price bid for the contract. For the purposes of this item, 5% percentage of the work shall be considered completed when the total of payments earned, not including the amount bid for this item, shall exceed 5% of the total amount of the Contractor's bid for the contract.

However, should the contract be terminated or it's term expire prior to completion of at least 50% percent of the original price bid for the contract then the Contractor will be paid a proportionate amount of this item based on the ratio of actual payments verified and approved by the Engineer and paid to the Contractor to the original price bid for the contract, plus any approved and registered change orders. Where the Contractor has already received the original total payment for this item after completion of 5% of the work and the contract has been terminated or expired prior to completion of at least 50% of the original price bid for the contract, then any monies owed the City due to the above specified reduction in payment will be withheld from monies owed the Contractor.

The amount bid for Mobilization shall not exceed four percent (4%) of the total contract price, excluding the price bid for Mobilization, and in no case will payment under this item exceed the original price bid for this item.

Payment will be made under:

Item No.	Item	Pay Unit
6.39 A	MOBILIZATION	L.S.

(NO FURTHER TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-008

Title: QUALIFICATION CARDS

Prepared:	Approved:
3/24/2017	3/24/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

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SUPERSEDENCE:

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ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

a) **Refer** to Page 150, Section 4.02 – Asphaltic Concrete Wearing Course, Subsection 4.02.4.(B) CERTIFICATION OF LABORATORY AND TECHNICIANS;
Delete in its entirety the Subsection;
Substitute the revised Subsection:

The testing laboratory used by the Contractor for testing core samples must be independent of those used at the plant and job site during placement of asphalt. Only laboratories approved by the Director of DDC QACS shall be used. Technicians used for plant and field work shall possess current QACS Qualification Cards. Technicians must have in their possession the current QACS issued Qualification Card (no copies), and present their current QACS Qualification Cards if so requested by authorized DDC staff. Expired QACS Qualification Cards will be kept by the DDC staff for return to the QACS Bureau. Technicians shall have one of the qualifications listed below in order to apply for a QACS Qualification Card:

Field Technician	Plant Technician
NICET Asphalt Level II	NICET Asphalt Level II
Alfred State HMA Density Testing Inspector	Alfred State QC/QA Technician
NETTCP HMA Paving Inspector	NETTCP HMA Plant Technician

Exceptions granted to any of the above requirements must be in writing by the Director of QACS.

b) **Refer** to Page 154, Section 4.02 – Asphaltic Concrete Wearing Course, Subsection 4.02.4.(G) TEST STRIP OPERATIONS;
Delete in its entirety the second paragraph;
Substitute the revised paragraph:

Size of each test strip shall be no greater than: a length of one city block, 250 feet, an area of 1,000 square yards, and 125 tons of each course of asphaltic concrete. Test strip areas shall become part of the completed pavement if, in fact, they meet the requirements of these specifications. The Contractor shall be required to furnish and use a properly calibrated nuclear asphalt testing device in the field to monitor the effectiveness of compaction by rolling during construction for each lift of asphaltic concrete placed. The technician operating the nuclear asphalt testing device shall possess a current QACS Asphalt Field Qualification Card. The amount of compaction shall be determined as a percentage of the theoretical maximum density of bituminous pavement mixture at the plant obtained in accordance with the requirements of ASTM Designation D 2041. Acceptable in place compaction shall range between 92% and 97% of the theoretical maximum density of bituminous pavement mixture. Field testing for compacted asphaltic concrete with the nuclear asphalt testing device shall be done by the Contractor in accordance with ASTM Designation D 2950, throughout his rolling operations. Number and locations of nuclear asphalt tests to be performed within each test strip area shall be of a sufficient number to obtain acceptable results, with a minimum of 12 randomly selected locations using statistically random number charts, except that none are to be within 18 inches of a longitudinal joints or edge of street hardware or within ten (10') feet of transverse joints; however, it is the Contractor's responsibility to take as many density readings as required to insure that the in place density after compaction falls within the specified range of 92% to 97% of the theoretical maximum density, obtained in accordance with ASTM Designation D 2041, of the asphaltic concrete placed. A copy of all density monitoring results, including date, time, station, offset, and theoretical maximum density of pavement mixture obtained in the plant in accordance with ASTM Designation D 2041, shall be given to the Engineer at the end of that day's operations.

d) **Refer** to Page 154, Section 4.02 – Asphaltic Concrete Wearing Course, Subsection 4.02.4.(Q) MONITORING FIELD DENSITY;
Delete in its entirety the first paragraph under Item 1);
Substitute the revised paragraph:

The Contractor shall be required to furnish and use a properly calibrated nuclear asphalt testing device in the field to monitor the effectiveness of compaction by rolling during construction for each lift of asphaltic concrete placed. The nuclear density gauge should consist of a radioactive source, scaler and other basic components housed in a single backscatter unit. The technician operating the nuclear asphalt testing device shall possess a current QACS Asphalt Field Qualification Card. Only gauge(s) calibrated during the construction of the test strip will be used during normal paving operation. If another nuclear gauge is to be used, a new test strip must be constructed to calibrate that gauge.

(NO FURTHER TEXT THIS PAGE)

NYC DDC	Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-008
Title:	QUALIFICATION CARDS		

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 487, Section 7.12 – Soil Density Testing, Subsection 7.12.2. APPROVAL OF TESTING LABORATORY AND QUALIFICATION OF THE TECHNICIANS;
Delete in its entirety the first paragraph;
Substitute the revised paragraph:

The testing laboratory used by the Contractor must be independent of the Contractor and any subsidiary. Only laboratories approved by the Director of DDC Quality Assurance and Construction Safety (QACS) Bureau shall be used for all work performed and technicians qualified by the DDC QACS Bureau shall be used for field work. Technicians used for field work shall possess QACS Qualification Cards. Technicians must carry the original QACS Qualifications on their person, and present their current QACS Qualification Cards if so requested by authorized DDC staff. Field technicians must present their current QACS Qualification Cards if so requested by authorized DDC staff. Expired QACS Qualification Cards will be kept by the DDC staff for return to the QACS Bureau. Technicians shall have one of the qualifications listed below in order to apply for a QACS Qualification Card:

- NICET Soils Level II;
- NETTCP Soils & Aggregate Inspector;

Exceptions granted to any of the above requirements must be in writing by the Director of QACS.

(NO FURTHER TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-009

Title: **SALVAGEABLE MATERIALS**

Prepared:	Approved:
3/24/2017	3/24/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 4/17/2017.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Pages I-15, Section 10.28 – SALVAGEABLE MATERIALS;
Delete in its entirety the Section;
Substitute the revised Section:

Except as specified below, no salvageable material shall be returned to the New York City Department of Environmental Protection regardless of condition. It shall become the property of the Contractor for removal and disposal, by the Contractor, away from the site. No salvage of materials shall be required on contracts with federal funding.

The Contractor shall salvage and deliver all Metropolitan Gate Valves (6" thru 20") removed during construction of the contract to the NYCDEP 3rd Ward Yard, 49-14 Fresh Meadow Lane, Flushing, NY 11365, Monday thru Friday, between the hours of 9:00AM and 2:00PM. The valves shall be free of all debris and have no attached piping.

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-009
Title: **SALVAGEABLE MATERIALS**		

The Contractor shall salvage and deliver all twenty-four (24) and twenty-seven (27) inch sewer manhole covers to the nearest NYCDEP Repair Yard as listed below between the hours of 9:00AM and 2:00PM. The delivered materials shall be free of all debris, including any attached piping.

NYC DEP REPAIR YARDS

FACILITY	TYPE	LOCATION
Pike Street	Manhattan Repairs	30 Pike Street New York, NY 10002
Joline Avenue	Staten Island Repairs	182 Joline Avenue Staten Island, NY 10307
Zerega Avenue	Bronx Repairs / Bronx Water Maintenance (E-BX)	930 Zerega Avenue Bronx, NY 10473
Queens Repairs	Queens Repairs	106-36 180 Street Jamaica, NY 11433
Brooklyn Repairs	Brooklyn Repairs	9023 Avenue D Brooklyn, NY 11236

The Contractor shall obtain from the yard a "Return Requisition Slip" as proof of delivery and shall submit it to the Engineer. Failure to provide a "Return Requisition Slip" to the Engineer shall incur to the Contactor for each failure a deduction in an amount as determined by the Engineer.The cost of all labor, material and equipment required and necessary for the removal, cleaning, dismantling, loading, transporting, unloading, etc. of the salvaged materials to the NYCDEP yard shall be deemed included in the unit prices bid for all items of the contract. No separate or additional payment will be made for this work.

I - PAGES

NEW SECTIONS

NOTICE

THE PAGES CONTAINED HEREIN ARE NEW SECTION OF WORK THAT SHALL APPLY TO AND BECOME A PART OF THE CONTRACT.

UNLESS OTHERWISE SPECIFIED, ALL SECTIONS, SUBSECTIONS, ARTICLES, AND SUBARTICLES AS REFERRED TO HEREIN (I-PAGES) ARE TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION'S (NYCDOT'S) STANDARD HIGHWAY SPECIFICATIONS, DATED AUGUST 1, 2015, AS CURRENTLY AMENDED BY THE R-PAGES.

(NO TEXT ON THIS PAGE)

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(NO TEXT ON THIS PAGE)

SECTION 4.08 ABM
CONCRETE CURB, MOUNTABLE

4.08ABM.1. DESCRIPTION. Mountable Concrete Curb shall be made of concrete and be constructed to the dimensions and at the locations shown on the Contract Drawings and where directed by the Engineer.

4.08 ABM.2. MATERIALS AND METHODS. All materials and methods shall be done in accordance with the applicable requirement of the **Section 4.08** of the NYCDOT Standard Highway Specifications, except that the curb shall be mountable to provide a smooth transition between plaza and the roadway as shown on the Contract Drawings. Shape of the curb and its construction shall be as shown on the Contract Drawings. The shape of the transitional curbs, 5'-0" in length, shall be as approved by the Engineer.

4.08 ABM.3. SUBMITTALS. The following shall be submitted in accordance to the conditions of the Contract drawings and Specifications.

(A) Product Sample: Submit material samples of cured concrete as specified in **Section 1.06.31** of the NYCDOT Standard Highway Specifications, exhibiting extremes of the full range of color and other visual characteristics expected in the completed Work. Samples shall establish the standard by which the installed mountable curbs will be judged.

4.08 ABM.4. MEASUREMENT. The quantity to be measured for payment shall be the length of mountable concrete curb constructed, complete, in place, as required, measured in linear feet along the top of the exposed face of both the mountable concrete curb and transitional sections, and adjusted in accordance with **Section 5.04** of the NYCDOT Standard Highway Specifications.

4.08 ABM.5. PRICES TO COVER. The contract price per linear foot of Mountable Concrete Curb, of the depth specified, shall cover the cost of all labor, materials, equipment, insurance, and incidentals required to construct the curb complete in place, including, but not limited to, excavation (other than rock excavation) and backfilling, and pigmenting, in full compliance with the requirements of the specifications, to furnish such samples for testing and to provide such testing equipment, laboratory space and facilities, as may be required, and the cost of maintaining the curb in good condition as specified in **Section 5.05** of the NYCDOT Standard Highway Specifications.

Payment with be made under:

Item No.	Item	Pay Unit
4.08 ABM	CONCRETE CURB, MOUNTABLE (18" DEEP)	L.F.

SECTION 4.18 RDM
Rodent Deterrent Mesh

4.18RDM.1. DESCRIPTION. Under this section, the Contractor shall furnish and install rodent deterrent mesh in the manner shown on the Contract Drawings. The purpose of the rodent deterrent mesh is to provide a permeable layer which allows water and soil particles to pass through, and that inhibits passage of rodents.

4.18RDM.2. MATERIALS. The rodent deterrent mesh shall be composed of a course stainless steel fiber bound to a porous geotextile. The fibers shall be a non-corroding stainless steel. Installation accessories, including, but not limited to, pins, tree collars and plastic edging required for installation as shown on the Contract Drawings shall be as required by manufacturer. Mesh shall be double-sided and provided in standard 6' width x 100' long rolls. Mesh shall be Xcluder Geo as manufactured by Global Material Technologies, 750 W Lake Cook Road Suite 480, Buffalo Grove, IL 60089 - (847)495-4700.

4.18RDM.3. SUBMITTALS. Follow the procedures in the General Conditions of **Section 1.06.31** of the NYCDOT Standard Highway Specifications. Provide product data for both rodent deterrent mesh and anchoring hardware, and minimum 4" x 4" sample of rodent deterrent mesh material, for approval by the Engineer.

4.18RDM.4. METHODS. Rodent deterrent mesh shall be placed as shown on the Contract Drawings and in accordance with the manufacturer's directions. Except where otherwise specified, the mesh shall be placed in planted areas and tree pits at a consistent depth of four (4) inches below finish grade. Fabric splices shall overlap a minimum of twelve inches (12"), and shall be joined with the provided seam kits and metal pins, spaced a maximum of 24" apart. Mesh shall be installed as shown on Contract Drawings at vertical rise along edges and continuously secured at edges with plastic edging per manufacturer with pins every 4". Provide manufacturer required tree collars at all tree locations.

Acceptable Distributors:

Residex
134 Charlotte Avenue
Hicksville, NY 11801 -2620
Phone: (800) 339 - 8772

Wildlife Control Supplies
P.O. Box 538
East Ganby, CT 06026
Phone: (877) 684-7262
Email: admin@wildlifecontrolsupplies.com

Essco Distributors
1555 5th Industrial Court
Bay Shore, NY 11706
Phone: (800) 842-1104
Email: esscodistributors@gmail.com

Contractor shall retain manufacturer's certified installer for the installation of the rodent deterrent mesh system. To obtain list of latest certified installers in the area, go to http://www.getxcluder.com/xcluder-geo-certified-installers.php . Contractor shall submit name of the installer, list of completed projects and current letter of certification to the Engineer for approval.

Install rodent deterrent mesh before perennial, vine, and bulb planting, and after tree planting and installation of initial base course of soil mix. Place rodent deterrent mesh on smoothly-graded soil mix base course surface free of objects which may interfere with barrier, to minimum depths as defined in the Contract Drawings. Mesh shall be secured using seam kits, pins, and edging per manufacturer's requirements sufficiently to allow placement of surface course of soil mix and finish grading without distortion of the rodent deterrent mesh. No opening greater than 0.5" shall be allowed.

4.18RDM.5. MEASUREMENT. The quantity of rodent deterrent mesh to be measured for payment shall be the number of square yards actually installed in place, computed between the limits shown on the Contract Drawings or within the limits established in writing by the Engineer prior to performing the work.

No quantity will be included for material used for repair of tears or for material used at the overlaps.

4.18RDM.6. PRICE TO COVER. The unit price bid per square yard for this item shall include the cost of furnishing all labor, materials, equipment, insurance, and all incidentals necessary to complete the work including, but not limited to, the cost of preparing the surface upon which the rodent deterrent mesh is placed; all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
4.18 RDM	RODENT DETERRENT MESH	S.Y.

SECTION 5.37
Construction Report

5.37.1. Intent. The intent of this Section is to prepare construction reports as prescribed herein and summarize the effects of construction activities on structures located within the influence line of work to be performed under this project to ensure that the Contractor's proposed construction methods do not create or aggravate any potentially dangerous conditions. In order to ascertain the effects of construction, the Contractor will be required to retain the services of a qualified firm with experience in structural engineering, soil mechanics, foundations, installation of piles, evaluation of the effect of construction on adjacent retaining walls to remain, buildings and/or structures, effects of dewatering and the associated movement of soil due to dewatering and the effect of vibrations upon structures. All construction work (roadway, sidewalk, curb, sewer, water main, subgrade remediation, etc.) is subject to preconstruction report.

However, the survey monitoring and visual inspection of the existing walls being demolished and vibration monitoring of the existing walls being demolished will be paid for under Items 9.71 WAD and 9.71 WBB, respectively.

5.37.2. Special Experience Requirements. Within thirty (30) days of the award of this contract, the Contractor shall submit to the Commissioner qualifications of the firm it proposes to provide the engineering services described in this section. The proposed engineering firm must meet the following special experience requirements.

(1) Such firm must, within the last five (5) consecutive years, have successfully provided engineering services similar to the services described in this section on a minimum of three (3) comparable projects.

(2) Such firm must carry professional liability insurance as specified in Schedule A.

Compliance with such special experience requirements will be determined solely by the Commissioner. Once a firm is approved, no substitution will be permitted, unless the Commissioner has approved the qualifications of the proposed replacement in writing in advance. If the qualifications of the proposed firm are not acceptable, the Contractor shall submit the qualifications of another proposed firm within fifteen (15) days of notice to do so.

5.37.3 Submissions.

(1) Pre-Construction Reports:

Upon approval and prior to construction the chosen firm (hereinafter referred to as the firm) shall submit six (6) copies of a report incorporating their findings and recommendations. The report shall be prepared by or under the immediate direction of a New York State Licensed Professional Engineer as evidenced by the imprint of

his seal and signature on the document. The report shall include but not be limited to the following:

a. A detailed description of the Contractor's proposed means and methods of construction including excavation support, the demolition of walls; demolition of sidewalk, curb and roadway; excavation; installation of the temporary excavation support system, including drilling of the holes in the ground; and installing the temporary sheeting and lagging panels.

b. An inspection of the interior and exterior (including photographs and videotapes as required) of all buildings and/or structures that may be affected by the proposed method of construction.

c. A definition of the "radius of influence" that the proposed work and other construction activity will impart on the surrounding soil and structures.

d. A definition of the limits of horizontal and vertical movement each building and/or structure within the "radius of influence" can tolerate without damage to the structural integrity of that building and/or structure. Movements which shall be considered include, but are not limited to, vibration-related settlements, differential settlements, settlements from dewatering, and building movements and/or rotation due to excavation or construction-related work.

e. A complete study of the vibrations that each building and/or structure can tolerate along with the anticipated vibrations promulgated by the construction methods, taking into account the age and condition of the buildings.

f. A statement that the limits of movement and vibrations as defined in (d) and (e) above will not be exceeded as a result of the proposed method of construction.

g. A geological profile of the soils in the area. This profile shall be based upon the boring logs taken for this project. See B-100 Boring Location Plan and Logs in the Contract Drawings.

h. A geotechnical summary including assumed values for the physical and strength characteristics of the soils and/or bedrock shown on the Record(s) of Borings, developed from, but not limited to available soil and/or rock descriptions, blow counts, and available geotechnical laboratory testing. Such physical and strength characteristics include, but are not limited to, a soil's unit weight, friction angle, cohesion, consolidation properties, and permeability/drainage properties.

i. Engineering computations to substantiate any values stated, recommended, or defined in (c), (d), and (e), using the appropriate data from (g) and (h), above.

The report shall include all field notes, measurements and photographs and videotapes, as required, of the existing conditions

which may be aggravated by the proposed construction work and shall include a visual inspection of the interior and exterior of all buildings, watermain and sewer within the adjacent area of the construction activity. A view of each exterior face of the building and/or structure is required. Additional interior photographs shall be taken to show any existing cosmetic or structural damage on buildings and / or structures. The Contractor shall install gages to monitor the cracks during the construction. The gages shall be able to determine crack opening or closing to the nearest one-sixteenth of an inch.

Applications for consents to enter buildings for the purpose of inspection shall state that the inspection is necessary to ensure the structural integrity of the building. One counterpart of each consent, duly signed and acknowledged by the owner or one of the owners, executors or administrators for himself and for his agents, lessee and any other persons who shall have a vested or contingent interest in the building, or notice of refusal if consent is not obtained shall be filed with the Engineer at least ten (10) days before the commencement of work which affect the buildings or structures.

The report shall also include recommendations or comments regarding any potentially dangerous and/or unsafe conditions uncovered along with all other additional information required pursuant to other sections of the Specifications.

All results of the building and/or structure examinations shall be incorporated into the Pre-Construction Report.

No work may begin until the NYCDDC has accepted the pre-construction report. This pertains to all contract work and no exceptions will be allowed unless otherwise stated in these specifications.

(2) Reports During Construction:

The firm will be required to perform the monitoring during construction activity and submit reports to the Engineer as required or as directed by the Engineer. These reports shall include sketches noting the location of all monitoring points. Should any of the criteria set forth in the Pre-Construction Report be exceeded, the Engineer shall be notified immediately. Monitoring shall include but not be limited to the following:

(A) Monitoring Settlement

A series of reference points shall be established outside of the "radius of influence" as previously described for monitoring structural settlements. All initial and subsequent readings shall be taken to the nearest 0.1 of a foot.

Structures and/or buildings shall be monitored daily for vertical and horizontal movement when work is being performed within the radius of influence.

Structures and/or buildings shall be monitored daily for one week. If no horizontal or vertical movement is measured, then structures and/or buildings shall be monitored weekly for one month. If no horizontal or vertical movement is measured, then structures and/or buildings shall be monitored monthly for the duration of the contract. In the event of an unusual event (e.g. water main break, heavy rains or abnormal flooding) monitoring shall be performed within 24 hours of the event. A maximum value of 1/4" shall be used for vertical and horizontal settlements.

All readings shall be done by or under the immediate supervision of a Surveyor Licensed by the State of New York as evidenced by the imprint of his seal and signature. The Contractor shall transmit a copy of all readings to the Engineer on the same day they are taken.

Should the limit of horizontal and/or vertical settlement of any building and/or structure be exceeded, the Contractor shall immediately, at his own expense, take steps to rectify the situation and prevent any further settlement of such buildings and/or structures. The Contractor shall be fully responsible for any damages to any foundations, walls or other portions of buildings and/or structures that may result during the courses of this construction. Any damages done by the Contractor, whether it is accidental or due to negligence or carelessness in performing the work included in this contract shall be made good by the Contractor at its own expense.

(B) Vibration Monitoring

Should the Contractor employ construction methods that will result in vibrations being imparted to the surrounding soil and/or buildings and/or structures, the Contractor shall monitor and record peak Particle velocity. Locations of the monitoring points shall be placed in such a manner so as to ensure recordings that reveal any possibility of damage to existing buildings.

These points shall be monitored at all times when construction methods resulting in vibrations are employed. The maximum permissible peak particle velocity of one-half (1/2) inch per second be permitted. Should particle velocities be exceeded the Contractor shall immediately cease his operations and resort to another method which will eliminate or minimize the effect of vibrations.

It shall be the Contractor's responsibility to restore any buildings and/or structures damaged as a result of his operations to its original or better condition.

The Contractor is advised that the parameter of one-half (1/2) inch per second shall be used as the maximum upper limit of particle velocity and it should be realized that particle velocities of less than one-half (1/2) inch per second could cause damage to buildings in the area.

The use of an upper limit of less than one-half (1/2) inch per second shall be mentioned in the Pre-Construction Report and Contractor shall be required to abide by any limits set forth in the Pre-Construction Report, other than one-half (1/2) inch per second, at no additional cost to the City.

The wall vibration monitoring shall be performed under Item 9.71 WBB.

(3) Post-Construction Reports:

Within 30 days of the completion of all work that necessitated monitoring, the chosen firm shall prepare a report detailing the results of the monitoring program. The report shall include a comparison of all assumptions and field-measured values. Should there be excessive discrepancies between the two, an explanation shall be presented within the report. This report shall include sketches of all monitoring points. Should this contract provide for the installation of piles the report shall include the location and length of all piles driven superimposed on the geological profile. The Engineer shall provide the location and approve the lengths of piles.

5.37.4 Responsibilities of the Contractor.

Prior to bidding, Contractor shall examine the site and available subsurface inspection information and formulate means and methods of construction that will not result in any damage to existing structures. Should the Contractor lack the expertise in evaluating the effects of his construction means and methods he should prepare his bid in consultation with an experienced firm or authority. In any event, the Contractor will be held liable for any damage to any existing structures due to his construction means and methods. In addition, should the results of a Pre-Construction Report indicate that damage will result from his proposed construction methods, the Contractor will be required to amend his means and methods in accordance with the Pre-Construction Report, at no additional cost to the City.

5.37.5 Work Included.

The contract price for the Construction Report shall be a Lump Sum Price and shall include the cost of all labor, materials, plant, equipment, and insurance necessary or required to prepare the report including, but not limited to, building examinations, construction monitoring, preparation of pre-construction reports, reports during construction and Post Construction Report, and all other work incidental thereto; all in accordance with the specification and as directed by the Engineer.

5.37.6 No Separate Payment.

No separate or additional payment will be made for compliance with the requirements of the Construction Report including, but not limited to, any modification to the Contractor's means and methods of construction.

5.37.7 Price to Cover.

Payment for this work will be made in proportion to the work completed as follows:

Acceptance of Pre-Construction Report	30%
Completion of Field Monitoring	40%
Acceptance of Post-Construction Report	30%

Payment will be made under:

Item No.	Description	Pay Unit
5.37	CONSTRUCTION REPORT	L.S.

SECTION 6.06 PB
Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver)

6.06PB.1. DESCRIPTION. This work shall consist of the construction of Concrete Paver Sidewalk and Concrete Paver Sidewalk, Engraved; as specified. Concrete Paver Sidewalk and Concrete Paver Sidewalk, Engraved shall consist of pavers furnished by the Contractor, laid on a mortar setting bed in required patterns, with cement-grout joints to the satisfaction of the Engineer.

6.06PB.2. MATERIALS.

A. Concrete pavers shall be Prest Brick Plankstone, nominal sizes; Matrix #M1428, with #13 finish with spacer lugs, and gauged standard 3/16" bevel, as manufactured by: Hanover Architectural Products, Inc., Hanover, Pennsylvania; (800) 426-4242.

Type	Length	Width	Thickness
Type 1 and Type 1, Engraved	18"	6"	2-1/4"
Type 2 and Type 2, Engraved	24"	6"	2-1/4"
Type 3 and Type 3, Engraved	36"	6"	2-1/4"

B. Cement Mortar shall conform to **Section 3.07**, Type 2, of the NYCDOT Standard Specifications, except for the proportion of Portland Cement and mortar sand: for setting bed it shall consist of one part Portland Cement Type 2 and two parts Mortar Sand by volume; and, for joints it shall be equal parts of Portland Cement and Mortar Sand by volume.

C. Cement-grout shall meet requirements of **Section 3.06**, Type 2 of the NYCDOT Standard Specifications.

D. Metal edging shall be Border King steel edging, 1/4" thickness; 5" height; 10' or 16' lengths; standard stakes in 3/16" x 15" size with 4 stakes per 10' length or 6 stakes per 16' length; color is to be black, as manufactured by Border Concepts, Inc., 1338 Hundred Oaks Drive, Suite G, Charlotte, NC 28217; (704)541-5509 or approved equivalent.

E. Engraving shall be sand-blasted with letters 3/4" height, Horatio Font, all caps, centered in paver, coated with black Lithichrome, as fabricated by Hanover Architectural Products, Inc., Hanover, Pennsylvania; (800) 426-4242.

6.06PB.3. SUBMITTALS.

A. Prior to Commencement of Work, the Contractor shall submit the name of the concrete paver sidewalk installer he proposes to use and upon which his bid is based, along with their respective work history experience, including list of owner references to the Engineer for review and approval. The installer shall have a minimum of one (1) similar size project in laying pavers and pavers with engraving in last seven (7) years.

B. Submit one (1) full-size paver of each paver type.

C. Submit sample of text sand-blast engraved in concrete paver, of each type, in the size and font indicated for this project.

D. The Contractor shall submit Shop Drawings in accordance with the requirements of the **Section 1.06.13** of NYCDOT Standard Highway Specifications. Submit overall and detailed plans, sections, and elevations as necessary to accurately and fully describe the work of this Section including the locations of each concrete paver type, oversized concrete pavers and information necessary for coordination with installation trades contractors of different components. The Shop Drawings shall include a keyed plan of the location of each engraved concrete paver, as each engraved concrete paver has unique content. Coordinate review of the Shop Drawings with the Engineer and Baruch College prior to installation.

E. The Contractor shall submit half-size black-and-white shop drawings for each engraved concrete paver showing exact layout of lettering, and showing limits of concrete paver on which letters shall appear, keyed to overall plan of the project. Baruch College to supply text for engraving for the preparation of shop drawings. Shop drawings to be approved by Baruch College and Engineer prior to engraving and installation.

F. All Shop Drawings of this Section shall be submitted concurrently.

6.06PB.4. CONSTRUCTION METHODS.

A. Preparation of Surface. Before laying operations begin, all structural, waterproofing, and plumbing work per Section BVM11 shall be completed and approved by the Engineer to receive work of this Section. No concrete paver sidewalk shall be laid unless the surface on which it is to be laid is in a condition acceptable to the Engineer. Comply with cold-weather and hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

B. Handling. All concrete pavers shall be handled, piled and laid, as required. They shall be handled with care to prevent the chipping and breaking of edges and corners or damage to engraving.

D. Mortar. Mortar for setting bed shall be composed of one part Portland cement and two parts sand. Mix mortar as stiff as practicable. Do not use mortar that has set up. Retempering of mortar will not be permitted.

E. Spreading and shaping of the Bed. The mortar setting bed shall be spread to a depth of three-quarter (3/4) inches, be shaped by approved methods to a surface approximately parallel to and depth of the concrete paver below the finished surface, and shall not be disturbed after shaping prior to the laying of the pavers.

F. Laying Concrete Pavers. The foundation shall be brought to the required grade and the concrete pavers shall be cut and laid on a mortar bed in the patterns shown on the plans to provide a uniform surface. Carefully place concrete pavers by hand in straight courses with joints 1/8", max. and with uniform top surfaces conforming to the patterns shown on the plans. Concrete pavers shall be laid on the bed before it has set. Each paver shall be tamped and adjusted, and retamped if required until it is thoroughly and satisfactorily bedded to the proper grade and crown. No air pockets in mortar bed will be allowed.

The Contractor shall perform all necessary field cutting and dressing to have concrete pavers fit the required patterns and interfaces, with the exception of the engraved pavers which shall not be cut or manipulated in the field.

I. Joint Filling in Cold or Wet Weather. During air temperature below 38 degrees Fahrenheit, in the shade, cement-grouting may be done only if permitted by the Engineer.

In case of rain the concrete pavers shall be protected as required.

J. Testing Surface. After the wearing course has been laid, the surface shall be tested with an approved straight edge ten (10) feet long or with an approved surface testing machine laid parallel with the center line of the roadway and any irregularity in the alignment of concrete paver sidewalk, exceeding one-quarter (1/4) inch shall be immediately corrected to the satisfaction of the Engineer.

K. Traffic. No traffic of any kind will be allowed on the concrete paver sidewalk.

L. Defective Wearing Course. Such portions of the completed sidewalk that are defective in finish, compression, composition, or that do not comply with the requirements of these specifications, shall be taken up, removed, and replaced with suitable materials, properly laid in accordance with these specifications at the Contractor's own expense.

6.06PB.5. MEASUREMENT. The quantity to be measured for payment shall be:

A. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 1
The number of square yards of 6"x18" Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 1 installed to the lines, grades and patterns shown on the plans, specified or directed,

measured in place in its final position to the satisfaction of the Engineer.

B. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 1 ENGRAVED
The number of square yards of 6"x18" Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 1 Engraved installed to the lines, grades and patterns shown on the plans, specified or directed, measured in place in its final position to the satisfaction of the Engineer.

C. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 2
The number of square yards of 6"x24" Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 2 installed to the lines, grades and patterns shown on the plans, specified or directed, measured in place in its final position to the satisfaction of the Engineer.

D. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 2 ENGRAVED
The number of square yards of 6"x24" Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 2 Engraved installed to the lines, grades and patterns shown on the plans, specified or directed, measured in place in its final position to the satisfaction of the Engineer.

E. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 3
The number of square yards of 6"x36" Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 3 installed to the lines, grades and patterns shown on the plans, specified or directed, measured in place in its final position to the satisfaction of the Engineer.

F. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 3 ENGRAVED
The number of square yards of 6"x36" Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 3 Engraved installed to the lines, grades and patterns shown on the plans, specified or directed, measured in place in its final position to the satisfaction of the Engineer.

6.06PB.6. PRICE TO COVER.

A. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 1
The unit price bid per square yard of Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 1 shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and incidentals required to lay such sidewalk on a mortar setting bed with cement-grout joints and shall include the furnishing of new pavers to the site; furnishing additional pavers as replacements for pavers which are broken or damaged as a result of Contractor's operations; cleaning; redressing, cutting and incorporating pavers into the work; furnishing and placing mortar for setting bed and grout-cements joints; and maintaining the sidewalk in conformity with **Section 5.05** of NYCDOT Standard Highway Specifications; as required, in full compliance with the Contract Drawings, the specifications and the directions of the Engineer.

B. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 1 ENGRAVED

The unit price bid per square yard of Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 1 Engraved shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and incidentals required to lay such sidewalk on a mortar setting bed with cement-grout joints and shall include the furnishing of new pavers to the site; engraving of pavers; furnishing additional pavers as replacements for pavers which are broken or damaged as a result of Contractor's operations; cleaning; redressing, cutting and incorporating pavers into the work; furnishing and placing mortar for setting bed and grout-cements joints; and maintaining the sidewalk in conformity with **Section 5.05** of NYCDOT Standard Highway Specifications; as required, in full compliance with the Contract Drawings, the specifications and the directions of the Engineer.

C. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 2
The unit price bid per square yard of Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 2 shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and incidentals required to lay such sidewalk on a mortar setting bed with cement-grout joints and shall include the furnishing of new pavers to the site; furnishing additional pavers as replacements for pavers which are broken or damaged as a result of Contractor's operations; cleaning; redressing, cutting and incorporating pavers into the work; furnishing and placing mortar for setting bed and grout-cements joints; and maintaining the sidewalk in conformity with **Section 5.05** of NYCDOT Standard Highway Specifications; as required, in full compliance with the Contract Drawings, the specifications and the directions of the Engineer.

D. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 2 ENGRAVED
The unit price bid per square yard of Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 2 Engraved shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and incidentals required to lay such sidewalk on a mortar setting bed with cement-grout joints and shall include the furnishing of new pavers to the site; engraving of pavers; furnishing additional pavers as replacements for pavers which are broken or damaged as a result of Contractor's operations; cleaning; redressing, cutting and incorporating pavers into the work; furnishing and placing mortar for setting bed and grout-cements joints; and maintaining the sidewalk in conformity with **Section 5.05** of NYCDOT Standard Highway Specifications; as required, in full compliance with the Contract Drawings, the specifications and the directions of the Engineer.

E. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 3
The unit price bid per square yard of Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 3 shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and incidentals required to lay such sidewalk on a mortar setting bed with cement-grout joints and shall include the furnishing of new pavers to the site; furnishing additional pavers as replacements for pavers which are broken or damaged as a result of Contractor's operations; cleaning; redressing, cutting and incorporating pavers into the work; furnishing and placing mortar for setting bed and

grout-cements joints; and maintaining the sidewalk in conformity with **Section 5.05** of NYCDOT Standard Highway Specifications; as required, in full compliance with the Contract Drawings, the specifications and the directions of the Engineer.

F. CONCRETE PAVER SIDEWALK (GROUTED JOINTS)(FURNISH PAVER), TYPE 3 ENGRAVED
The unit price bid per square yard of Concrete Paver Sidewalk (Grouted Joints)(Furnish Paver), Type 3 Engraved shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and incidentals required to lay such sidewalk on a mortar setting bed with cement-grout joints and shall include the furnishing of new pavers to the site; engraving of pavers; furnishing additional pavers as replacements for pavers which are broken or damaged as a result of Contractor's operations; cleaning; redressing, cutting and incorporating pavers into the work; furnishing and placing mortar for setting bed and grout-cements joints; and maintaining the sidewalk in conformity with **Section 5.05** of NYCDOT Standard Highway Specifications; as required, in full compliance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.06 PB1	CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 1	S.Y.
6.06 PB1E	CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 1 ENGRAVED	S.Y.
6.06 PB2	CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 2	S.Y.
6.06 PB2E	CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 2 ENGRAVED	S.Y.
6.06 PB3	CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 3	S.Y.
6.06 PB3E	CONCRETE PAVER SIDEWALK (GROUTED JOINTS) (FURNISH PAVER), TYPE 3 ENGRAVED	S.Y.

SECTION 6.27 D
Demolition, Removal and Disposal of Structures

6.27D.1. DESCRIPTION. Under this Section, the Contractor shall furnish all labor, material, equipment, insurance, and necessary incidentals required for the demolition, removal and disposal, away from the site, of bicycle racks and benches; all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

6.27D.2. METHODS. All work shall be done in accordance with the applicable requirement of the Section 6.27 - Demolition of Structures, of the Standard Highway Specifications, and as amended below.

Any holes resulting from the demolition and removal work under this section shall be backfilled and cleaned up, in compliance with subsections 6.27.4(E) and (F), such that no trip hazard remains. No additional payment will be made for this work.

a) BICYCLE RACKS. Bicycle Racks marked for removal under this Item No. 6.27 DBI, shall first be separated from their anchor bolts. The bicycle racks shall then be removed and disposed of away from the site. Any remaining anchor bolts shall either be cut flush with the existing pavement or completely removed, at the Contractor's option.

Should the anchor bars be completely removed and the area be open to the public, any holes or damaged pavement resulting from the removal work shall immediately be backfilled with temporary asphalt concrete mixture such that no trip hazards remains. No additional payment will be made for this work.

b) BENCHES. Benches marked for removal under Item No. 6.27 DBH, shall be first separated their anchor bolts. The benches shall then be removed and disposed of away from the site and then the bench foundations shall be excavate and dispose of as directed by the Engineer. All excavations shall be backfilled to the satisfaction of the Engineer, at no additional cost to the City.

6.27D.3. MEASUREMENT.

The quantities to be measured for payment under Demolition, Removal and Disposal of BICYCLE RACKS AND BENCHES shall be the actual number of each removed from the site, to the satisfaction of the Engineer.

6.27D.4. PRICES TO COVER.

The unit prices bid for

ITEM NO. 6.27 DBI DEMOLITION, REMOVAL AND DISPOSAL OF BICYCLE RACK
ITEM NO. 6.27 DBH DEMOLITION, REMOVAL AND DISPOSAL OF BENCHES

shall be a unit price for each and shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and necessary incidentals required and to complete the work; all in accordance with the contract drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.27 DBI	DEMOLITION, REMOVAL AND DISPOSAL OF BICYCLE RACK	EACH
6.27 DBH	DEMOLITION, REMOVAL AND DISPOSAL OF BENCHES	EACH

SECTION 6.74 ED
STEEL PLATE EDGING

6.74 ED.1. DESCRIPTION

A. WORK INCLUDED: The work of this Section includes, but is not limited to, the following:

Stainless steel planting edge.

SUBMITTALS

Submittals shall comply with the General Conditions of **Section 1.06.31** of the NYCDOT Standard Highway Specifications.

Product Data: Submit manufacturer's technical data, installation instructions and finish requirements for metal edging and the following:

Anchors.

Shop Drawings: Show fabrication and installation details for metal edging.

Include plans, elevations, sections, and details of metal edging and their connections. Show anchorage and accessory items.

Samples: Submit 12 inch piece of stainless steel edging with finish.

Welding Certificates: Signed by Contractor certifying that welders comply with AWS requirements.

QUALITY ASSURANCE

Fabricator Qualifications: Firm experienced in producing metal edging similar to those indicated for this Project with a record of successful in-service performance, and with sufficient production capacity to produce required units without delaying the Work.

Welding Qualifications: Qualify procedures and personnel according to the following:

AWS D1.1, "Structural Welding Code - Steel."

PROJECT CONDITIONS

Field Measurements: Verify actual locations of walls and other construction contiguous with metal edging by field measurements before fabrication.

COORDINATION

Coordinate installation of anchorages and steel weld plates and angles for casting into concrete or embedding in masonry.

Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, inserts, anchor bolts, and items with integral anchors, that are to be

embedded in concrete or masonry. Deliver such items to Project site for installation.

6.74 ED.2. MATERIALS

A. PERFORMANCE REQUIREMENTS

Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal edging by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

Temperature Change: 120 degrees F, ambient; 180 degrees F, material surfaces.

METALS, GENERAL

Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal edging exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

METALS

Stainless- Steel Sheet: ASTM A 240 or ASTM A 666, Type 316L, stretcher-leveled standard of flatness.

FASTENERS

General: Unless otherwise indicated, provide Type 316L stainless-steel fasteners for exterior use. Select fasteners for type, grade and class required.

Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, ASTM F 593; with hex nuts, ASTM F 594; and, where indicated, flat washers; Alloy Group 1.

Plain Washers: Round, ASME B18.22.1.

Lock Washers: Helical, spring type, ASME B18.21.1.

Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

Cast- in- Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47 malleable iron or ASTM A 27 cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.

Post- Installed Anchors: Torque-controlled expansion anchors.

Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

MISCELLANEOUS MATERIALS

Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

FABRICATION, GENERAL

Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

Form exposed work with accurate angles and surfaces and straight edges.

Weld corners and seams continuously to comply with the following:

Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

Obtain fusion without undercut or overlap.

Remove welding flux immediately.

At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface - no evidence of weld.

Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints as indicated on Contract Drawings. No joints/splices shall be visible along portions of edging that are visible from the plaza.

Fabricate seams and other connections that will be exposed to weather in a manner to exclude water.

Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal edging rigidly in place and to support indicated loads as indicated on the Contract Drawings.

Where units are indicated to be cast into concrete, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches on center, unless otherwise indicated.

METAL EDGING

1. Fabricate from steel from shapes and sizes indicated for assemblies as indicated on Contract Drawings. Fabricate in single lengths unless otherwise

indicated or impractical. Weld adjoining members together to form a single unit where indicated.

a. Stainless- Steel Sheet and Bar: Thickness required complying with performance requirements and as indicated on Contract Drawings.

FINISHES, GENERAL

Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

Finish metal edging after assembly.

Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

STAINLESS- STEEL FINISHES

Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

When finishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

Finish: Matte Bead Blast.

6.74 ED.3. METHODS

A. INSTALLATION, GENERAL

Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal edging. Set metal edging accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

Field Welding: Comply with the following requirements:

Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

Obtain fusion without undercut or overlap.

Remove welding slag immediately.

At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface – no visible evidence of weld.

Fastening to In- Place Construction: Provide anchorage devices and fasteners where metal edging is required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

INSTALLING METAL EDGING

Install stainless steel edging with fasteners to suit application and as detailed.

CLEANING

Protect finishes of decorative metal from damage during construction period with temporary protective coverings approved by decorative metal fabricator. Remove protective covering when directed to by the Engineer.

Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

6.74 ED.4. MEASUREMENT. The quantity to be measured for payment hereunder shall be the number of linear feet of Steel Plate Edging installed to the satisfaction of the Engineer.

6.74 ED.5. PRICE TO COVER. The unit bid price per linear foot Steel Plate Edging shall cover the cost of all labor, materials, equipment, insurance and all incidental expenses necessary to complete the work in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.74 ED	STEEL PLATE EDGING	LF

SECTION 6.77 PSR
PUBLIC SPACE RECEPTACLE BINS

6.77PSR.1. DESCRIPTION.

This section describes public space receptacle bins which shall be furnished and installed, all in accordance with the Contract Drawings, the specifications and directions of the Engineer.

6.77PSR.2. MATERIALS.

Public Space Receptacle Bins shall be of similar design and construction to Landscape Forms, Inc., #SF 1288 series model receptacles; Maglin, #MLWR600-32 series model receptacles; or approved equivalent model receptacles.

(A) CLASSIFICATION:

Receptacles shall conform to the style, size and type as specified in this contract and installation shall be ADA compliant.

(B) SALIENT CHARACTERISTICS:

The Contractor shall furnish public space receptacles for Recycling Bottles & Cans, for Mixed Paper, and for Litter.

(C) EXTERIOR MATERIAL:

The exterior frame shall be manufactured utilizing 333 or 319 cast aluminum, tubular steel, 11 GA Hot rolled carbon steel, galvenneal steel, or a combination of comparable materials. The receptacles shall incorporate a decorative configuration or perforated pattern designed and marked with the manufactured date, warranted to withstand outdoor use for a minimum of five (5) years. All exterior and interior frame components shall be (electro coated) rustproofed and/or powder coated as directed. The exterior receptacle color shall be RAL 9023.

(D) FLOOR:

The floor of the outside receptacle is to be solid A36 Hot Rolled Steel, Ductile Cast-iron or comparable material capable of supporting the weight of the inner receptacle. The floor shall have 3/8" weep holes, as well as a triangulated pattern of holes that support leveling provisions.

(E) FRAME/SWING DOOR/LID:

The frame shall be designed to accommodate the insertion of either a plastic liner basket with a minimum capacity of either 32 gallons for a smaller receptacle option or 44 gallons for the larger receptacle option.

The 44 gallon receptacle must have a swing door and the 32 gallon receptacle must have a removable lid that allow for easy access and removal of inner liner can.

The swing door on the 44 gallon receptacle shall be of a simple latch mechanism to secure the door and prevent scavenging. A door stop provision is required to regulate the full open position and to allow full access to the inner liner while preventing the receptacle from tipping over. Hinges and latch must be fully welded while leaving provisions to replace the door if damaged. The swing door should also have an installed locking mechanism. The locking mechanism shall be both simple and easy for anyone authorized to service the container to use, but at the same time prohibits access to anyone not authorized (to prevent poaching of the receptacle's contents). All such mechanisms shall be keyed

alike.

The 32 gallon receptacle shall be serviced through the lid without a swing door. The lid shall be manufactured from 16 gauge hot rolled steel, or spun aluminum, or comparable strength. The lid shall be attached to the receptacle using a vinyl coated steel chain in order to ensure the lid remains attached and to prevent the steel chain from damaging the rest of the receptacle. The steel chain must attach from the interior of the receptacle to the underside of the lid. The lid shall also have an installed locking mechanism. One that is both simple and easy for anyone authorized to service the container to use, but at the same time prohibits access to anyone not authorized (to prevent poaching of the receptacle's contents).

All such mechanisms shall be keyed alike.

All fasteners, screws, rivets used in construction of the receptacles shall be non-corrosive stainless steel. All Metal materials held by rivets or hex bolts must be fully secured to prevent dislodging and separation.

(F) EDGES & SEAMS:

The receptacle shall have no sharp edges or seams which a user or someone authorized to service the receptacle could come into contact with.

(G) WEIGHT:

The weight of outer receptacle shall be substantial to prevent it from easily being blown away or moved (32 gallons 115 to 150 pounds; 44 gallons 115 to 175 pounds).

The outer receptacle shall not move or tip when the side door is opened to remove or replace the inner receptacle.

Top lid must have an opening aligned precisely in the center of the slightly domed top. The shape of the lid must be slightly convex to act as a watershed so that litter cannot accumulate on it.

(H) TOP LID PAPER RECYCLING RECEPTACLES:

Top lid must have a 3.5 x 12 inch slot in the exact center of the domed top and must be part of the outer receptacle - not removable if it has the swing door or removable if there is no swing door. The shape must be convex to act as a watershed so that precipitation and litter cannot accumulate on it.

The color of the lid shall be RAL 6018 Green for the Paper Receptacle.

(I) TOP LID METAL/GLASS/PLASTICS RECEPTACLES:

The top lid must have a 5-inch diameter round opening in the exact center of the domed top and must be part of the outer receptacle - not removable if it has the swing door or removable if there is no swing door.

Color shall be RAL 5015 Blue for "Metal/Glass/Plastic" receptacle.

(J) TOP LID LITTER RECEPTACLES:

The top lid must have a minimum of a 9-inch diameter round opening in the exact center of the domed top and must be part of the outer receptacle - not removable if it has the swing door or removable if there is no swing door.

Color shall be RAL 9011 Black for "Litter" receptacle.

(K) DECALS:

Lid labels shall have a clear background. The material icons and text shall be white, except for multi-color graphics. Decal designs are shown at the end of this Section and will be provided by the Department of Design and Construction (DDC) to the manufacturer in an Adobe *.pdf file. The file is not to be altered for composition, type font or image from the version provided by DDC. The digital file shall be provided by DDC to the Contractor (on a CD or via E-mail) for printing.

For the 44 gallon receptacles to be directly serviced by DSNY: A label shall be placed on the outer bin between the lid top and the beginning of the perforated area, with a decal that is approximately 12" high. The length of this label shall be exactly 1/2 the circumference of the receptacle at the point of placement such that two decals can be placed around the receptacle and just meet each other. The decals shall have a clear background and the colored lettering as indicated.

For the 32 gallon receptacles to be serviced initially by partner or sponsoring group: Four decals shall be placed on the outer bin between the lid top and the beginning of the perforated area, with a decal that is approximately 12" high. Two decals, approximately 12"x12" are to be placed on opposite sides of the receptacle, and are for sponsoring groups. The other two decals shall be 12" high and the length determined in order to fill the space between the two sponsor decals. All four of the decals shall have a clear background and the colored lettering as indicated. If a sponsorship decal is needed, it will be indicated at the time of ordering.

Decals for the top of the lid of the receptacles shall be circular and have the same diameter as the lid. There shall be an appropriate cutout for the decal, accommodating the hole for placing items into the receptacle. All of the decals shall have a clear background and the colored lettering as indicated.

Decals for the side edge of the lid of the receptacles shall be a rectangular repeated graphic and lettering around the circumference of the lid. All of the decals shall have a clear background and the colored lettering as indicated.

All decals are to be coated with "Tedlar" or other compound of equal composition and are to have a sticky back (Adhesive glue) which is weatherproof in order to withstand the impact of precipitation, heat, cold, and wind without dislodging. All lettering is also to be weatherproof, i.e. is not to degrade due to precipitation, heat, cold, or the effects of the sun's UV rays.

(L) INTERIOR RECEPTACLE:

The receptacle must not weigh more than 30 pounds.

The receptacle must fit into the outer shell.

The receptacle shall be constructed of durable plastic material, formed polyethylene with 30 - 100% post-consumer content and be UV resistant.

The receptacle must have 3/8" weep/drain holes in bottom and the outer rim of the bottom to allow for rainwater and liquids to drain.

The receptacle shall have a minimum capacity of either 32 or 44 gallons.

The receptacle shall be easily removed or replaced into the outer shell.

The receptacle shall have hand grips or openings on two sides.

As a guide please note, that the Rubbermaid 44 Gallon "Brute" model or equivalent is acceptable for the 44 gallon receptacle.

(M) RECYCLED CONTENT:

A recycled content certification from the manufacturer shall be provided upon the request of the City of New York.

6.77PSR3. **METHODS:** The Contractor shall furnish and install receptacles of the types specified at locations shown on the Contract Drawings or as directed by the Engineer. Attachment of each receptacle to the sidewalk pavement shall be done using three (3) 3/8" x 4" minimum length, noncorrosive, concrete expansion anchors.

Immediately prior to installation of each receptacle the Contractor shall be required to sweep clean the area of sidewalk and remove all debris to the satisfaction of the Engineer.

6.77PSR4. **SUBMITTALS:** The Contractor shall submit the following to the Engineer, for his approval, in advance of ordering receptacle.

Manufacturer's shop drawings.
Catalog cut of receptacle(s) with manufacturer name and features included.
Submit color samples

6.77PSR5. **MEASUREMENT:** The quantities of **PUBLIC SPACE RECEPTACLE BINS** to be measured for payment shall be the number of receptacle of each type actually installed at the site as specified, to the satisfaction of the Engineer.

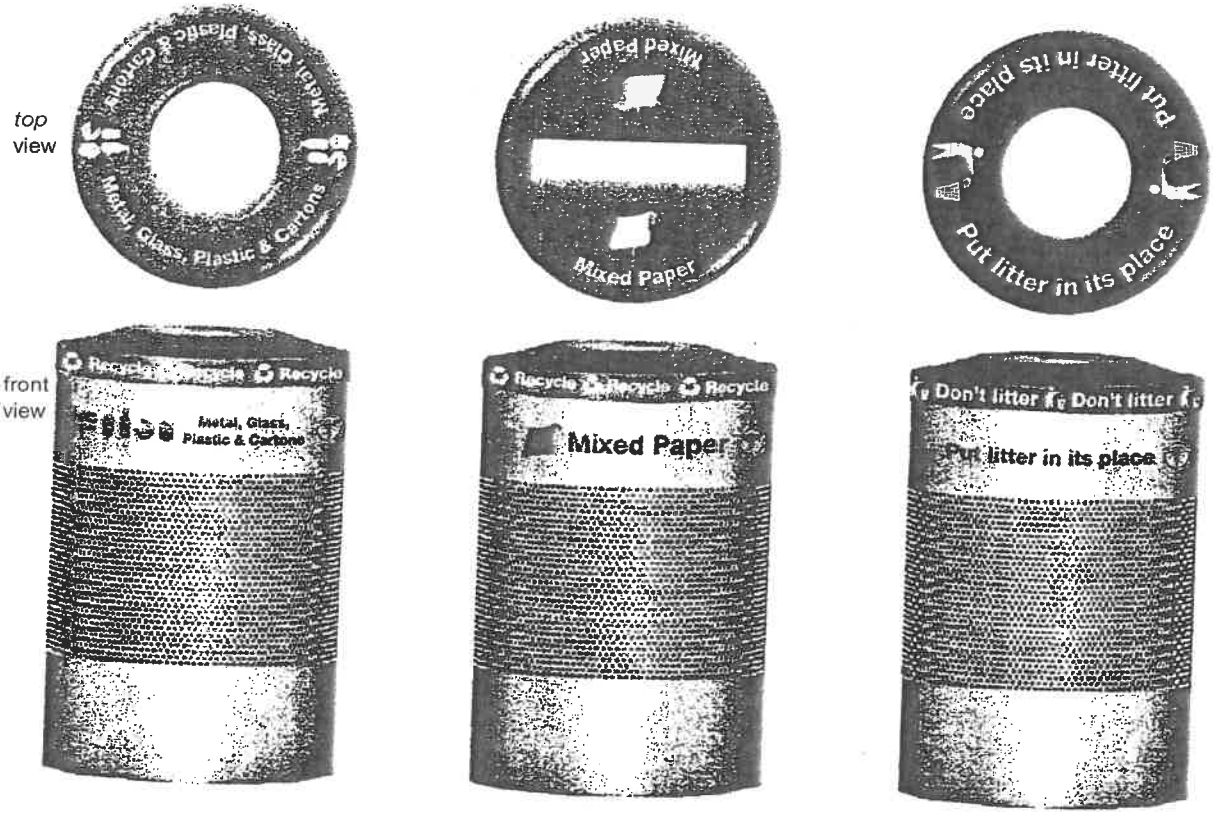
6.77PSR6. **PRICES TO COVER:** The contract prices bid shall be a Unit Price per **EACH** type of Public Space Receptacle Bin installed complete, and shall include the cost of furnishing all labor, material, equipment, insurance, and incidentals necessary to complete the work including, but not limited to, anchoring receptacle to the pavement and providing one plastic liner, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.77 PSR-L32G	PUBLIC SPACE RECEPTACLE BIN FOR LITTER, 32 GALLON	EACH
6.77 PSR-L44G	PUBLIC SPACE RECEPTACLE BIN FOR LITTER, 44 GALLON	EACH
6.77 PSR-MGPC32G	PUBLIC SPACE RECEPTACLE BIN FOR METAL, GLASS, PLASTIC & CARTONS, 32 GALLONS	EACH
6.77 PSR-MGPC44G	PUBLIC SPACE RECEPTACLE BIN FOR METAL, GLASS, PLASTIC & CARTONS, 44 GALLONS	EACH
6.77 PSR-MP32G	PUBLIC SPACE RECEPTACLE BIN FOR MIXED PAPER	EACH
6.77 PSR-MP44G	PUBLIC SPACE RECEPTACLE BIN FOR MIXED PAPER	EACH



44 GALLON RECEPTACLES



SECTION 7.07 SS
FURNISH AND INSTALL NEW STEEL BOLLARDS

Furnish And Install New Steel Bollards

7.07SS.1. INTENT. This section describes the fabrication and installation of new steel bollards.

7.07SS.2. DESCRIPTION. Under this section, the Contractor shall furnish all labor, material, plant, equipment, and incidentals necessary to furnish and install bollards in accordance with the plans, the specifications, and the directions of the Engineer.

7.07SS.3. MATERIAL. Stainless steel for bollards shall be of the size and dimensions shown on the plans and shall comply with the requirements of ASTM designation A 554, Grade MT 316L for tubing, ASTM A 312/A 312M Grade TP 316L for Pipe, ASTM A 240/A 240M or ASTM A 666, Type 316L for Plate and Sheet. Pipe shall be Schedule 80.

Acceptable Fabricators: Subject to compliance with requirements, but are not limited to, the following:

Post Road Iron Works
345 West Putnam Avenue
Greenwich, CT 06830
888-869-6322
info@priw.com

Ment Brothers Iron Works Co., Inc.
11 Broadway #1131
New York, NY 10004
212-217-6500

Westfield Sheet Metal Works, Inc.
North 8th Street & Monroe Avenue
Kenilworth, NJ 07033
908-276-5500
info@westfieldsheetmetal.com

Calpipe Security Bollards
19440 S. Dominguez Hills Drive
Rancho Dominguez, CA 90220
877-283-8518

or approved equivalent.

Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes

Finish shall be Matte Bead Blast for all surfaces.

Fasteners shall be stainless steel fasteners of type, grade, and class required to produce connections suitable for anchoring bollards and capable of withstanding design loads.

Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

Post-Installed Anchors: Torque-controlled expansion anchors.

Material for Exterior Location and Where Stainless Steel is Indicated: Alloy Group 1 stainless steel bolts, ASTM F 593, and nuts, ASTM F 594

Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

Non-Shrink Grout: shall be nonmetallic, factory-packaged, nonshrink, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C 1107M. Provide grout specifically recommended by manufacturer for exterior applications.

All other materials shall be as approved by the Engineer.

7.07SS.4. CONSTRUCTION METHODS. Bollards shall be shop fabricated from stainless steel pipe and plate.

All welds shall meet the requirements of the American Welding Society - AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

After fabrication, all exterior metal surfaces of the bollards shall be finished. Prior to finishing, the bollards shall be thoroughly cleaned.

Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

Form exposed work with accurate angles and surfaces and straight edges.

Weld corners and seams continuously to comply with the following:

Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

Obtain fusion without undercut or overlap.

Remove welding slag immediately.

At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and

contour of welded surface matches that of adjacent surface - no evidence of weld.

Cover base joint with flange at finish grade, the same metal as bollard, per contract drawings.

Handling, shipping and erecting of stainless steel bollards shall utilize special care to avoid abrasion, staining, or other damage to the finished surface.

Stacking and storing of bollards in the shop, in transit, and at the job site shall be done using softeners and timbers to keep individual members free from contract with the ground and with each other. Also, bollards shall be protected from soiling by adjacent fabrication or construction operations.

7.07SS.5. SHOP DRAWINGS. Shop drawings, including attachment details, shall be submitted by the Contractor to the Design Engineer for approval prior to installation.

7.07SS.6. METHOD OF MEASUREMENT. The quantity to be measured for payment shall be the number of bollards actually installed to the satisfaction of the Engineer.

7.07SS.7. PRICE TO COVER. The contract price bid per each stainless steel bollard furnished and installed shall cover the cost of all labor, material, finishing, equipment, and all incidentals necessary to complete the work, including, but not limited to, fabrication, finishing of bollards, embedment into vault concrete wall and shop drawings, all in accordance with the plans, the specifications and the directions of the Engineer.

Payment will be made under:

Item	Description	Pay Unit
7.07 SS	NEW STEEL BOLLARDS	EACH

SECTION 7.50 CB2
CityBench (Version 2)

7.50 CB2.1. INTENT.

This section describes the furnishing and installation of a CityBench (version 2.0). This specification includes the backed and backless bench types.

7.50 CB2.2. DESCRIPTION.

Under these items, the Contractor shall furnish and install each bench in accordance with the Contract Drawings, the specifications and directions of the Engineer.

7.50 CB2.3. MATERIALS.

(A) Bench shall be manufactured by Landscape Forms, Inc., 431 Lawndale Avenue, Kalamazoo, Michigan 49048.

Toll Free: (800) 521-2546. Phone: (269) 381-0396. Fax: (269) 381-3455.
Website: www.landscapeforms.com

(B) Bench Distributors:

1. Landscape Forms, Inc.,

   431 Lawndale Avenue
   Kalamazoo, Michigan 49048.
   Phone (269) 381-0396

2. Arenson Furniture Rental

   1115 Broadway
   New York, 10010
   Phone (212) 633-2400

3. AFD Contract Furniture Inc.

   810 7th Avenue,
   New York NY, 10019
   Phone (212) 721-7100

4. Empire Office Inc.

   105 Madison Ave. #15
   New York, NY 10016
   Phone (212) 607-5566

5. Or approved equivalent

(C) STYLE:

BACKED BENCH	BACKLESS BENCH
Chelsea Bench "QASF0886-005"	Chelsea Bench "QASF0886-006"
-Length: 89-1/4 inches	-Length: 89-1/4 inches
-Seat Height: 18 inches	-Seat Height: 17-3/4 inches
-Seat Depth: 19 inches	-Seat Depth: 22-5/8 inches
-Seat Width: 22 inches	-Seat Width: 22-5/8 inches
-Seat Radius: 79 inches	-Seat Radius: 79 inches
-Arm Height: 24-7/8 inches	-Arm Height: 24-7/8 inches
-Back Radius: 70 inches	
-Back Angle: 9-1/2 degrees	
-Seat Included Angle: 98-1/2 degrees	
-Height: 34 inches	

7.50 CB2.4. METHODS.

(A) DELIVERY, STORAGE, AND HANDLING. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer. All material shall be bundled and fully supported during shipping and storage to prevent creep.

Material manufacturer's directions for storage and use shall be adhered to. Material surfaces shall be protected during shipment so as to arrive mar and scratch free in the field.

Keep materials in manufacturer's original, unopened containers and packaging until installation. Any damage or excessively scratched will be rejected and replaced with new at no additional cost to the City. All material must be straight and true when placed in the construction. Store any and all tooling, fixtures, process drawings and project files until last project phase is complete. Deliver all tooling, fixtures and documentation to the Engineer upon completion of the work.

(B) INSTALLATION. Benches shall be uniquely fabricated and pre-assembled before being installed in their final location in the work. Benches shall be installed in their final position and properly secured in place, as indicated on the Contract Drawings. Protect installed product to ensure that, except for normal weathering, benches will be without damage or deterioration at time of Substantial Completion.

Note: Do not drag bench across concrete or other rough surfaces. This could damage the powder coat on the bottom of the base plate.

(C) TOUCHUP AND REPAIR. For all bolted connections and minor damage caused by transportation and installation of metal powder coated surface, the touch-up finish shall be in conformance with powder coating manufacturer's recommendations. Provide touch-up such that the repair is not visible from a distance of six feet (6') under bright sunlight. The touch up color shall match the color of the powder coat.

(D) FOUNDATION. If directed by the Engineer due to the condition of the sidewalk or where drilling

will crack distinctive pavements, two unreinforced concrete footings, 12" x 12" in plan and 18" deep shall be provided. Concrete shall be Class B-32 per Section 3.05. Foundation shall be centered under the bench leg base. Where footings are required, the openings for the footings are to be sawcut and the joints are to be finished per **Section 4.13.4.(F), EXPANSION JOINTS.**

(E) ANCHORING. Benches shall be anchored using sleeve anchors. Sleeve anchors shall be zinc-plated, ½" diameter, 2-1/2" length. An additional ¾" zinc-plated flat washer shall be used under the ½" zinc-plated washer that comes with the sleeve anchor.
Anchoring Details are as follows:

1. Holes shall be drilled using a full-size template, not by drilling through the bench. Place template in desired position, and drill anchor holes in the desired locations. Hole depth shall be at least 2-1/2" to allow for full engagement of sleeve anchors.
2. Remove template and clean the holes per the anchor manufacturer's requirements.
3. Place bench in desired position and install anchors. Tighten as recommended by anchor manufacturer. After anchors are properly tightened, mar the threads with a center punch in two places on each anchor to prevent removal of the nuts.

7.50 CB2.5. SUBMITTALS.

All submittals shall be as per **Section 1.06.31** of the NYC Department of Transportation's Standard Highway Specifications, and in accordance with the following requirements:

(A) WARRANTY: The manufacturer guarantees a standard warranty that the products will be free from defects in material and/or workmanship for a period of three years from the date of invoice.

7.50 CB2.6. MEASUREMENT.

The quantity of CityBench (version 2.0) to be paid for under this item shall be the number of CityBench(es) of each type installed at the site to the satisfaction of the Engineer.

7.50 CB2.7. PRICE TO COVER.

The unit price bid for EACH type CityBench (version 2.0) shall include the cost of furnishing all labor, materials, equipment, insurance, and incidentals necessary to furnish, assemble and install benches including, but not limited to, bench arm rests and hardware; all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

The unit price bid for this item shall also include the cost of concrete footings, sawcutting, sleeve anchors with nuts and washers, touch-up and repair.

Payment will be made under:

Item No.	Item	Pay Unit
7.50 CB2	CITYBENCH WITH BACK (V 2)	EACH
7.50 CBB2	CITYBENCH BACKLESS (V 2)	EACH

SECTION 7.55 SS
Stainless Steel Railings

7.55SS.1. INTENT. Under this section, the Contractor shall furnish and install fully welded, custom-fabricated, stainless steel railing.

7.55SS.2. REFERENCES.

(A) American National Standards Institute (ANSI)

A117.1 Accessible and Usable Buildings and Facilities

(B) American Society for Testing and Materials (ASTM)

(C) American Welding Society (AWS) Structural Welding Code

(D) All railings must meet ADA requirements.

(E) Provide railing conforming to AASHTO 2.7.3-Pedestrian Railings.

7.55SS.3. SUBMITTALS. Follow the procedures in the General Conditions of **Section 1.06.31** of the NYCDOT Standard Highway Specifications.

(A) Submit product data for each product used including, but not limited to, stainless steel tubing, sheet, and bar stock. The Contractor shall submit splice locations and splice details to the Engineer as part of shop drawings.

(B) Follow the requirements of the **Section 1.06.13** of NYCDOT Standard Highway Specifications for submission of the shop and working drawings. Submit shop drawings showing fabrication and installation of stainless steel railings, inserts including dimensioned elevation and details of components and attachments to other units of work. Indicate materials, profiles of each member and fitting, joinery, splices and concealed connections for expansion, finishes, fasteners, anchorages and accessory items. Shop drawings shall incorporate accurate, field-verified topographic elevations and dimensions. Show and identify adjustments in the work made to accommodate field conditions, if any. Identify field dimensions. Include design loads. Include setting drawings, templates and directions for installation of anchorages to be installed as unit of work of other sections. Provide clear indication of alloy types covering each condition. All shop drawings for items under this Section shall be coordinated and submitted concurrently.

(C) Samples for verification purposes of type of metal prepared of same thickness and alloy indicated for final unit of work with specified finish.

1. Provide three (3), 12 inch long samples of all linear shapes

2. Provide one (1) mock-up for splice of each railing type.

3. Provide mock-up of four (4) linear feet of railing.

(D) Delegated-Design Submittal: For railings, including analysis data of performance requirements (including but not limited to loads, point reactions, and anchorages, supports, and attachment of railings to structure) signed and sealed by the NYS licensed professional engineer responsible for their preparation.

7.55SS.4. QUALITY CONTROL. Contractor shall provide the following qualifications:

Fabricator Qualifications: Metal fabricator with experience in successfully producing at least one stainless steel railings within the last 3 years similar to that indicated for this project, with sufficient production capacity to produce required units without causing delay in the work.

Installer Qualifications: Arrange for installation of stainless steel railings specified in this section by a metal installer experienced in the installation of at least one railing work within the last 3 years of type and extent specified.

Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

7.55SS.5. MATERIALS. Provide stainless steel railings composed of metals of the forms and types which comply with requirements of referenced standards and which are free from surface blemishes where exposed to view in the finished unit. Exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, "oil canning", stains, discolorations, or other imperfections on finished units are not acceptable.

Stainless steel tube, sheet, and bar stock shall be Type 316L alloy, ASTM A 554, matte bead blast finish. Alloy shall be Type 316L except where Type 304 is indicated on Contract Drawings. Standards for tube and pipe shall be ASTM A 312. Bars and shapes shall be ASTM A 276. Plate shall be ASTM A 240 or ASTM A 666. All railings and posts shall be fitted with end caps.

Bolts, anchor bolts, nuts, and washers and other fittings for attachment and anchorage shall be stainless steel Type 316L unless indicated otherwise on Contract Drawings.

Welding Rods and Bare Electrodes: Select according to AWS specifications for metal allow welded. For stainless steel railings, provide type and alloy as recommended by producer of metal to be

welded and as required for color match, strength, and compatibility in fabricated items.

Non-Shrink Grout: shall be nonmetallic, factory-packaged, nonshrink, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C 1107M. Provide grout specifically recommended by manufacturer for exterior applications.

Acceptable Fabricators: Subject to compliance with requirements, fabricators offering stainless steel railing systems that may be incorporated in the work include, but are not limited to, the following:

1. Post Road Iron Works
   345 West Putnam Avenue
   Greenwich, CT 06830
   888-869-6322
   info@priw.com

2. Ment Brothers Iron Works Co., Inc.
   11 Broadway #1131
   New York, NY 10004
   212-217-6500

3. Westfield Sheet Metal Works, Inc.
   North 8th Street & Monroe Avenue
   Kenilworth, NJ 07033
   908-276-5500
   info@westfieldsheetmetal.com

PROJECT CONDITIONS. Take field measurements prior to preparation of shop drawings and fabrication, to ensure proper fitting of stainless steel components on granite, concrete and steel surfaces.

DELIVERY, STORAGE AND HANDLING. Store stainless steel railing components and materials in clean, dry and secure location.

7.55SS.6. METHODS. The Contractor shall be required to manufacture, install and protect the railings as shown on the Contract Drawings and in accordance with approved shop drawings to be furnished by the Contractor prior to fabrication.

1. Performance Requirements:

(A) Stainless steel railings, including attachments, shall withstand the effects of gravity loads and the following loads and stresses withing limits and under conditions indicated:

   a. Uniform load of 50lbf/ft applied in any direction.

   b. Concentrated load of 200 lbf applied in any direction.

c. Uniform and concentrated loads need not be assumed to act concurrently.

(B) Thermal Movements: Provide railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

a. Temperature Change (Range): 120 deg. F, ambient; 180 deg. F, material surfaces.

(C) Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

2. Fabrication:

(A) Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly.

(B) Fabrication and welding to comply with NYSDOT Steel Construction Manual.

(C) At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

(D) Fabricate railings and anchorage devices to comply with requirements indicated for design, dimensions, member sizes and spaces, details, and finish, but not less than that required to support structural loads.

(E) Accurately form curved elements of railings to radii indicated on the drawings, without kinks. Where curvature is required on sloping railings, curvature shall be accurate in horizontal dimension while also providing the required slope. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

(F) Tolerances: Railings shall be fabricated to the following tolerances: within 1/8" from plumb in all directions for 36" vertical distance. Maximum variation from flush conditions for all elements shall be 1/16". Maximum variation in horizontal alignment from true dimensions for top rails shall be 1/4". Maximum variation from true vertical alignment of railings shall be 1/4".

(G) Cut, drill, shear, and punch metals cleanly and accurately. Remove burrs from exposed cut edges. Ease exposed edges to a radius of approximately 1/32", unless otherwise indicated.

(H) Provide weep holes or another means to drain entrapped water in hollow sections of railing members that are exposed to exterior or to moisture from condensation or other sources.

(I) Fabricate joints in watertight manner.

(J) Coordinate the furnishing of anchorages with setting drawings, diagrams, templates, instructions, and directions of installation of items having integral anchors which are to be embedded in other construction, if any. Coordinate delivery of such items to the project site.

(K) Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove slag immediately. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces - no evidence of weld.

3. Installation:

(A) Provide anchorage devices and fasteners where necessary for securing railing systems to in-place construction; and other connectors as required.

(B) Perform cutting, core-drilling and fitting required for installation of railing. Set products accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels. Set posts plumb or as indicated in the contract drawings within a tolerance of 1/16" in 3 feet and align rails so variations from level for horizontal or from parallel with wall slope do not exceed 1/4" per 12 Feet. Holes to receive railings shall be cleanly core-drilled in granite and other masonry surfaces using the smallest size diameter to fit the supports, with not more than 1/8" additional diameter. Holes shall be accurately located per layout plans, and railing shop drawings shall be prepared to fit the hole locations as field-verified. The holes shall be the full depth of stone as indicated on the Contract Drawings. Care shall be taken while drilling in granite such that no damage will be done. Any damage to masonry surfaces resulting from drilling operations shall be remediated by the Contractor at no additional cost to the City, which may include replacement of whole granite units. No repair of granite involving gluing or patching will be allowed.

(C) For railing installation at concrete and granite surface, the railings shall be erected as detailed on Contract Drawings. After

posts have been set in place and properly supported to hold them to line and grade, the annular space shall be filled level or slightly higher than top surface with non-shrinking grout. For sloped surfaces, non-shrink grout shall be poured 0.25" low; after the grout has hardened, any remaining depression on sloped holes shall be filled and screeded flush with stiff mixture of epoxy grout matching color of concrete. In no case should grout protrude above finish grade. Mask around drill holes as necessary to prevent grout from contacting or staining adjacent surfaces.

(D) Fit exposed connections accurately together to form tight, hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers. Where cutting, welding and grinding are required for proper shop fitting and jointing of ornamental metal items, restore finishes to eliminate any evidence of such corrective work.

(E) Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing or provide new units as required.

(F) Cover anchorage joint with flange the same metal as post per Contract Drawings.

(G) Field Welding: Comply with applicable AWS specification for procedures of manual shielded metal-arc welding, for appearance and quality of welds made, and for methods used in correcting welding work. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed welded joints smooth and restore finish to match finish of adjacent rail surfaces.

4. Protection:

(A) Protect finish of railing systems from damage during construction period by use of temporary protective coverings approved by stainless steel fabricator. Remove protective covering as soon as need for protection has passed as directed by the Engineer.

(B) Restore protective coverings that have been damaged during shipment or installation of the work. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at the same location. Retain protective coverings intact and remove simultaneously from similarly finished items to preclude non-uniform oxidation and discoloration.

(C) Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items which cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units as required.

7.55SS.7. MEASUREMENT. The quantity to be measured for payment shall be:

STAINLESS STEEL RAILING: The number of linear feet of stainless steel railing measured along the center line of the railing, actually installed to the satisfaction of the Engineer, irrespective of wall- or ground-support.

7.55SS.8. PRICES TO COVER. The unit price bid per linear foot of railing shall cover the cost of all labor, material, plant, equipment, insurance, and incidentals necessary, but not limited to, furnishing and installing all stainless steel railings, posts, wall-supports, brackets, expansion joints, drilling of holes, welding, grouting, and shop drawings to complete the work, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
7.55 SS	STAINLESS STEEL RAILING	L.F.

SECTION 7.60 GS – Furnish and Install Decorative Screening

7.60GS.1. DESCRIPTION This section describes the furnishing and installation of a decorative screen composed of welded wire panels in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

7.60GS.2. MATERIALS

1.2 ACCEPTABLE MANUFACTURER

greenscreen®, 1743 La Cienega Blvd., Los Angeles, CA 90035; Tel: 1-800-450-3494; Fax: 310-837-0523, www.greenscreen.com.

(B) PANELS

Panels shall be rigid, three dimensional welded wire grid fabricated of 14 gage galvanized steel wire. Wire shall be welded-wire, galvanized in accordance with ASTM A641. Wires shall be welded at each intersection to form a 2 x 2 inch face grid on the front and back of panels. Face grids shall be separated by bent wire trusses spaced at 2-inch centers and welded to front and back face grids at each truss apex. Thickness of wall-mounted panels shall be 3 inches. The length and width shall be as indicated on the Contract Drawings. Tolerance shall be 1/8 inch in width and 1/8" in length. Cut panels to size.

(C) ACCESSORIES

Trim shall be fabricated from 20-gage ASTM A879 galvanized steel. Channel trim shall be the thickness of panel x 1/2 inch legs. Angle trim shall be 1/2-inch x 1/2-inch legs. The location of trim shall be as indicated on Contract Drawings. Weld trim to panels and grind smooth exterior surfaces of welds.

Clips and straps shall be the manufacturer's standard types of clips and straps suitable for mounting conditions fabricated from ASTM A879 galvanized steel. Adjustable clips shall have 1/4-inch diameter 18-8 stainless steel bolt, washer, and nut.

Plastic spacers shall be 1/2-inch thick black Ultra High Molecular Weight polyethylene (UHMW) washers to hold clips away from mounting surface.

Fasteners for attachment to structure shall have a pull out value of 480 lbs. minimum.

(D) FINISH

Metal components (except fasteners) shall receive commercial grade finish system after fabrication. The finish system shall consist of pretreat with general purpose, alkaline, water based cleaner / degreaser applied at 240 degrees F; prime with fusion bond epoxy powder coat; a topcoat with TGIC polyester or polyester urethane powder coat with a minimum total dry film thickness of not less than 6 mils.

Components shall have salt spray resistance where finish shall remain rust free when tested 1680 hours in accordance with ASTM B117.

Color shall be silver.

Touch-Up Paint shall be high quality, exterior-grade spray paint suitable for conditions of use as required by the manufacturer.

7.60GS.3. QUALITY ASSURANCE. Manufacturer shall have a minimum of 5 years experience in manufacturing and supplying welded wire panels for decorative screening systems of the type required for this project.

7.60GS.4. SUBMITTALS.

(A) PRODUCT DATA

Provide manufacturer's details for specified products demonstrating compliance with referred standards. Provide list of fittings being provided with descriptions and either photographs or drawings for each type.

(B) SHOP DRAWINGS

Submit shop drawings for fabrication and installation. Include plans, elevations, and detail sections showing sizes, critical dimensions, panel layout constraints using a 2 x 2-inch modular grid, and details and locations of accessories. Indicate materials, finishes, fittings, methods, fasteners, anchorages, and accessory items.

Verify actual openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

(C) SAMPLES

Submit two (2) samples representing actual products and finishes including welded wire grid panel, 6 in. x 6 in., with one edge of channel trim and one edge of angle trim, all as one unit; metal chips, 2 in. x 3-1/2 in. minimum, showing color and texture to be provided.

7.60GS.5. METHODS.

(A) EXAMINATION

Examine areas and conditions, with Installer and Engineer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work. Do not begin installation before final grade is completed unless otherwise permitted by the Engineer. Proceed with installation only after unsatisfactory conditions have been corrected and written approval from the Engineer is received.

(B) PREPARATION

Verify alignment, support dimensions, and tolerance are correct. Inventory components to ensure all required items are available for installation. Inspect components for damage. Remove damaged components from site and replace at no cost to the Owner.

(C) INSTALLATION

Install decorative screening according to manufacturer's written instructions. Install panels plumb and square, and aligned to maintain modular grid.

Avoid cutting panels in field. Where field cutting is essential, clean and dry area and apply touch-up paint to cut edges. Install securely with fasteners located to meet manufacturer's requirements.

Repair bent or damaged panels. If panels cannot be repaired to satisfaction of the Engineer, remove from jobsite and replace with new panels at no additional cost to the Owner.

(D) ADJUSTING AND CLEANING

Remove temporary coverings and protection of adjacent work areas. Clean installed products in accordance with manufacturer's instructions before the Engineer's acceptance. Do not use abrasive cleaners. Remove from project site and legally dispose of construction debris associated with this work.

(E) DELIVERY, STORAGE AND HANDLING

Protect materials from damage. Store panels flat. Provide edge protection when strapping is used. Do not apply loads to panel edges. Inspect products upon delivery in order to submit timely freight claim for any damaged materials. Store products in manufacturer's packaging until ready for installation. Handle and store products according to manufacturer's recommendations. Leave products wrapped or otherwise protected and under clean and dry storage conditions until required for installation.

7.60GS.6. MEASUREMENT. The quantity of furnished and installed decorative screening to be measured for payment shall be the number of linear feet furnished and installed on site to the satisfaction of the Engineer, in accordance with the Contract Drawings.

7.60GS.7. PRICES TO COVER. The contract unit price bid per linear foot of furnished and installed decorative screening shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for the completing the work, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
7.60 GS	FURNISH AND INSTALL DECORATIVE SCREENING	L.F.

SECTION 8.08 VMS
Variable Message Signs

8.08VMS.1. DESCRIPTION:

This work item involves the furnishing, installation, and maintenance of Portable Variable Message Signs (VMS) at specified locations shown on the plans and/or as ordered by the Engineer. The display units are intended to provide motorist information from a roadside installation and shall be configured for long term operation.

8.08VMS.2. MATERIALS:

The Contractor shall provide the following items as subsequently described in these specifications. All necessary incidental components, cables, and hardware, shall be supplied to accomplish a fully operational Portable VMS installation. All equipment and components furnished shall be new and be of the latest design manufacture. All parts shall be of high quality workmanship, and no part or attachment shall be substituted or applied contrary to the manufacturer's recommendations and standard practices. The design life of all components, operating 24 hours per day, shall be ten (10) years minimum with the exception of lead acid batteries.

A. Display

Variable message display units shall meet the requirements of Sections 201.3 and 294.6 of the New York State Manual of Uniform Traffic Control Devices. Each unit shall have a three line display with minimum of eight discrete characters per line. The sign characters shall measure at least 450 mm (18-in.) high, by 270 mm (11-in.) wide. The sign case shall not exceed 3.7 meters (12 ft.) wide. The display panel shall be 100% solid state with no moving parts or switches. All panels shall be identical and mutually interchangeable with all other panels. No field hardware or programming modifications shall be required to exchange or replace individual display panels.

LEDs shall be ITE amber wide angle providing for both daylight and nighttime legibility at a viewing angle of 30 degrees. Each pixel shall be capable of producing 20 candelas of light at 30 ma of current, shall be rated for 100,000 hours service life and shall have an operating temperature of -9 degrees C (15 degrees F) to +74 degrees C (165 degrees F).

B. Power Supply

The 12 VDC power source system shall consist of at least fourteen (14) batteries. Each battery shall be of the deep cycle design and shall operate at 12 VDC. The batteries shall be charged primarily by a solar voltaic array. Each battery shall have a minimum rating of 1,300 cold cranking amps for 30 seconds at -18 degrees C (65 degrees F) and shall have at least a 390 minute reserve capacity with 50% of pixels illuminated. The design of the VMS shall insure that this capacity shall be sufficient to provide virtual autonomy for the sign system which will allow full messages to be continuously displayed without the use of an external charger.

Control of the sign power supply shall be provided by a power management system that shall regulate the charging of the batteries by the solar charging system and shall provide for regulation, and distribution of the power to the various sign functions. This power management system shall provide power to the batteries when required and shall not overcharge them when they have reached a full charge.

C. Solar Charging System

The Solar charging system shall consist of a photovoltaic array mounted at the top of the sign case and power management system. The system shall provide regulated "on demand" charging consistent with the battery condition, with the ambient solar luminance at the photovoltaic array, and with net power consumption within the sign system. The photovoltaic array shall be capable of delivering 450 Watts of power in direct sunlight.

D. 110 VAC Charging system

A 110 VAC charging system shall be incorporated. The sign charging system shall be capable of producing a minimum seventy-five (75) amperes, twelve volt (12) VDC output. This charger shall be available as a backup and may be utilized when 110 VAC service is available at the site. A current meter for monitoring the charging process and an electrical receptacle mounted on the control pedestal shall be included. The system shall be capable of completely charging the battery pack within 24 hours. The actual charging time will vary depending upon conditions and state of charge/discharge of the batteries. Battery voltage shall be monitored by an on board CPU and the presence of 110 VAC line voltage shall be indicated on the keyboard terminal LCD.

E. Power Manager

The power manager shall control the regulation, and distribution of the power to the sign system. In addition, it shall regulate the solar charging of the 12 VDC batteries. The power manager shall automatically disconnect the battery pack from the solar array when the batteries attain a fully charged state. When the sign system is consuming power and the batteries are discharging, the power manager shall enable the solar arrays to provide a full charge from the solar array. This operation shall be designed to insure a maximum charge on the batteries when the sign is in full operation without overcharging the battery supply. The power manager circuitry shall be fully functional in the 0 to 95 % non-condensing humidity range and in the temperature range of -35 degrees C (-30 degrees F) to +75 degrees C (165 degrees F).

F. Central Processing Unit (CPU)

The CPU shall consist of one or more printed circuit (PC) board(s) which shall contain all of the sign message memory as well as the sign operating software. The CPU shall be constructed of a high quality fiberglass printed circuit card conformal coated with 100% solid-state circuitry. The CPU shall operate in 0 to 95 % non-condensing humidity conditions at temperatures from -35 degrees C (-30 degrees F) to +75 degrees C (165 degrees F). The CPU PC board shall be designed with reverse polarity protection in the event that batteries are incorrectly connected. The CPU shall have sufficient capacity to store 200 messages that can be entered from the sign keyboard terminal or remotely via a RS232 port. Remote control shall be possible over the RS232C control port. The data rate of this channel shall support operation in the 1.2 KB to 9.6 KB rate. The CPU shall include full support for the RS232 port and shall contain all required software and hardware which is necessary for a communication address to be stored in non-volatile RAM. The integral communication software on the CPU shall be able to recognize its own address in received messages and shall reject all other addresses. The RS232 hardware and software shall be capable of operation with all of the types of communication modems (i.e.: CDPD, Spread-spectrum, CDMA and Cellular).

The RS232 channel shall permit the programming, uploading and downloading of all necessary data to permit 100 % remote functionality of the sign. Message memory shall be retained during power interruptions or failures of indefinite length and the CPU shall be capable of operating the sign system in the event that the keyboard controller is disconnected. The units shall be capable of displaying up to six messages in a cyclical sequence and shall be capable of creating a minimum of 25 program sequences.

The complete RS232 protocol utilized shall be fully documented and provided to the Engineer. This protocol description shall be utilized by a third party for the purpose of developing control software for the VMS. The protocol shall include functions which shall allow the selection of pre-programmed messages, upload/download of the sign message library, and control of all auxiliary functions, such as LED messages. In addition, the protocol shall include functions to retrieve sign status such as current messages, failure states, etc.

The protocol shall be provided without any license restrictions or non-disclosure requirements. The manufacturer shall provide a minimum of sixteen hours telephone consultation to any party designated by the Engineer, to a software engineer who is fully cognizant and knowledgeable in all aspects of the protocol use and application.

G. VMSs shall be NTCIP Compliance

Profile Layer Applicable NTCIP Standards

Information Profile NTCIP 1201 (Global Object Definitions)
NTCIP 1203 (DMS Object Definitions)
Application Profile NTCIP 2301 (Simple Transportation Management Framework [STMF])
Transport Profile NTCIP 2201 (Transportation TransportProfile)
NTCIP 2202 (TCP/UDP/IP) Subnetwork Profile NTCIP 2101 (Point to MultiPoint over RS232)
NTCIP 2102 (Point to MultiPoint over FSK Modem)
NTCIP 2103 (Point to Point)
NTCIP 2104 (Ethernet)

H. Sign Keyboard Terminal

The sign keyboard shall be conveniently located for easy access and control of the display while the sign is in operation. The keyboard terminal shall consist of a standard QWERTY keyboard and at least a 4 line by 20 characters per line display. This terminal shall be watertight and shall be manufactured with conformal coated circuit boards. The keyboard shall operate in the 0 to 95 % non-condensing humidity conditions and -35 degrees C to +75 degrees C temperature range.

I. Sign Operation Software

The sign operating software (SOS) shall provide for operator interaction with the sign system through software residing in the CPU unit. This software shall be accessible through the sign keyboard terminal and an RS232 control port as described in Subsection F, above. The local software shall be user friendly (Capable of being operated by typical contractor personnel) and shall require operator confirmation prior to allowing a change to any sign operating parameter or message. The sign operating software shall contain a password entry system and limit access to the sign to authorized persons. The sign operating software shall provide for the following additional capabilities:

- Remote and local control of LED brightness (minimum 7 levels).
- Automatic (based on local photocell measurements) control of LED brightness.
- Enable/Disable cellular and CDPD and CDMA communications.
- Sign status including battery post voltage, 110 VAC service indicator, low voltage indicator, and photocell ambient light level.
- Accurate internal clock with automatic daylight savings time adjustment and no fail millennium change.

The following sign editing features shall be programmable:

- Create, edit, review, and delete messages.
- Create, edit, review, and delete message schedule.
- Create, edit, review, and delete message sequences.
- Programmable flash rate for messages.

J. Sign Operation Desktop, CDMA modem and Antenna and installation and integration in NYCDOT's Traffic Management Center (TMC)

Contractor shall provide a Personal computer P4 with the latest version of attached specifications, CDMA modem, and antenna installation at the NYCDOT Traffic Management Center (TMC), 28-11 Queens Plaza North, with the antenna installed on 9th floor roof. ***See Attachment at the end of this Section for the list of minimal requirements for desktop computer.***

Install and integrate all systems including communication with VMSs from TMC.

K. Sign Operation Notebook (laptop)

Contractor shall provide a laptop with the latest version of attached specifications and diagnostic software. ***See Attachment at the end of this Section for the list of minimal requirements for desktop computer.***

L. Trailer

The trailer shall be designed to safely transport the VMS assembly. The vehicle shall come equipped with all necessary lights, fenders, reflectors, etc. for use on public highways in accordance with the NYS Vehicle and Traffic Law. The trailer shall have a single axle and a fixed height tow ring and adjustable height ball or tow ring hitches. The trailer shall come equipped with leveling jacks of adequate strength to conveniently adjust the trailer orientation. These leveling jacks shall be affixed in such a manner that they may be readily placed and locked in a horizontal position for traveling without necessitating the use of tools. The trailer and sign assembly, when stationary and supported properly with the leveling jacks, shall withstand AASHTO rated 160 KPH wind gusts. The trailer shall be equipped with a rain tight locked housing for the keyboard, terminal and control panel. The sign trailer shall not exceed 2.4 meters (8 ft.) wide.

M. PC Based Remote Operation Software

A PC Based software package shall be supplied with each assembly. The package shall be supplied with an install disk and operating manual. From a standard PC, the software shall allow the VMS to be fully controlled, programmed, and maintained. The software package shall comply with the following specifications:

- Programmable for operation on COM1, COM2, COM3, + COM4 utilizing standard IRQs. In addition IRQ5 must be supported for COM3 and COM4. Two USB ports.
- Software must be operational under WINDOWS 98, WINDOWS XP.
- Must support as a minimum of functions available on the local CRT and terminal as defined in Subsection H, above.
- Must support dial-up modem operation including ability to maintain a telephone library for each VMS. Program must support a minimum of 100 VMS.
- Must support a sign message library which can be uploaded/download from the PC. Commands must be available to selectively upload/download complete messages from the VMS and a mechanism to store them on disk.
- PC software must be functional with all types of communication adapters utilized for the project.
- A PC 9-PIN to VMS controller RS232 connection cable shall be supplied for each VMS supplied. The cable shall be a minimum of 4 meters (13'-2") long and shall utilize water resistant connections and be of heavy-duty construction.

N. Modem Interface Cable

The VMS shall be supplied with a modem interface cable. This cable shall be designed to connect the VMS controller's RS232 port to the spread spectrum radio modem indicated on the plans to be utilized at this assembly.

O. Auxiliary Equipment Bay

The VMS shall have space for the installation of the external devices designated for use with the VMS in this contract. In addition, access to AC power shall be available in this bay. The bay shall be protected and secured by a lock and shall be watertight. Other internal spaces of the VMS can be utilized for this purpose if sufficient space exists.

P. MC Power Cable, Flexible Conduit

A nominal 3 meter (10 ft.) length of MC power cable and appropriate mating connectors, containing two (2) stranded # 8 wires and a ground shall be furnished and installed between the Pole Mounted Control Equipment Cabinet, power distribution panel and the Auxiliary Equipment Bay of the VMS sign. This cable shall be used to power the portable VMS sign from commercial electrical power.

Q. 3/4 NPS Sealtight Flexible Conduit

A nominal 3 meter (10 ft.) length of 3/4 NPS sealtight flexible watertight conduit and appropriate mating connectors shall be furnished and installed between the Pole Mounted Control Equipment Cabinet and the Auxiliary Equipment Bay of the VMS sign. The Contractor shall install the modem Interface Cable as described in Subsection N, above, in this flexible conduit.

8.08VMS.3. CONSTRUCTION MAINTENANCE DETAILS:

The Contractor shall prepare a shop drawing submittal which will include copies of descriptive literature for every component to be included in with the VMS assembly. The submittal shall include a complete description of the VMS protocol utilized to command and program the VMS assembly. In addition, the submittal shall include a complete plan for the VMS including all interconnections and physical placement of all of the required major and incidental components. These drawings shall include specific details of the installation of all of the material listed in this specification and as shown on the construction plans and details.

Upon request, as part of the shop drawing process, the Contractor may be required to perform a field demonstration of the assembly at a particular site which would be selected to approximate the conditions under which the VMS will need to operate for the project. During this demonstration, the unit must prove that it can meet all of the functional requirements defined in this specification. The Engineer has the right to reject the material if the demonstration fails to prove that the device is compliant, in the opinion of the Engineer. The shop drawing submittal must be as approved by the Engineer prior to any testing or installation of the VMS in the field.

The spread spectrum radio CDMA and power supply, as indicated on the plans or as designated by the Engineer, shall be installed, activated, and tested. The antenna cable shall be installed through the 2 NPS chase nipple in the back of the cabinet and at the top of the pole through the new opening with the rubber grommet as detailed in the plan set. The YAGI antenna detailed for in the Spread Spectrum Radio CDMA specification shall be installed utilizing the antenna mounting bracket described in that specification. The YAGI antenna shall be installed at the highest point possible on the sign/pole. Details for alignment of this antenna can be found in the CDMA Spread Spectrum radio specifications.

The VMS is to be installed at the locations indicated on the plans or as directed by the Engineer. The trailer wheels shall be removed and the VMS shall be positioned to maximize the viewing angle and visibility to the roadway. When in use, the units shall be set as shown on the construction plans and details. The base of the message display panel shall be adjusted so that it is at least two (2) meters (6-1/2 feet) above the pavement surface and properly aligned to provide optimum viewing by approaching motorists.

At locations where solar charging of batteries is not possible, a 110 VAC charging system shall be used to keep the batteries charged. At such locations, the Contractor shall be required to connect all installed VMSs to the nearest street light pole by overhang power cable in accordance with the National Electrical Code Specifications and as approved by the Engineer, in consultation with NYCDOT's inspector.

Once installed in the field, each VMS will be subjected to an Operational Standalone Test. This test shall verify that the VMS is fully operational and properly programmed with an initial message library to be provided by the Engineer.

The Contractor shall be responsible for maintenance, repair, and continuous operation of the display units until progress of work no longer requires their use, as determined by the Engineer. As a minimum, the Contractor shall field check the VMS at least once per week, while deployed in the field. The Contractor shall make all necessary adjustments or repairs to the VMS that are found necessary during the field inspection. This field check shall include inspection of battery electrolyte levels, cleaning and tightening battery cable harnesses and testing the VMS to ensure that all pixels are operational and that the VMS is fully operational. The Contractor shall also inspect the placement of traffic control devices such as cones, drums, signs, etc., for conformance with the construction plans and details. If such traffic control devices are missing or not in place the Contractor shall replace the devices in accordance with the contract documents. This inspection and replacement if required shall be considered as part of this bid item and shall not be considered for additional compensation. Any defective or non-functional sign shall be replaced within 24 hours.

All components to be supplied under this specification shall be under warranty for a minimum of two-years from the conclusion of the system acceptance test. This warranty shall include repair and/or replacement of all failed components via a factory authorized depot repair service. All items sent to the depot for repair shall be returned within two weeks of the date of receipt at the facility. The depot location shall be in the United States. Repairs shall not require more then two weeks from date of receipt and the provider of the warranty shall be responsible for all return shipping costs. The depot maintainer designated for each component shall be authorized by the original manufacturer to supply this service. A warranty certificate shall be supplied for each component from the designated depot repair site indicating the start and end dates of the warranty. The certificate shall be supplied at the conclusion of the system acceptance test and shall be for a minimum of two years after that point. The certificate shall name NYCDOT as the recipient of the service. The Engineer in consultation with NYCDOT shall have the right to transfer this service to other private parties who may be contracted to perform overall maintenance of the facility.

One copy of all operations and maintenance manuals for each portable VMS component shall be delivered for each assembly installed. For this project, a training course shall be conducted to review the operations and maintenance of all components. The training course shall consist of a minimum of two (2) 8-Hour sessions for each person and be scheduled for 6 City employees at TMC.

At the conclusion of the project, VMSs shall be delivered to a site designated by the Engineer. Each VMS shall be tested upon this delivery and must be in good working order in accordance with these specifications.

8.08VMS.4. MAINTENANCE CONTRACT:

For the duration of the project the Contractor shall be responsible to maintain VMS as per specification based on a specified on call service contract. The Commissioner, in consultation with NYCDOT, can cancel the maintenance contract at any time.

8.08VMS.5. METHOD OF MEASUREMENT:

A. The quantity to be measured for payments under Item 8.08 VMS, VARIABLE MESSAGE SIGN, shall be the number of Variable Message Signs satisfactorily installed where specified for use under this project. No additional measurement will be made for any relocation of variable message signs or for any temporary removal and subsequent reinstallation of variable message signs.

B. The quantity to be measured for payments under Item 8.08 VMSC, VARIABLE MESSAGE SIGN COMPUTER, shall be the number of Variable Message Sign Computers satisfactorily installed where specified for use under this project.

8.08VMS.6. BASIS OF PAYMENT:

A. The contract price bid for Item 8.08 VMS, VARIABLE MESSAGE SIGN, shall be a unit price per each Variable Message Sign and shall include the cost of all materials, labor, tools, equipment, documentation, testing, maintenance, insurance, and incidentals necessary to furnish, install, maintain, and remove, when directed, a variable message sign, complete, in accordance with the plans, the specifications, and the directions of the Engineer.

B. The contract price bid for Item 8.08 VMSC, VARIABLE MESSAGE SIGN COMPUTER, shall be a unit price per each Variable Message Sign Computer and shall include the cost of all materials, labor, tools, equipment, documentation, testing, maintenance, insurance, and incidentals necessary to furnish, install, maintain, and remove, when directed, a variable message sign computer complete with software, in accordance with the plans, the specifications, and the directions of the Engineer. The initial computer furnished under this item shall be a Desktop Computer and all subsequent computers furnished under this item shall be Notebook Computers.

C. No payment will be made for repair or replacement of damaged materials made necessary due to the Contractor's operations.

Payment of the unit price bid under each item will be made as follows:

20% payable upon equipment installation and satisfactory completion of installation tests.

25% payable upon project acceptance of the variable message sign or variable message sign computer, as applicable.

30% payable in monthly installments in proportion to the amount of the project completed following acceptance of the variable message sign or variable message sign computer, as applicable. Monthly payments will be dependent upon the Contractor performing all maintenance duties as may be required.

25% payable upon delivery of equipment to a site designated by the Engineer and satisfactory completion of tests as may be required by the manufacturer to verify that the unit is operational.

Payment will be made under:

Item No.	Description	Pay Unit
8.08 VMS	VARIABLE MESSAGE SIGN	EACH
8.08 VMSC	VARIABLE MESSAGE SIGN COMPUTER	EACH

8.08 VMS ATTACHMENT

Desktop Computer:

Module	Description
Make and Model	HP, Dell, Gateway, Toshiba; or, an approved equivalent. Note: An approved equivalent requires written approval of the Assistant Commissioner of ITS.
Processor	Intel Core 2 Duo Processor E6550 (2.33 GHz, 4M VT 1333MHz FSB) or faster
Operating System	Microsoft® Windows® XP Professional or Vista Business® , SP1 with Media and NTFS
Memory	2 GB or More, DDR2 Non-ECC SDRAM, 800 MHz
Keyboard	Entry Level Keyboard, PS/2, (No Hot Keys)
Monitor	19" LCD Monitor or Better
Graphics Card	PCI or AGP Interface with a minimum of 256 MB or RAM
Boot Hard Drive	160GB 7200RPM IDE Hard Drive
Mouse	PS/2
USB Memory Key	256MB USB Memory Key
CD ROM/DVD ROM	8X DVD+RW/+R AND 48X CDROM with Roxio® Easy CD Creator plus DVD Decode or faster version
Speakers	Two Piece Stereo System
Wireless	802.11 b/g USB 2.0
Sound	Built in sound
I/O Ports	At least: 2 serial, 8 USB2.0, 1 parallel, 1 IEEE1394 port, RJ45 Ethernet Port
Energy Star	Energy Star Compliant
Documentation Diskette	Resource CD contains DIgonstics and Drivers for the System

Notebook Computer:

Module	Description
Make and Model	HP, Dell, Gateway, Toshiba; or, an approved equivalent. Note: An approved equivalent requires written approval of the Assistant Commissioner of ITS.
Processor	Intel Core 2 Duo Processor 3.40GHz, 512K / 800MHz FSB or faster
Operating System	Microsoft® Windows® XP Professional or Vista Business® , SP1 with Media and NTFS
Memory	2 GB or more, DDR SDRAM Memory (2 DIMMS)
Graphics Card	4XAGP graphics w/128MB DDR Video Memory
Boot Hard Drives	160GB ATA-100 IDE (7200 rpm)
Modem	Internal 56K Modem
Modular Bay Devices	DVD/CD-RW combo or higher
Speakers	Two Piece Stereo System (builtin)
Wireless Local Area Networking Options	Intel® PRO/Wireless 2100 WLAN (802.11b,11Mbps) miniPCI Card
Battery	9-Cell Primary Battery
I/O Ports	At least: 1 serial, 1 parallel, 1 IEEE 1394, 2 UBS 2.0, RJ45 Ethernet Port
Factory-Installed Software	Norton Antivirus® 2009, 12-month subscription
Additional Battery	9-Cell Spare primary battery
Case	Yes

SECTION 8.32
Bark Chip Mulch

8.32.1. DESCRIPTION. Under this section, the Contractor shall furnish and place Bark Chip Mulch in accordance with the plans and specifications and as directed by the Engineer.

8.32.2. MATERIAL. Bark Chip Mulch shall be a natural forest product of 98% bark containing less than 2% wood or other debris. Bark species material shall be of White or Red Fir and/or Pine bark of a uniform grade with no additives or any other treatment. Size of bark shall be from 5/8" to 1-1/4". The pH factor should range from 5.8 to 6.2.

8.32.3. METHODS. Bark Chip Mulch shall be applied where required on the plans or directed by Engineer as a ground cover to the surface of beds and tree pits after the planting is completed. Mulch shall be applied to a uniform depth of three (3") inches and shall be so distributed as to create a smooth, level cover over the exposed soil. Plants shall not be covered.

8.32.4. MEASUREMENT. The quantity of Bark Chip Mulch to be paid for will be the number of square yards of ground surface area that has been satisfactorily covered with bark chip mulch within limits of tree pits and planting beds, for uniform cover over the entire planting area, as indicated on the Contract Drawings and where directed by the Engineer.

8.32.5. PRICE TO COVER. The unit price bid per square yard for Bark Chip Mulch shall cover the cost of all labor, materials, plant, equipment, insurance, and incidentals necessary to complete the work under this section in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

No payment will be made under this item for furnishing and placing mulch in tree pits around newly planted or transplanted trees required by **Section 4.16** of the NYCDOT Standard Specifications.

Payment will be made under:

Item No.	Item	Pay Unit
8.32	BARK CHIP MULCH	S.Y.

SECTION 8.52 FP
(NOT A PAY ITEM)
Steel Foundation Plate

8.52 FP.01. INTENT.

This section describes the furnishing and installation of the Steel Foundation Plate.

8.52 FP.02. DESCRIPTION.

The Steel Foundation Plate shall be embedded in the poured concrete footing to the nominal dimensions as indicated on the contract drawings and specifications.

8.52 FP.03. MATERIAL.

Steel Foundation Plates shall comply with the requirements of the NYC Department of Transportation (DOT) Standard Highway Specifications **Section 2.35, Structural Steel** and shall be galvanized in accordance with **Section 2.34, Galvanizing of NYCDOT Standard Specifications**.

8.52 FP.04. SUBMITTALS.

Shop drawings of each steel plate showing bolt locations shall be provided by the contractor in accordance with the requirements of **Subsection 1.06.13** of the NYCDOT Standard Highway Specifications, for review and approval prior to fabrication.

8.52.FP.05. NOT USED

8.52 FP.06. MEASUREMENT.

Payment will be based on the computed weight of metal as shown on the approved shop drawings, and shall include, but not be limited to, permanent bolts and welds in the structure as erected.

Not to be included in the measurement is the weight of all erection materials including but not limited to bolts, pilot and driving nuts, temporary protective coatings, and all boxes, crates or other containers used for packing, together with sills, struts, and rods used for supporting members during transportation.

The weight of all required bolt heads, nuts and washers will be estimated, making no allowance for waste, and included in the weight for which payment will be made. The mass of all required welds will be estimated and included in the mass for which payment will be made.

8.52 FP.07. PRICE TO COVER.

No separate payment will be made for steel foundation plate.

SECTION 8.52 PT
(NOT A PAY ITEM)
Paving Tray

8.52 PT.01. INTENT.

This section describes the furnishing of the ground level paving tray.

8.52 PT.02. DESCRIPTION.

Fabricated steel plate frame, angle and flat textured cover plate assembly, configured and to nominal dimensions as indicated on the contract drawings and specifications.

8.52 PT.03. SUBMITTALS.

All submittals shall be provided by the contractor in accordance with the requirements of **Subsection 1.06.13** of the NYCDOT Standard Highway Specifications.

A. Shop Drawings: Erection and fabrication drawings for all totem components and accessories. Show plans and elevations at not less than 1/4 inch to 1'-0" scale, and details at not less than 1-1/2 inch to 1'-0" scale.

B. Product Data: Manufacturer's printed specifications and installation instructions for each type of metal framing and accessory, including data required to show compliance with the Drawings and Specifications.

8.52 PT.04. MATERIALS.

A. Steel plate & Side Brackets:

a. Material & Finish: Grade 304 Stainless Steel, Mill finish.
b. Thickness: 1/4"
c. Side Brackets: As required, to be agreed with the Engineer prior to fabrication
   1. Edges: All edges to be polished and rounded off
   2. Joints: Plate sections to be butt jointed
   3. Installed level: To be aligned flush with poured concrete sidewalk

B. Cover Plate:

a. Material & Finish: Grade 304 Stainless Steel, Textured 'Durbar' plate.
b. Thickness: 1/4"
c. Edges: All edges to be polished and rounded off
d. Finished installed level: To be aligned flush with poured concrete sidewalk
e. Mounting Screws:
   1. Exposed To Sidewalk: To be stainless steel with tamper proof torx head or approved equivalent
   2. Beneath Sidewalk: To be stainless steel socket head

C. Temporary Cover Plate Mounting Brackets:

a. Material and Finish: Grade 304 Stainless Steel with mill finish

b. Nominal Thickness: As required by Contractor to safely support imposed sidewalk live loads

c. Bolt Fixings: To be stainless steel, sized and configured to support imposed sidewalk live loads

8.52 PT.05. METHOD.

A. Fabrication:

a. Plates cut and seam welded directly to each other

b. Side brackets spot welded directly to plates.

c. Provide all necessary Jigs for placement of paving trays relative to Totem foundation plates, provide a minimum of 6 jigs per Totem type.

8.52 PT.06. MEASUREMENT.

The quantity to be measured for payment shall be the number of new paving trays, of each size and type listed below, furnished and installed to the satisfaction of the Engineer.

Type	Item	Length	Width
A	Paving Tray (Pathway Totem) Paving	1'-7 ¼"	8 ½"
B	Tray (Area Totem)	2'-11 ¼"	8 ½"
C	Paving Tray (Neighborhood Totem)	4'-3 ¼"	8 ½"

8.52 PT.07. PRICES TO COVER.

No separate payment will be made for paving tray.

SECTION 9.71 WAD

Survey Monitoring and Visual Inspection of Existing Buildings

9.71WAD.1. Intent. The intent of this Section is to monitor the stability of the existing buildings adjacent to the project limits. The stability of these structures shall be determined by providing survey of permanent prisms and visual inspection of the structures and the submission of reports summarizing the results for the duration of the contract. The Contractor will be required to retain the services of a qualified firm, or firms, with experience in structural engineering, land surveying, soil mechanics, foundations, and the design and evaluation of masonry walls, stone walls and earth retaining structures.

Within thirty (30) days of the award of this contract, the Contractor shall submit to the Engineer qualifications of the firm it proposes to provide the engineering and surveying services described in this section. The proposed firms must have successfully provided engineering and or surveying services similar to the services described in this section on a minimum of two (2) comparable projects within the last three (3) consecutive years.

Compliance with such special experience requirements will be determined solely by the Commissioner. Once a firm is approved, no substitution will be permitted, unless the Commissioner has approved the qualifications of the proposed replacement in writing in advance. If the qualifications of the proposed firm are not acceptable, the Contractor shall submit the qualifications of another proposed firm within fifteen (15) days of notice to do so.

9.71WAD.2. Description. The Contractor shall field survey the prisms installed under Item 5.37 - Construction Report. If any prism is lost, stolen or disturbed, the Contractor shall replace it with a new one at no additional cost to the City. The Contractor shall perform a visual inspection of each of the structures simultaneously with the surveys. The results of the survey and visual inspection shall be provided in a report to the Engineer for review.

9.71WAD.3. Submissions. The reports shall consist of two (2) components, a detailed description of the findings of the visual inspection and the tabulated results of the locations of the prisms along with a stated amount of movement (if any). The report shall include all field notes, measurements and photographs, as required, of the existing wall conditions. The report shall be submitted for the Engineer's review within two (2) business days following the completion of the survey and inspection work.

The visual inspection report shall follow the NYC Buildings Department format for "B. DETAILED VISUAL INSPECTION" and as ordered by the Engineer. The survey results can be a tabulation showing the differences between subsequent surveys. The Contractor will be provided a list of survey points and coordinates as the baseline upon notice to commence.

9.71WAD.4. Methods. The Contractor shall engage the services of a firm capable of furnishing a New York State licensed Land Surveyor to survey the locations of the prisms. In addition the Contractor shall engage the services of a firm capable of furnishing a New York State licensed Professional Engineer to conduct visual inspections of the adjacent buildings and structures. The field surveys and visual inspections shall be conducted as follows:

A. Structures and/or buildings shall be monitored by survey and visually inspected **daily** during the performance of Test Pits (Item 7.16 D) and the selective demolition of the existing paving, walls, and stairs (Item BVM11-ST).
B. After completion of the demolition work for each of the construction stages detailed on the Contract Drawings, if no horizontal or vertical movement is measured, then the structures and/or buildings shall be monitored **weekly** for a period of one month.
C. If no horizontal or vertical movement is measured, then the structures and/or buildings shall be monitored **monthly** for the duration of that specific construction stage.
D. In case of an unusual event (e.g. water main break or abnormal flooding), monitoring shall be performed within 24 hours of the event.
E. A maximum value of 1/4" shall be used for vertical and horizontal settlements. All readings shall be done by or under the immediate supervision of a Surveyor Licensed by the State of New York as evidenced by the imprint of his seal and signature.

The Contractor shall transmit a copy of all readings to the Engineer on the same day they are taken.

Should the limit of horizontal and/or vertical movement, as set forth herein of any building and/or structure be exceeded, the Contractor shall immediately, at his own expense, take steps to rectify the situation and prevent any further settlement of such building and/or structure. The Contractor shall be fully responsible for any damages to any foundations, walls or other portions of buildings and/or structures that may result during the courses of this construction. Any damage done by the Contractor, whether it is accidental or due to negligence or carelessness in performing the work included in this contract shall be made good by the Contractor at his own expense.

9.71WAD.5. Measurement. The visual inspection of the existing adjacent buildings and the field survey will be measured on a per day basis as the work is approved by the Engineer.

9.71WAD.6. Price to Cover. The contract price bid for survey monitoring and visual inspection of the existing buildings shall be a Unit Price per day the survey and visual inspections are made and shall include, but not be limited to, the cost of furnishing all

labor, materials, equipment, insurance and incidental required to visually inspect and survey monitor the location of the existing prisms, prepare and submit the daily, weekly, and monthly reports and all other work incidental thereto; all in accordance with the specifications and as directed by the Engineer.

Payment will be made under:

Item No.	Description	Pay Unit
9.71 WAD	SURVEY MONITORING AND VISUAL INSPECTION OF EXISTING BUILDINGS	DAY

SECTION 9.71 WBB
Vibration Monitoring of Existing Buildings

9.71WBB.1. INTENT. The intent of this Section is to continuously monitor vibrations induced by construction activities for the existing step street reconstruction until the work is complete.

9.71WBB.2. DESCRIPTION. This work shall consist of performing vibration monitoring of background and construction activities, provide continuous email-notification of the readings to the Engineer (24-hours/7-days per week) and prepare daily and summary report(s) of vibration readings.

9.71WBB.3. MATERIALS. Provide a 3-component seismograph, capable of measuring particle velocity data in three mutually perpendicular directions. Annual factory calibration is required throughout the duration of the work.

9.71WBB.4. MONITORING CRITERIA.

ANOMALY	PEAK PARTICLE VELOCITY
PEAK CRITERIA	0.5 INCHES PER SECOND

9.71WBB.5. METHODS. The Contractor shall provide, as a minimum, a written vibration Monitoring Plan which shall include, but not limited to, the following items:

1. The name of the vibration monitoring specialist(s).
2. The scheduled start date and length of construction operations which require vibration monitoring.
3. The limits of vibration monitoring work for the proposed construction activities.
4. The location of any underground utilities in proximity to the construction operation.
5. Submit proof and details, as references, of two projects in the past three years where the vibration monitoring consultant performing the work has satisfactorily monitored construction operations by recording maximum peak particle velocities (PPVs). Include contact information for each reference.
6. Submit information on the required 3-component seismograph, capable of measuring particle velocity data in the three mutually perpendicular directions, including: the manufacturer's name, model number, and documentation of factory calibration performed within the last 12 months.

7. The location of monitoring points along East 25th Street between Lexington Avenue and 3rd Avenue within the Limit of Work and at the adjacent buildings to be monitored and maximum allowable PPVs as indicated in the contract documents. If not otherwise specified, a maximum allowable PPV in accordance with the United States Bureau of Mines (USBM) Vibration Criteria shall be observed at locations along the existing structure.

8. The location of seismograph(s) placements shall be as directed by the Contractor's Professional Engineer, registered in the State of New York, and shall be of sufficient number to adequately monitor the construction-induced vibrations.

9. Appropriate details for anchoring the geophone(s).

The vibration monitoring system shall inform the Engineer and the Contractor by email-notification immediately each time the measured particle velocities exceed 85% of the allowable peak particle velocity. The Contractor shall make equipment or procedural modifications as required to avoid exceeding the allowable vibration intensity.

If the measured velocities exceed the maximum allowable PPVs, the Contractor shall stop operations immediately and revise procedures to reduce vibrations to allowable levels.

If the seismographs show any indication of damage or vandalism, the seismographs shall be immediately recalibrated or replaced.

The Contractor shall be in communication with his monitoring firm's personnel during vibration monitoring at all locations to verify the data recorded.

The Contractor shall provide the Engineer with the results of the continuous vibration monitoring, one work day after the readings are taken. Upon completion of the construction operations for those locations requiring monitoring, the daily submittals shall be synthesized into a final report.

9.71WBB.6. MEASUREMENT.

The vibration monitoring work shall be measured on a lump sum basis.

9.71WBB.7. PRICE TO COVER.

The contract price bid for vibration monitoring of existing wall shall be a Lump Sum Price and shall include the cost of furnishing all labor, materials, equipment, insurance, and incidentals necessary to continuously monitor vibrations and prepare and submit required reports; all in accordance with the specifications and as directed by the Engineer.

Progress payments for this item shall be made proportionally in accordance with the amount of work completed, measured on a monthly basis and upon receipt of the required reporting documentation.

Payment will be made under:

Item No.	Item	Pay Unit
9.71 WBB	VIBRATION MONITORING OF EXISTING BUILDINGS	L.S.

SECTION 9.77 RSR - Remove, Store and Reset Flagpole

9.77RSR.1 DESCRIPTION. This section describes the removal and salvage, off-site storage, and re-installation of the existing stainless steel flagpoles and stainless steel flash collars (henceforth referred to collectively as flagpole or flagpoles) in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

9.77RSR.2 MATERIALS.

(A) OWNERSHIP

The salvaged flagpoles remain the property of Baruch College. The flagpoles are to be detached from existing construction, in a manner to prevent damage, prepared for reuse, and stored off-site by the Contractor until they are reinstalled on-site as part of this Work. Any pole damaged during the work of this Section will be replaced, in-kind, at no expense to the City.

Storage or sale of removed and salvaged items or materials on-site is not permitted.

(B) GROUNDING

Grounding system shall consist of three (3) copper bonded ground rods, copper grounding cable (size #2/0), PVC through sleeve and grounding connectors. Grounding system shall comply with all national and local laws, ordinances and safety standards that apply to lightning protections. All components shall be similar to that manufactured by Heary Brothers Lightning Protection Co., Inc., Springville, N.Y., or approved equivalent.

(C) INSTALLATION MATERIALS

Mortar for setting and pointing shall be one part Portland cement and one part plastic lime hydrate to three parts of clean, non-staining sand. It shall be mixed in small batches, using clean, non-alkaline water, until it is thoroughly homogenous, stiff and plastic. After mixing, the mortar shall set for not less than one hour or more than two hours before being used.

Sealant and related materials shall conform to the following:

(1) For joint filler provide closed cell extruded neoprene gasket conforming to ASTM C 509, grade 4, color to match stone.

(2) Sealant: Two (2) part self-leveling polyurethane sealant complying with ASTM C-920, Type M, Class 25, Grade P&NS, equal to Sikaflex-2c NS/SL made by Sika Chemical Co., Tremco or Pecora or approved equal. Color of sealant shall match stone, as approved by the Engineer.

(3) Back-up rod shall be "Ethafoam" or approved equal.

(4) Prime joints using primer recommended by sealant manufacturer.

9.77RSR.3 SUBMITTALS.

(A) INFORMATIONAL SUBMITTALS

Provide a proposed protection measures report, including drawings, that indicates the measures proposed for protecting individuals and property.

Schedule of removal, salvage and reinstallation activities that includes a detailed sequence of work with starting and ending dates for each activity.

Predemolition photographs or video showing existing conditions of flagpoles and adjoining construction, including finished surfaces, that might be misconstrued as damage caused by removal operations.

Prior to the start of construction, tag each flagpole scheduled for removal, off-site storage, and reinstallation and provide Engineer with an inventory. Inventory shall include all accessories and flagpole components; including, but not limited to pole, halyard, finial, collar, cleat and truck.

(B) SHOP DRAWINGS

Include plans, elevations, details, and attachments to other work. Show general arrangement, jointing, fittings, accessories, grounding, anchoring, and support. Include details of seat wall-mounted connections and mountings; grounding system and connections.

(C) DELEGATED DESIGN

Include loads, point reactions, and locations for attachment of flagpoles to seatwall structure. Engage a NYS qualified professional engineer to design flagpole assemblies. Flagpole assemblies, including anchorages and supports, shall withstand design loads indicated within limits and under conditions indicated. Wind loads are to be determined according to NAAMM FP 1001. Base flagpole design on flags of maximum standard size suitable for use with flagpole or flag size indicated, whichever is more stringent.

9.77RSR.4 METHODS.

(A) PREINSTALLATION MEETINGS

A predemolition conference shall be conducted on site with the Contractor and Engineer. During the meetings, inspect and discuss condition of construction to be removed and salvaged and the adjacent, impacted construction. Review structural load limitations of existing structure. Review and finalize removal and salvage schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays. Review requirements of work performed by other trades that rely of substrates exposed by removal and salvage operations. Review areas where existing constriction is to remain and requires protection. Notify Engineer of discrepancies between existing conditions and Contract Drawings before proceeding with removal and salvage.

(B) EXISTING WARRANTIES

Remove, replace, patch, and repair materials and surfaces cut or damaged during removal and resetting, but methods and with materials and using approved contractors so as not to void existing warranties.

(C) REMOVAL AND SALVAGE

Demolish and remove existing construction only to the extent required for salvaging flagpoles and new construction. Use methods required to complete the work within limitations of governing regulations. Comply with hauling regulations of authorities having jurisdiction for both the hauling of materials to off-site storage and the hauling of materials back to the site for reinstallation.

Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage materials to be salvaged and reinstalled, or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover opening to remain. Avoid marring existing finished surface of flagpoles.

Clean and repair items to functional condition adequate for intended reuse. Pack or crate items after cleaning; spiral wrap flagpoles with heavy paper and enclose in hard fiber tube or other protective container. Identify contents of containers. Store items, off-site, in a secure area until resetting. Protect items from damage during transport and storage.

(D) STORAGE

Salvaged materials to be reinstalled shall be transported off-site for storage until reinstallation. No salvaged materials shall remain on site following removal.

(E) PROTECTION

Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure minimal interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

(F) COORDINATION

Coordinate installation of anchorages for flagpoles. Furnish setting drawings, templates, and directions for installing anchorages that are to be embedded in concrete or masonry. Deliver such items to project site in time for installation.

(G) INSTALLATION

Reinstall flagpoles in locations indicated and according to approved Shop Drawings. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

The pole shall not be set until after the concrete has thoroughly hardened, and in no sooner than eight (8) days after pouring of concrete. The copper grounding cable shall be mounted to the grounding pad and sleeved through the concrete foundation before pole is set.

Install baseplate on washers placed over leveling nuts on bolts and adjust until flagpole is plumb. After flagpole is plumb, tighten retaining nuts and fill space under baseplate solidly with nonshrink, nonmetallic grout. Finish exposed grout surfaces smooth and slope 45 degrees away from edges of baseplate.

Anchor brackets and bases securely to structural support with fasteners as indicated on Shop Drawings.

9.77RSR.5 MEASURE. The quantity to be measured for payment under Remove, Store and Reset Flagpole shall be the number of posts removed, stored off-site and installed in this new work by the Contractor, as indicated on the Contract Drawings, to the satisfaction of the Engineer.

9.77RSR.6 PRICES TO COVER. The contract price for Remove, Store and Reset Flagpole shall be the unit price bid per each flagpole and shall cover all labor, materials, plant, equipment, transport, storage, insurance, and incidentals necessary to remove, store and reset the existing flagpoles, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
9.77 RSR	REMOVE, STORE AND RESET FLAGPOLE	EACH

SECTION 9.95 G
Dimensioned Granite Masonry

9.95G.1. DESCRIPTION. This Section describes the furnishing and installation of all dimensioned stone masonry indicated, including Dimensioned Granite Masonry, Large Blocks; Dimensioned Granite Masonry, Medium Blocks; Dimensioned Granite Masonry, Small Blocks; Granite Veneer; Granite Stair Treads; and New Granite Steps; in accordance with Contract Drawings, the specifications and the directions of the Engineer.

9.95G.2. MATERIALS.

(A) Stone Materials

All stone shall be carefully selected from sound stock, and free from defects impairing strength, durability or appearance, such as cracks, seams, starts, holes, flaws, or imperfections, which have been patched or filled. All stone shall be of the greatest possible uniformity, be uniformly consistent in color, value, graining texture, and other features to the extent inherent in the specified stone type. Color and value variations shall be within ranges established by approved samples and will be based upon the following criteria:

(1) Color within pre-selected color ranges and finish.

(2) Sequence matching of adjacent stone units.

(3) Only one source of stone shall be used throughout the work. Stone shall match the type, patterns, color, texture, and finish of samples available for inspection in the office of Engineer.

Graining and texture variations, whether highly figured or uniform, shall be consistent in all material supplied. Material sources and quarry locations shall be approved by Engineer for each stone type.

All stone under these items shall be a medium-coarse grained granite of average compressive strength of 18,680 psi (MPa) per ASTM C 170, avgerage bulk density of minimum 175.5 lb/cf per ASTM C 97, modulus of rupture minimum 1,552 psi per ASTM C 99, avgerage absorption rate of minimum 0.05% per ASTM C 97, and have a Dynamic Coefficient of Friction (DCOF) greater than 0.42 per ANSI A 137.1-2012. All stone to be Mesabi Black Granite, with textured (Diamond 10) finish as supplied by Cold Spring Granite, or equal as approved by Engineer. Suppliers include the following:

(1) Cold Spring Granite
17482 Granite West Road
Cold Spring MN 56320-4578
Phone#: (860) 657-8061

(2) Miller Druck Specialty Stone Inc.
264 West 40th Street
New York, NY 10018
Phone #: (212) 343-3300

(3) Furlong & Lee Stone Sales, Inc.
51 East 42nd Street, Suite 1409
New York, NY 10017
Phone#: (212) 986-3828

(4) or approved equivalent.

Source Quality Control of Stone Material: Furnish testing results of each stone type and finish for this Project, prepared by an approved independent and qualified testing agency. Tests shall be performed at thickness of 1.5" and with selected finished stone top surface. Granite materials shall conform to ASTM C 615, Granite Building Stone. In addition, granite materials shall conform to material properties requirements more stringent than ASTM C 615 as stated herein. Test reports for stone materials shall show and list minimum values for the following physical characteristics as a minimum: Modules of rupture, ASTM C 99; Compressive strengths, ASTM C 170; Absorption, ASTM C 97; and Flexural Strength, ASTM C 880. Provide mineral and chemical compositions of stone and identification of any material composition that may cause staining within stone or on surface of stone such as iron pyrites or other detrimental material.

There will be no material delivery to the job site without prior written approval from the Engineer; all material delivered to the site without such approval shall be rejected. Contractor shall submit samples in sufficient time as to not delay progress of Construction.

(B) Stone Fabrication

Stone shall be cut to sizes, shapes, dimensions, and details shown for each type and condition. Relate to and adjust stone fabrication together with installation requirements specified, herein. Include all cutting, drilling, and fitting of stone required to accommodate the work of other trades.

Where shapes are indicated on Contract Drawings as curved, either graphically or in text, edges shall be cut to true radii. Where

elements curve horizontally and slope vertically, curvature shall be accurate in the horizontal plane.

Exposed surfaces and edges of stone units shall be free from cracks, broken corners, chipped edges, scratches, or other defects affecting appearance. No patching, joining, or hiding of defects will be permitted.

Provide stone of the thickness specified or otherwise shown as a minimum. Maximum variations in thickness from that shown shall not exceed 1/8".

All stonework shall be executed by mechanics skilled in the trade. All stone shall be well-cured and seasoned before cutting. Cut stone units with bed, unless otherwise approved by the Engineer. Cut stone full and true on faces, reveals, beds, joints, and top to the full dimensions required by Contract Drawings. All sawn edges shall be straight and true. Maximum deviation from straight line or radii indicated shall not exceed 1/16" when measured with a 10' straightedge or radial template, or plus or minus one-fourth the width of joints, whichever is more stringent. All units shall fit together accurately.

Fabricate stone so that joints between units shall be as shown on Contract Drawings typically for alignment and spacing. Make faces of stone in same plane flush at joints. All finished surfaces of stone units shall be true and out of wind. Stone shall be accurately cut to sizes, shapes, profiles and dimensions. There shall be no deviation from jointing.

Typical joint width shall be 1/4" unless otherwise specified in the Contract Drawings.

Shop Cutting, Drilling, and Fitting: Include all cutting, drilling, and fitting of stone required to accommodate the work of other trades. In cutting and fitting, carefully cut and grind edges to a neat, tight, fit. Cutting shall be in such a manner so as not to impair strength or appearance. Use physical templates (not just drawing dimensions) for all cutting and drilling. Obtain required templates from appropriate trades and suppliers.

Exposed Faces and Edges: Provide finish characteristics and quality indicated for each stone material type, condition of use, and as approved. Stone surfaces finish shall be "Textured", Diamond 10; as defined by National Building Granite Quarries Association (NBGQA) and have a Dynamic Coefficient of Friction (DCOF) greater than 0.42 per ANSI A 137.1-2012.

(C) Installation Materials

Furnish all anchors, cramps, dowels, tiebacks, and the like fitting hardware as necessary to properly secure stone units. Types to be approved, of sizes and shapes to fit each particular support condition encountered. Metal components for exterior work shall be stainless steel, Type 316L, nonmagnetic. Provide for separation of dissimilar materials to prevent corrosion.

Lead or plastic buttons used shall be of the thickness required for the joint size shown or specified, and of the size required to maintain a uniform joint width, and meet the load requirements of stone installation condition.

Epoxy for setting stainless steel dowels and other metal anchors shall be a commercial-grade, high-strength, two-part epoxy as Quikrete High Strength Anchoring Epoxy (No. 8620-31), or equivalent product as manufactured by Sika, Mapei, Hilti or approved equivalent.

Grout for all exposed mortar joints shall be colored, pre-packaged epoxy grout as Laticrete Spectralock Pro Premium Grout, or equivalent type by Sika or Mapei, or approved equivalent. Colors to be used shall be as selected from a full range of manufacturer's colors by the Engineer, which shall include no fewer than forty (40) alternative colors.

Mortar for setting and pointing shall be one part Portland cement and one part plastic lime hydrate to three parts of clean, non-staining sand. It shall be mixed in small batches, using clean, non-alkaline water, until it is thoroughly homogenous, stiff and plastic. After mixing, the mortar shall set for not less than one hour or more than two hours before being used.

Setting Adhesive and Slurry Bond Coat shall be a latex-modified adhesive masonry setting product as Laticrete 254 Platinum, or approved equivalent adhesive type by Sika, Mapei, or approved equivalent.

Sealant and related materials shall conform to the following:

(5) For joint filler provide closed cell extruded neoprene gasket conforming to ASTM C 509, grade 4, color to match stone.

(6) Sealant: Two (2) part self-leveling polyurethane sealant complying with ASTM C-920, Type M, Class 25, Grade P&NS, equal to Sikaflex-2c NS/SL made by Sika Chemical Co., Tremco or Pecora or approved equal. Color of sealant shall match stone, as approved by the Engineer.

(7) Back-up rod shall be "Ethafoam" or approved equivalent.

(8) Prime joints using primer recommended by sealant manufacturer.

9.95G.3. QUALITY CONTROL.

(A) References Standards (as applicable generically to stone type(s) or material specified: National Building Granite Quarries Association (NBGQA); American Society for Testing and Materials (ASTM); American National Standards Institute (ANSI); American Iron and Steel Institute (AISI). In case of conflict between the referenced standards, codes, or Contract Documents, the referenced standard, code, or Contract Document having the more stringent requirements shall govern as approved by Engineer.

(B) Fabrication Qualifications: Stone fabrications shall be by a firm or firms that have successfully fabricated stonework similar to the quality and in the quality shown of each material type and condition, specified, and in the quality specified, for a period of not less than 5 years. Fabricator must demonstrate ability to fabricate these elements to the lines and contours as indicated on the Contract Drawings, by submission of photographs (in addition to those required under Article 1.06.45 of the General Conditions) of similar projects.

The Contractor, by commencing the work of this Section, assumes overall responsibility, as part of his warranty of the work, to assure that all assemblies, components, and parts shown or required within the work of this Section, comply with the Contract Drawings. The Contractor shall further warrant:

(1) That all components, specified or required to satisfactorily complete the installation, are compatible with each other and with the conditions of installation and expected use.
(2) The overall effective integration and correctness of individual parts and the whole of the system.
(3) Compatibility with adjoining substrates, materials, and work by other trades.
(4) There shall be no material failure due to improper design and fabrication of the stone. All materials are to fully perform to their normal life expectancy.
(5) All quantities and dimensions shall be verified in the field and work shall meet overall design intent as expressed in the Contract Drawings.

(C) Installation Company Qualifications: Erection of stonework shall be by a firm that can exhibit proof of expertise in the field and prior successful experience with stone installations of equivalent type and similar scope to this Project. Subcontract fabrication and installation of stone to a firm or firms which have successfully fabricated and/or installed stone similar to the quality specified and in the quantity shown for a period of not less than five (5) years. The Contractor shall submit for approval of the Engineer the name of the subcontractor he proposes to use and upon which his bid is based, along with their respective work history experience, and at least one sample of each different color granite masonry which he will use in the project. Each different color of granite masonry shall be a product of a single quarry.

9.95G.4. SUBMITTALS. All submittals shall be as per **Section 1.06.31 of the** NYCDOT Standard Highway Specifications.

(A) Submit complete data on quarry facilities for each stone type and on fabrication facilities for stonework. Include information of location, production capabilities, and the nature and character of each stone selected.

(B) Installer Qualifications: Submit to identify and exhibit installation company qualifications as specified herein.

(C) Stone Material Properties Data: Material properties data for each stone material type shall be submitted by the stone suppliers and certified as representative of the properties of stone material to be supplied for the Project. Include references to appropriate ASTM tests as conducted by a certified testing laboratory.

Submit product information for each installation material item including fitting hardware, fastening devices, accessories, mortars, caulk, grouts, and the like.

(D) Shop Drawings: The Contractor shall submit Shop Drawings in accordance with the requirements of the **Section 1.06.13 of** NYCDOT Standard Highway Specifications. Submit overall and detailed plans, sections, and elevations as necessary to accurately and fully describe the required elements for each stone material type furnished and each related application condition of the Project work. Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate work of this Section. Include necessary coordination and preparation of composite drawing information together with installation trades contractors of different components, including railings, edgings, skateboard deterrents, structural work and concrete foundations. Establish and verify locations of expansion joints, which shall be coordinated with related shop drawings. All shop drawings for items under this section shall be submitted concurrently. The shop drawings must be approved by the Engineer prior to fabrication.

Submit complete Cutting and Setting Drawings showing shop sizes, shapes, thickness, jointing, anchoring, connection with other work, typical and special anchoring details, supports, dimensions, and setting numbers for each piece. Setting Drawings shall show relationship to adjoining construction and, after fabrication and final selection, shall indicate the location of each stone unit with a number designation corresponding to number marked on each unit. Show location layouts and patterns coordinating with Contract Drawings and related survey control points and dimensions. Establish and verify dimensions with concrete work of on-site walls, masonry layouts and patterns, and

other like conditions. Show location, type, and extent of anticipated field cutting and finishing. Do not fabricate any stone (except for samples) until Engineer has approved Shop Drawings for fabrication.

Submit product information for each installation material item including fitting hardware, fastening devices, accessories, mortars, caulk, grouts, and the like.

Take field measurements prior to the preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for adjustments and fitting where taking of field measurements before fabrication might delay the work.

(E) Stone Samples: Submit sets of a minimum of 3 unit samples, minimum 1 square foot finished surface on each, of stone material and stone finish type. Include in each set the full and extreme range of exposed color, texture, and finish to be expected in the completed work. Engineer's review of samples will be for color, texture, and finish only. Compliance with all other requirements is the exclusive responsibility of the Contractor. Approved samples shall set the finish standard for the work.

(F) Grout Samples: Submit samples for each condition of use to show selected colors. Submit samples of full color range for selection by Landscape Architect.

(G) Mortar Materials: Submit certification that mortar materials comply with specification requirements.

(H) Sealant Material Samples: Submit samples for each product. Submit samples of full color range for selection by Landscape Architect.

(I) Stone Support and Accessory Items Samples: Submit samples for each type and material composition, full size.

(J) The samples must be approved by the Engineer, in consultation with the Landscape Architect, prior to fabrication.

(K) Mock-Ups: Construct mock-ups at the earliest possible time, and at approved location, before proceeding with work and after Engineer's approval of submitted shop drawings and samples. Submit proposed locations for typical field samples/mockups, and receive approval of locations prior to construction of field samples. Mock-ups shall be per Contract Drawings unless otherwise directed, using materials, setting bed, pattern, and joint treatment. The field mock-up/sample must be as approved by the Engineer before the actual work may proceed. If necessary remove and reconstruct field sample until approved. Accepted mock-up establishes minimum standard of quality and workmanship for granite masonry work of this section. Retain mock-up section during construction as a standard for judging completed work. Do not alter, move, destroy, or demolish mock-up, unless directed

by the Engineer. Mock-up may be incorporated into the finished Work if constructed in place, left undisturbed and approved by the Engineer. Provide and construct mock-ups as follows:

(1) Construct an eight (8) linear foot section of the dimensioned granite block and granite veneer seat wall system, including the end piece (dimensioned granite block) and a joint; include skateboard deterrent per **Section RCP-SD.**

(2) Construct an eight (8) linear foot section of Granite Stair Treads, at Flagpole Seatwall.

(I) Delivery, Storage, and Handling

Protect, store, and handle stone materials as recommended by stonework fabricating company in addition to requirements specified herein.

Properly crate and band stone units for shipment receiving at job site. Crating of stone and packaging accessory item shall be respective and related to the conditions for installation.

Handle each stone material type to prevent chipping, breakage, soiling, or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials.

Store stone materials on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skids and stone to distribute weight evenly and to prevent breakage or cracking of stone. Protect stone from detrimental weather conditions with waterproof, non-staining covers or enclosures, but allow air to circulate around stone during extended period of storage.

(J) Environmental Requirements

Protect mortar materials and stone accessories from weather, moisture, and contamination with earth and other foreign materials. Do not use mortar materials to install stone when the temperature is below 4 degrees Celsius (40 degrees Fahrenheit). When exposed during construction activities, protect partially completed stonework against weather when work is not in progress. Cover top of uncompleted work sections with strong, waterproof, non-staining membrane extending down both sides of walls and anchor securely in place.

9.95G.5. METHODS.

(A) Preparation: Verify all measurements and dimensions and coordinate the installation of support structures for this work. Coordinate and schedule stonework fabrications and installations with the work of other related trades and separate subcontractors. Give particular attention to the location and

size of cutouts required to accommodate mechanical, electrical, and other work or adjoining construction.

Examine the areas and conditions where granite is to be installed. Notify the Engineer of any conditions detrimental to the proper installation and subsequent use, and timely completion of work. Do not proceed with work until unsatisfactory conditions are corrected to permit proper installation of the work. Verify in writing.

Verify that surface of foundation has suitably-roughened texture to receive setting mortar.

Clean dirty or stained stone surfaces by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

Protection: Protect contact of exposed surfaces from contact with mortar materials. Apply protective wax coating to stone surface if adhesive, mortar, epoxy adhesive or any other setting material would stain the stone. Wax shall be applied carefully to prevent contact with surfaces to be joined. Wax shall be steam-cleaned off after work is completed.

(B) Installation: Do not use stone units with chips, cracks, voids, stains, or other defects that might be visible in the finished work. If installed, remove and replace with units meeting specification requirements and approval of the Engineer.

Execute work by skilled mechanics, and employ skilled stone fitters/cutters at site for necessary field cutting, as stone is set. Clean stone (especially edges) before setting.

Set stone in accordance with Contract Drawings and final approved shop drawings. Provide anchors, supports, fasteners, and other attachments shown or necessary to secure stone in place. Shim and adjust accessories as required for proper and correct setting of stone. Completely fill holes, slots and other sinkages for anchors, dowels, fasteners, and supports with epoxy grout as applicable to conditions during setting of stone. Provide compressible filler in dowel holes as necessary to insure that stone units do not bear on dowels such that may cause cracking.

Setting Surfaces, General: Before starting the installation, the concrete slab, structural concrete, and all other surfaces to contact mortar materials shall be cleaned to remove soil and loose mortar. Dry or dusty concrete surfaces shall be wet down or washed and excess water removed just prior to the application of setting bed. Immediately prior to placing the mortar, apply a slurry bond coat of approved setting adhesive to all surfaces to contact mortar materials. The mortar bedding course shall be placed, screeded and shaped upon the concrete base, its finished

depth shall be as shown on the detail drawings and at correct depth to achieve required grades. The bedding shall be shaped to a true surface. For monolithic elements, the surface shall be parallel with the seating surface of the elements. The surface shall be formed by means of template or striking board (12' X 2" X 6" board). The bed shall then be struck off until proper alignment is secured. The area of bedding placed in any work day shall be scheduled so that no bedding course remains at the end of the day without stone installed. After final shaping, the bedding course shall not be disturbed prior to laying the stone.

Stone Setting, General: Clean stones thoroughly before setting and set stones before initial mortar set occurs. Do not set stone on dry mortar bed. For all stone installation, except stone veneer, apply slurry bond coat of approved Setting Adhesive to all surfaces that will come into contact with mortar. Care should be taken to prevent contact of Setting Adhesive with any surface of stone to be exposed. Do not apply slurry bond coat to the portion of stone that will contact epoxy grout.

For monolithic stone installation, including granite stair treads and granite steps, apply slurry bond coat and set stone unit in wet setting bed, providing supports as necessary to achieve accurate grades. Set stones with anchor dowels in full bed of mortar with back-up spaces and vertical joints slushed full, unless otherwise indicated. Stone surface shall be beaten with a wooden block as necessary to embed units in the mortar. Rake out joints for grouting before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

For veneer installation, anchor stone masonry into concrete, or concrete masonry units, with approved anchors as shown on the drawings. Embed veneer anchors in stone masonry as shown on Contract Drawings.

Anchor veneer stone with stone anchors where required. Install anchors by installing stone first and pouring the concrete against the stone incrementally. Falsework in front of stone masonry may be used for stability as needed.

Set veneer stone units in full bed of mortar with full head joints unless otherwise indicated. Rake out joints for pointing with grout before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

For all granite installation, grout joints shall be installed with approved color and type of epoxy grout material in accordance with manufacturer instructions. Grout joints as soon as possible after initial set of setting bed. Employ all methods necessary to prevent dirt or other debris to enter ungrouted joints. If dirt or debris of any kind enters ungrouted joints despite these measures, clean joints completely according to grout manufacturer requirements before proceeding to grout installation. Brush all joints clean. Force grout into joints,

taking care not to smear grout on adjoining exposed stone surfaces. Compact each layer thoroughly and allow to it become thumbprint hard before applying next layer. Mortar shall be placed relatively dry and tooled in layers. Tool joints, when pointing mortar is thumbprint hard, with a finished profile that is slightly recessed. Grouting of joints as done in tile work is not permitted. Cure grout as recommended by manufacturer. Every effort must be made to keep mortar off stone face including applying masking tape to prevent staining of adjacent stone surfaces in continuous strips in alignment with joint edge. Remove tape immediately upon grout having achieved its finish set.

Provide caulk joints when meeting adjacent vertical elements, at expansion joints, where shown on Contract Drawings, and where required to prevent stone cracking.

Expansion joints shall be filled with non-extruding pre-molded joint filler to within 3/4" of the surface. All caulk and expansion joints shall then be filled with two-part urethane sealant over a foam backer rod. Sealant to be of an approved color to match surface of pavement, or other color as directed by the Engineer. Prepare joints and apply sealants of type and at locations indicated to comply with applicable requirements of the sealant manufacturer's instructions.

Sealant/Expansion Joints: Keep sealant joints free of dirt, debris, mortar, and other rigid materials. Sealant joints shall be finished cleanly per approved sample installation, with slightly concave section. Joints shall be one-quarter (1/4") inch in width unless otherwise specified on the Contract Drawings.

Sealant Joint Application: All exterior control joints as noted on the Contract Drawings, all joints in base work and joints at skateboard deterrents shall receive back-up fillers and sealant as specified herein. Install sealant in strict accordance with manufacturer's recommendations as approved by the Engineer.

(1) Install back-up material and joint filler, of type and size specified, using a blunt instrument so as not to puncture the surface skin, at proper depth in joint to provide sealant dimensions as detailed. Provide back-up material of suitable size and shape so that, when compressed (25 to 50%) it will fit in joints as required. Sealant shall not be applied without back-up materials, and, if necessary, bond breaker strip. When using back-up of rod stock, roll the material into the joint to avoid lengthwise stretching. Rod stock shall not be twisted or braided.

(2) Apply masking tape, where required, to prevent staining of adjacent stone surfaces, in continuous strips in alignment with joint edge. Remove tape immediately after joints have been sealed and tooled as directed.

(3) Prime surfaces of all stone to receive sealant.

(4) Apply, tool and finish sealant as required. When tooling light colored sealants, use dry tool or tooling solution recommended by sealant manufacturer.

(5) Clean adjacent surfaces free of sealant or soiling resulting from this work as work progresses. Use solvent or cleaning agent as recommended by sealant manufacturer. All finished work shall be left in a neat, clean condition.

(6) Sealants shall be applied in such a manner as to completely fill the joint.

(7) All sealants shall be tooled to insure complete filling of the joint to eliminate air pockets and voids and to insure positive adhesion of the sealant with the bonding surfaces.

(8) All joints shall be neatly finished.

Include all field cutting, drilling, and fitting of stonework not performed in the shop and required to accommodate the work of other trades or contracts. In cutting and fitting, carefully cut and grind edges to a neat tight fit. Do cutting in such manner so as not to impair strength or appearance of stone.

Use physical templates for all cutting and drilling and obtain required templates from appropriate trades.

(C) Erection Tolerances:

Variation from true horizontal alignment or curvature: Do not exceed 1/8".

Variation from Plumb for lines and surfaces of walls and arises: Do not exceed 1/8" in 10'.

Variation from Level, Slope, and Grade: For grades, slopes, level conditions, and other conspicuous lines indicated, surfaces shall

be true to grade, slope, and line indicated within 1/8" in any 20'.

Variation in Cross-Sectional Dimensions: For thickness of walls and other conditions from dimensions shown, do not exceed minus 1/8", nor plus 1/8".

Offset at Joints: Do not exceed plus or minus 1/16".

Tolerances shall not be accumulative.

(D) Protection: Prevent materials used for installing work of this Section from staining or damaging the exposed surfaces of stone units or the exposed surfaces of the adjoining construction. Immediately remove mortar, grout, wax, or other detrimental materials from exposed surfaces of stone or adjoining construction. After installation, protect stonework from damage during subsequent construction activities. Any pieces which may be rejected after having been set shall be carefully cut out and replaced with new suitable stone without delay and without cost to the Owner. Any piece or pieces damaged in the removal and resetting of defective pieces shall also be removed and suitable, approved pieces provided and set.

(E) Contractor is required to submit for approval, in detail, the methods proposed for hot weather or cold weather curing, protection and monitoring of work when the mean daily air temperature is below 40°F.

(1) Cold Weather Requirements: Do not use frozen materials or materials mixed or coated with ice of frost. Do not build on frozen substrates. Remove any ice or snow formed on stonework bed by carefully applying heat until top surface is dry to touch. Do not use salt to thaw ice in anchor holes or slots. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents, and do not use calcium chloride in mortar or grout. Remove stonework determined to be frozen or damaged by freezing conditions. Comply with cold-weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

(2) Cold Weather Cleaning: Use liquid cleaning methods only when mean daily air temperature is 40 degrees F or above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

(3) Hot Weather Requirements: Comply with hot weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

(F) Cleaning and Repairing: At completion of Work, replace defective, broken, or damaged stone units installed as work of this Section. Unfilled or defective joints shall be properly repaired. After completion of any repair work, clean exposed surfaces of all stone units installed as work of this Section with clean water and stiff fiber brushes until all dirt, stains, efflorescence, mortar, and other defacements are removed. Use cleaner and procedures recommended by stone quarry and stone fabricating company. Stainless steel wire brushes or wool may be used, but the use of other wire brushes, or of acid or other solutions which may cause discolorations is expressly prohibited. Protect adjacent surfaces from damage during cleaning operations. Provide new matching units, install as specified and reseal joints to eliminate evidence of replacement. Reseal defective and unsatisfactory joints to provide neat, uniform appearance.

9.95G.6. MEASUREMENT. The quantity to be measured for payment shall be:

(A) DIMENSIONED GRANITE MASONRY, LARGE BLOCKS
The number of cubic yards of dimensioned granite masonry, large blocks installed on the site, to the satisfaction of the Engineer, in accordance with the Contract Drawings.

(B) DIMENSIONED GRANITE MASONRY, MEDIUM BLOCKS
The number of cubic yards of dimensioned granite masonry, medium blocks installed on the site, to the satisfaction of the Engineer, in accordance with the Contract Drawings.

(C) DIMENSIONED GRANITE MASONRY, SMALL BLOCKS
The number of cubic yards of dimensioned granite masonry, small blocks installed on the site, to the satisfaction of the Engineer, in accordance with the Contract Drawings.

(D) GRANITE VENEER
The number of square feet of granite veneer actually installed as indicated on the Contract Drawings, irrespective of shape or size of veneer, to the satisfaction of the Engineer.

(E) GRANITE STAIR TREADS
The number of linear feet of granite stair treads as measured along the nose of the tread actually installed at the site, to the satisfaction of the Engineer, in accordance with the Contract Drawings, irrespective of cross-sectional shape, thickness, depth or width of tread section.

(F) NEW GRANITE STEPS
The number of linear feet of new granite steps as measured along the nose of the tread actually installed at the site, to the satisfaction of the Engineer, in accordance with the Contract Drawings, irrespective of cross-sectional shape, thickness, depth or width of tread section.

9.95G.7. PRICES TO COVER.

(A) DIMENSIONED GRANITE MASONRY, LARGE BLOCKS
The contract unit price bid per cubic yard of dimensioned granite masonry, large blocks shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for completing the work per this Section, including but not limited to, photographs, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

(B) DIMENSIONED GRANITE MASONRY, MEDIUM BLOCKS
The contract unit price bid per cubic yard of dimensioned granite masonry, medium blocks shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for completing the work per this Section, including but not limited to, photographs, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

(C) DIMENSIONED GRANITE MASONRY, SMALL BLOCKS
The contract unit price bid per cubic yard of dimensioned granite masonry, small blocks shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for completing the work per this Section, including but not limited to, photographs, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

(D) GRANITE VENEER
The contract unit price bid per square foot of Granite Veneer shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for completing the work per this Section, including but not limited to, photographs, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

(E) GRANITE STAIR TREADS
The contract unit price bid per linear foot of granite stair treads shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for completing the work per this Section, including but not limited to, photographs, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

(F) NEW GRANITE STEPS
The contract unit price bid per linear foot of new granite steps shall cover the cost of all labor, materials, fabrication, plant, equipment, insurance, and necessary incidentals required for completing the work per this Section, including but not limited to, photographs, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
9.95 BL	DIMENSIONED GRANITE MASONRY, LARGE BLOCKS	C.Y.
9.95 BM	DIMENSIONED GRANITE MASONRY, MEDIUM BLOCKS	C.Y.
9.95 BS	DIMENSIONED GRANITE MASONRY, SMALL BLOCKS	C.Y.
9.95 GV	GRANITE VENEER	S.F.
9.95 GST	GRANITE STAIR TREADS	L.F.
9.95 S	NEW GRANITE STEPS	L.F.

SECTION HW-914

Allowance for (Wayfinding) Totems

HW-914.1. DESCRIPTION.

Under this item, the Contractor shall be required to pay to the NYCDOT TOTEM sign Contractor for furnishing and installing new (WAYFINDING) TOTEMS.

HW-914.2. MATERIALS.

(Not applicable)

HW-914.3. CONSTRUCTION DETAILS.

The NYCDOT TOTEMS sign Contractor shall only install (WAYFINDING) TOTEMS signs once the foundation (including paving tray and steel foundation plate) has been installed by the Contractor. The Contractor shall pick up, delivery to the project site and install the paving tray and steel foundation plate in accordance with plans, specifications and as directed by the Engineer. All costs for pick up, delivery to the project site and installation of the paving tray and steel foundation plate shall be deemed to be included in all scheduled items for foundation work pertinent to (Wayfinding) TOTEMS signs.

HW-914.4. METHOD OF MEASUREMENT.

The fixed price lump sum shown in the Bid Schedule for this item shall be included in the total bid price; however, actual payment to the Contractor will be based on the actual invoices submitted by the NYCDOT TOTEM sign Contractor.

It is agreed that all work shall be based on the actual number of (Wayfinding) TOTEM SIGNS that are installed by the NYCDOT TOTEM sign contractor to the satisfaction of the Engineer.

HW-914.5. BASIS OF PAYMENT.

The fixed sum shown in the proposal for the (Wayfinding) TOTEMS sign shall be considered the price bid for this item. The fixed sum is not to be altered in any manner by the bidder. Should the amount shown be altered, the new figures will be disregarded and the original price will be used to determine the total amount bid for the contract.

The fixed sum payment made under this item shall be equal to the sum of all invoices submitted by the NYCDOT TOTEM sign Contractor as proof of work performed for this item, as approved by the Engineer.

The total estimated cost of this item is the "fixed sum" amount shown for this item in the Bid Schedule and shall not be varied in the bid. The "fixed sum" amount is included in the bid solely to ensure that sufficient monies will be available to pay the Contractor for this work, which may be more or less than the fixed sum amount.

The unit price shall cover the cost of all labor, materials, equipment, insurance, and incidentals necessary to complete the work under this section in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
HW-914	ALLOWANCE FOR (WAYFINDING) TOTEMS	F.S.

SECTION RCP-SD
CUSTOM SKATEBOARD DETERRENTS

RCP-SD.1 DESCRIPTION

This section describes the furnishing and installation of the custom skateboard deterrents Type 1, Type 1A, Type 2, Type 3, Type 4 and Type 4A in accordance with the Contract Drawings, the Specifications and the Engineer.

RCP-SD.2 MATERIALS

The materials under this section shall comply with the following:

RCP-SD.21 Qualify Assurance

A) Manufacturer's Qualifications: Work of this section shall be fabricated and installed by an experienced fabricator or manufacturer, who has been engaged in work of equivalent scope and fabrication standards for at least five (5) years. Materials, methods of fabrication, fitting, assembly, operating devices and installation shall be in accordance with Contract Drawings and Specifications, approved shop drawings, and be of highest quality practices of the industry, using new and clean materials as specified, having structural properties sufficient to safely sustain or withstand stresses and strains to which materials and assembled work will be subjected. All work shall be accurately and neatly fabricated, assembled and installed.

Acceptable Fabricators: Subject to compliance with requirements, but are not limited to, the following:

Post Road Iron Works
345 West Putnam Avenue
Greenwich, CT 06830
888-869-6322
info@priw.com

Ment Brothers Iron Works Co., Inc.
11 Broadway #1131
New York, NY 10004
212-217-6500

Westfield Sheet Metal Works, Inc.
North 8th Street & Monroe Avenue
Kenilworth, NJ 07033
908-276-5500
info@westfieldsheetmetal.com

B) Shop Assembly: Insofar as practicable, fitting and assembly of work shall be done in shop. Work that cannot be permanently shop assembled, shall be completely assembled, marked and disassembled in shop before shipment to insure proper assembly in field. It is the responsibility of the Contractor to ensure the shop fabricated items will properly fit the field condition. In the event that

shop fabricated items do not fit the field condition, the item shall be returned to the shop for correction.

RCP-SD.22 Submittals

A) Shop Drawings: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer, in consultation with the City's Architect, prior to fabrication.

B) Samples: Submit one sample each of a Type 1 and Type 4 of skateboard deterrent.
Each sample shall be clearly identified by the manufacturer's name, date of production and contract number. The samples must be approved by the Engineer prior to fabrication.

C) Process: There will be no material delivery to job site without prior written approval from the Engineer; all material delivered to site without such approval shall be rejected. Contractor shall submit samples in sufficient time as to not delay progress of construction.

RCP-SD.23 Delivery, Storage and Handling

A) Delivery: Deliver all finished materials to the site with sufficient protection and with labels clearly identifying product name, manufacturer and part number, but in a location that will not be visible at the time of Substantial Completion.

B) Storage: Store materials in a clean, dry area and use all means necessary to protect materials of this section before, during and after installation.

C) Handling: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the City.

RCP-SD.24 Products: Stainless Steel

A) General: All metal components used in the custom skateboard deterrents shall be ASTM A240 316L and ASTM A666 316L stainless steel.

B) Quality: Provide materials which have been selected for their surface flatness, smoothness and freedom from surface blemishes where exposed to view in the finished unit. Exposed to view surfaces which exhibit pitting, seam marks, roller marks, "oil-canning," stains, discolorations or other imperfections on the finished units will not be acceptable.

C) Finish: Remove or blend tool and die marks and stretch lines into finish. Grind and polish surfaces to produce uniform, matte bead blast finish indicated in the Contract Drawings, free of cross scratches. Bead blasted finish with clean fine glass beads, producing an even, matte, non-reflective, non-directional surface finish.

D) Types: The size and geometry of each Type of skateboard deterrent shall be as indicated on the Contract Drawings.

RCP-SD.25 Hardware

Skateboard Deterrents shall be epoxy anchored to stone with stainless steel fasteners as indicated on the Contract Drawings.

RCP-SD.26 Miscellaneous Materials

A) Grout: Grout for all exposed mortar joints shall be colored, pre-packaged epoxy grout as Laticrete Spectralock Pro Premium Grout, or equivalent type by Sika or Mapei, or approved equivalent. Colors to be used shall be as selected from a full range of manufacturer's colors by the Engineer, which shall include no fewer than forty (40) alternative colors.

B) Caulk/Expansion Joint Materials:

(1) Joint filler material shall be an approved premolded non-bituminous material, compatible with backer rod and sealant.
(2) Backer rod shall be closed cell polyethylene backer rod.
(3) Sealant at horizontal surfaces shall be "Sonolastic NP II" two-part elastomeric polyurethane, or approved equivalent type by Sika or Pecora, or approved equivalent. Colors to be used shall be as selected from a full range of manufacturer's colors by the Engineer, which shall include no fewer than forty (40) alternative colors.

RCP-SD.3 METHODS

RCP-SD.31 Metal Fabrication

A) Cutting: Cut metal by sawing, shearing or blanking. Plasma cutting will be permitted only if cut edges are ground back to clean, smooth edges. Make cuts accurate, clean, sharp, square and free of burrs, without deforming adjacent surfaces or metals.

B) Holes: Drill or cleanly punch holes (do not burn), so that holes will be accurate, clean, neat and sharp without deforming adjacent surfaces or metals.

RCP-SD.32 Inspection

Examine the areas and conditions where custom skateboard deterrents are to be installed. Notify the Engineer of any conditions detrimental to the proper installation and subsequent use, and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work. Verify in writing.

RCP-SD.33 Coordination and Layout

A) Coordination: Coordinate the work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from applicable trades for proper coordination of this work.

B) Layout: The layout of the deterrents shall be subject to approval by the Engineer,. Deterrent locations are as indicated on the Contract Drawings.

RCP-SD.34 Installation

A) General: Install work of this Section square, straight, true to line or radius, accurately fitted and located, with flush, tight hairline joints (except as otherwise indicated or to allow for thermal movement), with provisions for other trades, with provisions to allow for thermal movement, with provisions to exclude water where exposed to weather, and with attachment devices as required for secure and rigid installation. It is the responsibility of the Contractor to assure that shop fabricated items will properly fit the field condition. In cases where the shop fabricated items do not fit the field condition, the item shall be returned to the shop for correction.

B) Attachments: All attachment devices shall be of type, size and spacing to suit condition and as approved by Engineer. Do all necessary drilling, tapping, cutting or other preparations of surrounding construction in the field accurately, neatly and as necessary for the attachment and support of work of this Section, but obtain Engineer's approval prior to such preparation to work of others.

C) Adjustment: Where defects in material or installation appear in the completed work, such areas shall be removed and replaced at no cost to the City.

RCP-SD.35 Cleaning

Upon the completion of the work clean stainless steel by washing thoroughly with clean water and soap and rinsing with clean water. Do not use cleaning materials or methods that can damage finish.

RCP-SD.36 Protection

Protect finishes from damage during construction period with temporary protective coverings approved by fabricator. Remove protective covering at the time of Substantial Completion. Restore finishes damaged during construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units, at no additional cost to the City.

RCP-SD.4 MEASUREMENT

CUSTOM SKATEBOARD DETERRENTS

The quantity to be measured for payment shall be the number of actual Custom Skateboard Deterrents of type specified that have been satisfactorily furnished and installed at the site in accordance with the Contract Drawings and the Specifications. Contractor shall also include components for 10% overage of each type; the cost of these extra materials shall be deemed included in the price for this Item.

RCP-SD.5 PRICES TO COVER

CUSTOM SKATEBOARD DETERRENTS

The contract price bid shall be a unit price per EACH Custom Skateboard Deterrent of type specified and shall include the cost of furnishing and installing the Custom Skateboard Deterrent including, but not limited to, anchoring the deterrent to the granite or concrete, all in accordance with the Contract Drawings, the specifications and the directions of the Engineer. The unit price shall also include 10% overage.

Payment will be made under:

Item No.	Item	Pay Unit

RCP-SD 1	CUSTOM SKATEBOARD DETERRENT, TYPE 1	EACH
RCP-SD 1A	CUSTOM SKATEBOARD DETERRENT, TYPE 1A	EACH
RCP-SD 2	CUSTOM SKATEBOARD DETERRENT, TYPE 2	EACH
RCP-SD 3	CUSTOM SKATEBOARD DETERRENT, TYPE 3	EACH
RCP-SD 4	CUSTOM SKATEBOARD DETERRENT, TYPE 4	EACH
RCP-SD 4A	CUSTOM SKATEBOARD DETERRENT, TYPE 4A	EACH

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S - PAGES

SPECIAL PROVISIONS

NOTICE

THE PAGES CONTAINED HEREIN (S-PAGES) ARE SPECIAL PROVISIONS THAT SHALL APPLY TO AND BECOME A PART OF THE CONTRACT.

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SPECIAL PROVISIONS

A. LINES AND GRADES. The Contractor shall furnish lines and grades in accordance with Section 1.06.27 of the Standard Specifications, except that survey controls established for this project may no longer exist and the Contractor shall be required to re-establish the survey control information using official Borough Survey Control Monuments and Bench Marks, where they exist. The Contractor shall check with Topographic Section of the Borough President's Office as to the reliability and accuracy of the data to be used for lines and grades.

B. SPECIFIC TRAFFIC STIPULATIONS. Under this contract, the Contractor shall perform the work in strict accordance with the requirements of Section 6.70 in the Standard Highway Specifications, specific traffic stipulations as called for on the plans, OCMC Traffic Stipulations attached to the end of these Special Provisions, and the directions of the Engineer. In case of a conflict, the Engineer's decision shall be final.

In addition, the cost of compliance with requirements of the OCMC Traffic Stipulations, unless otherwise provided for, shall be deemed included in the prices bid for all scheduled items.

C. HOLIDAY CONSTRUCTION EMBARGO. A special Holiday Construction Embargo shall be in effect on the Friday of the week preceding Thanksgiving Day week from 6:00 AM to 11:59 PM and again from the Monday of Thanksgiving Day week from 6:00 AM through January 2, at 11:59 PM. Roadway and sidewalk construction activities will be restricted during the embargo period on the streets listed below*.

Any permits issued prior to the date of this notice, for work during this embargo period on the streets listed below which do not already have the permit stipulation "410" are hereby suspended for the period noted above. All permittees must comply with this embargo unless a special waiver is granted by OCMC. Waiver requests must be filed at least thirteen days before Thanksgiving Day, in the Permit Office by filing a "Request for Roadway/Sidewalk Permits During Embargo Periods" and submitting supporting documentation. Waiver requests should only be submitted for critical reasons for a specific project. If a waiver is granted, the applicant will be notified so they can apply for the approved permits. Waivers **are not** required for ongoing Building Construction Activity Permits which already include the "410" permit stipulation. Waiver request forms may be obtained at any Permit Office or on the Department of Transportation's website at: **http://www.nyc.gov/html/dot/downloads/pdf/holidayembapp.pdf**

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* **Please note that this embargo only applies to NYCDOT construction permits.**
* **List of street and maps of the affected locations are available by borough on the Department of Transportation's website at: http://www.nyc.gov/html/dot/html/motorist/trafalrt.shtml**

Prior to this embargo period all necessary measures must be taken so that all roadways and sidewalks are in proper condition to allow for the expeditious and safe movement of vehicular, bicycle and pedestrian traffic. Tool carts, cable reels, containers, and material stored on roadways must be removed during the embargo period.

The opening of utility access covers is prohibited on any of the streets noted below between the hours of 6:00 AM and midnight unless the utility or Contractor files for an Emergency Authorization Number as required by section 2-07 of the Department of Transportation's Highway Rules. The planned opening of utility access covers may occur during the hours of 12:01 AM and 5:59 AM where no authorization number is required.

Temporary restoration of the streets and sidewalks and removal thereof, if required for the Holiday Embargo period, will be paid for under the appropriate scheduled items.

No extension of time due to the shutdown period will be granted to the Contractor for completion of the work.

D. DISPOSAL OF EXCESS EXCAVATED MATERIAL. All excess excavated material, with the exception of contaminated material, shall become the property of the Contractor and shall be properly disposed of away from the site, at the Contractor's expense. Contaminated material shall be disposed of separately in accordance with contract requirements.

E. CONTRACT ITEMS THAT INCLUDE BACKFILL AS A PART OF THEIR WORK. The following shall pertain to all contract items that have backfill as a part of their work: Backfilling shall comply with Subsection 4.11.3 of the Standard Specifications and no additional payment will be made for any Highway or Street Lighting work item requiring Contractor to furnish additional fill material to meet these requirements when backfilling.

F. SCHEDULE OF WORK. The Contractor shall be required to prepare a progress schedule, in accordance with the requirements of Article 9 of the Standard Construction Contract, based on simultaneously working at multiple locations using multiple crews during the construction of the contract, as approved by the Engineer.

Each work force crew shall be defined as a sufficient number of workers with support staff and equipment necessary to perform the work efficiently as directed by the Engineer. Where the Contractor can demonstrate to the Engineer that he has substantially completed work, he may be permitted to start work at additional locations, on a one to one basis, at the sole discretion of the Engineer.

Where the Contractor's work operations are not able to meet its approved progress schedule, the Engineer may order the Contractor to provide additional work force as may be necessary. Failure to comply

with such orders within seven (7) calendar days after the written notice from the Engineer may result in the Contractor being declared in default of the Contract in accordance with the procedure contained in Article 48 of the Standard Construction Contract.

G. SCHEDULING PRESENTATION. The Contractor shall submit construction schedule in the form of a bar chart using "Microsoft Project 2010", or in an approved equivalent program which shall be directly and fully translatable into Microsoft Project 2010 format, within seven days of the initial Pre-Construction Meeting. Each bar in the chart shall show dates the Contractor plans to start and complete each construction activity after the initial Pre-Construction Meeting. Bar chart shall show the order and interdependence of all activities necessary to complete the work and the sequence in which activity is to be accomplished as planned by the Contractor and in accordance with all subcontractors or suppliers whose work shall be shown on the bar chart. The Contractor shall submit the bar chart for the Engineer's review and revise it, if required, until approved by the Engineer.

The Contractor shall submit weekly progress status update reports or as otherwise directed by the Engineer. The Contractor shall submit updated bar chart every month. The revised bar chart shall be made in the same form and detail as the original submittal and shall be accompanied by an explanation of the reasons for the revisions all of which shall be subject to approval by the Engineer.

H. ACCELERATED PROJECT SCHEDULE AND COMBINATION OF STAGES. Contractor shall plan and/or stage it work schedule using all hours/days available. Contractor is advised that all applicable unit prices shall include, for the purpose of this contract, all overtime costs, premium time costs, shift differentials required to complete construction within the specified "Time(s) of Completion" stipulated in this contract.

Contractor shall be permitted to accelerate this project, to combine stages and/or work sequences. Any such changes shall be shown in the construction schedule, to be furnished in accordance with the General Provisions of the Standard Specifications and the above "SCHEDULING PRESENTATION" Article, and shall be submitted for approval of the Engineer.

I. NO EXTENSION OF TIME FOR WINTER SHUT-DOWN. Where the Contractor's approved work schedule for installing sidewalk, curb, roadway base and/or pavement falls within the winter period of December 1st through April 1st, the Contractor will NOT be granted an extension of time for completion of this contract due to the winter shut-down period, unless otherwise provided in Schedule A.

J. PRIVATE UTILITY HARDWARE ADJUSTMENTS will be performed by the owning utility company or its agent, at its expense. The Contractor shall notify the utility company 72 hours prior to start of work at each location where its hardware requires adjustment.

K. SURVEY MONUMENTS. When working in the vicinity of survey monument the Contractor shall hand excavate per Item 8.02 A and 8.02 B at City Survey Monuments, for a distance of five (5) feet around each monument, as directed by the Engineer.

L. RESTORATION OF ADJACENT AREAS. The Contractor shall be required to remove all form work. In planting strip areas, the Contractor shall be required to restore areas damaged as a result of his operations, to the satisfaction of the Engineer, with sod. The Contractor shall also, as directed by the Engineer, make safe adjacent areas to his work, such as: restoring missing or damaged pavement markings that were removed or damaged as a result of the Contractor's operations (as per requirements of Section 6.44 in the Standard Specifications); resetting granite blocks in tree pits; and, applying asphaltic concrete mixture (Item 4.02 CB) where badly broken sidewalk or curb may create a dangerous condition just outside his area of operation, where and when directed by the Engineer.

All restoration work shall be done to the satisfaction of the Engineer.

M. USE OF CITY WATER. The Contractor is notified that for use of City water under this project the Contractor shall be required to obtain a water use permit from the Department of Environmental Protection at the Contractor's own cost.

N. FUEL COST. The Contractor is notified that the fuel cost per gallon used in the formula under Sub-Article 26.2.8 of the Standard Construction Contract for **Extra Work** will be derived from the fuel price index for the United States East Coast published weekly by the United States Energy Information Administration ("USEIA"), and available on its website at http://www.eia.gov/petroleum/gasdiesel/. The USEIA-published cost per gallon for the applicable fuel on the East Coast for the week in which the first day of each calendar quarter during the contract term occurs (i.e., January 1st, April 1st, July 1st and September 1st) will be used in the reimbursement formula for all **Extra Work** invoiced that was performed during that calendar quarter. Should the USEIA stop publishing this fuel price index, the fuel cost per gallon will be determined by reference to a substitute index to be agreed upon by the Contractor and the City.

O. SPECIAL PERMIT AND INSPECTION. Portions of work required special permit and inspection under this contract are subject to the provisions of the New York City Construction Codes, as noted on the contract drawings and contract documents Volume 4 of 4.

P. DPR CONSTRUCTION PERMITS. are required for all work on parkland or on sidewalks adjacent to parks or other areas maintained by DPR.

Q. START OF CONTRACT WORK. The Contractor is notified that a Notice To Proceed (NTP) date will be issued for work to commence within 21 to 30 Days of Contract Registration.

R. PRICES TO INCLUDE. No direct payment will be made for costs incurred in complying with the foregoing Special Provisions, unless otherwise provided. Said costs will be deemed to have been included in the prices bid for all the scheduled contract items.

NEW YORK CITY DOT **Department of Transportation**

POLLY TROTTENBERG, Commissioner

OCMC TRAFFIC STIPULATIONS

June 3, 2016

OCMC FILE NO: MEC-16-187
CONTRACT NO: HWBARUCH
PROJECT: RECONSTRUCTION OF EAST 25TH STREET PLAZA (BARUCH COLLEGE)

LOCATION(S): EAST 25TH STREET PLAZA BETWEEN LEXINGTON AVENUE AND 3RD AVENUE

3RD AVENUE BETWEEN EAST 24TH STREET AND EAST 26TH STREET

LEXINGTON AVENUE BETWEEN EAST 24TH STREET AND EAST 25 STREET

EAST 24TH STREET BETWEEN 3RD AVENUE AND LEXINGTON AVENUE

EAST 25TH STREET BETWEEN 2AVENUE AND 3RD AVENUE

PERMISSION IS HEREBY GRANTED TO THE **NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION** AND ITS DULY AUTHORIZED AGENT, TO ENTER UPON AND RESTRICT THE FLOW OF TRAFFIC AT THE ABOVE LOCATION(S) FOR THE PURPOSE OF CARRYING OUT THE ABOVE NOTED PROJECT, SUBJECT TO THE STIPULATIONS, AS NOTED BELOW:

I. SPECIAL STIPULATIONS

A. **EMBARGOES** – A CONSTRUCTION EMBARGO WILL APPLY TO THOSE LOCATIONS BELOW WHICH FALL WITHIN THE **HOLIDAY EMBARGO, SUMMER STREETS EMBARGO** OR ANY OTHER SPECIAL EVENT EMBARGOES SUCH AS PUBLISHED BY THE BUREAU OF PERMIT MANAGEMENT AND CONSTRUCTION CONTROL.

B. **BIKE LANES** – IF WORK IS IN OR AFFECTING A BIKE LANE, THE PERMITTEE MUST POST ADVANCE WARNING SIGNS 350 FEET AND 200 FEET PRIOR TO THE WORK ZONE STATING **"CONSTRUCTION IN BIKE LANE AHEAD PROCEED WITH CAUTION"**, AND ALSO POST A SIGN AT THE WORK ZONE STATING **"CONSTRUCTION IN BIKE LANE PROCEED WITH CAUTION"**. SUCH SIGNS SHALL BE ORANGE, 3' X 3', DIAMOND-SHAPED WITH 4" BLACK LETTERING. SIGNS SHALL BE POSTED IN ACCORDANCE WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

C. **BIKE SHARE STATIONS:** THE PERMITTEE SHALL NOT REMOVE, RELOCATE, DAMAGE OR DISRUPT THE OPERATION OF EXISTING BIKE SHARE STATIONS WITHOUT FIRST CONTACTING NYC BIKE SHARE AT 855-245-3311 FOR THEIR REQUIREMENTS PRIOR TO COMMENCING WORK.

D. **CITYBENCH:** THE PERMITTEE SHALL NOT REMOVE, RELOCATE, DAMAGE OR DISRUPT AN EXISTING CITYBENCH WITHOUT FIRST CONTACTING NYC DOT AT 212-839-6569, OR VIA EMAIL AT CITYBENCH@DOT.NYC.GOV PRIOR TO COMMENCING WORK.

E. **PROTECTION OF NYC DEP GREEN INFRASTRUCTURE:** THE PERMITTEE SHALL TAKE PRECAUTION OF NYC DEP GREEN INFRASTRUCTURE IN THE RIGHT-OF-WAY. THE PERMITTEE MUST PROTECT NYC DEP GREEN INFRASTRUCTURE DOWNSTREAM OF THE WORK OR WITHIN FIVE (5) FEET OF THE WORK AREA. THE PERMITTEE MUST EMAIL NYC DEP AT SUSTAINABILITY@DEP.NYC.GOV FOR PROTECTION REQUIREMENTS PRIOR TO COMMENCING WORK. THE PERMITTEE IS RESPONSIBLE FOR RESTORATION OF DAMAGED NYC DEP INFRASTRUCTURE AS DIRECTED BY NYC DEP.

F. **BUS STOPS** – THE PERMITTEE SHALL PROVIDE WRITTEN NOTICE TO NYC DOT OCMC AND NEW YORK CITY TRANSIT (NYCT) A MINIMUM OF FIVE (5) WEEKS IN ADVANCE FOR LANE/STREET CLOSURES THAT AFFECT BUS ROUTES/BUS STOPS.

G. **STREET LIGHTS / TRAFFIC SIGNALS:** THE PERMITTEE SHALL NOT REMOVE OR RELOCATE EXISTING STREET LIGHTS OR TRAFFIC SIGNALS WITHOUT FIRST OBTAINING APPROVAL FROM NYCDOT STREET LIGHTING / TRAFFIC SIGNALS UNIT.

H. **TRAFFIC CAMERAS, DETECTION/COMMUNICATION EQUIPMENT:** IF AT ANY TIME DURING THE APPROVED WORK, THE PERMITTEE ENCOUNTERS TRAFFIC SURVEILLANCE CAMERAS, DETECTION EQUIPMENT OR ANY TYPE OF COMMUNICATION EQUIPMENT (WIRELESS OR HARD-WIRED) ON ANY NYC DOT FACILITY, THAT IS NOT INCLUDED ON THE DESIGN/BUILD DRAWINGS, THE PERMITTEE SHALL IMMEDIATELY NOTIFY NYC DOT TRAFFIC MANAGEMENT BY PHONE AT 718-433-3390 OR 718-433-3340 AND VIA EMAIL AT TMC@DOT.NYC.GOV AND AWAIT DIRECTION PRIOR TO CONTINUING WORK.

I. **METERS** – THE PERMITTEE SHALL NOT REMOVE OR RELOCATE PARKING METERS WITHOUT FIRST OBTAINING APPROVAL FROM NYCDOT PARKING METER DIVISION AT 718-894-8651.

J. **TEST PITS** – THE BELOW TRAFFIC STIPULATIONS DO NOT APPLY TO TEST PIT WORK RELATED TO THIS CONTRACT. WORK HOURS AND OTHER REQUIREMENTS FOR TEST PIT OPERATIONS MAY DIFFER FROM THE STIPULATIONS IDENTIFIED BELOW. THE PERMITTEE SHALL BE REQUIRED TO OBTAIN SEPARATE PERMITS RELATED TO TEST PITS.

K. **TEMPORARY PARKING REGULATIONS/PAVEMENT MARKINGS** – THE PERMITTEE IS REQUIRED TO INSTALL, MAINTAIN AND REMOVE ALL NECESSARY TEMPORARY PARKING AND REGULATORY SIGNS AND PAVEMENT MARKINGS, AND RESTORE THEIR ORIGINAL CONDITION PER NYC DOT STANDARDS, PRIOR TO EXPIRATION OF THEIR PERMITS. THE PERMITTEE OR AGENCY PERFORMING PUBLIC OUTREACH SHALL POST AND MAINTAIN ADVISORY SIGNS A MINIMUM OF 48 HOURS PRIOR TO CHANGING EXISTING PARKING REGULATION SIGNS TO APPROVED TEMPORARY CONSTRUCTION

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street - 7th Floor, New York, NY 10041
T: 212.839.9621 F: 212.839.8970
www.nyc.gov/dot

PARKING REGULATION SIGNS. THE ADVISORY SIGNS SHOULD BE POSTED ON ALL POLES AND DRIVE RAILS ON THE SEGMENT AFFECTED, INDICATING THE DATE OF THE CHANGE, THE NEW REGULATIONS AND A TELEPHONE NUMBER TO OBTAIN MORE INFORMATION.

L. **ACCESS TO ABUTTING PROPERTIES** – THE PERMITTEE SHALL COORDINATE ALL ACTIVITIES WITH ABUTTING PROPERTY OWNERS TO ENSURE ACCESS IS PROVIDED TO/FROM ENTRANCES/DRIVEWAYS AT ALL TIMES.

M. **AUTHORIZED PARKING** – PRIOR TO PERFORMING WORK WHICH IMPACTS AUTHORIZED PARKING, THE PERMITTEE SHALL SUBMIT IN WRITING, AND COPY OCMC-STREETS, A REQUEST TO OCCUPY SPACE CURRENTLY USED BY AUTHORIZED VEHICLES. APPROVAL MUST BE RECEIVED FROM AUTHORIZED PARKING PRIOR TO OCCUPYING THESE AREAS.

N. **NOTIFICATION** – THE PERMITTEE MUST AT LEAST TWO (2) WORKING DAYS BEFORE THE START OF CONSTRUCTION NOTIFY THE NYC FIRE DEPARTMENT, NYC POLICE DEPARTMENT, NYCEMS, LOCAL COMMUNITY BOARD, BOROUGH PRESIDENT'S OFFICE-CHIEF ENGINEER, NYCDOT OCMC OFFICE, AND ALL ABUTTING PROPERTY OWNERS.

O. **CONSTRUCTION INFORMATIONAL SIGNS** – THIS PROJECT REQUIRES A CONSTRUCTION PROJECT INFORMATIONAL SIGN (CPIS) IN ACCORDANCE WITH NYCDOT HIGHWAY RULE SECTION 2-02 (4) AND (5). CRITERIA AND A PROTOTYPE FOR THIS SIGN MAY BE FOUND ON THE NYCDOT WEBSITE AT:

HTTP://WWW.NYC.GOV/HTML/DOT/DOWNLOADS/PDF/DOT_CPIS_DIRECTIONS.PDF

P. **ENHANCED MITIGATIONS**

- **VARIABLE MESSAGE SIGNS (VMS)** SHALL BE PROVIDED FOR THIS PROJECT. **VMS SHALL BE PLACED FOR THIS CONTRACT.** THE LOCATIONS AND MESSAGES SHALL BE RECOMMENDED BY NYCDOT BRIDGES AND THEIR CONTRACTOR A MINIMUM OF TWO (2) WEEKS PRIOR TO WORK COMMENCING, FOR OCMC REVIEW AND APPROVAL.
- **"NO STANDING ANYTIME-TEMPORARY CONSTRUCTION" SIGNS** AND TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED AND MAINTAINED AS WARRANTED BY THE MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) REQUIRED TO FACILITATE TRAFFIC MOVEMENTS THROUGH THE WORK ZONE. ALL TEMPORARY SIGNS AND PAVEMENT MARKINGS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
- **COMMUNITY OUTREACH** SHALL BE PROVIDED FOR THE DURATION OF THE PROJECT.

II. MAINTENANCE AND PROTECTION OF TRAFFIC

A. EAST 24TH STREET AT 3RD AVENUE ,

1. Work hours shall be as follows: 7AM-6PM MONDAY – FRIDAY, 9AM-5PM SATURDAY AND SUNDAY.
   a. MUST MAINTAIN 5FT CLEAR SIDEWALKS OR PROTECTED PEDESTRIAN WALKWAYS IN ROADWAY AT ALL TIMES.
   b. MUST MAINTAIN 8FT CLEAR MINIMUM CROSSWALKS.
2. **ON EAST 24 STREET BETWEEN 3RD AVENUE AND LEXINGTON AVENUE.** MAINTAIN 2x11FT MOVING LANES FOR VEHICLES AT ALL TIMES.
   a. ANY WORK WHICH CAN BE ACCOMPLISHED ONLY BY MAINTAINING 1x13 FT MOVING LANE FOR VEHICLES MAY OCCUR ONLY BETWEEN THE HOURS OF 9AM-3PM MONDAY TO FRIDAY, AND 9AM-5PM SATURDAY AND SUNDAY.
   b. COORDINATE WITH USPS
3. **ON 3RD AVENUE BETWEEN E24ST AND E25ST FOR BULB OUT AND UTILITY WORK ASSOCIATED WITH E24ST:** OCCUPY A MAXIMUM OF 20FT ADJACENT TO EXISTING/ ORIGINAL CURBLINE. MAINTAIN A MINIMUM OF 4x11FT MOVING LANES FOR TRAFFIC, AND PARKING ALONG THE EAST CURBLINE.

B. EAST 25TH STREET BETWEEN 3RD AVENUE AND LEXINGTON AVE

1. Work hours shall be as follows: 7AM-7PM MONDAY-FRIDAY, 9AM-5PM SATURDAY AND SUNDAY.
2. ROADWAY TO REMAIN CLOSED TO CIVILIAN VEHICLE USE. MAINTAIN A MINIMUM 13FT CLEAR RIGHT OF WAY SHARED USE FOR PEDESTRIANS AND EMERGENCY SERVICES. MUST COORDINATE WITH AND MAKE AMMENITIES FOR ALL ABUTTING PROPERTY SUPPLY CHAIN OPERATIONS.
3. SCHEDULE TO BE COORDINATED WITH BARUCH COLLEGE.

C. 3RD AVENUE BETWEEN EAST 24TH STREET AND EAST 26TH STREET. (WORK ASSOCIATED WITH AND ADJACENT TO ABOVE ITEM II.B.)

1. Work hours shall be as follows: 7AM-6PM MONDAY – FRIDAY, 9AM-5PM SATURDAY AND SUNDAY.
   a. MUST MAINTAIN 5FT CLEAR SIDEWALKS OR PROTECTED PEDESTRIAN WALKWAYS IN ROADWAY AT ALL TIMES.
   b. MUST MAINTAIN 8FT CLEAR MINIMUM CROSSWALKS AT ALL TIMES
2. OCCUPY A MAXIMUM OF 20FT ADJACENT TO EXISTING/ ORIGINAL CURBLINE. MAINTAIN A MINIMUM OF 4x11FT MOVING LANES FOR TRAFFIC, AND PARKING ALONG THE EAST CURBLINE.

D. LEXINGTON AVENUE BETWEEN EAST 24TH STREET AND EAST 26TH STREET. (WORK ASSOCITED WITH AND ADJACENT TO ABOVE ITEM II.B.)

1. Work hours shall be as follows: 9AM-3PM MONDAY-FRIDAY, 9AM-6PM SATURDAY AND SUNDAY
   a. MUST MAINTAIN 5FT CLEAR SIDEWALKS OR PROTECTED PEDESTRIAN WALKWAYS IN ROADWAY AT ALL TIMES.
   b. MUST MAINTAIN 8FT CLEAR MINIMUM CROSSWALKS AT ALL TIMES
2. MAINTAIN 2X11FT MOVING LANES DURING WORING HOURS. OCCUPY 8FT ADJACENT TO EAST CURBLINE OTHER TIMES.
3. COORDINATE WITH ARMORY COMMAND BEFORE MOBILIZING AND FOR DURATION.

E. EAST 25TH STREET BETWEEN 2nd AVENUE AND 3RD AVENUE. AT 3RD AVENUE , (WORK ASSOCIATED WITH THE CATCH BASIN AND CURB BUMP PUT ON THE NORTH EAST CORNER OF E25ST AT 3AVE)

1. Work hours shall be as follows: 7AM-3PM MONDAY – FRIDAY, 9AM-5PM SATURDAY AND SUNDAY.
   a. MUST MAINTAIN 5FT CLEAR SIDEWALKS OR PROTECTED PEDESTRIAN WALKWAYS IN ROADWAY AT ALL TIMES.
   b. MUST MAINTAIN 8FT CLEAR MINIMUM CROSSWALKS.
   c. THIS WORK MAY NOT TAKE PLACE SIMULTANIOUSLY AS THE WORK ON THE WEST SIDE OF 3RD AVENUE.
2. **EAST 25 STREETS BETWEEN 2ND AVENUE AND 3RD AVE ON AVENUE.**
   a. MAINTAIN 1x13FT MOVING LANE FOR VEHICLES AT ALL TIMES.
3. **3RD AVENUE BETWEEN E24ST AND E25ST.**
   a. MAINTAIN A MINIMUM OF 4x11FT MOVING LANES FOR TRAFFICDURING WORKING HOURS.
   b. OCCUPY A MAXIMUM OF 8FT ADJACENT TO EAST CURBLINE OTHER TIMES.
   c. OCCUPANCY OF THE EAST CURB PARKING LANE IS PROHIBBETED EXCEPT DURING THIS WORK.

F. SPECIAL OPERATIONS STIPULATIONS FOR NEW CONCRETE ROADWAY AND CURING.

MUST MAINTAIN 5FT CLEAR SIDEWALKS OR PROTECTED PEDESTRIAN WALKWAYS IN ROADWAY AT ALL TIMES.
MUST MAINTAIN 8FT CLEAR MINIMUM CROSSWALKS

1. **3RD AVENUE BETWEEN EAST 24TH STREET AND EAST 26 STREET**
   a. WORK 8AM SATURDAY THROUGH 6AM MONDAY
   b. MAINTAIN A MINIMUM 3X11 FT MOVING LANES FOR VEHICLES.
   c. BY 6AM MONDAY MORNING OCCUPY A MAXIMUM OF 20FT ADJACENT TO EXISTING/ ORIGINAL CURBLINE. MAINTAIN A MINIMUM OF 4x11FT MOVING LANES FOR TRAFFIC, AND PARKING ALONG THE EAST CURBLINE.
2. **LEXINGTON AVENUE BETWEEN EAST 24 STREET AND EAST 26 STREET**
   a. WORK 8AM SATURDAY THROUGH 6AM MONDAY .
   b. MAINTAIN A MINIMUM 1X13 FT MOVING LANE FOR VEHICLES.
   c. A MINIMUM OF 3X NYPD TRAFFIC AGENTS ARE REQUIRED ON POST FOR DURATION.
   d. OCCUPY A MAXIMUM OF 8FT ADJACENT TO EAST CURB BY 6AM MONDAY MORNING.

II. GENERAL NOTES

A. **THIS IS NOT A PERMIT.** THIS STIPULATION SHEET MUST BE SUBMITTED WITH ALL REQUESTS FOR PERMITS PERTAINING TO THE ABOVE CONTRACT AND PRESENT AT THE WORK SITE ALONG WITH ALL ACTIVE CONSTRUCTION PERMITS WHEN THE APPROVED WORK IS BEING PERFORMED.

B. THE PERMITTEE MUST COMPLY WITH ALL CONSTRUCTION EMBARGOS ISSUED BY THE NYCDOT INCLUDING THE HOLIDAY EMBARGO.

C. THE PERMITTEE SHALL COMPLY WITH ALL REQUIREMENTS OF THE NYCDOT SPECIAL EVENTS UNIT AS IDENTIFIED BELOW:

1. STREET FAIRS / FESTIVALS

- ALL EXCAVATIONS MUST BE PLATED WITH SKID RESISTANT PLATES.
- PLATES MUST BE RECESSED AND FLUSH WITH PAVEMENT.
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

2. RUNNING / WALKING / BIKING EVENTS

- ALL EXCAVATIONS MUST BE BACKFILLED AND PAVED OR PLATES MUST BE RECESSED AND PAVED OVER FLUSH WITH PAVEMENT.
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

3. PARADES

- ALL EXCAVATIONS MUST BE BACKFILLED AND PAVED OR PLATES MUST BE RECESSED AND PAVED OVER FLUSH WITH PAVEMENT.
- FORMATION AND DISPERSAL AREA PLATES MUST BE RECESSED AND FLUSH WITH PAVEMENT (PLATES MUST BE SKID RESISTANT).
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

4. MAYORAL EVENTS

- ALL EXCAVATIONS MUST BE BACKFILLED AND PAVED OR PLATES MUST BE RECESSED AND PAVED OVER FLUSH WITH PAVEMENT.
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

D. ALL RELOCATION WORK BY THE UTILITIES SUCH AS; CON EDISON, TELEPHONE, GAS AND CABLE COMPANIES SHALL PRECEDE THE CONTRACTORS' START OF WORK ON ALL AFFECTED ROADWAYS IN THE IMPACTED CONTRACT AREA.

E. THE CONTRACTOR IS ADVISED THAT OTHER CONTRACTORS MAY BE WORKING IN THE GENERAL AREA DURING THE TERM OF THIS STIPULATION. IN WHICH EVENT, THE CONTRACTOR MAY REQUIRE MODIFICATIONS BY THE OCMC-STREETS.

F. THE PERMITTEE IS NOT AUTHORIZED TO ENTER, OCCUPY OR USE ANY PUBLICLY-OWNED OR PRIVATELY OWNED, NON-PAVED, LANDSCAPE OR NON-LANDSCAPED LOCATION WITHOUT SPECIFIC WRITTEN PERMISSION. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF A LIMITED-ACCESS ARTERIAL HIGHWAY, **WRITTEN** APPROVAL FROM THE NYCDOT OCMC-HIGHWAYS IS REQUIRED. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR PUBLIC PARK, **WRITTEN** APPROVAL FROM THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION OR NEW YORK CITY DEPARTMENT OF PARKS AND RECREATION IS REQUIRED. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF ANY OTHER JURISDICTION SUCH AS PRIVATE PROPERTY, STATE, FEDERAL ETC., IT IS THE PERMITTEE'S RESPONSIBILITY TO DETERMINE THE PROPERTY OWNER AND OBTAIN THE WRITTEN APPROVAL.

G. THE PERMITTEE SHALL ADHERE TO THE NYCDOT BUREAU OF BRIDGES' SPECIAL PROVISIONS FOR LANDSCAPE PROTECTION, MAINTENANCE AND RESTORATION, ITEMS 1.18.15 THROUGH 1.18.19, WHENEVER AND WHEREVER ANY OF THE PERMITTEE'S ACTIVITIES OCCUR WITHIN A LIMITED ACCESS ARTERIAL HIGHWAY RIGHT - OF - WAY.

H. NO DEVIATION OR DEPARTURE FROM THESE STIPULATIONS WILL BE PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL FROM THE OCMC-STREETS. REQUEST FOR SUCH MODIFICATIONS SHALL BE SUBMITTED TO THE OFFICE OF THE OCMC-STREETS, NEW YORK CITY DEPARTMENT OF TRANSPORTATION, A MINIMUM OF TWENTY (20) DAYS IN ADVANCE FOR CONSIDERATION.

I. FOR ANY CONSTRUCTION ACTIVITY RESULTING IN THE FULL CLOSURE OF A ROADWAY FOR MORE THAN 180 CONSECUTIVE CALENDAR DAYS, THE CONTRACTOR MUST PRODUCE AND SUBMIT A COMMUNITY REASSESSMENT, IMPACT AND AMELIORATION (CRIA) STATEMENT TO NYCDOT PLANNING AND OBTAIN THEIR APPROVAL BEFORE APPLYING FOR PERMITS, IN COMPLIANCE WITH THE PROVISIONS OF **LOCAL LAW 24 STREET CLOSURE LAW.**

J. FOR THIS PROJECT THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL NECESSARY ADVANCE WARNING AND DETOUR SIGNS, TEMPORARY CONTROL DEVICES, BARRICADES, LIGHTS AND FLASHING ARROW BOARDS IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," THE TYPICAL SCHEMES INCLUDED IN THIS SPECIFICATION; AND AS ORDERED BY THE ENGINEER-IN-CHARGE AND THE OCMC-STREETS.

K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING HIS CONSTRUCTION SIGNAGE. THE IDENTIFICATION SHALL INCLUDE THE CONTRACTOR'S NAME, SPONSORING AGENCY NAME AND THE CONTRACT NUMBER. THE IDENTIFICATION SHALL BE PLACED ON THE BACK OF THE SIGN. THE LETTERING SHALL BE THREE (3) INCHES HIGH.

L. THE OCMC-STREETS RESERVES THE RIGHT TO VOID OR MODIFY THESE STIPULATIONS SHOULD CONSTRUCTION FAIL TO COMMENCE WITHIN TWO (2) YEARS OF THE SIGNED DATE OF THESE STIPULATIONS.

DUANE BARRA
DIRECTOR
OCMC-STREETS

JASON S. BUCCHERI
PROJECT MANAGER
OCMC-STREETS

THE CITY OF NEW YORK Department of Sanitation

S. ELIZABETH SEARLE
Assistant Commissioner
for Legal Affairs

Bureau of Legal Affairs
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New York, NY 10004
Telephone (212) 837-8110
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Department of Sanitation Rules and Regulations Governing Non-Putrescible Solid Waste Transfer Stations

INTERPRETIVE MEMORANDUM # 2
February 14, 1995

Subject: Temporary Storage and Processing of Construction and Demolition Debris by New York City Agency Contractors

Contractors performing construction work for New York City agencies may be required to excavate dirt, concrete, rock, gravel and similar materials ("construction materials") from a contract site or to remove from a contract site construction materials resulting from construction, demolition, alteration, repair or renovation of structures, streets or buildings. On street construction projects, construction materials required to be excavated or removed may also include asphalt. The purpose of this Interpretive Memorandum is to (a) define the circumstances under which the Department of Sanitation (the "Department") will not deem its Rules and Regulations Governing Non-Putrescible Solid Waste Transfer Stations (the "Rules") to apply to the temporary storage, processing and/or stockpiling (collectively, "stockpiling") of such construction materials and (b) the procedure for ensuring such exemption. It is the responsibility of the contracting agency to oversee its contractors' compliance with the Rules and with this Interpretive Memorandum.

1. <u>When No Transfer Station Permit is Required</u>

Where a City contractor has:

(a) set aside an area of a contract site for stockpiling construction materials excavated from and/or intended for that site; <u>or</u>

(b) received written approval from the contracting agency for an off-site stockpiling location,

the Department will not deem such stockpiling location a transfer station and will not require the contractor to obtain a transfer station permit so long as:

(c) no construction materials or debris from off the contract site are received at the designated location for subsequent transfer to another location (other than the contract site); <u>and</u>

(d) the temporary stockpiling location is clearly described as such in the contract or clearly approved by the construction agency and designated as such in writing to the Department by the agency; <u>and</u>

(e) the construction agency represents in writing to the Department that such agency will monitor the temporary stockpiling location and ensure its clean-up and restoration pursuant to the procedures set out in this memorandum.



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Help Reduce New York's Waste.

Example: *Street Construction Projects*

As part of a contract for street construction, the contractor may be working at one end of a street and using an area at the other end of the street for the temporary stockpiling of construction materials. Both ends of the street are part of the construction contract site. In addition, the contractor may have leased an off-site location for temporary stockpiling of materials, which, following processing, will be reincorporated into the contract site, with some portion of the remainder designated for delivery to a Department disposal facility. Neither location will be regulated by the Department as a transfer station so long as the procedures set out in this memorandum are followed.

2. Procedure for Exception.

Upon a City construction agency's approval of any location to be designated as a temporary processing, storage or stockpiling area, that agency must determine that (a) its contract with the contractor provides for clean-up and restoration of such area by, for example, the contractor's posting of a restoration bond and/or by contractual set-off and (b) the agency has adequate procedures for monitoring the designated area to ensure that it does not violate the provisions set forth in this memorandum and that such location is cleaned up and restored at the completion of the contract work.

The City construction agency must submit an official letter to the Department acknowledging compliance with both (a) and (b) immediately above and representing that the agency will ensure the contractor's compliance. The letter to be submitted must be in substantially the following form, addressed to the Director, Bureau of Waste Disposal, Department of Sanitation, 125 Worth Street, Room 726, New York, NY 10013:

"The New York City Department of _____ (the "Agency") has awarded a construction contract to _____(Contractor)_____ _____ (the "Contractor") for work to be performed at _____(Contract Site)_____ .

a. This Agency has approved the following locations to be used by the Contractor for the temporary storage, processing and/or stockpiling of construction materials (the "Stockpiling Locations") excavated from the construction site or intended for the construction site:

_____

_____

_____

_____

b. The terms of the contract require the Contractor to clean up and restore the Stockpiling Locations, whether on or off the contract site, at or before the completion of the contract work.

c. This Agency assumes responsibility for the monitoring of Stockpiling Locations to ensure that only materials received from and/or intended for the construction site are stockpiled at such locations and we will enforce clean-up and restoration of such Locations at the end of their use for temporary stockpiling or at the termination of the contract, whichever occurs earlier, through restoration

bonding requirements and/or contractual set-off provisions such that the costs of clean-up and restoration will not become a charge to the Department or the City. "

3. When a Transfer Station Permit is Required

A transfer station permit will be required under any circumstances other than those outlined above. Except in the specifically defined circumstances set forth in this memorandum, any operator of a location or facility which receives, processes, stores or stockpiles construction and demolition debris or fill material for purposes of transfer to another location, including to a New York City Department of Sanitation facility, and whether or not under contract to the Department for the delivery of such materials, will be fully subject to the Department's transfer station rules and liable for enforcement for violations.

SW - PAGES

SEWER AND WATER MAIN REVISIONS TO SPECIFICATIONS

NOTICE

The Standard Sewer And Water Main Specifications of the Department of Environmental Protection (dated July 1, 2014), Sewer Design Standards of the Department of Environmental Protection (dated (September 2007) Revised January 2009), Water Main Standard Drawings of the Department of Environmental Protection (latest revisions), and Specifications For Trunk Main Work of the Department of Environmental Protection (dated July 2014), shall be included as part of the contract documents. These said specifications and standard drawings are hereby revised under the following section headings:

A. NOTICE TO BIDDERS
B. REVISIONS TO THE STANDARD SEWER AND WATER MAIN SPECIFICATIONS
C. REVISIONS TO THE SPECIFICATIONS FOR TRUNK MAIN WORK

(NO TEXT ON THIS PAGE)

A. NOTICE TO BIDDERS

(1) The Contractor is notified that a Notice To Proceed (NTP) date will be issued for work to commence within twenty-one (21) to thirty (30) days of Contract Registration.

(2) The Contractor shall furnish, install, maintain and subsequently remove temporary Protective Tree Barriers. Protective Tree Barriers shall be Type B, unless otherwise directed by the Engineer, and shall be constructed and installed as shown on the Protective Tree Barrier sketch in Department Of Transportation, Standard Highway Details Of Construction, Drawing No. H-1046A, as directed by the Engineer, and in accordance with Department of Parks and Recreation requirements.

(3) All utility locations and invert elevations are not guaranteed, nor is there any guarantee that all existing utilities, whether functional or abandoned within the project area are shown.

(4) All existing house connections shall be maintained and supported during construction. The Contractor shall replace any existing house connection damaged as a result of the Contractor's construction operations as ordered by the Engineer at no cost to the City.

(5) The Contractor is advised that any City owned light poles, traffic signals, street name signs, traffic signs and encumbrances including, but not limited to, underground conduit displaced as the result of the installation of the new sewers, water mains, catch basins, catch basin connections and appurtenances shall be replaced in kind and as directed by the Engineer. The cost of such work shall be deemed included in the prices bid for all items of work under this contract.

(6) The Contractor is notified that Victaulic Style 77 Coupling is no longer acceptable for use in any steel water main work. All reference to Victaulic Style 77 Coupling within the Standard Sewer And Water Main Specifications of the Department of Environmental Protection (dated July 1, 2014), the Water Main Standard Drawings of the Department of Environmental Protection (latest revisions), the Specifications For Trunk Main Work (dated July 2014), and the contract drawings, shall be replaced with Bolted Split-Sleeve Restrained Coupling.

(7) The Contractor is notified that wherever the Item No. "6.52" and words "flagger", "flagperson" and "flagman" are used in the contract documents and drawings it shall mean the Item No. "6.52 CG" and the words "Crossing Guard", respectively. The Contractor is advised that until the Comptroller of the City of New York sets a prevailing wage rate for crossing guards, there are no prevailing wage rates for crossing guards.

(8) The Contractor is notified that the fuel cost per gallon used in the formula under **Sub-Article 26.2.8** of the Standard Construction Contract for **Extra Work** will be derived from the fuel price index for the United States East Coast published weekly by the United States Energy Information Administration ("USEIA"), and available on its website at http://www.eia.gov/petroleum/gasdiesel/ . The USEIA published cost per gallon for the applicable fuel on the East Coast for the week in which the first day of each calendar quarter during the contract term occurs (i.e., January 1st, April 1st, July 1st and September 1st) will be used in the reimbursement formula for all **Extra Work** invoiced that was performed during that calendar quarter. Should the USEIA stop publishing this fuel price index, the fuel cost per gallon will be determined by reference to a substitute index to be agreed upon by the Contractor and the City.

(9) The Contractor is responsible for any damage to the existing street and traffic signal equipment, including underground conduits and the safety of both pedestrian and vehicular traffic for the duration of the contract.

Should any conduits, cables or foundations need repair due to the Contractor's negligent operations during construction, all work shall be performed according to NYCDOT Bureau of Traffic's Standard Drawings and Specifications at the sole expense of the Contractor.

It is the Contractor's responsibility to secure an approved electrical contractor to perform all traffic signal work (if any). For list of approved electrical contractors, contact Mr. Michael R. LeFosse of New York City Department of Transportation at (212) 839-3799.

B. REVISIONS TO THE STANDARD SEWER AND WATER MAIN SPECIFICATIONS

(1) **Refer** to **Subsection 10.21 - Contractor To Notify City Departments**, Page I-13:
Add the following to **Subsection 10.21**:

(1) N.Y.C. D.E.P., BUREAU OF WATER AND SEWERS OPERATIONS

The Contractor shall notify Mr. Peter Gordon, P.E., Chief, Linear Capital Program Management Division at the Department of Environmental Protection, 59-17 Junction Blvd., 3rd floor low rise, Corona N.Y. 11368, at least thirty (30) days prior to the start of construction.

(2) N.Y.C. DEPARTMENT OF TRANSPORTATION

The Contractor shall notify Mr. Steve Galgano, P.E. Chief of Signal/Street Lighting Operations, 34-02 Queens Blvd., Long Island City, N.Y. 11101 at (718) 786-3550, at least seventy-two (72) hours prior to the start of construction.

(2) **Refer** to **Subsection 10.30 - Contractor To Provide For Traffic**, Page I-15:
Add the following to **Subsection 10.30**:

(1) Traffic Stipulations:

The Contractor shall refer to Traffic Stipulations identified in the maintenance of traffic requirements under Highway Contract No. HWBARUCH

(3) **Refer** to **Subsection 71.41.4 - Specific Pavement Restoration Provisions**, Page VII-67:
Add the following to **Subsection 71.41.4**:

(E) Specific Pavement Restoration Provisions:

(1) Within the limits of the highway reconstruction the restoration shall be accomplished and paid for in accordance with Highway Construction Plans, Details and Specifications for Highway Project ID. HWBARUCH

C. AMENDMENTS TO THE SPECIFICATIONS FOR TRUNK MAIN WORK

1) **Refer** to **Part 1 – Furnishing And Delivering Steel Pipes And Appurtenances 30 Inches In Diameter And Larger, Section 11. Fabrication:,** Page 4;
Add the following to **Section 11:**

All steel water mains shall be spiral welded pipes, and all steel water main fittings shall be fabricated from qualified spiral welded pipe. Can type pipe is not acceptable.

2) **Refer** to **Part 1 – Furnishing And Delivering Steel Pipes And Appurtenances 30 Inches In Diameter And Larger, Section 13. Special Fittings:,** Page 5;
Add the following to **Section 13:**

The steel reducer shall have a length of seven (7) feet for every twelve (12) inches reduction in diameter.

END OF SECTION
This Section consists of four (4) pages.

EP7 - PAGES

GAS COST SHARING (EP-7) STANDARD SPECIFICATIONS

NOTICE

THE PAGES CONTAINED IN THIS SECTION (EP7-PAGES) REPRESENT THE GAS COST SHARING WORK THAT SHALL APPLY TO AND BECOME A PART OF THE CONTRACT.

(NO TEXT ON THIS PAGE)

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I - NOTICE TO ALL BIDDERS; GAS COST SHARING WORK

All prospective bidders are hereby advised that, pursuant to the "Gas Facility Cost Allocation Act", ("the Act"), the City of New York has entered into an agreement ("the Agreement") with the gas companies (Con Edison or National Grid (formerly KeySpan Energy Delivery)) operating in their respective areas of the City to "share" the cost of facility relocation and/or support and protection of facilities disturbed by proposed water and/or sewer and related City work specified in this contract. Therefore, bid items, specifications and estimated quantities for the incremental costs of support and protection of certain gas facilities have been included in this contract. The low bid for this contract shall be determined by examining each bid for all work to be performed under this contract including any work of support and protection of gas facilities to be performed. The Contractor shall not seek additional compensation from gas companies except as specifically set forth in its contract.

II - GENERAL PROVISIONS; GAS COST SHARING WORK

1. General:

The Contractor shall perform City work with interferences from existing live and abandoned gas facilities. This shall be defined as utility work. Therefore, this contract includes bid items, specifications and estimated quantities designed to fully compensate him/her for the incremental costs of supporting, protecting, providing accommodations and, avoiding disturbing gas facilities located in the streets shown on the contract drawings. In the event that any other provisions of this contract related to gas facilities (or private utilities) conflict with these provisions, these provisions shall supersede and govern all work related to gas facilities owned by the companies operating in the project area. All utility work, as defined in these specifications, including changes and additions thereto shall be paid solely by the City except when specified otherwise in this contract. Contractor hereby agrees that the facility operator shall not be liable to pay him/her for any work performed including extra utility work. Contractor agrees that its bid prices include all compensation for loss of productivity and efficiency, idle time, delays (including any delays occasioned by negotiation of a contract change), change in operations, mobilization, demobilization, remobilization, added cost or expense, lost of profit, other damages or impact costs that may be suffered by or because of utility work, or the presence of gas facilities in the proximity of City work and that it will not seek additional compensation for these items. All disputes shall be resolved as specified in the contract.

Pursuant to the Act, Agreement, and the New York City Administrative Code, the gas company(ies) has been directed by the Commissioner and is required to perform all maintenance, repairs, replacement, shifting, alteration, relocation, and/or removal work that are not part of this contract. By having bid on this contract, the Contractor understands and agrees that the Commissioner has preasserted any right the City has to require, including the issuance of any directives or so called "order outs" under the New York City Administrative Code, any or all gas companies to maintain, repair, replace, protect, support, shift, alter, relocate, and/or remove all gas facilities that are about to be disturbed by the City contract work. The issuance of additional such directives during the performance of the contract work, where necessary in the sole judgment of the Commissioner, shall be initiated by such Commissioner as set forth in the relevant sections of the Act and Agreement. Contractor further agrees to insert such requirements as set forth herein above into any contracts with its approved subcontractors so that its subcontractors also understand and agree to such contract requirements.

2. Gas Interferences And Accommodations:

During the performance of sewer and water main work funded by the New York City Department of Environmental Protection (NYCDEP), as instructed by the Engineer, the use of any applicable contract bid item is allowed in order to resolve and accommodate all gas facilities interferences with such City work, including the removal of contaminated soil in associated trench excavation. This is in addition to the specified EP-7 bid items in the contract. Payment for such accommodation shall be funded by EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" (F.S. Fixed Sum). The value of such accommodation shall be computed by multiplying the appropriate unit prices bid to the quantity of work performed, as determined by the Engineer, and applying the total amount thus to be paid

to EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS". When EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" does not exist, such additional accommodation work shall be at no cost to the City but shall be a matter of adjustment between gas facility operator and Contractor. Private facilities, other than gas, that become in interference due to gas interferences accommodations shall also be accommodated, if so directed by the Resident Engineer, at no additional cost to the City and, provided that its owner agrees to be responsible for all additional costs to Contractor, otherwise, such facility shall be ordered by the City to be maintained, shifted, relocated or replaced by its owner at his/her expenses.

2a. Water Main Accommodations:

When water main construction is to be performed in this contract, Contractor shall be required, if warranted by field conditions, and at locations designated by the Resident or Borough Engineer, to change the vertical or horizontal alignment of water mains including but not limited to all additional labor, material, work method accommodations, furnishing, delivering and laying offset fittings and pipes, etc., necessary in order to complete water main installation and, avoid gas interferences in the project area, including street intersections. Typical work method accommodations shall include, but not be limited to, pier and plate, installation of filter fabric and select fill, etc. Such work shall be performed as directed by the Engineer and in accordance with contract specifications and latest edition of water mains standards and specifications.

2b.Sewer Accommodations:

When sewer construction is to be performed in this contract, Contractor shall be required, if warranted by field conditions, and at locations designated by the Resident or Borough Engineer, to change the horizontal alignment of sewer facilities (if possible) including but not limited to all additional labor, material, work method accommodations, furnishing, delivering and construction of additional manholes or modification of manholes/catch basins, extending chute connections, house connections, using alternate materials and methods, poured-in-place structures, etc., necessary in order to complete sewer installation and, avoid gas interferences in the project area, including street intersections. The term sewer facility shall include, but not be limited to, all sewer pipe and appurtenances, manholes, catch basins, catch basin chutes, etc. Such work shall be performed as directed by the Engineer and in accordance with contract specifications and latest edition of sewer standards and specifications.

3. Quantity Overruns, EP-7 Funded Bid Items:

No quantity overrun, in excess of one hundred twenty five (125) percent, shall be permitted for EP-7 funded bid items (gas) included in this contract, except when Resident Engineer determines that such overruns are caused by field modifications to planned City work, or approved construction methods, or contract scope changes. Overruns not paid by City shall be negotiated and paid to Contractor by gas facility operator who then shall be entitled to reimbursement by NYCDEP under established cost sharing procedures.

4. Changes And Extra Work:

This section is not applicable to work defined under "Emergency Reconstruction Contracts" or so-called "Where and When Contracts" since these projects, by definition, inherently encounter unanticipated gas facilities and cannot be pre-engineered. In all other cases, any contract changes proposed for City work shall also cover and include all associated changes to support and protection of gas facilities affected by such changes to City work. In all other cases where the Contractor finds that City work cannot be performed as planned and specified and/or, as approved because of a need to support, protect and/or alleviate interferences from gas facilities that were not listed and/or shown, or incorrectly shown in contract plans and specifications, he shall immediately notify the Resident Engineer and the facility operators' representative of his findings. Resident Engineer shall promptly examine such claims and determine whether or not such work is covered by contract bid items and /or specifications (contract bid items and specifications shall include city contract items as well as EP-7 items). The Resident Engineer shall also

examine the claim to determine if the application of EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" is appropriate to resolve the claim. If upon examination, the Engineer determines that such field conditions were unanticipated (not shown and/or listed, or incorrectly shown in contract documents) and are not covered by bid items and contract specifications, he shall then direct the Contractor and the affected facility operator to negotiate the cost of supporting and protecting, and/or alleviating the impact on City work caused by such unanticipated gas facilities with each other with the understanding that the performance of City work shall continue during negotiations. If a cost agreement is reached, the Contractor and facility operator shall adjust such costs between themselves at no additional costs to the City contract. If the Contractor and affected facility operator do not reach an agreement concerning the price to be paid for the extra work within five (5) business days of the Engineer's directive to engage into such negotiations and, after considering: public safety and inconvenience, requirements of laws and regulations applicable to private utilities, integrity of all utility systems, including but not limited to sewer and water, gas, electric, telephone and, cable TV facilities, sound engineering practices, cost (long and short term) to all affected parties, and potential City work delays, then the Resident Engineer, depending on nature and severity of interferences with City work, shall either, direct the facility operator to relocate or replace its facilities at its own discretion and cost, reimbursable by NYCDEP under established gas cost sharing procedures or, direct the Contractor to perform the utility work on actual time, material and equipment costs basis pursuant to relevant contract requirements and amendments. Contract bid prices for any applicable items of work involved shall be applied, or converted to an allowance for time and material charges. Changes shall be for affected portions of utility work and, shall be processed with EP-7 funds.

5. Excavation:

All excavators shall notify the NYC/LI One Call Center at 1-800-272-4480 at least two (2) working days, not including the day of the call, but not more than ten (10) working days in advance of the start of any excavation work. The gas company(ies) will mark out its facilities within the project limits and provide Construction Inspector(s) during all excavation work in close proximity (within twelve (12) inches) to gas facilities. The Contractor shall exercise extreme caution when excavating in the vicinity of any gas facilities. Hand excavation shall be performed within twelve (12) inches of gas facilities. The Contractor prior to excavating underneath these facilities shall adequately support all gas facilities. Standard support details for gas facilities have been included in the specifications. Any damage to gas facilities shall be reported immediately to the gas company(ies). The Contractor shall be responsible for all cost associated with repairs made necessary by damages caused by his operations.

6. Backfilling And Street Restoration:

Backfilling operations and street restorations shall be in accordance with contract requirements.

7. Non-Responsive Bids:

Every gas (EP-7) bid item has a suggested "Not less than" value per unit indicated on contract bid sheet. Bids resulting in cost of less than suggested for EP-7 items are hereby prohibited and if submitted shall be considered NON-RESPONSIVE.

8. Minimum Clearances:

Clearance requirements for City work shall govern and supersede any clearance requirement of gas facility operator. Therefore, a minimum of twelve (12) inches clearance between private utilities and City water mains, sewers or related structures to be installed in this contract shall be maintained. When this clearance is not attainable, the Resident Engineer may allow a minimum of four (4) inches clearance. With less than twelve (12) inches clearance a neoprene/polyethylene shield (to be provided by facility operator) shall be installed as part of all work item specifications. However, if Resident Engineer determines that City work cannot be performed within allowable clearance and no reasonable City accommodation (no-cost change to City work) is possible, the City shall direct the facility operator to remove, relocate, shift, or alter their facility(ies) pursuant to the New York City Administrative Code.

9. Work By Facility Operator:

The facility operator may find it necessary to perform the following types of work during performance of City work: accommodating a contractor's request for gas facilities modifications (in order to facilitate City contractor's proposed construction method) or, remedial and emergency work on gas facilities proper with their own resources and materials if an approved method of construction for City work causes unanticipated disturbances to gas facilities or, replacing defective gas facilities when they are exposed by the Contractor and their actual conditions are observable by the facility operator. Also included in the above category of defective gas facilities are: the presence of environmental contaminants attributable to the gas facility in or around gas facilities. If such work is deemed required by the facility operator or if facility operator is directed by the City to address such deficiencies at any time during the course of construction, the Contractor shall modify the construction schedule at no cost to the City and allow the facility operator five (5) business days to perform such work without interferences. Additional costs to the facility operator (in cases of accommodations) or, Contractor (in cases of defective gas facilities) due to such gas work, if any, shall be the responsibility of the parties involved and not of the City. Such costs shall be a matter of adjustment between the Contractor and the facility operator.

10. Materials Furnished By Facility Operator:

It shall be the Contractor's responsibility to inspect material to be installed by him immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional costs to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

11. Liability And Insurance:

Notwithstanding the provisions of this contract, the existing division of liabilities to third parties shall remain the same as between the City and the company. Therefore, it is specifically agreed by the City, company and Contractor (by bidding on this contract) that for the purpose of any liabilities to third parties, that the City contractor performing work directly and physically relating to gas company facilities in this project, shall be deemed an agent of the company and not an agent of the City, the New York City Municipal Water Finance Authority, or the New York City Water Board. Contractor shall include the company as an additional insured on all insurance policies maintained to comply with the City's insurance requirements.

12. Width And Depth Of Excavation:

Contractor shall not be authorized to deliberately change trench or excavation widths and/or depth specified without Engineer's approval. Enlargement of any side of excavation up to eighteen (18) inches beyond pay limits (or inside face of sheeting) requested by the Contractor for the installation of certain types of sheeting may be granted. However, such enlargements or those greater than allowable shall not be approved when, in the sole judgment of the City, field conditions allow the water mains and sewer work to be performed within the limits specified and, the sole purpose of such enlargement request is to impact adjacent utilities (public or private) whose support and protection are part of this contract. Any approval shall be given at no additional cost to the City contract, including EP-7 funding, and all costs associated with unauthorized enlargements shall be the sole responsibility of the Contractor.

13. Depth And Crossing Angles Of Gas Facilities:

Where gas facilities are shown (or specified as) crossing proposed alignment of sewers, water mains, catch basins and chute connections or any other proposed excavations at specific angles (as measured off plans or sketches or specified in contract), it shall be understood that actual field measurements may deviate (plus or minus) forty-five (45) degrees from those shown or specified. The cover, or depth from street surface to top of facilities, shall be as shown or specified in contract documents, no deviation is to be assumed. Where gas facilities are not shown on contract documents, but their support and protection are otherwise included in this contract then, all references to facilities crossing at "various angles and depth" in the gas sections shall mean that such facilities are crossing sewer, water, catch basin and, catch basin chute, and other excavations at a ninety (90) degree angle to the proposed sheeting line or side of

excavation (for unsheeted trenches) with an allowable deviation of forty-five (45) degrees in any direction, except for catch basin chute excavation where the allowable deviation shall be sixty (60) degrees. Where the cover is not noted or specified, the bottom face of such facilities shall be assumed to be crossing catch basin chutes at a depth of three (3) foot eight (8) inches or less from the street surface. Paragraph No. 2 above shall apply in cases of distribution water main construction. Appropriate bid items and specifications are provided for cases where angle and depth are greater than stated above. This section also applies to work defined in "Emergency Reconstruction Contracts" or so-called "Where and When Contracts". These contracts are not pre-engineered and consequently have no drawings, sketches or determined locations and so, gas facilities encountered will be crossing existing and proposed sewer, water, catch basin/catch basin chutes and all appurtenances at various angles and depths.

14. Maintenance Of Traffic For Gas Work:

All work pertaining to gas bid items and specifications shall be performed within the contract maintenance of traffic plan as specified in the contract document. The bid price for the Maintenance and Protection of Traffic shall cover all work pertaining to gas items. The City shall make compensation for additional maintenance and protection of traffic items in connection with gas item of work only when such additional work is deemed reasonable and necessary by the Resident Engineer and is approved by him prior to its performance.

15. Relocated Gas And Temporary Systems Installation:

In cases where the Contractor is allowed to select the location for temporary construction such as, installation of dewatering headers, wells, well points, etc., he shall not disturb any gas facilities shown on sketches provided in this section. The only exception shall be, if the affected gas company agrees to such relocation and provided that the cost of such relocation is a matter of adjustment between the company and Contractor, and at no cost to the City.

16. Role Of Company Inspector:

In any case in which the City elects to perform some or all support and protection work with its own employees, personnel or contractors, the facility operator shall provide onsite inspectors to approve and certify such support and protection work (exclusive of City accommodations) performed by the City's own employees, personnel, and contractors. Facility operator's inspectors are not authorized to direct City contractor during the performance of contract work. They shall act through the City Resident Engineer and provide him/her required approvals and certifications, prior to preparing partial payments of EP-7 items, in a format and frequency to be prescribed by the appropriate City Head of Construction.

17. Coordination With Gas Company:

The Contractor shall be required to notify the gas company(ies), in writing, at least two (2) weeks prior to the start of final paving in order to allow companies to complete any unfinished gas work located within the area to be paved. Every effort shall be made to maintain gas service with minimum inconvenience to the public.

III - TECHNICAL SECTION

SECTION 6.01 - Trench Crossings; Support And Protection Of Gas Facilities And Services.

1. Description:

Under this section, the Contractor shall provide all labor, materials, equipment, and incidentals required to

support and/or protect the integrity of gas mains, services and appurtenances of any sizes, configurations, and operating pressures crossing trench excavations above subgrade for planned construction of sewers and water mains facilities. A gas service shall be defined as a gas pipe of three (3) inches in diameter or less branching from the main to a customer pick up point or property valve box. A gas main may be any size pipe that is part of a distribution or transmission network other than services described above. Crossings shall be defined as gas facilities spanning the width of excavation (one side to the other side). These crossings may be at various angles and depth as shown on "Gas Cost Sharing Work Standard Sketches Nos. 1 and 1A", and as specified in "General Provisions; Gas Cost Sharing Work Paragraph No. 13" and, at the locations shown or listed in contract documents. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with contract specifications, plans, and at the directions of the Resident Engineer in consultation with the authorized representatives of the facility operator.

2. Method Of Construction:

A. Protection: In general, the gas facilities shall be protected as required by New York State Industrial Code 753. In particular, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the gas facilities (marked out by facility operators) and to ascertain the clearances and cover of the facilities with respect to the proposed excavation. Upon exposing the affected facilities sufficiently, at the discretion of the Resident Engineer, to ascertain the foregoing, Contractor shall be permitted to proceed with a combination of hand and machine excavation, as appropriate, outside a zone of protection whose limit shall be defined as a perimeter located twelve (12) inches from the outside face of each gas facility crossings (See "Gas Cost Sharing Work Standard Sketch No. 2"). If the facilities are in direct interference with City work, meaning that "Minimum Clearances" described in "General Provisions; Gas Cost Sharing Work Paragraph No. 8" cannot be maintained, and excavation has to be temporarily or permanently abandoned then this particular location shall become a test pit and dealt with as specified in Section 6.07, and "General Provisions; Gas Cost Sharing Work Paragraphs Nos. 2 and 8".

B. Support: Gas mains or services crossing excavations equal or less than four (4) feet wide are generally self supporting, unless field conditions as determined by the Resident Engineer require otherwise. The support requirements for gas mains and services crossing excavations greater than four (4) feet wide shall be as shown on the attached "Gas Cost Sharing Work Standard Sketch No. 1" and Contractor shall use sheeting methods that permit the maintenance of gas facilities in their existing locations and configurations. Alternate methods equivalent to those shown on the sketch or accommodations by the facility operator proposed by the Contractor in order to facilitate the execution of the specified work shall be allowable, provided that prior approval is obtained by the Contractor from the Engineer and the facility operator. The support and protection of gas facilities crossings shown on plans, drawings, listings or otherwise identified in this contract shall not be circumvented with the issuance of so called "order outs".

3. Method Of Measurement:

The Contractor shall be paid for supporting and/or protecting gas facilities crossing trench excavations under the appropriate bid items covered by this section. The Contractor shall be directly responsible to the facility operator for the total cost of using any alternate method requiring the use of resources owned by the facility operator. Regardless of the method used, the City shall pay the bid price for the appropriate support and/or protect item of work. The average rate charged by the facility operator for alternate support and protection work such as, disconnecting and reconnecting gas services is listed in attached "Schedule GCS-A".

4. Payment Restrictions:

These items shall not be paid for: gas services crossing unsheeted water main trench excavation; abandoned gas main/services identified by facility operator; gas mains/services crossing trench excavations for fire hydrant branch connections pipes, catch basins and/or chutes (sewer drain pipe), house sewer and/or water services; gas facilities encroaching any face of excavation for sewer and/or

water construction, all of which are covered under other contract sections. Also this item shall not be paid for new gas mains and services crossing water trenches when trenching for such new facilities has been performed by the Contractor in common with trench excavation for City work (overlapping trench limits). The cost of supporting and protecting such gas facilities crossings shall be deemed included in the cost of trench excavation for the new gas facilities. This payment restriction shall apply even if such common trench gas excavation is not part of the contract. The prices bid for items covered by this section represent full compensation to Contractor to completely perform the work described. No other bid items shall be combined with these items in order to pay for gas main and/or services crossing excavations specified herein.

5. Method Of Payment:

Each (Ea.) gas facility crossing trench excavation as described in these specifications shall be counted for payment.

6. Price To Cover:

The cost of timber/steel supports installed for gas facilities shall be included in the bid price. The bid price for each crossing shall also cover all additional supervision, labor, material (except those provided by the facility operator), equipment and insurance necessary to completely maintain the gas facilities without disruption of service to the customers and in accordance with contract plans, specifications and facility operator standards. The price shall also include: changes of method of operations; sheeting modifications where necessary to accommodate the gas facilities crossings; installation and removal of water pipe under gas facilities (so called "snaking"); extra care during excavation (including hand excavation under existing single and multiple gas facilities); extra backfilling and compaction around, over and under gas facilities; installation and removal of sheeting around gas facilities; associated maintenance and protection of traffic; barricades; and traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.02 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Gas Interferences.

1. Description:

Under this item, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals for the extra excavation associated with the installation of catch basin sewer drain pipes (chute) under gas facilities of various sizes crossing the trench excavation at various angles and depth at the locations shown in the contract documents and also, for the support and protection of these facilities during associated excavation and backfill operations. The gas company operating in the area, (facility operator), owns these facilities.

2. Method Of Measurement:

The bid price shall be per location (Each) where extra excavation is required when catch basin sewer drain pipes are installed at an upstream invert depth lower than four (4) feet (up to a maximum of six (6) feet) from the proposed pavement grade because the bottom faces of interfering gas mains and appurtenances are located at a depth greater than three (3) foot eight (8) inches from proposed pavement surface (See "Gas Cost Sharing Work Standard Sketch No. 4").

3. Method Of Construction:

Incremental cost responsibility for chute excavation is determined by the first private facility encountered starting from catch basin structure proper and that prevents the installation of the chute connection at an upstream cover less than or equal to three (3) feet or any other minimum cover required to avoid City facilities (e.g. water, sewer, etc.) as directed by the Resident Engineer.

4. Payment Restrictions:

This item shall not apply and related bid item shall not be paid in cases where:

A. Upstream invert chute is more than six (6) feet deep because of gas facilities.

B. Chute cannot be installed above existing gas facilities because of interferences with other private facilities that are not otherwise covered under this contract, regardless of upstream invert depth.

The above cases shall be at no cost to the City, but shall be a matter of adjustment between the Contractor and the facility operator(s).

5. Price To Cover:

The bid price shall cover the additional cost of all additional supervision, labor, materials, equipment and insurance, to complete the installation of catch basins and associated sewer connections in accordance with the contract plans and specifications. The price shall include: excavation by hand around and under single and multiple gas facilities; locating, supporting and protecting gas facilities; backfilling and all other items necessary to perform all work incidental thereto including: installation and removal of drain pipe under gas facilities ("snaking"); widening of trenches to facilitate the above work; subsequent additional backfill and pavement restoration; modifying precast catch basin window to accommodate connection; changing sheeting method and configuration to accommodate gas facility crossings; maintenance and protection of traffic; barricades; and installation of traffic plates that may be required to temporarily close and/or complete the work. The price shall not include removal of ledge rock and/or excavation of boulders in open cut.

SECTION 6.02.1 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Upstream Inverts Greater Than Six (6) Feet.

1. Description:

Under this item, the Contractor shall provide all labor, materials, equipment, insurance and incidentals for the extra excavation of catch basin chutes where the upstream invert is greater than six (6) feet under gas facilities of various sizes crossing the trench excavation at various angles and depth at the locations shown in the contract documents or as determined by field conditions and also, for the support and protection of these facilities during the associated excavation, sheeting and backfilling operations.

2. Method Of Measurement:

The bid price shall be per location (Each) where extra excavation and sheeting is required when the catch basin chute installed at an upstream invert depth lower than six (6) feet from the proposed pavement grade because the bottom faces of the interfering gas mains and appurtenances are located at a greater depth than three foot eight inches from the proposed pavement surface only.

3. Method Of Construction:

Incremental cost responsibility for chute excavation is determined by the first private facility encountered during such excavation when initiated from catch basin structure and that prevents the installation of the chute at an upstream cover less than or equal to three (3) feet or any other cover required to avoid City facilities as directed by the Resident Engineer.

4. Payment Restriction:

This item shall not apply and related bid item shall not be paid in cases where:
Upstream invert chute is less than or equal to six (6) feet deep because of gas facilities. Section 6.02 shall be paid.

5. Price To Cover:

The bid price shall cover the additional cost of all supervision, labor, materials, equipment and insurance to complete the installation of catch basin and associated sewer connections in accordance with the contract plans and specifications. The price shall include: excavation by hand around and under single and multiple gas facilities; locating, supporting and protecting gas facilities incidental thereto; widening of trenches to facilitate the above work; subsequent additional backfilling and pavement restoration; modifying pre-cast basin window to accommodate connection; the installation of catch basin with deeper sumps as specified; additional sheeting and changes in sheeting method and configuration to accommodate gas facility crossings; maintenance and protection of traffic; barricades; and installation of traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.03 - Removal Of Abandoned Gas Facilities. All Sizes.

1. Description:

Under this section the Contractor shall provide all labor, materials, equipment, insurance and, incidentals required for the removal of abandoned gas mains, services, or appurtenances thereof, located within the street shown on the contract plans, owned by gas company operating in the project area (facility operator), used or to be used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural or manufactured or mixture of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distributing or furnishing of gas in enclosed containers. Such removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work.

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on facility operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and, Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities to be removed by the Contractor. However, facility operator may prefer to make this test during performance of City work, in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any resulting from this choice shall be a matter of adjustment between the Contractor and facility operator only, and at no cost to the City.

3. Restrictions:

The facility operator shall be solely responsible for its contaminated gas facilities, surrounding contaminated soil and their disposal and abatement procedures, unless contract bid items are applicable and provided for such work. In such cases, the quantity removed shall be charged to EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" at the City bid prices.

4. Method Of Measurement:

Abandoned gas pipeline removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment, and insurance necessary to complete this work in accordance with the contract plans and specifications, including excavation by hand around and under other City and facility operator owned properties and, where necessary, support and protection of such properties. The price shall also cover breaking, cutting, and/or burning of abandoned gas pipes and their disposal from the site; sealing open ends remaining in the excavation with concrete or caps (caps to be provided by the facility operator) and backfilling of the area where the pipeline has been removed with clean backfill. The price shall also include any required dump charges. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and restoration associated with abandoned gas facilities removal, all of which are covered under Section 6.06.

SECTION 6.03.1 - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For National Grid Work Only)

1. Description:

Under this section the Contractor shall provide all labor, materials, equipment, insurance and, incidentals required for the removal of abandoned gas mains, services or appurtenances thereof, located within the street shown on the contract plans, owned by the gas company operating in the project area (facility operator), used or to be used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural or manufactured or mixture of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distributing or furnishing of gas in enclosed containers. Such removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work. These gas facilities may be coated with Coal Tar Wrap and so, may require special handling and disposal methods as specified in National Grid Standard Operating Procedure 12-2, Coal Tar Wrap Handling and 12NYCRR56.

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on the facility operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and, the Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities to be removed by the Contractor. However, the facility operator may prefer to make this test during performance of City work, in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any, resulting from this choice shall be a matter of adjustment between the Contractor and the facility operator only, and at no cost to the City contract. Should such investigation result in the determination that the abandoned gas facilities do not contain Coal Tar Wrap then the removal of said facilities shall be covered under separate item (See Section 6.03).

3. Requirements:

The City Contractor shall excavate abandoned gas facility sufficiently, either in its entirety, or at locations determined by Contractor to allow the removal of Coal Tar Wrap (if present on the abandoned gas facility) and to facilitate the safe extraction of manageable lengths of abandoned pipe without damage to adjacent facilities, utilities or City structures either parallel to or crossing above or below abandoned gas facility. The Contractor is to allow access to the designated cutting points within the Contractor's trench by authorized National Grid personnel who will remove the Coal Tar Wrap as per National Grid procedures. This work by National Grid personnel shall be performed in a timely fashion and shall not unduly impede the Contractor's progress and/or productivity. Upon completion of the coating removal, the Contractor shall be allowed to cut, burn or grind the gas facility and remove the section of abandoned pipe. The

Contractor at a site designated by the Contractor shall stockpile the removed pipe. The facility operator will be responsible to provide trucking and disposal services with its own personnel and shall remove the stockpiled pipes during off hours or during such time as agreed to by the Contractor. Since the pipe removed will remain the property of the facility operator and is to be disposed of by the facility operator, the facility operator shall be responsible for any required notifications, filings, dump charges and incidentals associated with the disposal of abandoned gas facilities found to contain Coal Tar Wrap.

4. Method Of Measurement:

Abandoned gas pipeline removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment and insurance necessary to complete this work in accordance with the contract plans and specifications, including excavation by hand around and under other City and facility operator owned properties and, where necessary, the support and protection of such properties. The cost shall also include hand excavation in the area(s) of proposed abandoned pipe cut(s), cutting and/or burning of abandoned gas pipes and stockpile of removed sections of abandoned pipe and associated maintenance and protection of traffic, blocking and temporary fencing if required. The unit price shall also cover sealing open ends remaining in the excavation with concrete or end caps (end caps to be provided by the facility operator) and backfilling of the area where the abandoned pipeline has been removed with clean backfill material. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and/or restoration (temporary and permanent) associated with abandoned pipe removal ("lost trench"), all of which are covered under separate Section 6.06. The price shall also include allowance for any loss of productivity by the Contractor due to required facility operator work to remove pipe coating and prepare pipe for cutting as well as any change in Contractor's excavation method, additional trucking and/or stockpiling costs.

SECTION 6.03.1a - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For Con Edison Work Only)

1. Description:

Under this section the Contractor shall provide all labor, material, equipment, insurance and, incidentals required to prepare abandoned gas mains, services and appurtenances thereof located within the street shown on contract plans, owned by the gas company operating in the project area (facility operator), for removal due to interference with proposed City work. These abandoned gas facilities were, at one time, used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural, manufactured or a combination of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distribution or furnishing of gas in enclosed containers. Such preparation for removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work. These gas facilities may be coated with Coal Tar Wrap which may contain asbestos or PCB's and so, may require special handling and disposal methods as specified in Con Edison - ASBESTOS MANAGEMENT MANUAL, CHAPTER 6 - ASBESTOS WORK PROCEDURES, SECTION 06.04 - COAL TAR WRAP REMOVAL. For under 25' (feet) in length and an approved NYC-DEP variance for over 25' (feet).

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas Facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on the facility

operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities. However, the facility operator may prefer to make this test during performance of City work in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any, resulting from this choice shall be a matter of adjustment between the Contractor and the facility operator only, and at no cost the City contract. Should such investigation result in the determination that the abandoned gas facilities do not contain Coal Tar Warp then the removal of said facilities shall be covered under separate item (See Section 6.03).

3. Requirements:

The Contractor shall excavate abandoned gas facility sufficiently, either in it's entirety, or at locations determined by Contractor to allow the removal of Coal Tar Wrap (if present on the abandoned gas facility) and to facilitate the safe extraction of manageable lengths of abandoned pipe without damage to adjacent facilities, utilities or city structures either parallel to or crossing above or below abandoned gas facility. The Contractor is to allow access to the designated cutting points within the Contractors trench by authorized Con Edison personnel who will remove the Coal Tar Wrap as per Con Edison and/or NYC-DEP approved procedures. This access shall conform to all applicable codes, rules & regulations. This work by Con Edison personnel shall be performed in a timely fashion and shall not unduly impede the Contractors progress and/or productivity. Upon completion of the coating removal, the Contractor shall be allowed to cut, burn or grind the gas facility and remove the section of abandoned pipe. Contractor shall designate a specific site to stockpile those removed pipes. The facility operator will be responsible to provide trucking and disposal services with its own personnel and shall remove the stockpiled pipes during off hours or during such time as agreed to by the Contractor. Since the pipe removed will remain the property of the facility operator and is to be disposed of by the facility operator, the facility operator shall be responsible for any required notifications, filings, dump charges and incidentals associated with the disposal of abandoned gas facilities found to contain Coal Tar Wrap.

4. Method Of Measurement:

Abandoned gas facility removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment and insurance necessary to complete this work in accordance with the plans and specifications, including, but not limited to, excavation by hand around and under other City and facility operator owned properties and, where necessary, the support and protection of such properties. The cost shall also include hand excavation in the area(s) of proposed abandoned pipe cut(s), cutting and/or burning of abandoned gas pipes and stockpile of removed sections of abandoned pipe and associated maintenance of traffic, blocking and temporary fencing if required. The unit price shall also cover sealing open ends remaining in the excavation with concrete or end caps (end caps to be supplied by facility operator) and backfilling of the area where the abandoned pipeline has been removed with clean backfill material. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and/or restoration (temporary and permanent) associated with abandoned pipe removal ("lost trench"), all of which are covered under separate Section 6.06. The price shall also include allowance for any loss of productivity by the Contractor due to required facility operator work to remove pipe coating and prepare pipe for cutting as well as any change in Contractor excavation method, additional trucking and/or stockpiling costs.

SECTION 6.04 - Adjust Hardware To Grade Using Spacer Rings/Adaptors. (Street Repaving.)

1. Description:

Under this section, the Contractor shall provide all labor, supervision, materials, equipment, insurance and incidentals required to adjust to final grade gas street surface hardware located within the contract area boundaries shown on the plans. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in concurrence with authorized representative of the facility operator.

2. Materials:

The facility operator shall furnish and deliver all prefabricated hardware parts required. These include adaptors for the grade adjustment proper and new street hardware if existing ones are found to be defective, all in accordance with the facility operator standards and City rules and regulations. The Contractor shall notify the facility operator of the installation schedule at least three (3) business days before materials are required on the site. Should the facility operator fail to deliver the necessary material according to any schedule mutually agreed upon by the Contractor and facility operator, the City shall not be responsible for any delays attributable thereto, nor for the failure of delivery of such materials. On project where material storage is not permitted on site, the facility operator shall deliver the required material to the Contractor's yard and it shall be the Contractor's responsibility to transport the material to the work site when needed for installation. It shall also be the Contractor's responsibility to inspect the materials to be installed by him immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional expense to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

3. Method Of Measurement:

The Contractor shall be paid for each six (6) inch round box and/or nine (9) inch square box adjusted to grade regardless of adjustment height requirements.

4. Price To Cover:

The unit price bid for this item shall include all additional labor, supervision, insurance, equipment and, material (except those to be provided by the facility operator), required to adjust each box to grade as required in the contract plans and specifications. The bid price shall also include the removal of existing frames and covers from existing facilities to be salvaged and returned to the facility operator and, all material transportation from the Contractor's material storage yard to the work site. In addition the bid price shall include "chipping" around existing box using appropriate means and methods where grinding is required.

SECTION 6.05 - Adjust Hardware To Grade By Resetting. (Road Reconstruction.)

1. Description:

Under this item, the Contractor shall provide all labor, supervision, materials, equipment, insurance and incidentals required to adjust to the proposed grade gas street surface hardware located within the contract area boundaries shown on the plans. The gas company operating in the area, (facility operator), owns these facilities. The work shall consist of either building up or lowering or resetting the casting by removing the existing frame and cover building up or decreasing the existing installation, replacing the frame and/or cover if damaged or worn out, as determined by the Resident Engineer, with a new frame and/or cover furnished by the owner, and setting the frame and cover to new elevation. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer.

2. Materials:

The facility operator shall furnish and deliver all new hardware parts required. The Contractor shall furnish materials such as mortar, bricks and concrete in compliance with contract requirements. At locations

where high-early strength concrete is required under this contract to be placed adjacent to gas facilities, then the requirement for concrete shall be high-early strength complying with the current New York State Department of Transportation, Standard Specifications for Class F concrete. Existing castings may be replaced as required and deemed necessary by the Engineer and by City rules and regulations. The Contractor shall install the new castings of various sizes furnished by the facility operator. The Contractor shall notify the facility operator of the installation schedule at least three (3) business days before materials are required on the site and, shall provide off-loading services to the facility operator. Should the facility operator fail to deliver the necessary material according to any schedule mutually agreed upon by the Contractor and facility operator, the City shall not be responsible for any delays attributable thereto, nor for the failure of delivery of such materials. Such delays shall be a matter of adjustment between the Contractor and the facility operator. On project where material storage is not permitted on site, the facility operator shall deliver the required material to the Contractor's yard and it shall be the Contractor's responsibility to transport the material to the work site when needed for installation. It shall also be the Contractor's responsibility to inspect the materials to be installed by him, immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional expense to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

3. Methods Of Construction:

The Contractor shall remove and reinstall existing castings or install new castings to the proposed grade. Setting and resetting the castings shall be done with mortar and brick according to the standards of the facility operator. Work shall be performed in a workmanlike manner. Castings that are deemed unacceptable for resetting shall remain the property of the facility operator and he shall be responsible for their removal and proper disposal from site. No traffic shall be allowed on adjusted street hardware until permitted by the Engineer.

4. Method Of Measurement:

The Contractor shall be paid for each gas hardware adjusted to grade regardless of size or adjustment height requirements (up or down).

5. Price To Cover:

The unit price bid for this item shall include all additional labor, supervision, insurance, equipment and, material (except those to be provided by the facility operator), required to adjust each gas hardware to grade as required in the contract plans and specifications. The bid price shall also include the removal of existing frames and covers from existing facilities; building up the existing installations with bricks and mortar, or lowering the existing installation by removing bricks and mortar; replacing damaged frames and/or covers with new frames and/or covers furnished by the facility operator; setting the frames and covers to the new elevations; protect existing installations; repair minor structural damages to existing installations prior to resetting frames; unloading of furnished castings at the Contractor's yard and transporting castings from the Contractor's yard to the job site as required; completing the work in accordance with the contract plans, specifications and, at the directions of the Engineer. In addition the bid price shall include "chipping" around existing gas facilities using appropriate means and methods where grinding is required.

SECTION 6.06 - Special Care Excavation And Backfilling.

1. Description:

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to support and protect the integrity of live gas facilities including mains, services, related structures and appurtenances during excavations. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in consultation with authorized

representatives of the facility operator.

2. Applicability Of Section:

This section shall apply to live gas facilities of various sizes located within two (2) feet of any face of unsheeted excavation, (unsheeted excavation refers to any excavation performed for city work and includes excavations performed that are to be subsequently sheeted using approved methods) and paralleling or, encroaching any face of excavation. Also, for crossings greater than forty-five (45) degrees and/or located at a cover depth greater than five (5) feet from existing street surface. Parallel facilities are not exposed at any time during excavation (See "Gas Cost Sharing Work Standard Sketch No. 5"). Encroaching facilities are partially exposed inside the limit of excavation (See "Gas Cost Sharing Work Standard Sketch No. 5"). This section shall also apply to gas facilities crossing catch basins excavation, and catch basins sewer connections (chutes) trench excavation only when extra depth (covered in other section), is not required for chutes installations because of such utilities interferences (See "Gas Cost Sharing Work Standard Sketch No. 3"). This section shall also apply to gas services (if shown or otherwise listed in contract documents) crossing unsheeted excavations for water mains, gas facilities crossing fire hydrant branch connections, house sewer and/or water service connections excavations. This section shall also apply for so called "loss trench", as described further, and for additional excavation (pavement and/or soil), backfilling, compaction, roadway base and pavement restoration due to abandoned gas facilities, only if removed by Contractor. If operating status of gas facilities cannot be determined prior to excavation then such facilities shall be considered live and this section shall fully apply. The excavation around fully exposed live gas facilities along and within limits of excavation (not crossings) shall be covered by this section also (not shown on "Gas Cost Sharing Work Standard Sketch No. 5"), however the support requirement, if any is required, of such facilities is beyond the scope of these specifications and therefore shall be the responsibility of facility operator to determine and prescribe, at no cost to the City contract, but shall be a matter of adjustment between the Contractor and facility operator.

3. Payment Restriction:

No special care excavation shall be paid for abandoned gas facilities paralleling and/or encroaching excavation and therefore are not in direct interference with City work. Except as allowed in this section, the bid item specified under this section shall not be used in combination with items covered under other sections for work done due to a particular gas facility. This item shall not be paid for new gas facilities when trenching for such new facilities has been performed by the Contractor of record in common with trench excavation for City Work (overlapping trench limits). The cost of excavating with care as defined in this section shall be deemed included in the cost of trench excavation for the new gas facilities. This restriction shall apply even if such gas common trench excavation is not part of the contract. If facilities are in direct interference with City work, meaning that "Minimum Clearances" described in "General Provisions; Gas Cost Sharing Work Paragraph No. 8" cannot be maintained and excavation has to be temporarily or permanently abandoned then this particular location shall become a test pit and dealt with as specified in Section 6.07 and "General Provisions; Gas Cost Sharing Work Paragraphs Nos. 2 and 8".

4. Method Of Construction:

All excavation in the vicinity of gas facilities shall be as required by NYS Industrial Code 753. Where these facilities are paralleling and located two (2) feet or less from the limits of the proposed excavation, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) to ascertain the clearances of these facilities with respect to the proposed excavation. Once the location of these facilities with respect to the proposed excavation is verified to the satisfaction of the Resident Engineer, the Contractor shall then proceed with a combination of hand and machine excavation as required preserving the integrity of the facilities. The installation of timber supports or underpinning, when soil foundation cannot fully support partially exposed pipes, may be required to prevent pipe movement as directed by the Resident Engineer.

5. Method Of Payment:

The unit price for this work item shall be based on cubic yard (CY) of average excavation with care and, is

to be considered as an incremental cost for performing City work with gas facilities interferences.

6. Method Of Measurement:

A. For Paralleling Facilities: Volume calculated as: Depth as measured from existing street surface to the bottom of unsheeted trench excavation allowable by OSHA regulations, multiplied by, the width measured as one (1) foot from the face of excavation toward the center of excavation, multiplied by the length of parallel facility, divided by twenty-seven (27) cubic feet per cubic yard (See "Gas Cost Sharing Work Standard Sketch No. 5"). The gas facility is no longer considered to be in interference once sheeting has been installed, therefore no further compensation for paralleling facilities as described above will be made.

B. For Encroaching Facilities: Volume calculated as: Depth of trench as allowable by OSHA, maximum up to five (5) feet multiplied by, the width of partially exposed pipe plus one (1) foot, multiplied by the length of facility encroachment, divided by twenty-seven (27) cubic feet per cubic yard (See "Gas Cost Sharing Work Standard Sketch No. 5").

C. Fully Exposed Gas Facilities: (Not shown on "Gas Cost Sharing Work Standard Sketch No. 5") along and inside trench and/or crossing trench at an angle greater than forty-five (45) degrees and/or a cover depth greater than five (5) feet from the existing street surface. The volume shall be measured as the depth of trench excavation multiplied by the distance measured along the sheeting line between two (2) points of intersections of the gas facilities and the sides of trench excavation, multiplied by the width of trench excavation.

D. For Additional Excavation And Restoration Due To So Called "Loss Trench", When The Integrity Of Pavement And Soil Above And Around Existing Live Gas Facilities Cannot Be Maintained Due To Its Lack Of Cohesiveness: Volume shall be calculated as: Depth of unsheeted trench excavation multiplied by width measured as distance of facility from closest edge of unsheeted excavation plus, width of facility proper plus, one (1) foot or a maximum width of three (3) feet multiplied by length of facility fully exposed divided by, twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

E. For Facilities Crossing Excavation For Catch Basins, Or Chutes Installations (When NYCDEP Funded) Or Fire Hydrant Branch Connections, Or Unsheeted Water Main Trench, Or House Sewer And/Or Water Services: Volume calculated as: Depth as measured from existing street surface to the bottom of the trench excavation multiplied by, the width taken as the outside diameter of pipe or the width of structure plus one (1) foot on either side (two (2) feet), multiplied by, the length of exposed facility crossing the trench, divided by twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

Overlapping volume dimensions measured as described above may occur when multiple facilities are paralleling excavations, encroaching excavations or crossing catch basins and catch basin chute installations. In such cases, all such facilities shall be counted as one limited by the extreme pipes, faces (See "Gas Cost Sharing Work Standard Sketch No. 2"). The volume shall then be calculated as described above.

7. Price To Cover:

The bid price shall also cover all additional supervision, labor, material, equipment and insurance necessary to excavate while protecting and maintaining (excluding supports for fully exposed live gas) gas facilities without disruption of service to the public and in accordance with contract specifications. The price shall also include, changes of sheeting method and excavation width configuration where necessary to accommodate gas facilities in their existing locations; difficulties during the installation of catch basins, chute connections, hydrant branch, and house sewer and water connections under or over gas facilities; loss of productivity due to slower rate of excavation (special care) during excavation, including the use of such methods as: hand excavation around existing single and multiple facilities, extra excavation and backfilling due to lost trench because of existing and adjacent gas facilities, compaction, removal of

sheeting from the facilities, extra roadway base restoration and temporary pavement, associated maintenance and protection of traffic, barricades, and traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.07 - Test Pits For Gas Facilities.

1. Description:

Under this section, the Contractor shall furnish all labor, materials, insurance, equipment and appliances necessary to excavate, sheet and, maintain test pits at locations approved by the Resident Engineer in consultation with the facility operator. Test pits shall be dug in order to ascertain exact locations, cover and invert elevations, clearances, alignment and operating status (live or dead) of existing gas facilities. The Contractor shall inspect jointly with the Resident Engineer and facility operator, gas facilities and other structures uncovered, take all relevant measurements and elevations as directed by the Resident Engineer. Tests to determine operating status of gas facilities shall be performed by facility operator. The pits shall be covered with steel plates during daytime nonworking hours, and uncovered, as required, until the inspection work is completed. Testing of gas facilities may require a maximum of four (4) hours. Then, the pits shall be backfilled with clean fill, and resurfaced with temporary pavement. All traffic shall be maintained and all safety measures as stipulated shall be complied with.

2. Methods Of Construction:

A. Excavation: Existing pavement to be removed shall be neatly cut along lines of removal with a saw or other approved equipment which leaves a neat straight joint line along the juncture with subsequently replaced pavement. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. Use of hand operated pneumatic and electric jackhammers will be permitted only for breaking pavement and removal of masonry, concrete and boulders, or as otherwise directed by the Resident Engineer. The Contractor shall properly dispose of all materials excavated from test pits away from site. Test pits shall be excavated at locations shown on the contract drawings or as directed by the Resident Engineer. Additional test pits may be required and shall be excavated where required, as ordered by the Resident Engineer. All test pits shall be excavated to a depth and size necessary to locate the existing facilities. Sheeting shall be used when depth of excavation exceeds five (5) feet. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Codes requirements and as specified in contract, whichever is more stringent. Care shall be taken that no existing gas facilities or other structures are broken or damaged. All broken or damaged facilities shall be reported immediately to facility operator who shall decide whether such facilities shall be repaired or replaced by company forces or by City contractor and in conformance with "General Provisions; Gas Cost Sharing Work Paragraph No. 9". Contractor shall excavate all material encountered, including large masses of concrete, cemented masonry and boulders, as directed by the Resident Engineer. Any type of excavation protection used, shall satisfy the following:

   (a) Industrial Code Rule 753.
   (b) Prevent injury to workers and the public, and avoid damage to existing water, sewer, and gas pipes or other structures, and to pavements and their foundations, through caving or sliding of the banks of the excavation.

   Should it become necessary, as determined by the Resident Engineer, to enlarge any test pit in any dimension after sheeting has been placed, the Contractor shall remove portions of the sheeting, as necessary, enlarge the test pits as directed, and replace the sheeting without additional compensation for this work other than for the additional volume of material excavated.

B. Maintenance Of Test Pits: Excavated test pits shall be maintained free of debris and kept dry by the Contractor in order to permit the inspection and measurements and to determine the locations of facilities. In order to accomplish this, Contractor shall, upon completion of excavation and placement of sheeting (if depth greater than five (5) feet), furnish and install adequate steel plates and posting

over the excavated pits and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during nonworking hours. The Contractor shall then, at no additional cost, relocate such barricades, barrels, cones and other warning devices and remove steel plates, as and when directed by the Resident Engineer to facilitate the inspection of exposed facilities. When work is being performed and the pits are not covered with steel plates, the Contractor shall provide complete and safe access to the test pits as may be required, and he shall provide construction barricades and maintain traffic at all times as shown or as directed by the Resident Engineer. Upon completion of test pit inspection by the Resident Engineer, the pit shall be backfilled by the Contractor as specified in contract, except that backfill material shall conform to contract specifications for such purpose.

C. Pavement And Sidewalk Restoration: After backfilling is completed, the Contractor shall construct a temporary pavement consisting of a minimum of four (4) inches thick asphaltic concrete mixture in roadway areas or a two (2) inches thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent pavement and sidewalk replacement is constructed as specified in contract.

3. Measurements:

The quantity to be measured for payment shall be the number of cubic yards of material removed from within the limits of the pit dimensions as directed by the Resident Engineer. The volume occupied by existing pipes or other structures remaining within the maximum payment lines will not be deducted from the total volume measured except, where the cross sectional area of these facilities exceeds four (4) square feet. As determined by the Resident Engineer, the quantity measured for payment may be proportionate to a fair and reasonable estimate of gas responsibility in the total volume excavated.

4. Price To Cover:

The contract price bid per cubic yard for test pits shall cover all additional costs of labor, material, insurance, equipment, appliances and incidentals required to excavate test pits, including removal and disposal of excavated materials, sheeting, steel plating, backfill, compaction and temporary pavement and sidewalk restoration all in accordance with the specifications and as directed by the Resident Engineer. The price shall also include the cost of providing safe access to the excavation by facility operator for the performance of certain test to determine operating status of gas facilities prior to City work. The price shall also include support and protection of all gas facilities crossing excavation, paralleling and/or encroaching any face of excavation.

SECTION 6.09 - Trench Excavation and Backfill for New Gas Mains and Services (For National Grid Work Only)

1. Description:

Under this section, the contractor shall furnish all labor, materials, equipment, insurance, permits and incidentals required to break/remove roadway and sidewalk pavement, excavate, backfill and restore gas trenches. The trench to be excavated shall be determined by the size of the gas facility to be installed. The work shall be performed in accordance with applicable specifications, and/or at the direction of the Resident Engineer in consultation with the facility operator.

2. Materials:

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer.

3. Method of Construction:

Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include

but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat straight joint line along the juncture with subsequently replaced pavement. Prior to starting the trenching operation, the contractor shall excavate the appropriate gas main tie-in pits at the extremities of the gas main sections to be replaced. Test pits shall be excavated to determine exact location of all tie-in pits and at appropriate intervals along proposed trench excavation to verify lane and clearances as shown on the contract plans. The tie-in pits shall be adequately protected by the contractor using wood fencing or steel traffic plates until such time when the facility operator has completed the tie-in work. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant, and as directed by the facility operator. The trench shall be adjusted so as to provide for a nominal cover on the new gas facilities or as required based on field conditions, applicable specifications, or as directed by the facility operator in consultation with the Resident Engineer. The width of the trench shall be as directed by the facility operator in consultation of the Resident Engineer. The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of clean sand and in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new gas facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new gas facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator in consultation with the Resident Engineer. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new gas facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator in consultation with the Resident Engineer. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator in consultation with the Resident Engineer. Care shall be taken that no existing gas facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new gas facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator in consultation with the Resident Engineer, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. National Grid forces will perform all live gas main connections, dead gas main cut-outs, and/or service work associated with disconnecting and reconnecting from old to new gas main The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator in consultation with the Resident Engineer to facilitate the installation of the new gas facilities. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator in consultation with the Resident Engineer. The contractor has the responsibility to maintain and set to grade all National Grid hardware during backfill and pavement restoration. Upon completion of installation of the new gas facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract. Permanent pavement restoration shall be as required by the appropriate contract

specifications and as directed by the Resident Engineer.

4. Method of Measurement:

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated, including roadway pavement, base and/or sidewalk concrete removed within the limits of the trench as directed by the Resident Engineer in consultation with the facility operator. The volume occupied by existing pipes or other structures will be deducted from the total volume measured as shown on contract drawing(s) Title: EP-7 SECT. 6.09 GAS SPECIALTY CONTRACTOR WORK, or as encountered based on existing field conditions.

5. Price to Cover:

The unit price bid per cubic yard for excavation shall include the cost of all supervision, labor, material, equipment, insurance and incidentals necessary to complete excavation trenches, including backfill, compaction testing and restoration of trenches and tie-ins pits as specified or shown on the contract, plans. The bid price shall also include the cost of coordinating the sewer and water main work to be performed by the contractor with the gas installation work to be performed by others. The price shall also include, associated maintenance of traffic, and traffic plates and openings and closings of plates as may be required in order to provide access to the facility operator during the new gas facility installation, and installing, removing and maintaining tight sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand, furnish, place and compact, in compliance with DOT requirements, clean sand backfill following installation of the gas facility. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be deemed included in this item, as required and as directed by the Resident Engineer.

SECTION 6.09a Trench Excavation and Backfill for New Gas Mains and Services (For Con Edison Work Only)

1. Description:

Under this section, the contractor shall furnish all labor, materials, equipment, insurance, permits and incidentals required to break/remove roadway and sidewalk pavement, excavate, backfill and restore gas trenches. The trench to be excavated shall be determined by the size of the gas facility to be installed. The work shall be performed in accordance with applicable specifications, and/or at the direction of the Resident Engineer in consultation with the facility operator.

2. Materials:

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer. Clean sand backfill material shall be used and shall conform to Con Edison specification EO-1181-rev.6, General Specification for Backfilling of Trench and Small Openings.

3. Method of Construction:

Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat straight joint line along the juncture with subsequently replaced pavement. Prior to starting the trenching operation, the contractor shall excavate the appropriate gas main tie-in pits at the extremities of the gas main sections to be replaced. Test pits shall be excavated to determine exact location of all tie-in pits and at appropriate intervals along proposed trench excavation to verify lane and clearances as shown on the contract plans. The tie-in pits shall be adequately protected by the contractor using wood fencing or steel traffic plates until such time when the facility operator has completed the tie-in work. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant, and as directed by the facility operator. The trench shall be adjusted so as to provide for a

nominal cover on the new gas facilities or as required based on field conditions, applicable specifications, or as directed by the facility operator in consultation with the Resident Engineer. The width of the trench shall be as directed by the facility operator in consultation of the Resident Engineer. The width and depth of the trench shall conform to Con Edison Gas Operations drawing 309495 rev. 4, Trench Excavation for Gas Mains Up to 350 PSIG, or as directed by the facility operator in consultation of the Resident Engineer. The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of clean sand and in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new gas facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new gas facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator in consultation with the Resident Engineer. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new gas facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator in consultation with the Resident Engineer. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator in consultation with the Resident Engineer. Care shall be taken that no existing gas facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new gas facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator in consultation with the Resident Engineer, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. Con Edison forces will perform all live gas main connections, dead gas main cut-outs, and/or service work associated with disconnecting and reconnecting from old to new gas main The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator in consultation with the Resident Engineer to facilitate the installation of the new gas facilities. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator in consultation with the Resident Engineer. The contractor has the responsibility to maintain and set to grade all Con Edison hardware during backfill and pavement restoration. Upon completion of installation of the new gas facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract. Permanent pavement restoration shall be as required by the appropriate contract specifications and as directed by the Resident Engineer.

4. Method of Measurement:

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated, including roadway pavement, base and/or sidewalk concrete removed within the limits of the trench as directed by the Resident Engineer in consultation with the facility operator. The volume occupied

by existing pipes or other structures will be deducted from the total volume measured as shown on contract drawing(s) Title: EP-7 SECT. 6.09 GAS SPECIALTY CONTRACTOR WORK, or as encountered based on existing field conditions.

5. Price to Cover:

The unit price bid per cubic yard for excavation shall include the cost of all supervision, labor, material, equipment, insurance and incidentals necessary to complete excavation trenches, including backfill, compaction testing and restoration of trenches and tie-ins pits as specified or shown on the contract, plans. The bid price shall also include the cost of coordinating the sewer and water main work to be performed by the contractor with the gas installation work to be performed by others. The price shall also include, associated maintenance of traffic, and traffic plates and openings and closings of plates as may be required in order to provide access to the facility operator during the new gas facility installation, and installing, removing and maintaining tight sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand, furnish, place and compact, in compliance with DOT requirements, clean sand backfill following installation of the gas facility. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be deemed included in this item, as required and as directed by the Resident Engineer.

GAS COST SHARING STANDARD SPECIFICATIONS
SCHEDULE GCS-A

Average rate charged by utility companies to Disconnect and Reconnect Gas Services:

1. National Grid - $586.90 per Service/and Visit
2. Con Edison - $524.00 per Service/and Visit

IV - STANDARD SKETCHES; GAS COST SHARING WORK

Hereinafter attached are the following Standard Sketches for Gas Cost Sharing Work:

Sketch No. 1 - Support Requirements For Gas Mains And Services Crossing Excavation Greater Than 4' - 0" Wide At Any Angle

Sketch No. 1A - Support Requirements For Gas Mains Over 16" Diameter Up To And Including 48" Diameter Crossing Excavation At Any Angle

Sketch No. 2 - Typical Methods Of Measurement For Gas Crossings

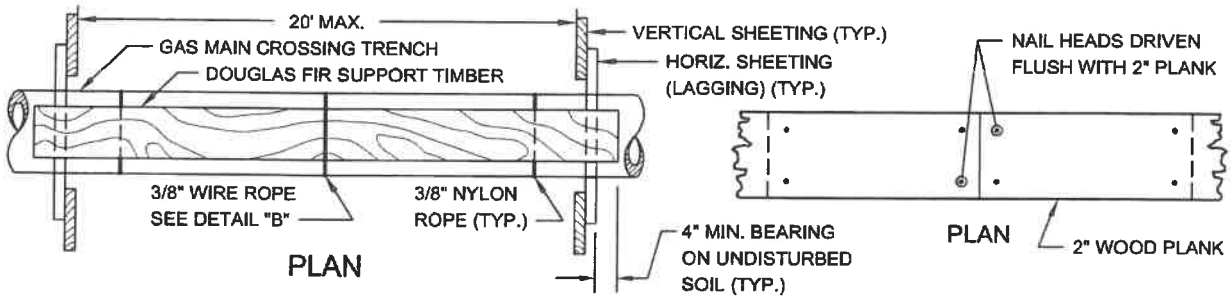
Sketch No. 3 - Utility Crossings During Catch Basin Chute Connection Pipe Installation

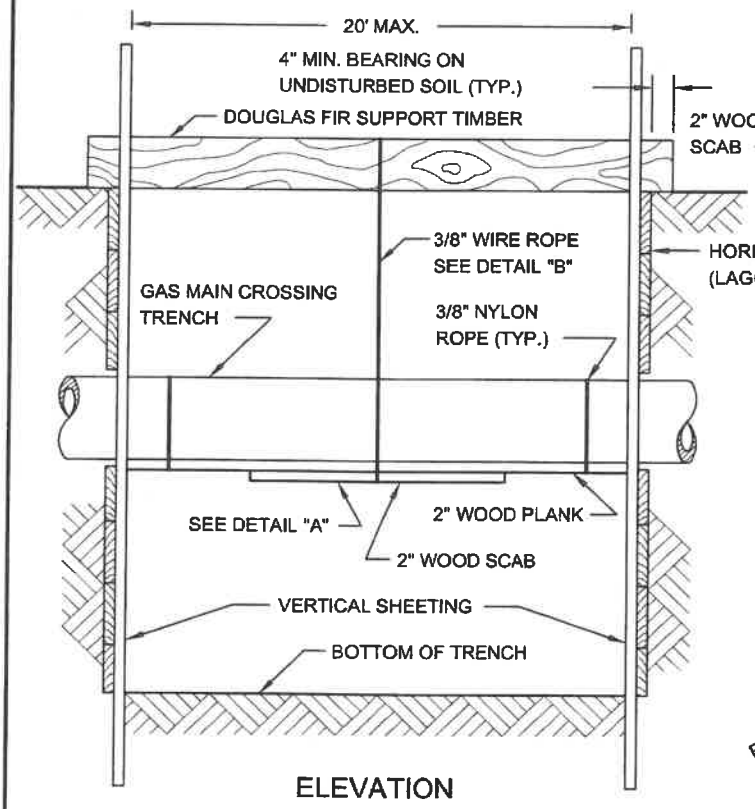
Sketch No. 4 - Utility Crossings During Catch Basin Chute Connection Pipe Installation (Extra Depth)

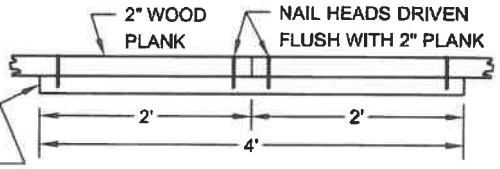
Sketch No. 5 - Gas Main Encroachment On And/Or Parallel To Excavation Of Unsheeted Trench

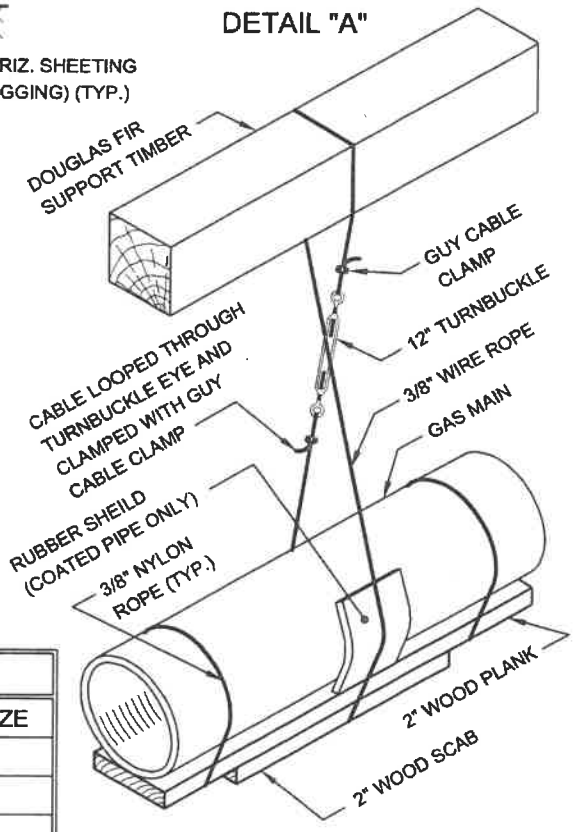
GAS COST SHARING WORK (SKETCH NO. 1)

SUPPORT REQUIREMENTS FOR GAS MAINS AND SERVICES CROSSING EXCAVATION GREATER THAN 4'-0" WIDE AT ANY ANGLE









CABLE SUPPORT		TIMBER SUPPORT	
MAIN TYPE	SPACING	MAIN SIZE	TIMBER SIZE
CAST IRON	4' O.C. MAX.	UP TO 6"	6" X 6"
STEEL	10' O.C. MAX.	8" TO 10"	8" X 8"
PLASTIC	10' O.C. MAX.	12" TO 16"	10" X 10"

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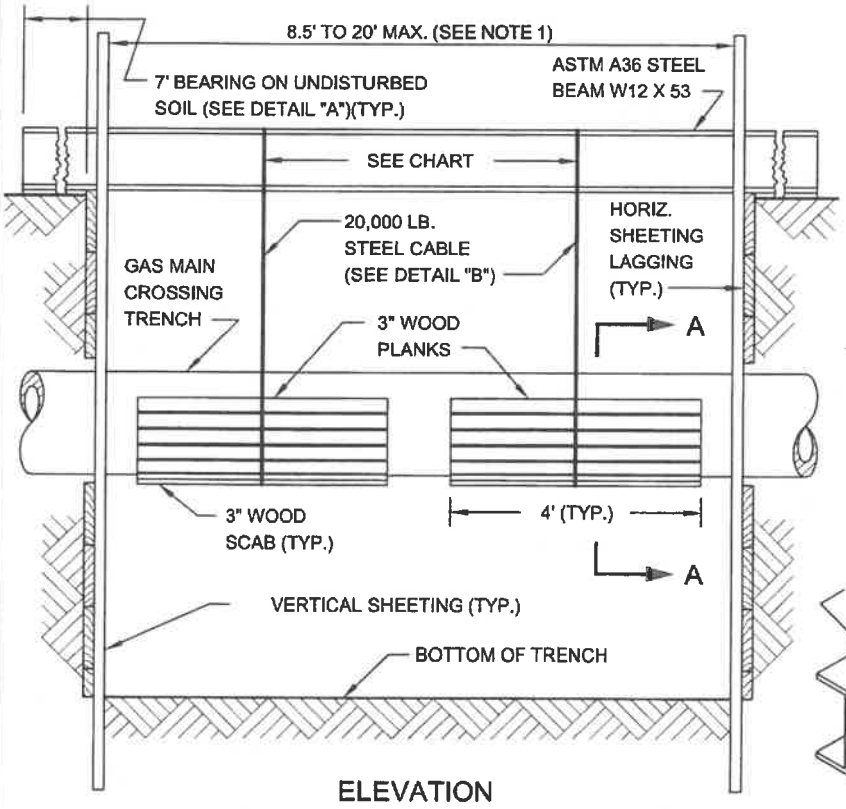
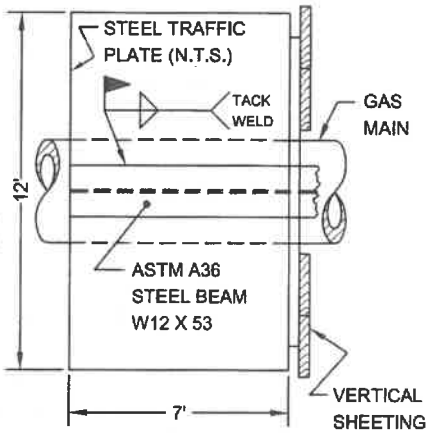
REVISED JUNE 1998 - J. WONG / W. PATALANOP. MOY

GAS COST SHARING WORK (SKETCH NO. 1A)

SUPPORT REQUIREMENTS FOR GAS MAINS OVER 16" DIAMETER UP TO AND INCLUDING 48" DIAMETER CROSSING EXCAVATION AT ANY ANGLE

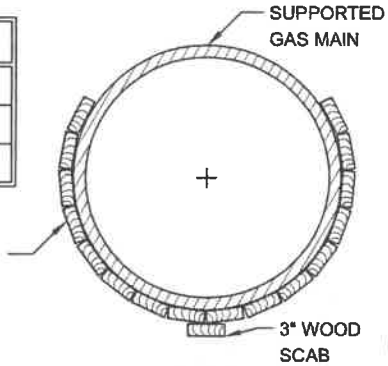


ELEVATION

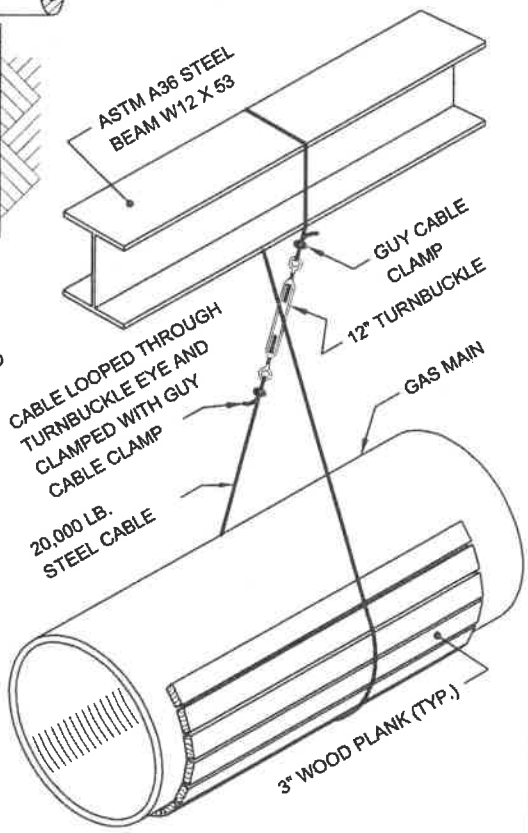


DETAIL "A"

CABLE SUPPORT	
MAIN TYPE	SPACING
CAST IRON	4' O.C. MAX.
STEEL	10' O.C. MAX.



SECTION A-A



DETAIL "B"

NOTES:

(1) NO SUPPORT IS REQUIRED FOR GAS MAINS OVER 16" DIA. UP TO AND INCLUDING 48" DIA. CROSSING TRENCHES LESS THAN 8.5' WIDE.

(2) UNDERMINE A MAXIMUM OF 8.5 L.F. OF CAST IRON GAS MAIN AT A TIME.

(3) SET STEEL CABLE OVER 3" WOOD PROTECTIVE PLANKS AND PLACE AN ADDITIONAL 3" SCAB ON THE BOTTOM OF THE GAS MAIN.

(4) ADJUST STEEL CABLE UNTIL DEAD WEIGHT OF THE UNDERMINED GAS MAIN HAS BEEN TAKEN UP BY THE OVERHEAD STEEL BEAM SUPPORT.

(5) ALL SUPPORTS AND STEEL CABLES CAN BE REOMVED ONLY AFTER THE REQUIRED BACKFILL (AROUND AND BELOW GAS MAIN) HAS BEEN COMPACTED IN ACCORDANCE WITH NEW YORK CITY STANDARDS AND AT THE DIRECTIONS OF THE ENGINEER.

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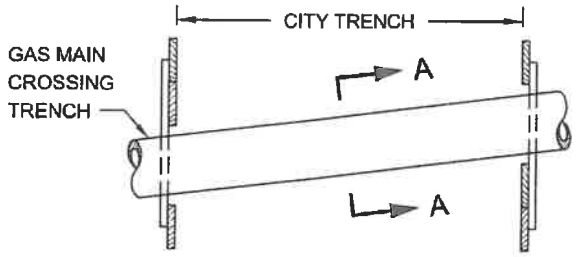
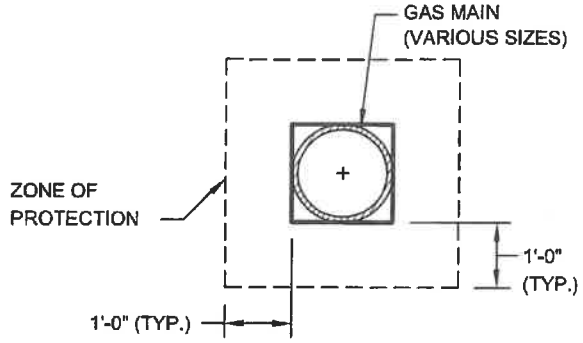
GAS COST SHARING WORK (SKETCH NO. 2)

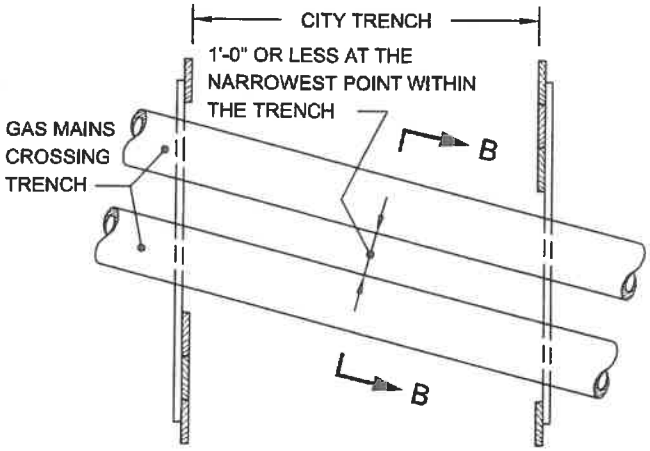
TYPICAL METHODS OF MEASUREMENT FOR GAS CROSSINGS



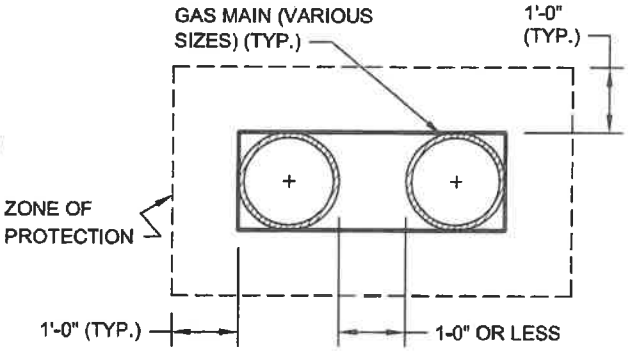
SINGLE FACILITY CROSSING



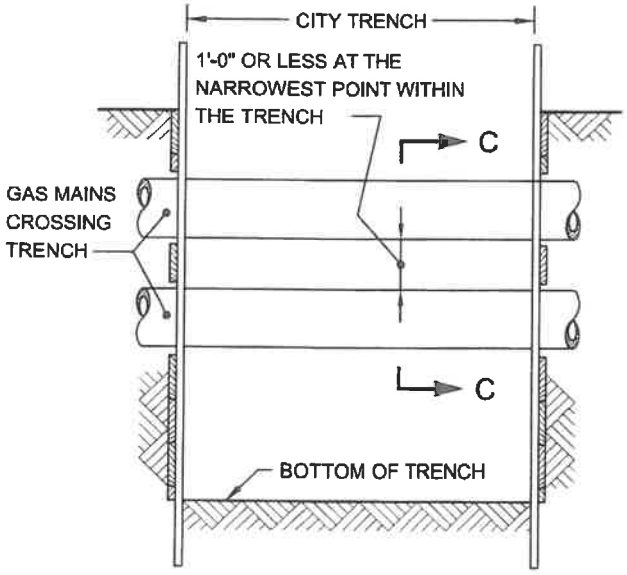
SECTION A-A



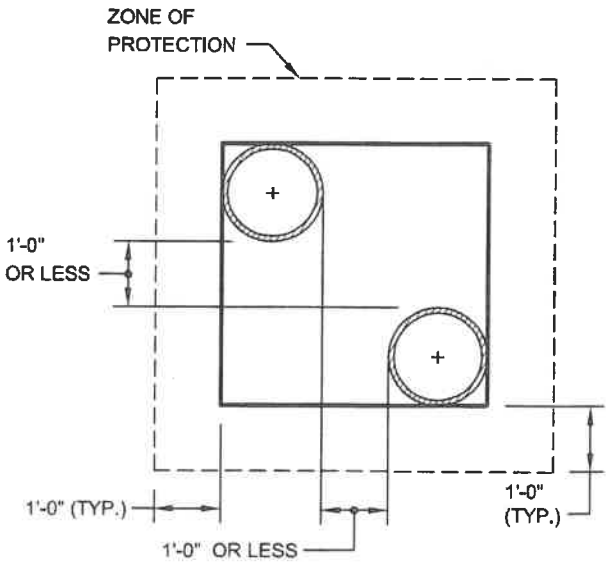
MULTIPLE FACILITIES
(GAS MAINS AT SAME ELEVATION)



SECTION B-B



MULTIPLE FACILITIES
(ONE CROSSING AT DIFFERENT ELEVATIONS)



SECTION C-C

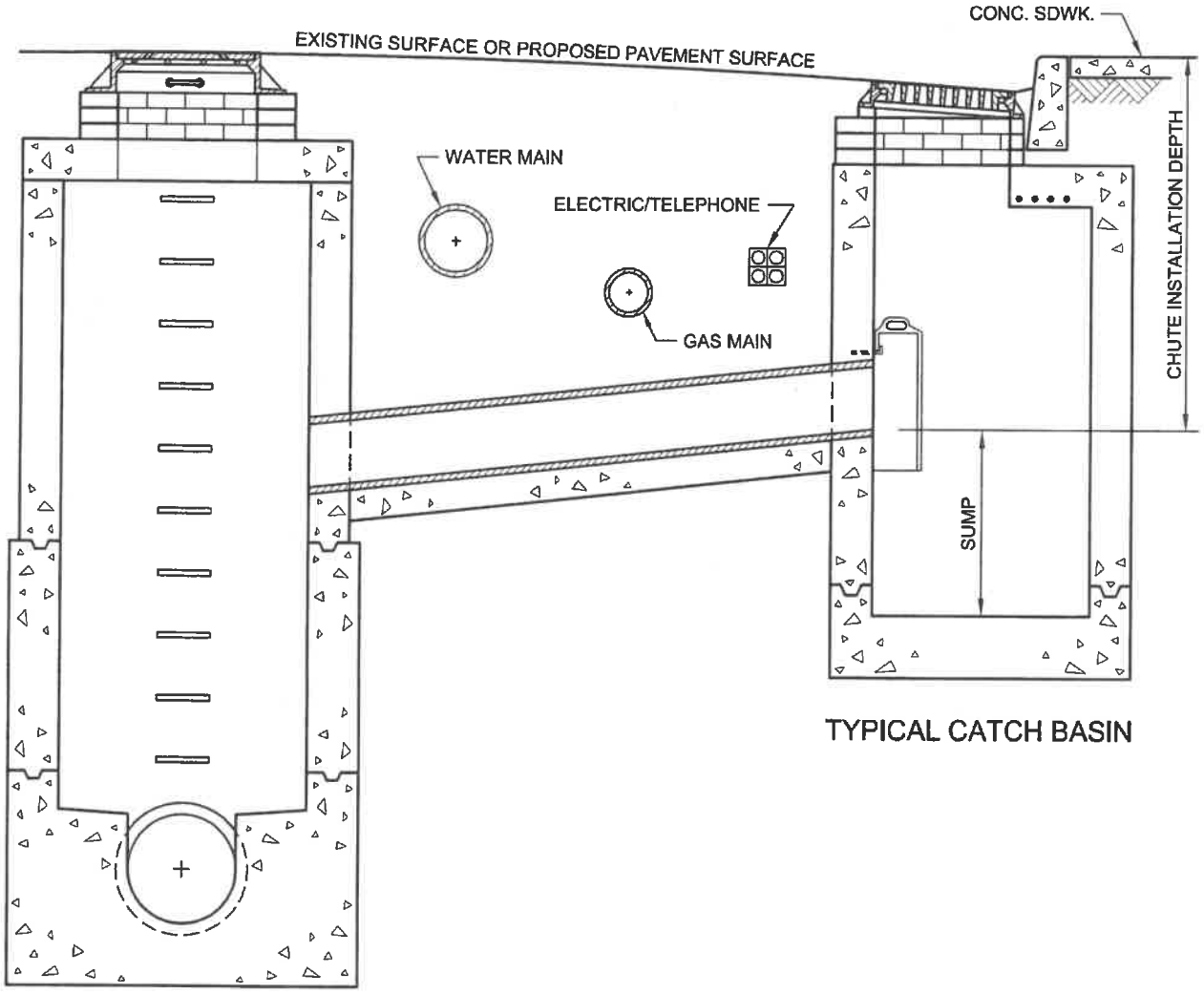
NOTE:

GAS MAINS MAY OR MAY NOT BE PARALLEL TO EACH OTHER.

REVISED SEPT. 2004 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 3)

UTILITY CROSSINGS DURING CATCH BASIN CHUTE CONNECTION PIPE INSTALLATION



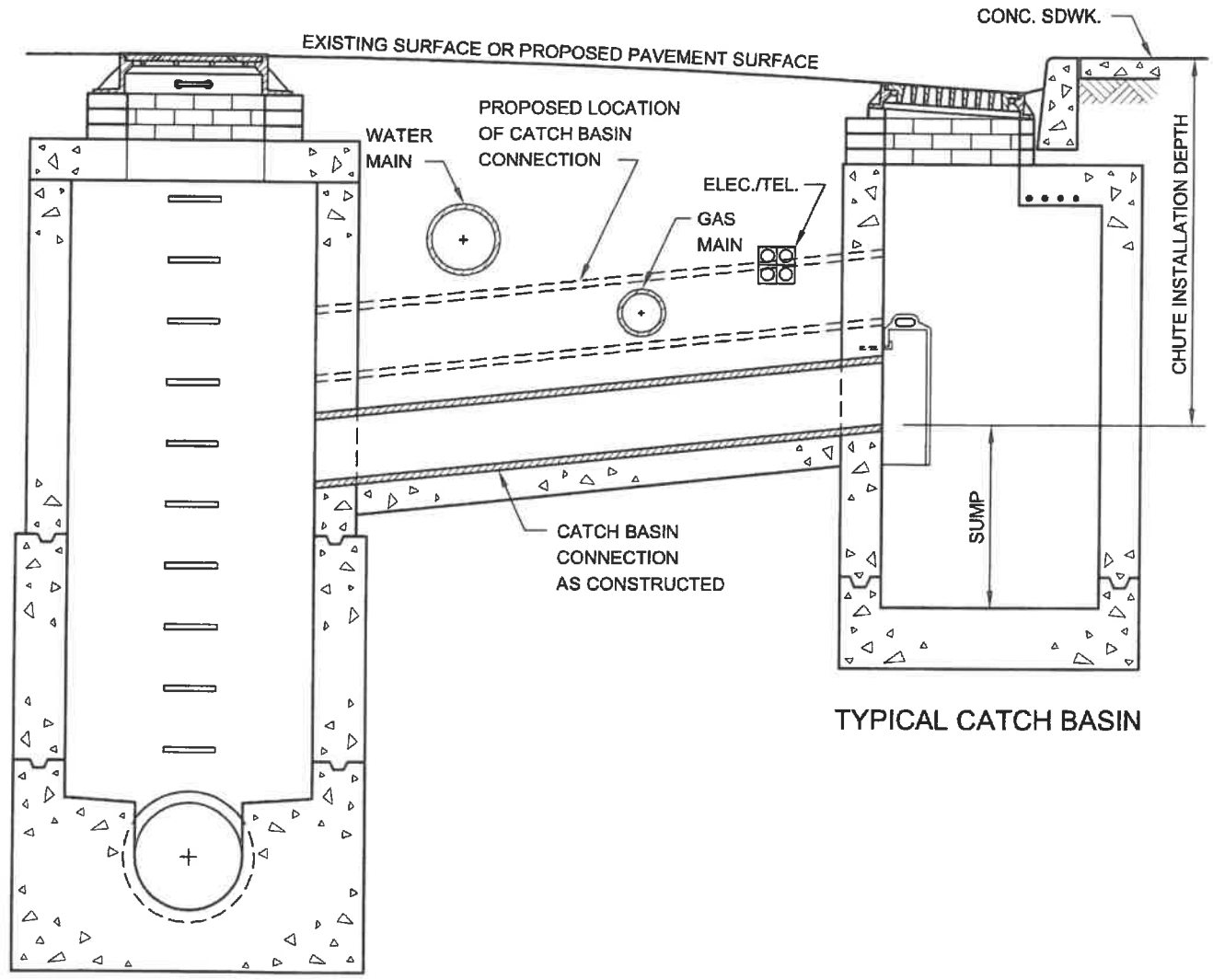
TYPICAL CATCH BASIN

TYPICAL SEWER MANHOLE

REVISED OCT. 2004 - L. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 4)

UTILITY CROSSINGS DURING CATCH BASIN CHUTE CONNECTION PIPE INSTALLATION (EXTRA DEPTH)



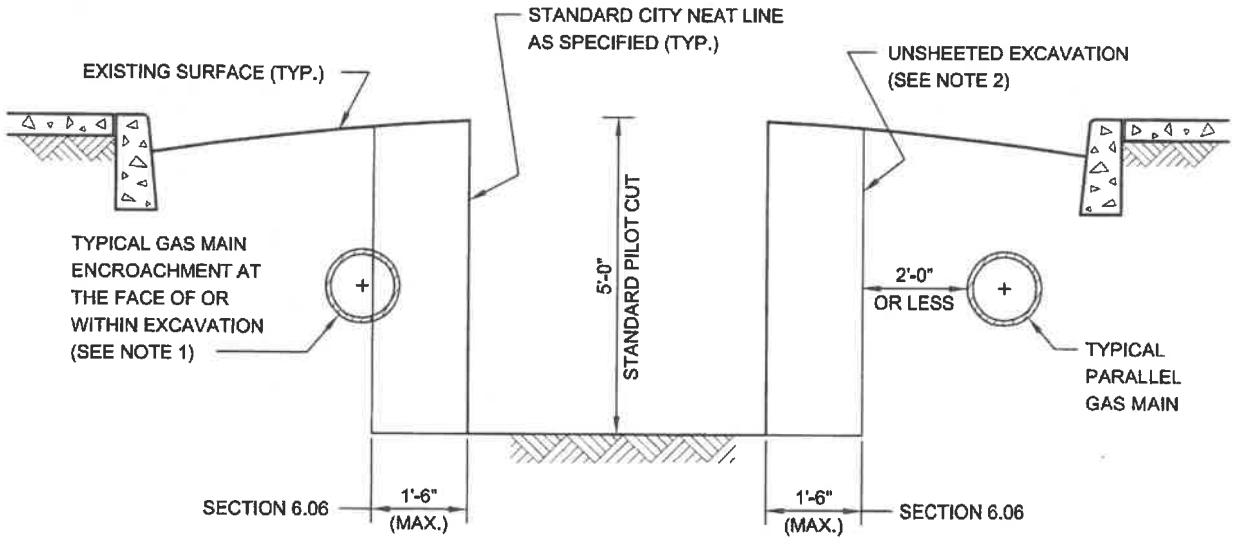
TYPICAL CATCH BASIN

TYPICAL SEWER MANHOLE

REVISED OCT. 2004 - I. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 5)

GAS MAIN ENCROACHMENT ON AND/OR PARALLEL TO EXCAVATION OF UNSHEETED TRENCH



NOTES:

(1) GAS MAIN LOCATED AS SHOWN MAY HAVE TO BE REMOVED BY THE FACILITY OPERATOR PRIOR TO THE START OF CITY EXCAVATION, OTHERWISE, THE CONTRACTOR WILL BE PAID UNDER SECTION 6.06 FOR THE SAID WORK. IF GAS MAIN IS ABANDONED THEN SECTION 6.03 SHALL APPLY.

(2) EIGHTEEN (18) INCHES FROM STANDARD NEAT LINE IS THE MAXIMUM ALLOWABLE WIDTH OF AREA THAT MAY BE DISTURBED OR EXCAVATED DURING INSTALLATION OF CERTAIN TYPES OF SHEETING SYSTEMS THAT MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS OF THE DEPARTMENT OF DESIGN AND CONSTRUCTION OF THE CITY OF NEW YORK.

REVISED OCT. 2004 - I. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

V - PRELIMINARY GAS WORK TO BE PERFORMED BY FACILITY OPERATOR

APPLICABLE TO ALL GAS DRAWINGS:

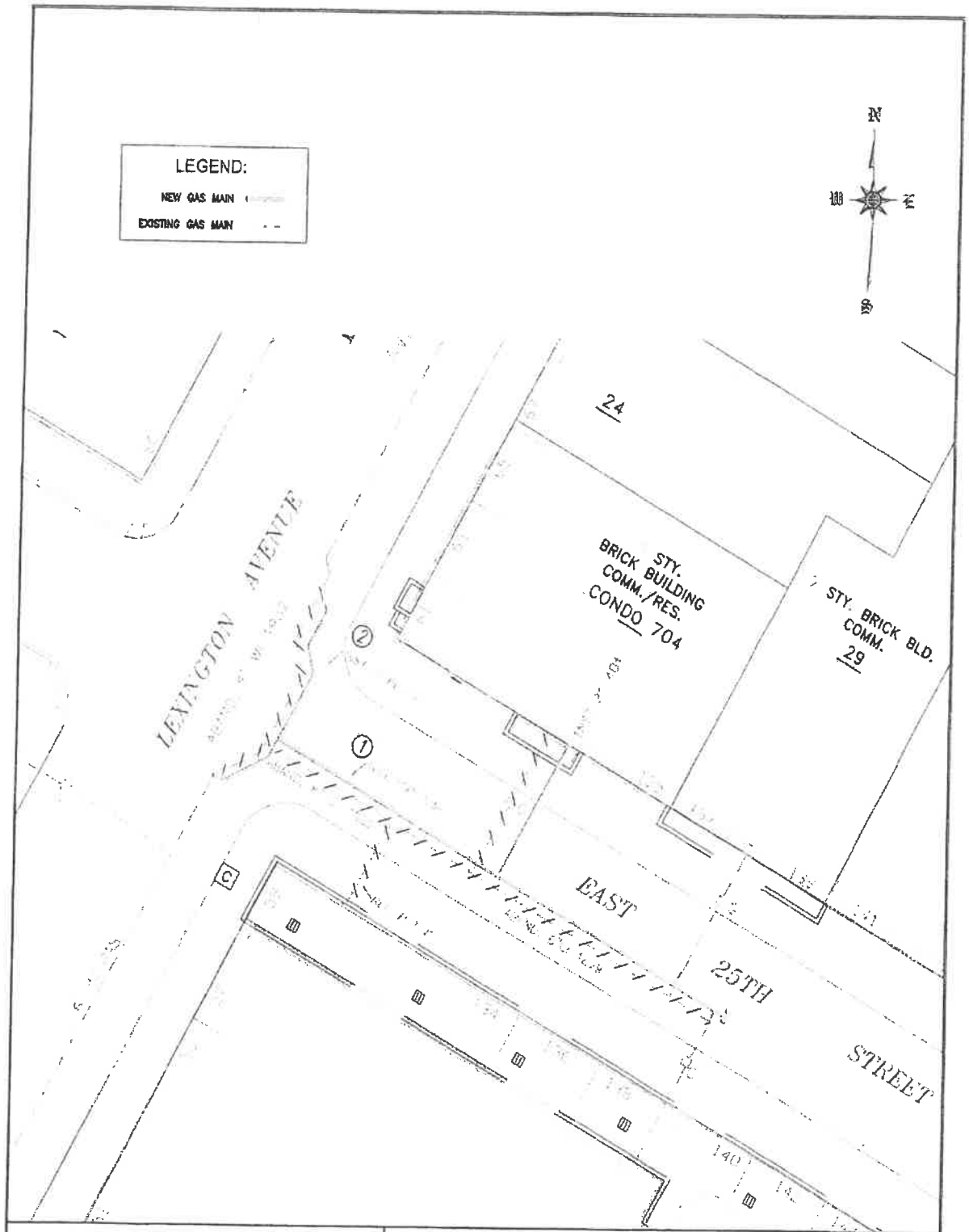
- ALL RELOCATION WORK SHOWN IN THIS SECTION IS TO BE PERFORMED BY FACILITY OPERATOR.
- ALL SUPPORT AND PROTECTION WORK IS TO BE PERFORMED BY CITY CONTRACTOR.
- IF ADDITIONAL INFORMATION IS NEEDED REGARDING THE FACILITY OPERATOR RELOCATION WORK, THE CONTRACTOR IS ADVISED TO CONTACT THE GAS COMPANY REPRESENTATIVE:

MS. THERESA KONG
CONSOLIDATED EDISON
4 IRVING PLACE, 12TH FLOOR SWC
NEW YORK, NY 10003
TEL.: 212-460-4834

(NO TEXT IN THIS AREA, TURN PAGE)

GAS FACILITY COST ALLOCATION AGREEMENT
PROJECT NO. HWBARUCH
CAPITAL GAS MAIN INSTALLATION

SHEET #	LOC.	ON STREET	FROM	TO	ITEM	SIZE	TYPE	LENGTH	REIMB LENGTH	REMARKS
1	1	E. 25TH ST	LEXINGTON AVE.	3RD AVE.	82i	6"	PE	135'±	135±	RETIRE 6" C.I AND 6" C.I
1	2	E. 25TH ST	LEXINGTON AVE.		82k	12"	PE	60'±	60±	RETIRE 8" WI



JAN. 2016	CONSOLIDATED EDISON CO. OF NEW YORK, INC.
SCALE = NTS	HWBARUCH
1 OF 1	E.25TH STREET/BARUCH PLAZA
	BOROUGH OF MANHATTAN

EP7-27B

VI - LISTING OF APPROXIMATE LOCATIONS OF EP-7 BID ITEMS QUANTITIES

(NO TEXT IN THIS AREA, TURN PAGE)

SCOPE OF WORK
SUPPORT AND PROTECTION
FOR CONTRACT NUMBER HWBARUCH

The City of New York Department of Design and Construction is planning to install sewers and/or water mains and all appurtenances in various locations in The City of New York along with all work incidental thereto.

6.01.8 - Support & Protect Gas Services Crossing Trenches And/Or Excavations (Ea.)

2 in Various Locations As Required.

6.01.9 - Support & Protect Gas Main Crossing Water Main Up To 20" In Diameter (Ea.)

2 in E.25th Street @ 3rd Avenue

6.03 - Removal Of Abandoned Gas Facilities. All Sizes (L.F.)

50 in Various Locations As Required

6.03.1a - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For Con Edison Work Only) (L.F.)

20 in Various Locations As Required

6.05 - Adjust Hardware To Grade By Resetting (Road Reconstruction) (Ea.)

5 in Various Locations As Required

6.06 - Special Care Excavation & Backfilling (C.Y.)

30 CY In Various Locations As Required, Including But Not Limited To All Gas Services Crossing Unsheeted Water Main Trenches.

6.07 - Test Pits For Gas Facilities (C.Y.)

25 in Various Locations As Required.

NO TEXT ON THIS PAGE

HAZ - PAGES

SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS

NOTICE

THE PAGES CONTAINED IN THIS SECTION ARE ISSUED FOR THE PURPOSE OF AMENDING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND HEREBY MADE PART OF SAID CONTRACT DOCUMENTS TO THE SAME EXTENT AS IF IT WAS ORIGINALLY INCLUDED HEREIN.

(NO TEXT ON THIS PAGE)

SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NON-HAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS

RECONSTRUCTION OF BARUCH COLLEGE PLAZA

BOROUGH OF MANHATTAN
CITY OF NEW YORK

Capital Project ID: HWBARUCH

Prepared By:

NYC DDC Department of Design and Construction
30-30 Thomson Avenue, 3rd Floor
Long Island City, New York 11101

July 6, 2017

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ITEM 8.01 C1 HANDLING, TRANSPORTING, & DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOILS

8.01 C1.1 WORK TO INCLUDE

General: This work shall consist of the handling, transportation, and disposal of non-hazardous contaminated soils. The materials covered by this specification are soils that are contaminated with petroleum or chemical products but cannot be classified as hazardous waste. For the purpose of this specification, soil shall be defined as any material excavated below the pavement and base for pavement.

Non-hazardous contaminated soils are defined as soils exhibiting one or more of the following characteristics:

- Elevated Photo-Ionization Detector (PID) readings, subsequently confirmed by lab analysis
- Visual evidence of contamination
- Petroleum and/or chemical odors
- Soils that have been documented as contaminated in previous environmental reports

Non-hazardous contaminated soils must be stockpiled at an off-site approved location or secured on-site by the Contractor, meeting all required Federal, State and Local stipulations. Sampling and laboratory analysis must be conducted to determine if the soils are hazardous, unless the alternative procedure as defined under subsection 8.01 C1.1 A.5 has been agreed upon by treatment facilities. Contaminated soils determined to be non-hazardous shall be handled in accordance with the specifications herein for Item 8.01 C1. Contaminated soils determined to be hazardous shall be handled in accordance with the specifications for Item 8.01 H – Handling, Transporting and Disposal of Hazardous Soils.

The Contractor shall retain the services of an independent Environmental Consultant, as specified under Item 8.01 S – Health and Safety, to oversee the work required under this Item.

Non-hazardous soils shall be delivered to the disposal or treatment facility within thirty (30) calendar days after excavation.

The Contractor shall conduct sampling and analysis of the impacted soils as specified under Item 8.01 C2 – Sampling and Testing of Contaminated/Potentially Hazardous Soils for Disposal Parameters. The laboratory results shall be forwarded to DDC Program Management, Office of Environmental and Geotechnical Services (OEGS) for review to determine if the soils will be handled and disposed of as contaminated regulated soils or hazardous waste. No other soils shall be sampled or tested without the DDC's approval or direction.

The Contractor shall ensure that all operations associated with the handling, sampling, loading, transportation, and disposal of non-hazardous contaminated soils are in compliance with all applicable Federal, State, and City statutes and regulations.

The Contractor shall document the excavation, handling, transportation and disposal of non-hazardous contaminated soils. The Contractor shall supply all equipment, material and labor required to conduct the specified work of this Item.

A. Material Handling Plan: Within forty-five (45) calendar days after award of Contract, the Contractor shall submit to the Program Management, OEGS for review, a Material Handling Plan (MHP). The MHP must be approved by the Program Management, OEGS, prior to the Contractor's commencement of work. The MHP shall, at a minimum, consist of:

1. The Contractor's procedures for identifying non-hazardous contaminated soils during excavation, including the specific model and manufacturer of intended organic vapor monitoring equipment and calibration procedures to be used. It should also include the training and experience of the personnel who will operate the equipment.
2. The Contractor's procedures for safely handling non-hazardous contaminated soils. The procedures must include personnel safety and health as well as environmental protection considerations.
3. Name, address, New York State Department of Health's (DOH) Environmental Laboratories Accreditation Program (ELAP) status and telephone number of the proposed laboratory for analysis of representative soil samples. The ELAP for the intended analysis must approve the laboratory.
4. Identification of the Contractor's proposed waste transporter(s). This information shall include:

    a. Name and Waste Transporter Permit Number

    b. Address

    c. Name of responsible contact for the hauler

    d. Telephone number for the contact

    e. Any and all necessary permit authorizations for each type of waste transported

    f. Previous experience in performing the type of work specified herein

5. All staging/stockpiling areas (if stockpiling areas are intended and available), or alternate procedures that will be used. Alternate procedures may include, but are not limited to, agreements from the intended disposal or treatment facilities to accept boring data and/or analytical data previously obtained during the site characterization so that materials may be directly loaded into vehicles for shipment to the disposal facility.
6. A backup facility should the staging/stockpile areas become unavailable, insufficient in area or not be present by some other unforeseen difficulty.
7. Identification of the Contractor's two proposed Treatment Storage or Disposal (TSD) facilities for non-hazardous contaminated soils (primary and back-up) for final disposal of the soils. The primary TSD shall be an approved soil recycling/treatment facility. The backup facility may be a recycling/treatment facility or a New York State Department of Environmental Conservation (DEC) approved lined landfill or other facility approved by DEC to accept this material. The information required for each facility shall include:

    a. Facility name and the State identification number

        (1) Facility location

        (2) Name of responsible contact for the facility

        (3) Telephone number for contact

        (4) Signed letter of agreement to accept waste as specified in this contract

        (5) Unit of measure utilized at facility for costing purposes

    b. A listing of all permits, licenses, letters of approval, and other authorizations to operate, which are currently held and valid for the proposed facility.

c. A listing of all permits, licenses, letters of approval, and other authorizations to operate which have been applied for by the proposed facility but not yet granted or issued.

d. The Contractor shall specify and describe the disposal/containment unit(s) that the proposed facility will use to manage the waste. The Contractor shall identify the capacity available in the units and the capacity reserved for the subject waste.

e. The Contractor shall provide the date of the proposed facility's last compliance inspection.

f. A list of all active (unresolved) compliance orders (or agreements), enforcement notices, or notices of violations issued to the proposed facility shall be provided. The source and nature of the cause of violation shall be stated, if known.

8. Description of all sampling and field/laboratory analyses that will be needed to obtain disposal facility approval.

8.01 C1.2 MATERIALS

A. Containers shall be as required in the United State Department of Transportation (DOT) regulations.

B. Polyethylene to be placed under (20 mil. thickness minimum) and over (10 mil. thickness minimum) soil piles.

C. The Contractor shall assure that the waste hauler's appropriate choice of vehicles and operating practices shall prevent spillage or leakage of contaminated material from occurring en route.

D. The Contractor shall provide, install and maintain any temporary loading facilities on site as required until completion of material handling activities. The location and design of any facilities shall be included in the MHP and be approved by the Program Management, OEGS.

8.01 C1.3 CONSTRUCTION DETAILS

A. Material Handling

1. Immediately after excavation of non-hazardous contaminated soil the Contractor shall:

   a. Load material directly onto trucks/tankers/roll offs for disposal off site; or

   b. If interim stockpiling is required, place on a minimum of 20 mil. or equivalent plastic ground cloth and cover by minimum of 10 mil. polyethylene sheeting or equivalent to protect against leaching or runoff of contaminants into groundwater or stormwater. Weight or secure the sheeting by appropriate means and seal seams as approved by the DDC to prevent tearing or removal by weather. Grade surrounding surface to provide for positive drainage away from pile. Stockpile shall not exceed 100 cubic yards.

2. Institute appropriate procedures and security measures to ensure the protection of site personnel and the public from contaminated materials as described in the approved MHP and Item 8.01 S - Health and Safety.

3. Any soil encountered that appears to contain unknown contaminants (based on visual, odor, or other observation), or that vary substantially from the material originally identified must be segregated in stockpiles and the independent Environmental Consultant promptly notified. Construct stockpiles to the same requirements as stated in subsection A.1.b above.

4. Provide any dewatering that is necessary to complete the work. Contaminated water shall be disposed of in accordance with Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

5. Provide and operate field organic vapor test equipment, a PID or a flame ionization detector (FID), to detect general organic vapor levels at intervals of approximately fifty (50) cubic yards of soil excavated, when visual or odor observations indicate the material may substantially differ from the soil previously excavated and/or as directed by the independent Environmental Consultant.

B. Off-Site Transportation to Disposal or Treatment Facility

1. General

a. The Contractor shall furnish all labor, equipment, supplies and incidental costs required to transport contaminated material from the work area to the off-site disposal or treatment facility, and any other items and services required for transporting contaminated material for disposal at an off-site facility.

b. The Contractor shall submit the name and location of the facility where an off-site scale is located. The Contractor shall also submit a plan to the DDC for review outlining procedures on controlling trucks leaving the work site and en-route to the off-site scale. The Contractor shall be responsible for tracking all material/vehicles from the site to the off-site scale.

c. The Contractor shall provide to the DDC certified tare and gross weight slips for each load received at the accepted facility which shall be attached to each returned manifest.

d. The Contractor shall coordinate the schedule for truck arrival and material deliveries at the job site to meet the approved project schedule.

e. The Contractor shall inspect all vehicles leaving the project site to ensure that contaminated soils adhering to the wheels or undercarriage are removed prior to the vehicle leaving the site.

f. The Contractor shall obtain letters of commitment from the waste haulers and the treatment, disposal or recovery facility to haul and accept shipments. The letter shall indicate agreement to handle and accept the specified estimated quantities and types of material during the time period specified in the project schedule and any time extension as deemed necessary.

g. **The Program Management, OEGS shall review and approve waste profiles before transportation to the TSD facility.**

2. Hauling

a. The Contractor shall coordinate manifesting, placarding of shipments, and vehicle decontamination. All quantities shall also be measured and recorded upon arrival at the disposal or treatment facility. If any deviation between the two records occurs, the matter is to be reported immediately to the DDC and to be resolved by the Contractor to the satisfaction of the DDC.

b. The Contractor shall be held responsible, at its own cost for any and all actions necessary to remedy situations involving material spilled in transit or mud and dust tracked off-site.

c. The Contractor shall ensure that trucks are protected against contamination by properly covering and lining them with compatible material (such as polyethylene) or by decontaminating them prior to and between acceptances of loads.

d. The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance, and weight restrictions.

e. The Contractor shall only use the transporter(s) identified in the MHP for the performance of work. Any use of substitute or additional transporters must have previous written approval from the Program Management, OEGS at no additional cost to the City.

f. The Contractor shall develop, document, and implement a policy for accident prevention.

g. The Contractor shall not combine contaminated materials from other projects with material from this project.

h. No material shall be transported until approved by the DDC.

3. Off-Site Disposal

a. The Contractor shall use only the facility(ies) identified in the MPH for the performance of the work. Substitutions or additions shall not be permitted without prior written approval from the Program Management, OEGS, and if approved shall be at no extra cost to the City.

b. The Contractor shall be responsible for acceptance of the materials at an approved facility, for ensuring that the facility is properly permitted to accept the stated materials, and that the facility provides the stated treatment and/or disposal services.

c. The DDC reserves the right to contact and visit the disposal or treatment facility and regulatory agencies to verify the agreement to accept the stated materials and to verify any other information provided.

d. In the event that the identified and approved facility ceases to accept the stated materials or the facility ceases operations, it is the Contractor's responsibility to locate an alternate approved and permitted facility(ies) for accepting materials. The alternate facility(ies) must be approved in writing by the DDC in the same manner and with the same requirements as for the original facility(ies). This shall be done at no extra cost or delay to the City.

e. The Contractor shall obtain manifest forms, and complete the shipment manifest records required by the appropriate regulatory agencies for verifying the material and quantity of each load in unit of volume and weight. Copies of each manifest shall be submitted to the DDC within four (4) business days following shipment, and within three (3) business days after notification of receipt of the facility. Any manifest discrepancies shall be reported immediately to the DDC and be resolved by the Contractor to the satisfaction of the DDC.

4. Equipment and Vehicle Decontamination

a. The Contractor shall design and construct a portable decontamination station to be used to decontaminate equipment and vehicles exiting from the exclusion zone. The cost for this work will be paid under Item 8.01 S - Health and Safety.

b. Water generated during the decontamination process shall be disposed of in accordance with Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

8.01 C1.4 METHOD OF MEASUREMENT

Quantities for non-hazardous contaminated soils shall be measured in tons. The tonnage will be determined by off-site truck scales, as per Subsection 8.01 C1.3.B1, that are capable of generating load tickets.

8.01 C1.5 PRICE TO COVER

A. The unit bid price bid per ton for Item 8.01 C1 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for excavation, handling, transportation, disposal, documentation, fees, permits, loading, stockpiling, hauling, and any other incidentals necessary to complete all the work as specified herein for handling, transporting, and disposal of non-hazardous contaminated soil.

B. Final disposal of hazardous soil shall be paid for under Item 8.01 H – Handling, Transporting and Disposal of Hazardous Soils. Disposal of decontamination water shall be paid for under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

C. Backfill will be paid for under its respective item as specified in the contract document.

D. The independent Environmental Consultant shall be paid under Item 8.01 S – Health and Safety.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 C1	Handling, Transporting, and Disposal of Non-Hazardous Contaminated Soil	Tons

ITEM 8.01 C2 SAMPLING AND TESTING OF CONTAMINATED/ POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PARAMETERS

8.01 C2.1 WORK TO INCLUDE

A. Description

The work shall consist of collecting and analyzing representative soil samples for parameters typically requested by the disposal facilities.

B. Sampling and Laboratory Analysis

1. At least thirty (30) days prior to the commencement of work, the Contractor's independent Environmental Consultant must submit a Soil Sampling Plan/Field Sampling Plan (SSP/FSP) and an Investigation Health and Safety Plan to the Program Management, Office of Environmental and Geotechnical Services (OEGS) for review and approval. The SSP/FSP shall include the name, address, DOH's ELAP status, and telephone numbers of the proposed laboratory. The SSP/FSP shall also include training and experience of the personnel who will collect the samples. The Investigation HASP shall identify actual and potential hazards associated with planned sampling field activities and stipulate appropriate health and safety procedures, so as to minimize field personnel exposure to physical, biological, chemical hazards that may be present in the all sampling media.

2. The Contractor shall sample and analyze representative samples of the contaminated/potentially hazardous soils. For stockpiled soils, the Contractor shall collect and analyze one (1) composite sample per 500 cubic yards or fraction thereof. Each composite sample shall consist of a minimum of five (5) grab samples collected from greater than two (2) feet below the soil surface. For drummed soil, the Contractor shall collect one (1) composite sample per (ten) 10 drums or fraction thereof. Each composite sample shall consist of a grab sample from each of the ten (10) drums or fraction thereof. Each composite sample shall be analyzed for Resource Conservation and Recovery Act (RCRA) hazardous waste characteristics (Ignitability, Reactivity, Corrosivity), Full Toxicity Characteristic Leaching Procedure (TCLP) (including RCRA metals, volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), pesticides, herbicides), Total Petroleum Hydrocarbons (TPH) and Polychlorinated Biphenyls (PCBs). All samples collected should be analyzed on a five (5) calendar days turn around time and analytical results must be submitted to Program Management, OEGS upon receipt of the analytical results.

3. All sampling shall be conducted by a person trained in sampling protocols using standard accepted practices for obtaining representative samples.

4. The Contractor must also contact the disposal facility where the waste will be sent for permanent disposal, and arrange to collect any additional samples required by the facility. The cost associated with additional sampling and testing shall be included in the bid price of this Item.

5. The quality of the data from the sampling program is the Contractor's responsibility. The Contractor must furnish all qualified personnel, equipment and instruments necessary to carry out the sampling. Unless directed otherwise, all sampling procedures must follow the DEC sampling guidelines and protocols.

6. All sample containers shall be marked and identified with legible sample labels which shall indicate the project name, sample location and/or container, the sample number, the

date and time of sampling, preservatives utilized and other information that may be useful in determining the character of the sample. Chain-of-custody shall be tracked from laboratory issuance of sample containers through laboratory receipt of the samples.

7. The Contractor shall maintain a bound sample logbook. The Contractor shall provide DDC access to it at all times and shall turn it over to the DDC in good condition at the completion of the work. The following information, as a minimum shall be recorded to the log:

    1. Sample identification number
    2. Sample location
    3. Field observation
    4. Sample type
    5. Analyses
    6. Date/time of collection
    7. Collector's name
    8. Sample procedures and equipment utilized
    9. Date sent to laboratory and name of laboratory

8. The City reserves the right to direct the Contractor to conduct alternative sampling in lieu of the parameters described in subsection B2, if the situation warrants. The substitute sampling parameters shall be of equal or lesser monetary value than those described in subsection B2, as determined by industry laboratory pricing standards.

9. Only dedicated sampling equipment may be used to collect these samples. All equipment involved in field sampling must be decontaminated before being brought to the sampling location, and must be properly disposed after use.

10. Soils exceeding any of the hazardous characteristic criteria meet the legal definition of hazardous soils (rather than non-hazardous contaminated soils) and shall be transported or disposed of under Item 8.01 H – Handling, Transporting and Disposal of Hazardous Soils. All analyses must be done by a laboratory that has received approval from the ELAP for the methods to be used. The Contractor must specify the laboratory in the MHP.

8.01 C2.2 METHOD OF MEASUREMENT

Quantities for samples shall be measured as the number of sets of samples that are tested. A set shall be defined as one (1) composite sample analyzed for the full range of parameters as specified in subsection B2.

8.01 C2.3 PRICE TO COVER

The unit price bid per set for Item 8.01 C2 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance necessary for sampling, handling, transporting, testing, documentation, fees, permits and any other incidentals necessary to complete the work as specified herein for sampling and testing of contaminated/potentially hazardous soil.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 C2	Sampling and Testing of Contaminated/ Potentially Hazardous Soil for Disposal Parameters	Set

ITEM 8.01 H HANDLING, TRANSPORTING, AND DISPOSAL OF HAZARDOUS SOILS

8.01 H.1 WORK TO INCLUDE

General: This work shall consist of the handling, transportation and disposal of soils or materials that are listed as hazardous wastes or exhibit any of the characteristics of a hazardous waste, namely ignitability, corrosivity, reactivity, and toxicity, as defined in 6 NYCRR Part 371, Section 371.3 and 40 CFR Section 261. For the purpose of this specification, soils shall be defined as any materials excavated below the pavement and base for pavement.

Contaminated soils determined to be hazardous under Item 8.01 C2 shall be handled, transported, and disposed of under Item 8.01 H in accordance with the specifications herein.

The independent Environmental Consultant retained by the Contractor, as specified under Item 8.01 S – Health and Safety, shall conduct sampling and analysis of above soils to determine which soils are hazardous.

All work under Item 8.01 H shall be performed under the direct supervision of the Contractor's Environmental Consultant, as approved by the Program Management, Office of Environmental and Geotechnical Services (OEGS).

The Contractor shall ensure that all operations associated with the handling, sampling, loading, transportation, and disposal of hazardous materials are in compliance with the applicable Federal, State, and Local statutes and regulations.

The Contractor shall document the excavation, handling, sampling, and testing, transportation and disposal of hazardous soils. The City shall be listed in the disposal documents as the waste generator.

The Contractor shall supply all equipment, material and labor required to conduct the specified work of this section.

The Contractor shall ensure that all operations associated with the handling, sampling, loading, transportation and disposal of hazardous soils are conducted in a manner to protect site personnel, the public and the environment, in accordance with all applicable Federal, State, and Local laws and regulations.

The Contractor shall decontaminate all equipment prior to its removal from the exclusion zone and/or following contact with hazardous materials, as detailed in Item 8.01 S - Health and Safety. Water generated during the decontamination process shall be disposed of under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

A. Material Handling Plan: Within forty-five (45) calendar days after award of Contract, the Contractor shall submit to the Program Management, OEGS for review, a Material Handling Plan (MHP). The MHP must be approved by the Program Management, OEGS, prior to the Contractor's commencement of work. The MHP shall, at a minimum, consist of:

    1. The Contractor's procedures for identifying contaminated/potentially hazardous soils during excavation, including instrumentation and calibration procedures to be used.

    2. The Contractor's procedures for safely handling hazardous soils or soils which have not yet been tested but are believed to be potentially hazardous.

    3. Identification of the Contractor's proposed waste transporter(s). This information shall include:

        a. Name and waste transporter permit number

        b. Address

        c. Name of responsible contact for the hauler

d. Telephone number for the contact

e. Any and all necessary permit authorizations for each type of waste transported

f. Previous experience in performing the type of work specified herein

4. All staging/stockpiling areas (if stockpiling areas are intended and available), or alternate procedures that will be used. Alternate procedures could include, but are not limited to, agreements from the intended disposal or treatment facilities to accept boring data and/or analytical data previously obtained during the site characterization so that materials may be directly loaded into vehicles for shipment to the disposal facility or the use of off-site stockpiling locations approved by the DEC.

5. A backup facility, should the staging/stockpile areas become unavailable, insufficient in area or not be present by some other unforeseen difficulty.

6. Identification of the Contractor's two proposed United State Environmental Protection Agency (EPA) or DEC approved RCRA TSD facilities for hazardous soils.

7. The Contractor shall submit the following information prior to any transportation of soils regarding the temporary and final off-site TSD or facilities where it is proposing to take hazardous soils. The expense of furnishing all information will be included in the Contractor's bid price:

   a. General Information

      (1) Facility name and the EPA identification number

      (2) Facility location

      (3) Name of responsible contact for the facility

      (4) Telephone number for contact

      (5) Signed letter of agreement to accept waste as specified in this contract

      (6) Signed letter of agreement with a TSD for disposal of waste that may not be land-disposed

      (7) Unit of measure utilized at each facility for costing purposes

   b. A listing of all permits, licenses, letters of approval, and other authorizations to operate, which are currently held and valid for the proposed facility as they pertain to receipt and management of wastes derived from this Contract.

   c. A listing of all permits, licenses, letters of approval, and other authorizations to operate which have been applied for by the proposed facility.

   d. The Contractor shall specify and describe the disposal/containment unit(s) that the proposed facility will use to manage the waste. The Contractor shall identify the capacity available in the units and the capacity reserved for the subject waste.

   e. The Contractor shall provide the date of the proposed facility(ies) last compliance inspection under RCRA.

   f. A list of all active (unresolved) compliance orders, agreements, enforcement notices or notices of violations issued to the proposed facility shall be approved. The source and nature of the cause of violation shall be stated, if known.

8. Description of all sampling and analyses that will be needed to obtain disposal facility approval.

8.01 H.2 MATERIALS

A. Containers shall be watertight as required in the DOT regulations and must meet all applicable regulations including but not limited to those in Attachment 2.

B. Polyethylene (20 mil. thickness minimum) to be placed under and (10 mil. thickness minimum) over soil piles. If soils are placed in drums, polyethylene must be placed over the drums.

8.01 H1.3 CONSTRUCTION DETAILS

A. Material Handling

1. The Contractor shall institute procedures to protect site personnel and the public from the non-hazardous and hazardous materials as described in Section 8.01 S - Health and Safety.

2. The Contractor shall handle hazardous soil as approved in the MHP.

3. Stockpiled materials at the temporary TSD facility shall be handled according to the facility requirements but at a minimum: shall be drummed or placed on and covered with polyethylene to protect against erosion and leaching into surrounding soils, the stockpile area shall be graded for positive drainage away from the pile, and shall be labeled while being held for sampling prior to permanent disposal.

4. Provide any dewatering that is necessary to complete the work. Water shall be disposed of in accordance with Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

B. Off-Site Transportation and Disposal

1. The Contractor shall furnish all labor, equipment and supplies required to transport hazardous materials from the work area to the off-site TSD facility(ies) and to acquire any other items and services required for transporting hazardous materials for storage and/or disposal at an approved off-site facility.

2. Weight Measurement

   a. The Contractor shall submit the name and location of the facility where an off-site scale is located. The Contractor shall also submit a plan to the DDC for review outlining procedures on controlling trucks leaving the work site and on-route to the off-site scale. The Contractor shall be responsible for tracking all materials/vehicles from the site to the off-site scale.

   b. The Contractor shall provide to the DDC certified tare and gross weight slips for each load received at the accepted facility which shall be attached to each returned manifest.

3. General

   a. Manifests: The Contractor shall organize and maintain the material shipment records/manifests required by law.

   b. The Contractor shall coordinate the schedule for truck arrival and material deliveries at the job site to meet the approved project schedule. The schedule shall be compatible with the availability of equipment and personnel for material handling at the job site.

c. The Contractor shall inspect all vehicles leaving the project site to ensure that hazardous soils adhering to the wheels or under carriage are removed prior to the vehicle leaving the site.

d. The Contractor shall obtain letters of commitment from the waste haulers and the TSD facility to haul and accept shipments. The letter shall indicate agreement to handle and accept the specified estimated quantities and types of material during the time period specified in the project schedule and any time extension as deemed as necessary.

4. Hauling

a. The Contractor shall not deliver waste to any facility other than the TSD facility(ies) listed on the shipping manifest.

b. The Contractor shall coordinate manifesting, placarding, of shipments, and vehicle decontamination. All quantities shall also be measured and recorded upon arrival at the TSD facility. If any deviation between the two records occurs, the matter is to be reported immediately to the DDC and to be resolved by the Contractor to the satisfaction of the DDC.

c. The Contractor shall be held responsible, at its own expense, for any and all actions necessary to remedy situations involving material spilled in transit or mud and dust tracked off-site.

d. The Contractor shall ensure that trucks are protected against contamination by properly covering and lining them with compatible material (such as polyethylene) or by decontaminating them prior to any use other than hauling hazardous materials.

e. The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance, and weight restrictions.

f. The Contractor shall only use the transporter(s) identified in the MHP for the performance of work. Only a transporter with a current Part 364 Waste Transporter Permit from the DEC may transport this material. Any use of substitute or additional transporters must have previous written approval from the DDC at no additional cost to the City.

g. The Contractor shall develop, document, and implement a policy for accident prevention.

h. The Contractor shall not combine hazardous materials from other projects with material from this project.

i. **The Contractor shall obtain for the City an EPA hazardous waste generator identification number and a representative of Program Management, OEGS will review and sign the manifest as the generator.**

j. No materials shall be transported until approved by the DDC.

5. Off-Site Disposal

a. The Contractor shall be responsible for acceptance of the materials at an approved TSD facility, for ensuring that the facility is properly permitted to accept the stated materials, and that the facility provides the stated storage and/or disposal services.

b. In the event that the identified and approved facility ceases to accept the stated materials or the facility ceases operations, it is the Contractor's responsibility to locate an alternate approved and permitted facility(ies) for accepting materials.

The Contractor is responsible for making the necessary arrangements to utilize the facility(ies), and the alternate facility(ies) must be approved in writing by the DDC in the same manner and with the same requirements as for the original facility(ies). This shall be done with no extra cost or delay to the City.

c. The Contractor shall submit all results and weights to the DDC.

d. **The Contractor is responsible to pay all fees associated with the generation and disposal of all excavated hazardous waste. These fees include, but are not limited to, the New York State Department of Finance and Taxation (DFT) quarterly fees for hazardous waste and the New York State DEC annual hazardous waste regulatory fee program. The Contractor shall submit a copy of proof of payment to the DDC and Program Management, OEGS.**

6. Equipment and Vehicle Decontamination

The Contractor shall design and construct a portable decontamination station to be used to decontaminate equipment and vehicles exiting from the exclusion zone. The cost for this work shall be paid under Item 8.01 S - Health and Safety. Disposal of decontamination liquids is described under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

7. Record Keeping

The Contractor shall obtain manifest forms, and complete the shipment manifest records required by the appropriate regulatory agencies for verifying the material and quantity of each load in unit of volume and weight. Copies of each manifest shall be submitted to the DDC within four (4) business days following shipment, and within three (3) business days after notification of receipt of the facility. Any manifest discrepancies shall be reported immediately to the DDC and be resolved by the Contractor to the satisfaction of the DDC.

8.01 H.4 METHOD MEASUREMENT

Quantities for hazardous soil shall be measured in tons satisfactorily delivered to the treatment, storage or disposal facility. The tonnage will be determined by off-site truck scales, as per subsection 8.01 H1.3.B.2, that are capable of generating load tickets.

8.01 H.5 PRICE TO COVER

A. The unit price bid per ton for Item 8.01 H shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for excavation, handling, transportation, disposal, documentation, permits, fees, taxes, stockpiling, hauling, and any other incidentals necessary to complete the work as specified herein for handling, transporting and disposal of hazardous soils.

B. Final disposal of non-hazardous materials shall be paid for under Item 8.01 C1 – Handling, Transporting and Disposal of Non-Hazardous Soils. Disposal of decontamination water shall be paid under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

C The independent Environmental Consultant shall be paid under Item 8.01 S – Health and Safety.

D. Backfill will be paid for under its respective item.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 H	Handling, Transporting, and Disposal of Hazardous Soils	Tons

ITEM 8.01 S HEALTH AND SAFETY

8.01 S.1 WORK TO INCLUDE

Health and Safety Requirements

A. Scope of Work

It is the Contractor's responsibility to stage and conduct his work in a safe manner. The Contractor shall implement a Health and Safety Plan (HASP) for contaminated/hazardous soil intrusive activities as set forth in Occupational Safety and Health Administration (OSHA) Standards 1910.120 and 1926.650-652. The Contractor shall ensure that all workers have at a minimum hazard awareness training. The Contractor shall segregate contaminated work area in secured exclusion zones. These zones shall limit access to Contractor personnel specifically trained to enter the work area. The exclusion zone shall be set up to secure the area from the public and untrained personnel. The project health and safety program shall apply to all construction personnel including persons entering the work area. In addition, the Contractor shall protect the public from on-site hazards, including subsurface contaminants associated with on-site activities. The HASP shall be signed off by a Certified Industrial Hygienist and reviewed by Program Management, Office of Environmental and Geotechnical Services (OEGS).

Work shall include, but not be limited to:

1. Implementation of a baseline medical program.
2. Providing safety equipment and protective clothing for site personnel, including maintenance of equipment on a daily basis; replacement of disposable equipment as required; decontamination of clothing, equipment and personnel; and providing all other health and safety measures.
3. Providing, installing, operating and maintaining on-site emergency medical first aid equipment as specified in this section for which payment is not provided under other pay items in this Contract.
4. Providing, installing, operating, maintaining and decommissioning all equipment and personnel decontamination facilities specified within this section, including, but not limited to, the decontamination pad, decontamination water supply, decontamination water collection equipment and all other items and services required for the implementation of the health and safety requirements for which pay items are not provided elsewhere in this Contract.
5. Provide the minimum health and safety requirements for excavation activities within the limits of this Contract.
6. Implement and enforce a HASP: The HASP as presented in these specifications is dynamic with provisions for change to reflect new information, new practices or procedures, changing site environmental conditions or other situations which may affect site workers and the public. The HASP will also address measures for community protection, accident prevention, personnel protection, emergency response/contingency

planning, air monitoring, odor control and hazardous chemicals expected on site. Providing a Confined Space Entry Program as defined in the Occupational Safety and Health Act, Confined Space Entry Standard, 29 CFR 1910.146.

B. Environmental Consulting Services

The Contractor shall retain an independent Environmental Consultant to obtain all permits and perform all field screening, air monitoring, community air monitoring, soil sampling, and health and safety services. The independent Environmental Consultant shall at a minimum provide documentation to the Program Management, OEGS demonstrating the minimum requirements as set forth below:

1. The independent Environmental Consultant project supervisor on site and other designated key personnel shall have a minimum of three (3) years experience in the environmental field dealing with issues associated with contaminated soils. Such experience shall include oversight on environmental, specifically volatile organic compound and dust monitoring services as a routine part of its daily operations.
2. The independent Environmental Consultant must be experienced in work of this nature, size, and complexity and must have previous experience in working with the DEC.
3. The independent Environmental Consultant shall furnish a project listing identifying the location, nature of services provided, owner, owner's contact, contact's telephone number, project duration and value for at least five (5) projects within the last three (3) years.
4. If conditions within the exclusion zone are deemed hazardous, then the Contractor and its independent Environmental Consultant shall ensure that all personnel working within identified exclusion zones and/or involved (direct contact) with the handling, storage or transport of hazardous and contaminated materials shall have completed a minimum of forty (40) hours of Health and Safety Training on Hazardous Waste Sites in accordance with 29 CFR 1910.120(e). The training program shall be conducted by a qualified safety instructor. If conditions in the exclusion zone are deemed to be non-hazardous, the independent Environmental Consultant shall provide site specific training.
5. The Contractor shall ensure that on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations shall receive the training specified in above and at least eight (8) additional hours of specialized training on managing such operations at the time of job assignment.

C. Submittals

1. The Contractor shall submit, a written HASP, as specified herein, to Program Management, OEGS for review and comment. The written HASP shall be submitted, within thirty (30) calendar days after the availability of analytical results of the soil and groundwater testing, as required under Section 8.01 C2 and Section 8.01 W2. The Contractor shall make all necessary revisions required by Program Management, OEGS and resubmit the HASP to the Program Management, OEGS for acceptance. Start-up work for the project will not be permitted until written acceptance has been issued by the Program Management, OEGS.
2. Daily safety logs shall be maintained by the Contractor and shall be submitted to the DDC either on request or on completion of the work. Training logs shall be maintained by the Contractor and submitted to the DDC either on request or on completion of the work. Daily logs on air monitoring during excavation activities shall be prepared and maintained by the Contractor and submitted to the DDC either on request or upon completion of the work.

3. A closeout report shall be submitted by the Contractor to the DDC upon completion of the work within the defined exclusion zones. This report shall summarize the daily safety and monitoring logs and provides an overview of the Contractor's performance regarding environmental and safety issues. The report shall carefully document all areas where contamination has been found including pictures, addresses of locations, and potential sources.

4. Medical Surveillance Examinations: The Contractor shall submit to the DDC the name, office address and telephone number of the medical consultant utilized. Evidence of baseline medical examinations together with the evidence of the ability to wear National Institute for Occupational Safety and Health (NIOSH) approved respirators (as specified in American National Standards Institute (ANSI) Z88.6) shall be provided to the DDC for all construction personnel who are to enter the exclusion zones.

5. Accident Reports: All accidents, spills, or other health and safety incidents shall be reported to the DDC.

D. Health and Safety Plan

The HASP shall comply with OSHA regulations 29 CFR 1910.120/1926.65. This document shall at a minimum contain the following:

1. Description of work to be performed
2. Site description
3. Key personnel
4. Worker training procedures
5. Work practices and segregation of work area
6. Hazardous substance evaluation
7. Hazard assessment
8. Personal and community air monitoring procedures and action levels
9. Personal protective equipment
10. Decontamination procedures
11. Safety rules
12. Emergency procedures
13. Spill control, dust control, vapor/odor suppression procedures
14. Identification of the nearest hospital and route
15. Confined space procedures
16. Excavation safety procedures

8.01 S.2 MEASUREMENT

Health and Safety Requirements

A. 25% of the lump sum price will be paid when the following items are implemented or mobilized:

Medical surveillance program
Health and safety training
Health and safety plan
Environmental and personnel monitoring
Instrumentation
Spill control
Dust control
Personnel and equipment decontamination facilities
Personnel protective clothing
Communications

Mobilization

B. 50% will be paid in proportional monthly amounts over the period of work.

C 25% will be paid when the operation is demobilized and removed from the project site.

8.01 S.3 PRICE TO COVER

Health and Safety Requirements

The lump sum price bid for the health and safety requirements shall include all labor, materials, equipment, and insurance necessary to complete the work in accordance with these specifications. The price bid shall include, but not be limited to, the following:

A. Providing training, safety personnel, air monitoring and medical examinations as specified.

B. Providing safety equipment and protective clothing for site personnel, including maintenance of equipment on a daily basis; replacement of disposable equipment as required; decontamination of clothing, equipment and personnel; and all other health and safety activities or costs not paid for under other pay items in this Contract.

C. Providing, installing, operating and maintaining on-site emergency medical and first aid equipment. This includes all furnishings, equipment, supplies and maintenance of all medical equipment, and all other health and safety items and services for which payment is not provided under other pay items in this Contract.

D. Providing, installing, operating, maintaining, and decommissioning all personnel and equipment decontamination facilities, including decontamination pad, decontamination water supply, and all other items and services required for the implementation of the health and safety requirements for which pay items are not provided elsewhere in this Contract. Vehicle decontamination pads shall be included in the price of this item. Disposal of decontamination fluid shall be paid for under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

E. Spill Control

1. Payment shall account for furnishing, installing, and maintaining all spill control equipment and facilities. Payment will include equipment and personnel to perform emergency measures required to contain any spillage and to remove spilled materials and soils or liquids that become contaminated due to spillage during work within the exclusion zones and handling of excavated soils and liquids from these areas. This collected spill material will be properly disposed of.

2. Payment under this item shall not include testing, handling, transportation or disposal of petroleum-contaminated/potentially hazardous soils excavated during construction. The price for this work will be paid for under Items 8.01 C1 – Handling, Transporting and Disposal of Non-Hazardous Contaminated Soils, 8.01 C2 – Sampling and Testing of Contaminated/Potentially Hazardous Soil for Disposal Parameters or 8.01 H – Handling, Transporting and Disposal of Hazardous Soils, as appropriate.

F. Dust Control

Payment shall account for furnishing, installing, and maintaining dust control equipment and facilities to be used whenever applicable dust levels are exceeded. Payment will include all necessary labor, equipment, clean water, foam, and all other materials required by the Dust Control Plan. The DOH Community Air Monitoring Plan (CAMP) may be used as guidance.

G. Vapor/Odor Suppression

Payment shall account for furnishing, installing and maintaining vapor/odor control equipment and facilities to be used whenever organic vapor monitoring or the presence of odors indicates that vapor suppression is required to protect workers or the public. Payment will include all necessary labor, equipment, clean water, foam and all other materials required by the Vapor/Odor Suppression Plan.

H. Mobilization/Demobilization

1. Mobilization

Payment shall include but not be limited to:

a. All work required to furnish, install and maintain all signs, fencing, support zone facilities, parking areas and all temporary utilities;

b. All work required to furnish, install, and maintain an office space with phone and utilities for health and safety personnel;

c. All work required for complete preparation of lay down area for roll-off containers, including sampling, and any required fencing;

d. All direct invoiced cost from bonding companies and government agencies for permits and costs of insurance; and

e. All other items and services required for mobilization and site preparation.

2. Demobilization

Payment shall include but not be limited to: All work required to sample the area; remove from the site all equipment, temporary utilities and supporting facilities; performance of necessary decontamination and repairs; disposal of disposable equipment and protective gear and other items and services required for complete demobilization.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 S	Health and Safety	Lump Sum

ITEM 8.01 W1 REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER

8.01 W1.1 WORK TO INCLUDE

General: This work shall consist of the proper removal and disposal of all contaminated groundwater and decontamination water generated during construction operations. The Contractor shall be solely responsible for the proper disposal or discharge of all contaminated water generated at the job site. The Contractor will have the option of treating water on-site for discharge to the combined sanitary/storm sewer system or removing contaminated water for off-site disposal. The Contractor shall be responsible to choose a method compatible to the construction work and shall be compensated on a per day basis regardless of method employed. The Contractor will be compensated for only those days where the system is in full operation.

The Contractor shall retain a dewatering/water treatment Specialist (hereinafter the "Specialist") and laboratory as specified under Item 8.01 W2 – Sampling and Testing of Contaminated Water, to conduct any testing that may be required for disposal of impacted water.

The dewatering/water treatment Specialist is responsible to obtain all permits; perform all water sampling, testing; and provide ancillary services related to dewatering and water treatment. The Specialist shall at a minimum provide documentation to the Program Management, Office of Environmental and Geotechnical Services (OEGS) demonstrating the minimum requirements as set forth below:

1. The Specialist shall demonstrate that it has, at a minimum, three (3) years experience in the design of dewatering plans. The Specialist should demonstrate expertise dealing with issues associated with contaminated water. During that three (3) year period, the Specialist shall demonstrate that it provided dewatering and water treatment systems as a routine part of its daily operations.
2. The Specialist must be experienced in work of this nature, size, and complexity and must have previous experience in working with the DEC.
3. The Specialist shall furnish a project listing identifying the location, nature of services provided, owner, owner's contact, contact's telephone number, project duration and value for at least five (5) projects within the last three (3) years of a similar nature, size, and complexity to this one.
4. If conditions within the exclusion zone are deemed hazardous, then the Contractor and its independent Environmental Consultant shall ensure that all personnel working within identified exclusion zones and/or involved (direct contact) with the handling, storage or transport of hazardous and contaminated material shall have completed a minimum of forty (40) hours of Health and Safety Training on Hazardous Waste Sites in accordance with 29 CFR 1910.120(e). The training program shall be conducted by a qualified safety instructor. If conditions in the exclusion zone are deemed to be non-hazardous, the Specialist shall be responsible to provide site-specific training to its employees and other affected personnel.
5. The Contractor shall ensure that on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations shall receive the training specified in above and at least eight (8) additional hours of specialized training on managing such operations at the time of job assignment.

The Contractor shall document all operations associated with the handling, sampling and disposal of contaminated water, and ensure that they are in compliance with applicable Federal, State and Local statutes and regulations.

The Contractor shall supply all labor, equipment, transport, plant, material, treatment, and other incidentals required to conduct the specified work of this section.

If water will be disposed of into the combined sanitary/storm sewer system, the Contractor shall ensure the Specialist treats the water to comply with the New York City Department of Environmental Protection (DEP) Sanitary/Combined and Storm Sewer Effluent Limit concentrations prior to discharge. The Contractor is responsible for providing settling or filtering tanks and any other apparatus required by DEP. Alternatively, the Contractor can provide a plan for transport and disposal at an off-site waste disposal facility.

Within forty-five (45) calendar days after award of Contract, the Contractor shall submit to the Program Management, OEGS for review, a Water Handling Plan (WHP). The WHP must be approved by the Program Management, OEGS, prior to the Contractor's commencement of work. The minimum requirements for the WHP are specified herein Item 8.01W 1.2, for each type of disposal (disposal into the combined sanitary/storm sewer or off-site disposal). The Contractor shall maintain a complete, up to date copy of the WHP on the job site at all times.

8.01 W1.2 CONSTRUCTION DETAILS

For each disposal method the Contractor proposes to utilize (disposal to combined sanitary/storm sewer or off-site disposal), the WHP shall include the information required in paragraphs A and B below, as appropriate.

A. On-site treatment and discharge into New York City combined sanitary/storm sewers.

1. Regulations: The Contractor shall comply with all applicable regulations. This includes but may not be limited to:

   Title 15-New DEP Sewer Use Regulations.

2. Permits: The Contractor is solely responsible to obtain all necessary and appropriate Federal, State and Local permits and approvals. The Contractor will be responsible for performing all and any system pilot tests required for permit approval. This includes but may not be limited to:

   a. Industrial waste approval for the New York City sewer system.

   b. Groundwater discharge permit for the New York City sewer system (DEP Division of Sewer Regulation and Control), if discharge to sewer exceeds 10,000 gallons per day.

   c. The Contractor shall comply with DEC State Pollutant Discharge Elimination System (SPDES) Permit Number GP-0-10-001, General Permit for Stormwater Discharges.

   d. Long Island well point permit for Brooklyn and Queens sites, if well points are used for dewatering.

   e. Wastewater quality control application, DEP.

3. The WHP for this portion of the work shall include at a minimum:

a. Identification and design of Contractor's proposed treatment to assure that the water meets the DEP sewer use guidelines prior to discharge to the sewer, including identification of all materials, procedures, settling or filtering tanks, filters and other appurtenances proposed for treatment and disposal of contaminated water.

b. The name, address and telephone number of the contact for the Contractor's proposed chemical laboratory, as well as the laboratory's certifications under Federal, State or non-governmental bodies.

c. The name, address and telephone number of the contact for the Contractor's proposed independent Environmental Consultant.

d. Copies of all submitted permit applications and approved permits the Contractor have received.

4. Materials

The Contractor shall supply all settling or filtering tanks, pumps, filters, treatment devices and other appurtenances for treatment, temporary storage and disposal of contaminated water. All equipment shall be suitable for the work described herein.

5. Execution

a. The Contractor is solely responsible for disposal of all water, in accordance with all Federal, State and Local regulations.

b. The Contractor is solely responsible for any treatment required to assure that water discharged into the sewer is in compliance with all permits and Federal, State and Local statutes and regulations.

c. The Contractor is solely responsible for the quality of the water disposed of into the sewers.

d. The Contractor is responsible for sampling and testing of water for the DEP Sanitary/Combined and Storm sewer Effluent Limit concentrations. The quality of the data is the Contractor's responsibility. Any sampling and testing shall be conducted and paid in accordance with Item 8.01 W2 – Sampling and Testing of Contaminated Water.

e. The Contractor shall be responsible to maintain the discharge rate to the sewer such that all permit requirements are met, the capacity of the sewer is not exceeded and no surcharging occurs downstream due to the Contractor's actions. Dewatering by means of well points or deep wells will not be allowed in the Boroughs of Brooklyn or Queens where the rate of pumping exceeds forty-five (45) gallons per minute unless the appropriate permit has been secured from the DEC.

f. Disposal of Treatment Media

(1) The Contractor shall be responsible for disposal or recycling of treatment media in accordance with all Federal, State and Local regulations.

(2) The Contractor shall provide the DDC with all relevant documentation concerning the disposal of treatment media, including manifests, bills of

lading, certificates of recycling or destruction and other applicable documentation.

(3) **Disposal of treatment media shall not be considered as a separate pay item; instead it shall be considered as incidental work thereto and included in the unit price bid.**

B. Off-Site Disposal

1. Regulations: The Contractor shall conform to all applicable Federal, State and Local regulations pertaining to the transportation, storage and disposal of any hazardous and/or non-hazardous materials as listed in Attachment 2.

2. The following shall be submitted to the DDC prior to initiating any off-site disposal:

a. (1) Name and waste transporter permit number

(2) Address

(3) Name of responsible contact for the hauler

(4) Any and all necessary permit authorizations for each type of waste transported

(5) Previous experience in performing the type of work specified herein

b. General information for each proposed treatment/disposal facility and at least one backup treatment/disposal facility

(1) Facility name and EPA identification number

(2) Facility location

(3) Name of responsible contact for the facility

(4) Telephone number for contact

(5) Unit of measure utilized at facility for costing purposes

c. A listing of all permits, licenses, letters of approval and other authorizations to operate, which are currently held and valid for the proposed facility as they pertain to receipt and management of the wastes derived from this Contract.

d. A listing of all permits, licenses, letters of approval and other authorizations to operate which have been applied for by the proposed facility but not yet granted or issued. Provide dates of application(s) submitted. Planned submittals shall also be noted.

e. The Contractor shall specify and describe the disposal/containment unit(s) that the proposed facility will use to manage the waste and provide dates of construction and beginning of use, if applicable. Drawings may be provided. The Contractor shall identify the capacity available in the units and the capacity reserved for the subject waste.

f. The Contractor shall provide the date of the proposed facility's last compliance inspection.

g. A list of all active (unresolved) compliance orders, agreements, enforcement notices or notices of violations issued to the proposed facility shall be submitted. The source and nature of the cause of violation shall be stated, if known. If groundwater contamination is noted, details of the facility's groundwater monitoring program shall be provided.

h. Description of all sampling and field/laboratory analyses that will be needed to obtain disposal facility approval.

3. Materials

All vessels for temporary storage and transport to an off-site disposal facility shall be as required in DOT regulations.

4. Execution

a. General

(1) The Contractor shall organize and maintain the material shipment records/manifests required by Federal, State and Local law. The Contractor shall include all bills of lading, certificates of destruction, recycling or treatment and other applicable documents.

(2) The Contractor shall coordinate the schedule for truck arrival and material deliveries at the job site to meet the approved project schedule. The schedule shall be compatible with the availability of equipment and personnel for material handling at the job site.

(3) The Contractor shall inspect all vehicles leaving the project site to ensure that contaminated liquids are not spilling and are contained for transport.

(4) The Contractor shall obtain letters of commitment from the waste haulers and the treatment, disposal or recovery facility to haul and accept shipment. The letter shall indicate agreement to handle and accept the specified estimated quantities and types of material during the time period specified in the project schedule and any time extension as deemed as necessary.

(5) The Contractor shall verify the volume of each shipment of water from the site.

(6) The Contractor is responsible for sampling and testing of water for off-site disposal. The quality of the data is the Contractor's responsibility. Any sampling and testing shall be conducted and paid in accordance with Item 8.01 W2 – Sampling and Testing of Contaminated Water.

(7) The Contractor shall be responsible for any additional analyses required by the TSD facility, and for the acceptance of the water at an approved TSD facility.

b. Hauling

(1) The Contractor shall not deliver waste to any facility other than the TSD facility(ies) listed on the shipping manifest.

(2) The Contractor shall coordinate manifesting, placarding of shipments, and vehicle decontamination. All quantities shall also be measured and recorded upon arrival at the TSD facility(ies). If any deviation between the two records occurs, the matter is to be reported immediately to the DDC and shall be resolved by the Contractor to the satisfaction of the DDC.

(3) The Contractor shall be held responsible for any and all actions necessary to remedy situations involving material spilled in transit or mud and dust tracked off-site. This cleanup shall be accomplished at the Contractor's expense.

(4) The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance and weight restrictions.

(5) The Contractor shall only use the transporter(s) identified in the WHP for the performance of work. Only a transporter with a current Part 364 Waste Transporter Permit from DEC may transport this material. Any use of substitute or additional transporters must have previous written approval from the DDC at no additional cost to the City.

(6) The Contractor shall develop, document, and implement a policy for accident prevention.

(7) The Contractor shall not combine waste materials from other projects with material from this project.

(8) The Contractor shall obtain for the City a hazardous waste generator identification number and will sign the manifest as the generator, if necessary.

(9) No material shall be transported until approved by the DDC.

c. Disposal Facilities

(1) The Contractor shall use only the TSD facility(ies) identified in the WHP for the performance of the work. Substitutions or additions shall not be permitted without prior written approval from the Program Management, OEGS, and, if approved, shall be at no extra cost to the City.

(2) The Contractor shall be responsible for acceptance of the material at an approved TSD facility, for ensuring that the facility is properly permitted to accept the stated material, and that the facility provides the stated storage and/or disposal services.

(3) The DDC reserves the right to contact and visit the disposal facility and regulatory agencies to verify the agreement to accept the stated material and to verify any other information provided. This does not in any way relieve the Contractor of his responsibilities under this Contract.

(4) In the event that the identified and approved facility ceases to accept the stated materials or the facility ceases operations, it is the Contractor's responsibility to locate an alternate approved and permitted facility(ies) for accepting materials. The Contractor is responsible for making the necessary arrangements to utilize the facility(ies), and the alternate facility(ies) must be approved in writing by the DDC in the same manner and with the same

requirements as for the original facility(ies). This shall be done with no extra cost or delay to the City.

d. Equipment and Vehicle Decontamination

(1) The Contractor shall design and construct a portable decontamination station to be used to decontaminate equipment and vehicles exiting the exclusion zone. The cost for this work shall be paid under Item 8.01 S – Health and Safety.

8.01 W1.3 METHOD OF MEASUREMENT

The quantity for on-site treatment and discharge or off-site disposal shall be on a per day basis.

8.01 W1.4 PRICE TO COVER

A. The per day price bid for Item 8.01 W1 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for handling, transportation, disposal, documentation, permits, hauling, mobilization and demobilization, and any other incidentals thereto to complete the work.

B. The Contractor will not be paid for water that is within the DEP Sewer Discharge Limits.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 W1	Removal, Treatment and Disposal/Discharge of Contaminated Water	Day

ITEM 8.01 W2 SAMPLING AND TESTING OF CONTAMINATED WATER

8.01 W2.1 WORK TO INCLUDE

A. Description

The work shall consist of sampling and testing of potentially contaminated groundwater, surface runoff within the excavated area and all contaminated water generated during the decontamination process.

B. Sampling and Testing

1. The Contractor is responsible, at a minimum, for sampling and testing of contaminated water for the DEP Sanitary/Combined and Storm Sewer Effluent Limit concentrations as listed in Attachment 1, and in accordance with the DDC-approved SSP/FSP and the Investigation HASP, as specified in 8.01 C2. The quality of the data is the Contractor's responsibility. Any additional testing required by the Federal, State and/or disposal facilities shall be included in the bid price of this Item.

2. All sampling and testing shall be conducted by a person trained in sampling protocols using accepted standard practices and/or the DEC sampling guidelines and protocols.

3. All sample containers shall be marked with legible sample labels which shall indicate the project name, sample location and/or container, the sample number, the date and time of sampling, preservatives utilized, how the sample was chilled to 4 degrees Celsius, and other information that may be useful in determining the character of the sample.

4. Chain-of-custody shall be tracked from laboratory issuance of sample containers through receipt of the samples.

5. The Contractor shall maintain a bound sample log book. The Contractor shall provide the DDC access to it at all times and shall turn it over to the DDC in good condition at the completion of the work. The following information, as a minimum, shall be recorded to the log:

   a. Sample identification number

   b. Sample location

   c. Field observation

   d. Sample type

   e. Analyses

   f. Date/time of collection

   g. Collector's name

   h. Sample procedures and equipment used

   i. Date sent to laboratory/name of laboratory

6. Only dedicated sampling equipment may be used to collect these samples. All equipment involved in field sampling must be decontaminated before being brought to the site, and must be properly disposed of after use.

7. Samples shall be submitted to the Contractor's laboratory within the holding times for the parameters analyzed.

8. All analyses must be done by a laboratory that has received approval from the DOH's ELAP for the methods to be done. The Contractor must specify the laboratory in the WHP.

9. Analytical results for water discharged to the sewer and for off-site disposal must be submitted to the DDC no later than five (5) days after sample collection.

10. The City reserves the right to direct the Contractor to conduct alternative sampling in lieu of the parameters described above, if the situation warrants. The substitute sampling parameters shall be of equal or lesser monetary value than those described above, as determined by industry laboratory pricing standards.

8.01 W2.2 METHOD OF MEASUREMENT

Quantities for samples shall be measured as the number of sets of samples that are tested for the DEP Sanitary/Combined and Storm Sewer Effluent Limit concentrations. A set shall be defined as one (1) representative sample analyzed for the full range of DEP parameters as specified in attachment 1.

8.01 W2.3 PRICE TO COVER

The unit price bid per set for Item 8.01 W2 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for handling, transport, sampling, testing, documentation, permits, other incidentals necessary to complete the work of sampling and testing of contaminated water. Any additional costs incurred by the Contractor for sampling and testing of contaminated water shall be included in the bid price of this Item.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 W2	Sampling and Testing of Contaminated Water	Set

ATTACHMENT 1: NYCDEP LIMITATIONS FOR DISCHARGE TO STORM, SANITARY/COMBINED SEWER

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTEWATER TREATMENT

Limitations for Effluent to Sanitary or Combined Sewers

Parameter[1]	Daily Limit	Units	Sample Type	Monthly Limit
Non-polar material[2]	50	mg/l	Instantaneous	---
pH	5-11	SU's	Instantaneous	---
Temperature	< 150	Degree F	Instantaneous	---
Flash Point	> 140	Degree F	Instantaneous	---
Cadmium	2 0.69	mg/l mg/l	Instantaneous Composite	--- --
Chromium (VI)	5	mg/l	Instantaneous	---
Copper	5	mg/l	Instantaneous	---
Lead	2	mg/l	Instantaneous	---
Mercury	0.05	mg/l	Instantaneous	---
Nickel	3	mg/l	Instantaneous	---
Zinc	5	mg/l	Instantaneous	---
Benzene	134	ppb	Instantaneous	57
Carbontetrachloride	---	---	Composite	---
Chloroform	---	---	Composite	---
1,4 Dichlorobenzene	---	---	Composite	---
Ethylbenzene	380	ppb	Instantaneous	142
MTBE (Methyl-Tert-Butyl-Ether)	50	ppb	Instantaneous	---
Naphthalene	47	ppb	Composite	19
Phenol	---	---	Composite	---
Tetrachloroethylene (Perc)	20	ppb	Instantaneous	---
Toluene	74	ppb	Instantaneous	28
1,2,4 Trichlorobenzene	---	---	Composite	---
1,1,1 Trichloroethane	---	---	Composite	---
Xylenes (Total)	74	ppb	Instantaneous	28
PCB's (Total)[3]	1	ppb	Composite	---
Total Suspended Solids (TSS)	350[4]	mg/l	Instantaneous	---
CBOD[5]	---	---	Composite	---
Chloride[5]	---	---	Instantaneous	---
Total Nitrogen[5]	---	---	Composite	---

Total Solids[5]	---	---	Instantaneous	---

1 All handling and preservation of collected samples and laboratory analyses of samples shall be performed in accordance with 40 C.F.R. pt. 136. If 40 C.F.R. pt. 136 does not cover the pollutant in question, the handling, preservation, and analysis must be performed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater." All analyses shall be performed using a detection level less than the lowest applicable regulatory discharge limit. If a parameter does not have a limit, then the detection level is defined as the least of the Practical Quantitation Limits identified in NYSDEC's Analytical Detectability and Quantitation Guidelines for Selected Environmental Parameters, December 1988

2 Analysis for ***non-polar materials*** must be done by EPA method 1664 Rev. A. Non-Polar Material shall mean that portion of the oil and grease that is not eliminated from a solution containing N–Hexane, or any other extraction solvent the EPA shall prescribe, by silica gel absorption.

3 Analysis for PCB=s is required if ***both*** conditions listed below are met:
1) if proposed discharge ≥ 10,000 gpd;
2) if duration of a discharge > 10 days.
Analysis for PCB=s must be done by EPA method 608 with MDL=<65 ppt. PCB's (total) is the sum of PCB-1242 (Arochlor 1242), PCB-1254 (Arochlor 1254), PCB-1221 (Arochlor 1221), PCB-1232 (Arochlor 1232), PCB-1248 (Arochlor 1248), PCB-1260 (Arochlor 1260) and PCB-1016 (Arochlor 1016).

4 For discharge ≥ 10,000 gpd, the TSS limit is 350 mg/l. For discharge < 10,000gpd, the limit is determined on a case by case basis.

5 Analysis for Carbonaceous Biochemical Oxygen Demand (CBOD), Chloride, Total Solids and Total Nitrogen are required if proposed discharge ≥ 10,000 gpd.

ATTACHMENT 2: APPLICABLE REGULATIONS

Applicable regulations include, but are not limited to:

1. 49 CFR 100 to 179 - DOT Hazardous Materials Transport and Manifest System Requirements
2. New York State Department of Environmental Conservation (DEC), Spills Technology and Remediation Series (STARS) Memo #1
3. 6 NYCRR 360-1 DEC Solid Waste Management Facilities
4. 6 NYCRR 364- Waste Transporter permits
5. Local restrictions on transportation of waste/debris
6. 40 CFR 260 to 272 - Hazardous Waste Management (RCRA)
7. 6 NYCRR 371 - Identification and Listing of Hazardous Wastes
8. 6 NYCRR 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
9. 6 NYCRR 373-1 - Hazardous Waste Treatment, Storage and Disposal Facility Permitting Requirements
10. 6 NYCRR 376 - Land Disposal Restrictions
11. Posted weight limitations on roads or bridges
12. Transportation Skills Programs, Inc. 1985 - Hazardous Materials and Waste Shipping Papers and Manifests
13. Other local restrictions on transportation of waste/debris
14. Occupational Safety and Health Administration (OSHA), Standards and Regulations, 29 CFR 1910 (General Industry)
15. OSHA 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
16. OSHA Safety and Health Standards 29 CFR 1926 (Construction Industry)
17. OSHA 29 CFR 1910.146 Confined Space Entry Standard
18. Standard Operating Safety Guidelines, EPA Office of Emergency and Remedial Response Publication, 9285.1-03
19. NIOSH / OSHA / USCG / EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1986)
20. U.S. Department of Health and Human Services (DHHS) "NIOSH Sampling and Analytical Methods," DHHS (NIOSH) Publication 84-100
21. ANSI, Practice for Respiratory Protection, Z88.2 (1980)
22. ANSI, Emergency Eyewash and Shower Equipment, Z41.1 (1983)
23. ANSI, Protective Footwear, Z358.1 (1981)
24. ANSI, Physical Qualifications for Respirator Use, Z88.6 (1984)
25. ANSI, Practice for Occupational and Educational Eye and Face Protection, Z87.1 (1968)
26. Water Pollution Control Federation "Manual of Practice No. 1, Safety in Wastewater Works"
27. NFPA No. 327 "Standard Procedures for Cleaning and Safeguarding Small Tanks and Containers"

28. Occupational Safety and Health Act Confined Space Entry Standard 29 CFR 1910.146.87
29. Department of Transportation 49 CFR 100 through 179
30. Department of Transportation 49 CFR 387 (46 FR 30974, 47073)
31. Environmental Protection Agency 40 CFR 136 (41 FR 52779)
32. Environmental Protection Agency 40 CFR 262 and 761
33. Resource Conservation and Recovery Act (RCRA)
34. Any transporter of hazardous or non-hazardous materials shall be licensed in the State of New York and all other states traversed in accordance with all applicable regulations.

ATTACHMENT 3: DEFINITIONS

Contaminated Groundwater and Decontamination Fluids: Groundwater within the excavation trench or decontamination water that contains regulated compounds above the NYCDEP Discharge to Sanitary/Combined Sewer Effluent limits.

Disposal or Treatment Facility: A facility licensed to accept either non-hazardous regulated waste or hazardous waste for either treatment or disposal.

Exclusion Zone: Work area that will be limited to access by Contractor personnel specifically trained to enter the work area only. The exclusion zone will be set up to secure the area from the public and untrained personnel. The project health and safety program will apply to all construction personnel including persons entering the work area.

Hazard Assessment: An assessment of any physical hazards that may be encountered on a work site.

Hazardous Soils: Soils that exhibit any of the characteristics of a hazardous waste, namely ignitability, corrosivity, reactivity, and toxicity, as defined in 6 NYCRR Part 371, Section 371.3 and 40 CFR Section 261.

Hazardous Substance Evaluation: An evaluation of the possible or known presence of any hazardous substances that may be encountered on a job site. This evaluation is included in the Health and Safety Plan and will include the identification and description of any hazardous substances expected to be encountered. Material Safety Data Sheets (MSDS) will be included for each substance.

Health and Safety Plan: A plan employed at a work site that describes all the measures that will be taken to assure that all work is conducted in a safe manner, and that the health of the workers and the public will be insured.

Material Handling Plan: A plan outlining the methods that will be employed to handle, transport and dispose of contaminated materials.

Non-Hazardous Contaminated Soils: Soils which exhibit a distinct chemical or petroleum odor, or exhibit elevated photoionization detector readings but are not classified as hazardous waste under 6 NYCRR Part 371, Section 371.3 and 40 CFR Section 261.

New York State Health Department's Environmental Laboratory Approval Program: A program by which the state of New York approves and accredits environmental testing laboratories.

PCBs: Polychlorinated biphenyls are a group of toxic compounds commonly used as a coolant in transformers and other electrical components.

Photoionization Detector: A hand held instrument used to measure volatile organic compounds in air. The instrument ionizes the organic molecules through the use of an ultraviolet lamp.

RCRA Hazardous Waste Characteristics: Characteristics of a material which may indicate the material is hazardous. These include: ignitability corrosivity, reactivity, and toxicity.

Total Petroleum Hydrocarbons: An analytical procedure used to determine the total amount of petroleum compounds in a material.

ATTACHMENT 4: PHASE II SUBSURFACE CORRIDOR INVESTIGATION REPORT

- FINAL-

Phase II Subsurface Corridor Investigation Report

for

Baruch Plaza

E. 25th Street between 3rd Avenue and Lexington Avenue

Manhattan, New York

DDC PROJECT NO. HWBARUCH

WOL NO. 10131-LBA-3-R-9505

CONTRACT REGISTRATION NO. 20141401626

Prepared for:

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Bureau of Environmental and Geotechnical Services

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PROJECT NO. 3000647.368

March 2, 2015

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EXECUTIVE SUMMARY

On behalf of the New York City Department of Design and Construction (NYCDDC), Louis Berger & Assoc., PC (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (SCI) in preparation for proposed excavation activities for the installation of a new water main and construction of a permanent pedestrian plaza along the Corridor.

The Corridor consists of E. 25th Street between 3rd Avenue and Lexington Avenue in the Flatiron District in the Borough of Manhattan, New York. The Corridor is approximately 500 feet in length. The Corridor location is identified on the Topographic Map on Figure 1.

The Phase II SCI was conducted to determine if the Corridor's environmental condition may potentially impact the proposed construction activities.

Louis Berger prepared a Phase I Corridor Assessment Report (CAR) dated December 2014, which presented the results of a survey conducted along the Corridor to assess the presence of potential sources of subsurface contamination within, and in the immediate vicinity of, the Corridor. The Phase I CAR identified six (6) (i.e., four (4) blocks and two (2) individual sites) final "High" risk sites and four (4) final "Moderate" risk sites with respect to potential impact on the project Corridor (soil and/or groundwater), and recommended the completion of a Phase II SCI. The objective of the Phase II SCI was to assess the presence of subsurface contamination that may potentially impact proposed construction activities. The Phase II SCI was conducted on February 13, 2015 and consisted of the following components:

- The advancement of two (2) soil borings (SB01 and SB02) to terminal depths of between 15 to 16 feet below ground surface (ft bgs). All borings were initially pre-cleared, using a vacuum device (i.e., Vactron®) and air-knife method, to 6 ft bgs. The borings were then advanced using a Geoprobe® direct push drill rig. Soil samples were collected using 5-foot long, 2-inch diameter Macro Core® stainless steel samplers equipped with acetate sleeves;

- Field screening, classification and identification of soils from the surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of identifying visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one (1) composite and one (1) grab soil sample from each boring. The composite samples collected from the soil borings were comprised of soil from the entire boring column. The grab soil sample at SB01 was collected from the 6-inch interval above the perched water encountered at 13.5 ft bgs. The grab soil sample at SB02 was collected from the bottom 6-inch interval of the boring since groundwater was not encountered and no evidence of contamination was observed;

- Composite samples were analyzed for: (1) Target Compound List (TCL) base neutral/acid (BN/A) extractable semi-volatile organic compounds (SVOCs) by United States

Environmental Protection Agency (EPA) Method 8270; (2) Target Analyte List (TAL) metals by EPA Method 6010B; (3) TCL herbicides and pesticides by EPA Method 8151A and 8081A, respectively; and (4) TCL polychlorinated biphenyls (PCBs) by EPA Method 8082. The grab samples were analyzed for TCL volatile organic compounds (VOCs) by EPA Method 8260;

- The collection of one (1) composite waste classification soil sample (WC01). The composite sample was obtained by compositing aliquots from samples SB01 and SB02. The waste classification sample was analyzed for: (1) the EPA Full Toxicity Characteristics Leaching Procedure (TCLP) parameters by EPA Method SW846; and (2) the Resource Conservation and Recovery Act (RCRA) Characteristics (ignitability, reactivity and corrosivity) by EPA Method SW846; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant site features and, if applicable, contamination occurrence and distribution.

In order to evaluate subsurface soil quality, laboratory analytical results of grab and composite soil samples were compared with regulatory standards identified in: (1) New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Remedial Program Unrestricted, Residential, and Commercial Use (Track 1 and Track 2) Soil Cleanup Objectives (SCOs) and (2) NYSDEC CP-51 Soil Cleanup Guidance Supplemental Soil Cleanup Objectives (SSCOs) to NYSDEC Subpart 375-6. The laboratory analytical results of the waste classification soil sample were compared with the Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and NYSDEC Part 371.

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following conclusions are presented:

- No evidence of visual or olfactory contamination was observed in the soil and PID readings were not detected at any boring locations;

- The Corridor was found to be underlain with non-native fill material or reworked soils comprised mostly of moderate yellowish brown to dark yellowish brown coarse to fine sand with trace silt and little coarse to fine gravel from the surface to depths between 11.5 and 15 ft bgs. Due to the highly developed nature of the Corridor, it is assumed that soils encountered in the soil borings consist of reworked soils displaced during construction or renovation. At approximately 15 ft bgs at SB01 and 11.5 ft bgs at SB02, a native weathered schist layer comprised mostly of moderate yellowish brown to dark yellowish brown fine sand with trace silt was observed, which is indicative of the top of bedrock. Refusal in SB01 was encountered at 16 ft bgs. At SB02, the weathered schist layer was identified at 11.5 ft bgs and refusal was encountered at 15 ft bgs;

- At SB01, perched water was observed at approximately 13.5 ft bgs, directly above the weathered schist layer identified at 15 ft bgs. Approximately 6 inches of saturated soils

were recovered at SB01, which was an insufficient amount of water column for sampling at that location; furthermore, the water was not representative of regional groundwater beneath the Corridor. Regional groundwater was not encountered during this Phase II SCI;

- No VOCs were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI;

- Laboratory results indicate low-level detections of several SVOCs in soil sample SB01. No SVOCs were detected above the laboratory's reporting limits in soil sample SB02. No SVOCs were detected above regulatory standards;

- Several metals were detected in all soil samples; however, no exceedances of regulatory standards were reported except in SB01, where mercury exceeded the Unrestricted Use SCO (Track 1);

- No pesticides, herbicides, or PCBs were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI; and,

- Laboratory results of the analyses of waste classification sample WC01 indicate that the soil beneath the Corridor does not exhibit evidence of hazardous waste characteristics.

Based on the results of the field investigation and laboratory analytical results, Louis Berger recommends the following:

- The Contract documents should identify provisions for managing, handling, transporting and disposing of nonhazardous soil and nonhazardous impacted soil. The Contractor should be required to submit a Material Handling Plan, to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations in which findings from this Phase II SCI should be stated;

- Dust control procedures are recommended during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor may implement dust control measures to minimize potential airborne contaminants released into the ambient environment as a direct result of construction activities. A Community Air Monitoring Plan (CAMP) should be developed in accordance with NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site Investigation and Remediation* Regulations. The CAMP requires real-time monitoring for particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is intended to provide a measure of protection for the area of the surrounding community located downwind from the potential release of airborne contaminants. Specific requirements should be reviewed for each situation and coordinated with the New York State Department of Health (NYSDOH) to ensure proper applicability;

- Although perched water was encountered at SB01, regional groundwater was not encountered during this Phase II SCI. The estimated depth to groundwater ranges from 25 to

30 ft bgs. Depending on the location along the Corridor, dewatering may be necessary for the proposed excavation activities. If dewatering is necessary, the contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into sanitary and combined sewers;

- In addition, if discharge into storm sewers is required during dewatering, it may be performed under the appropriate NYSDEC State Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

- Before beginning any excavation activity, the contractor should submit a site-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the NYSDOH and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns (i.e., dust control procedures for metals).

1.0 INTRODUCTION

On behalf of the New York City Department of Design and Construction (NYCDDC), Louis Berger & Assoc., PC (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (SCI) in preparation for proposed excavation activities for the installation of a new water main and construction of a permanent pedestrian plaza along the Corridor.

The Corridor consists of E. 25th Street between 3rd Avenue and Lexington Avenue in the Flatiron District in the Borough of Manhattan, New York. The Corridor is approximately 500 feet in length. The Corridor location is identified on the Topographic Map on Figure 1.

The Phase II SCI was conducted to determine if the Corridor's environmental condition may potentially impact the proposed construction activities.

1.1 Summary of Previous Environmental Investigations

Louis Berger prepared a Phase I Corridor Assessment Report (CAR) for the Corridor in December 2014. The Corridor Assessment process involved conducting a Corridor reconnaissance to document current property use and conditions; a review of historical Sanborn Fire Insurance Maps to document historical property usage; and a review of a regulatory agency database report to identify Corridor properties and adjoining sites of potential environmental concern.

The December 2014 Phase I CAR identified six (6) (i.e., four (4) blocks and two (2) individual sites) final "High" risk sites and four (4) final "Moderate" risk sites with respect to potential impact on the project Corridor. The final "High" and "Moderate" risk sites are listed below:

HIGH RISK SITES

1) Con Edison V4846/105 E 24th Street/RFR Realty, Inc./345 Park Avenue South Building/ 343-353 Park Avenue South/State Armory/NYS Armory/68 Lexington Avenue Building; Block 881, Lots 1, 6 (Map IDs H211, K204, H207, H208, H209, H213, A36, A39, A40, A41, A42, A38, H212).
2) 137 E 25th Street/137 & 138 Realty LLC/137 E 25th Street aka 138 E. 26th St/Walker Prismatic Engraving/Lexington Building/Bernard M. Baruch College/Dormitory Authority State of NY/Baruch/160 E 26th Street Owners Corporation/Manhattan Promenade LLC/Arista Surgical Supply Co. Inc./Con Edison/Eldore Apartments Inc./Spill Number 0001653; Block 881, Lots 24, 29, 31, 39, 40, 41, 45, 47, 59, 60, 61, 62, 63, 64, 7501(Map IDs A1, A3, A5, A6, A7, A9, A10, A12, B27, B34, A35, B46, A59, A60, A61, B64, A119, F124).
3) Spill Number 9707248/Vacant Lot/LB Oil Company/49-51 Lexington Ave Garage/Gramercy Parking Terminal/DASNY - Baruch College Academic Complex/330 3rd Avenue Owners Corp./Hotel Gramercy/Hotel Amsterdam/Spill Number 9802030/Kalimian Apartment House; Block 880, Lots 24, 42, 50 (Map IDs A11, A13, A22, C45, A48, B51, B52, B53, B56, A63, D87, C95, C100, C101, C106, C107, C111, D131, E140, E141).

4) ATC Environmental Inc/ATC Associates/Madison Square Condominium/Kofler Associates/St. Francis Residences/Friends House in Rosehill/FM Ring Associates/Watton Studio Corp/Watton Studio TTF/RBH Management TTF/Elite II Cleaners/Education & Cultural Fund/Con ED/122 E 25th Street Condominium/Spill Number 971264920125 Owners Corporation, 349 3rd Avenue, 201 E 25th Street; Block 880, Lots 1, 2, 3, 4, 6, 9, 14, 16, 19, 73, 78, 80, 82, 84, 89, 92, 7501 (Map IDs A23, A24, A25, A49, A50, A54, A55, A73, E114, H130, E138, E139, E152, E157, H179, H180, H181, H182, H186, H191, H200, K204, H219, H220, H221).
5) Apartment House Storage/Marlin Cleaners; 200 E 26th Street, 351 3rd Avenue; Block 906, Lot 55 (Map IDs B65, B67, B66, B68).
6) 20125 Owners Corporation/201 E 25th Street Building/Vault #5735/Drum Run/Con Ed/Residential/Nail Salon; 349 3rd Avenue, 201 E 25th Street; Block 906, Lot 1 (Map IDs B14, B15, B16, B18, B21, B44).

MODERATE RISK SITES

7) 325-331 Realty/Residential/Deli/Restaurant; 329 3rd Avenue; Block 905, Lot 58 (Map ID B37).
8) RHIMS Properties, Inc./126 Bapaz LLC/Wine Heaven/Residential; 333 3rd Avenue; Block 905, Lot 57 (Map IDs B31, B30).
9) Office Building, 360 Park Avenue South; 360 Park Avenue South; Block 855, Lot 24 (Map IDs L345, L350).
10) Office Building, 352 Park Avenue South; Block 855, Lot 16 (Map ID L421).

1.2 Scope of Work

The Phase II SCI consisted of a field investigation, laboratory analyses, and the preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant site features and, if applicable, contamination occurrence and distribution. Drilling activities for the field investigation were performed by Aquifer Drilling and Testing, Inc. of Mineola, New York. Oversight of drilling activities was performed by Ms. Breanna Gribble, Project Scientist of Louis Berger. Laboratory analyses were provided by Hampton-Clarke/Veritech (HC-V) of Fairfield, New Jersey, which is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (No. 11408). Field derived Quality Assurance/Quality Control samples (i.e., field blanks, trip blanks, and duplicates) were not collected for this project. The field investigation was conducted on February 13, 2015 and consisted of the following components:

- The advancement of two (2) soil borings (SB01 and SB02) to terminal depths of between 15 to 16 feet below ground surface (ft bgs). All borings were initially pre-cleared, using a vacuum device (i.e., Vactron®) and air-knife method, to 6 ft bgs. The borings were then advanced using a Geoprobe® direct push drill rig. Soil samples were collected using 5-foot long, 2-inch diameter Macro Core® stainless steel samplers equipped with acetate sleeves;

- Field screening, classification and identification of soils from the surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of identifying visual and olfactory indicators of impacts as well as screening with a photoionization detector (PID);

- The collection of one (1) composite and one (1) grab soil sample from each boring. The composite samples collected from the soil borings were comprised of soil from the entire boring column. The grab soil sample at SB01 was collected from the 6-inch interval above the perched water detected at 13.5 ft bgs. The grab soil sample at SB02 was collected from the bottom 6-inch interval of the boring since groundwater was not encountered and no evidence of contamination was observed;

- Composite samples were analyzed for: (1) Target Compound List (TCL) base neutral/acid (BN/A) extractable semi-volatile organic compounds (SVOCs) by United States Environmental Protection Agency (EPA) Method 8270; (2) Target Analyte List (TAL) metals by EPA Method 6010B; (3) TCL herbicides and pesticides by EPA Method 8151A and 8081A, respectively; and (4) TCL polychlorinated biphenyls (PCBs) by EPA Method 8082. The grab samples were analyzed for TCL volatile organic compounds (VOCs) by EPA Method 8260;

- The collection of one (1) composite waste classification soil sample (WC01). The composite sample was obtained by compositing aliquots from samples SB01 and SB02. The waste classification sample was analyzed for: (1) the EPA Full Toxicity Characteristics Leaching Procedure (TCLP) parameters by EPA Method SW846; and (2) the Resource Conservation and Recovery Act (RCRA) Characteristics (ignitability, reactivity and corrosivity) by EPA Method SW846; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant site features and, if applicable, contamination occurrence and distribution.

2.0 CORRIDOR INFORMATION

2.1 Corridor Location, Description and Use

The project corridor is located in the Flatiron District in the Borough of Manhattan, New York. The Corridor consists of E. 25th Street between 3rd Avenue and Lexington Avenue, which is also identified as Baruch Plaza or the 25th Street Interim Plaza. The Corridor consists of a temporary pedestrian plaza, which will remain in place until a permanent plaza can be designed and constructed. Property usage within the area of E. 25th Street is primarily educational, with some commercial and residential operations. Baruch College, The City University of New York is located along the Corridor. The Corridor is approximately 500 feet long. A map of the Corridor area is presented as Figure 2.

Visible utility entities are present on the plaza and sidewalk areas throughout the Corridor and indicate the presence of multiple buried utilities including gas, sewer, water, electric and communication.

2.2 Description of Surrounding Properties

The Corridor is located in a densely populated urban area primarily surrounded by commercial and residential properties. Surrounding properties along Lexington Avenue include a New York State Armory and residential buildings with commercial usage on the ground floor. Similarly, surrounding properties along 3rd Avenue are primarily multi-family residential buildings with commercial uses on the ground floor, including a dry cleaner on the east side of 3rd Avenue between E. 25th Street and E. 26th Street. Surrounding properties along the Corridor include Baruch College, The City University of New York buildings (classrooms, theatre and residence halls) and some residential and commercial operations. Metropolitan Transportation Authority (MTA) subway train lines are present along Park Avenue to the west of the Corridor.

2.3 Corridor and Regional Topographic Setting

Louis Berger reviewed the United States Geologic Survey (USGS) 7.5-minute Topographic Quadrangle for Brooklyn, N.Y. (USGS, 1995) (Figure 1) to determine regional topography at the Corridor. The approximate elevation of the Corridor is 35 feet above mean sea level (msl). Surface runoff within the Corridor would be expected to flow east, ultimately discharging into the East River; however, surface run-off within the Corridor is managed by storm drains.

2.4 Corridor and Regional Geology

Based on the *NYC Reconnaissance Soil Survey* (2005), surficial soil is expected to consist of the Pavement & Buildings, till substratum complex. Generally, this complex is found in highly urbanized areas with greater than 80 percent of land surface covered by imperious development on 0 to 5 percent slopes. These soils generally form over glacial till.

Based on a review of the *Surficial Geologic Map of New York, Lower Hudson Sheet* (Caldwell, 1991), surficial soils are underlain by late Wisconsin-aged kame moraine gravel, sand and silt. These deposits can reach depths of more than 180 feet below ground surface (bgs), but generally occur between 15 and 90 feet in thickness. Underlying these glacial deposits are a series of tightly folded metamorphic rocks consisting of gneisses, schist, and quartzite (OFT, 2004).

The Corridor was found to be underlain with non-native fill material or reworked soils comprised mostly of moderate yellowish brown to dark yellowish brown coarse to fine sand with trace silt and little coarse to fine gravel from the surface to depths between 11.5 and 15 ft bgs. Due to the highly developed nature of the Corridor, it is assumed that soils encountered in the soil borings consist of reworked soils displaced during construction or renovation. At approximately 15 ft bgs at SB01 and 11.5 ft bgs at SB02, a native weathered schist layer comprised mostly of moderate yellowish brown to dark yellowish brown fine sand with trace silt was observed, which is indicative of the top of bedrock.

2.5 Corridor and Regional Hydrogeology

Although perched water was encountered at SB01, regional groundwater was not encountered during this Phase II SCI. At SB01, perched water was observed at approximately 13.5 ft bgs, directly above the weathered schist layer identified at 15 ft bgs. Based on the elevation of the East River (estimated to be approximately sea level) and the elevation of the Corridor ground surface (approximately 35 feet above msl), groundwater is anticipated to be present at approximately 25 to 30 feet bgs within the Corridor (USGS, 1995). Groundwater is anticipated to flow towards the east, towards the East River. Groundwater flow direction may also vary due to seasonal fluctuations in precipitation, local usage demands, local variation in geology, underground structures or local dewatering operations.

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, no wetlands are located along the Corridor; however, the East River is mapped as estuarine and marine deep water wetlands (USFWS, 2014).

The closest surface water body to the Corridor is the East River, located approximately 0.5 miles to the east. According to the environmental database report provided by Environmental Data Resources (EDR) of Milford, CT (Appendix C) and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 3604970201F (FEMA, 2007), the Corridor is located outside of the 100- and 500-year flood zones.

3.0 CORRIDOR EVALUATION

Proposed construction activities within the Corridor include soil excavation, which, in turn, requires that soils at the site be characterized to identify material handling requirements (i.e., use of protective equipment) and for material reuse, handling, and/or waste disposal requirements. Louis Berger provided oversight for the advancement of two (2) soil borings during the field investigation conducted on February 13, 2015. The field investigation was performed at designated areas in the vicinity of the planned construction. A summary of the field observations and details of the soil borings, is provided in Table 1.

3.1 Soil Quality Investigation

The two (2) soil borings (SB01 and SB02) were advanced to a maximum terminal depth of between 15 and 16 ft bgs. All borings were initially pre-cleared, using a vacuum device (i.e., Vactron®) and air-knife method, to 6 ft bgs. The borings were then advanced using a Geoprobe® direct push drill rig. Soil samples were collected using 5-foot long, 2-inch diameter Macro Core® stainless steel samplers equipped with acetate sleeves. Soil boring locations are depicted on Figure 2. The designations and sampling intervals for the samples that were submitted to the laboratory are included in Table 1. Maps depicting each boring location are included in Appendix A. Boring logs are provided in Appendix B. The locations of each boring are described below:

- **SB01** – Located in the concrete sidewalk along the north side of E. 25th Street, 40 feet and 10 inches east of the northeast corner of the intersection of E. 25th Street and Lexington Avenue, and 30 feet and 10 inches north of the curb along the south side of E. 25th Street.

- **SB02** – Located in the concrete sidewalk along the south side of E. 25th Street, 40 feet and 8 inches east of the southwest corner of the intersection of E. 25th Street and 3rd Avenue, and 30 feet and 8 inches south of the curb along the north side of E. 25th Street.

Soil from each boring was classified and examined for visual evidence (i.e., staining, discoloration) and any olfactory indications (i.e. odors) of contamination. Continuous soil cores were collected from each of the borings at 1-foot intervals. In addition, a PID was used to screen the soil for VOC vapors.

In order to identify representative conditions relative to the presence of SVOCs, metals, herbicides, pesticides and PCBs over the entire soil column in each boring, composite soil samples were collected by mixing the soil from the entire column in a stainless steel bowl. A boring composite sample was taken from each soil boring.

In order to identify representative conditions relative to the presence of VOCs, the grab soil sample at SB01 was collected from the 6-inch interval above the perched water detected at 13.5 ft bgs. The grab soil sample at SB02 was collected from the bottom 6-inch interval of the boring since groundwater was not encountered and no evidence of contamination was observed.

In order to identify representative conditions for disposal purposes, one (1) composite waste classification soil sample (WC01) was collected. The composite sample was obtained by compositing aliquots from samples from soil borings SB01 and SB02.

Soil classification information, including stratigraphy, is documented on the boring logs included in Appendix B. All boring equipment was cleaned by being rinsed with tap water, scrubbed with Alconox®, then rinsed with deionized water again between each sample interval. Following the completion of each boring, the boreholes were back-filled with drill cuttings, and then sealed with concrete, where appropriate.

3.2 Laboratory Analyses

Soil samples were submitted to Hampton-Clarke/Veritech (HC-V) of Fairfield, New Jersey, which is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (No. 11408). Field derived Quality Assurance/Quality Control samples (i.e., field blank, trip blank, duplicate) were not collected for this project. Laboratory analytical reports are included in Appendix C.

The grab soil samples were analyzed for TCL VOCs by Method 8260. The composite soil samples were analyzed for: (1) TCL BN/A extractable SVOCs by EPA Method 8270; (2) TAL metals by EPA Method 6010B; (3) TCL pesticides and herbicides by EPA Method 8081A and EPA Method 8151A, respectively; and (4) PCBs by EPA Method 8082. The waste classification soil sample was analyzed for: (1) EPA Full TCLP parameters and (2) RCRA Characteristics (ignitability, reactivity and corrosivity).

3.3 Data Evaluation

In order to evaluate subsurface soil quality, laboratory analytical results of grab and composite soil samples were compared with regulatory standards identified in: (1) New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Remedial Program Unrestricted, Residential, and Commercial Use (Track 1 and Track 2) Soil Cleanup Objectives (SCOs) and (2) NYSDEC CP-51 Soil Cleanup Guidance Supplemental Soil Cleanup Objectives (SSCOs) to NYSDEC Subpart 375-6. The laboratory analytical results of the waste classification soil sample were compared with the Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and NYSDEC Part 371.

4.0 FINDINGS

This section discusses the analytical data and findings for activities discussed in Section 3.0. Boring logs can be found in Appendix B. Complete analytical data reports are included in Appendix C.

4.1 Field Screening

Field screening consisted of identifying visual and olfactory indicators of potential impact, as well as screening soil for VOC vapors with a PID. No evidence of visual or olfactory contamination was observed and PID readings were not detected at any soil boring locations. Refer to Table 1 for a summary of environmental boring data.

4.2 Soil Laboratory Analytical Results

4.2.1 Volatile Organic Compounds (VOCs) in Soil

No VOCs were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI. Refer to Table 2 for a summary of VOC results.

4.2.2 Semi-Volatile Organic Compounds (SVOCs) in Soil

Laboratory results indicate low-level detections of several SVOCs in soil sample SB01. No SVOCs were detected above the laboratory's reporting limits in soil sample SB02. No SVOCs were detected above regulatory standards. Refer to Table 3 for a summary of SVOC detections.

4.2.3 Target Analyte List Metals (TAL Metals) in Soil

Several metals were detected in all soil samples; however, no exceedances of regulatory standards were reported except in SB01, where mercury exceeded the Unrestricted Use SCO (Track 1). The presence of metals in the borings can be attributed to non-native fill material or reworked soils displaced during construction or renovation in the area. Refer to Table 4 for a summary of metal detections.

4.2.4 Pesticides and Herbicides in Soil

No pesticides were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI. Refer to Table 5 for a summary of pesticide results.

No herbicides were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI. Refer to Table 6 for a summary of herbicide results.

4.2.5 PCBs in Soil

No PCBs were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI. Refer to Table 7 for a summary of PCB results.

4.2.6 Waste Classification of Soil

The composite waste classification sample WC01 was analyzed for USEPA RCRA hazardous waste characteristics, including corrosivity, ignitability, reactivity and toxicity. Although barium was detected in WC01 at a low level, results of these analyses indicate that the soil beneath the Corridor does not exhibit evidence of hazardous waste characteristics. Refer to Table 8 for a summary of TCLP parameters and RCRA characteristics results.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following conclusions are presented:

- No evidence of visual or olfactory contamination was observed in the soil and PID readings were not detected at any boring locations;

- The Corridor was found to be underlain with non-native fill material or reworked soils comprised mostly of moderate yellowish brown to dark yellowish brown coarse to fine sand with trace silt and little coarse to fine gravel from the surface to depths between 11.5 and 15 ft bgs. Due to the highly developed nature of the Corridor, it is assumed that soils encountered in the soil borings consist of reworked soils displaced during construction or renovation. At approximately 15 ft bgs at SB01 and 11.5 ft bgs at SB02, a native weathered schist layer comprised mostly of moderate yellowish brown to dark yellowish brown fine sand with trace silt was observed, which is indicative of the top of bedrock. Refusal in SB01 was encountered at 16 ft bgs. At SB02, the weathered schist layer was identified at 11.5 ft bgs and refusal was encountered at 15 ft bgs;

- At SB01, perched water was observed at approximately 13.5 ft bgs, directly above the weathered schist layer identified at 15 ft bgs. Approximately 6 inches of saturated soils were recovered at SB01, which was an insufficient amount of water column for sampling at that location; furthermore, the water was not representative of regional groundwater beneath the Corridor. Regional groundwater was not encountered during this Phase II SCI;

- No VOCs were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI;

- Laboratory results indicate low-level detections of several SVOCs in soil sample SB01. No SVOCs were detected above the laboratory's reporting limits in soil sample SB02. No SVOCs were detected above regulatory standards;

- Several metals were detected in all soil samples; however, no exceedances of regulatory standards were reported except in SB01, where mercury exceeded the Unrestricted Use SCO (Track 1);

- No pesticides, herbicides, or PCBs were detected above the laboratory's reporting limits in any of the soil samples collected as part of this Phase II SCI; and

- Laboratory results of the analyses of waste classification sample WC01 indicate that the soil beneath the Corridor does not exhibit evidence of hazardous waste characteristics.

Based on the results of the field investigation and laboratory analytical results, Louis Berger recommends the following:

- The Contract documents should identify provisions for managing, handling, transporting and disposing of nonhazardous soil and nonhazardous impacted soil. The Contractor should be required to submit a Material Handling Plan, to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations in which the findings from the Phase II SCI should be stated;

- Dust control procedures are recommended during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor may implement dust control measures to minimize potential airborne contaminants released into the ambient environment as a direct result of construction activities. A Community Air Monitoring Plan (CAMP) should be developed in accordance with NYSDEC DER-10 Regulations. The CAMP requires real-time monitoring for particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is intended to provide a measure of protection for the area of the surrounding community located downwind from the potential release of airborne contaminants. Specific requirements should be reviewed for each situation and coordinate with the New York State Department of Health (NYSDOH) to ensure proper applicability;

- Although perched water was encountered at SB01, regional groundwater was not encountered during this Phase II SCI. The estimated depth to groundwater ranges from 25 to 30 ft bgs. Depending on the location along the Corridor, dewatering may be necessary for the proposed excavation activities. If dewatering is necessary, the contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into sanitary and combined sewers;

- In addition, if discharge into storm sewers is required during dewatering, it may be performed under the appropriate NYSDEC State Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and

- Before beginning any excavation activity, the contractor should submit a site-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the NYSDOH and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns (i.e., dust control procedures for metals).

6.0 STATEMENT OF LIMITATIONS

The data presented and the opinions expressed in this report are qualified as stated in the attachment to this section of the report.

Report Prepared By:

Fameeda Ali, CHMM
Project Manager

Report Reviewed By:

Michael J. McCloskey, PG
QA/QC Manager

STATEMENT OF LIMITATIONS

The data presented and the opinions expressed in this report are qualified as follows:

The sole purpose of the investigation and of this report is to assess the physical characteristics of the Corridor with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable state and federal environmental laws and regulations and to gather information regarding current and past environmental conditions at the Site.

Louis Berger derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals with information about the Site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the Site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.

In preparing this report, Louis Berger has relied upon and presumed accurate certain information (or the absence thereof) about the Site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, Louis Berger has not attempted to verify the accuracy or completeness of any such information.

The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Services, including the extent of subsurface exploration and other tests. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the Site.

Because of the limitations stated above, the findings, observations, and conclusions expressed by Louis Berger in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation. No warranty or guarantee, whether express or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon site conditions in existence at the time of investigation.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the Agreement and the provisions thereof.

TABLES

TABLE 1 – SUMMARY OF ENVIRONMENTAL BORING DATA
TABLE 2 – SUMMARY OF TCL VOCs DETECTED IN SOIL
TABLE 3 – SUMMARY OF TCL SVOCs DETECTED IN SOIL
TABLE 4 – SUMMARY OF TAL METALS DETECTED IN SOIL
TABLE 5 – SUMMARY OF PESTICIDES DETECTED IN SOIL
TABLE 6 – SUMMARY OF HERBICIDES DETECTED IN SOIL
TABLE 7 – SUMMARY OF PCBs DETECTED IN SOIL
TABLE 8 – SUMMARY OF WASTE CLASSIFICATION PARAMETERS DETECTED IN SOIL

Table 1. Summary of Environmental Boring Data
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

Boring No.	Sample ID	High PID (ppm)	Sample Interval (ftbgs)	Total VOCs (mg/kg)	Total SVOCs (mg/kg)	Metals Exceed (Yes/No)[1]	Depth to Water (ftbgs)	Total Depth (ftbgs)	Other Comments
SB01	SB01	0.0	13.0 - 13.5	ND	--	Yes	NE	16.0	No visual/olfactory signs of contamination observed. Collected Waste Classification Sample WC01 from SB01 and SB02.
			0.5 - 16.0	--	0.97				
SB02	SB02	0.0	14.5 - 15.0	ND	--	No	NE	15.0	No visual/olfactory signs of contamination observed. Collected Waste Classification Sample WC01 from SB01 and SB02.
			0.5 - 15.0	--	ND				

Notes:
1. Metal(s) exceeds Unrestricted Use (Track 1) or Residential Use (Track 2) SCOs.
All soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds, Semi-Volatile Organic Compounds (SVOCs) Pesticides, PCBs, Target Analyte List (TAL) Metals and Herbicides.
PID = Photoionization detector
N/A = Not applicable.
ND = Not Detected
NE = Not Encountered
ftbgs = feet below ground surface

Table 2. Summary of Target Compound List Volatile Organic Compounds Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

TCL VOCs	Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Residential Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth	
				SB01	SB02
				2/13/2015	2/13/2015
				13.0 - 13.5	14.5 - 15.0
No VOCs were detected	NS	NS	NS	ND	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
BOLD = Concentration exceeds Residential Use (Track 2) Soil Cleanup Objectives
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives
Underline = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives

**Table 3. Summary of Target Compound List Semi-Volatile Organic Compounds Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York**

TCL SVOCs	Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Residential Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth	
				SB01	SB02
				2/13/2015	2/13/2015
				0.5 - 16.0	0.5 - 15.0
Benzo[a]anthracene	1	5.6	1	0.1	ND
Benzo[a]pyrene	1	1	1	0.091	ND
Benzo[b]fluoranthene	1	5.6	1	0.11	ND
Benzo[g,h,i]perylene	100	500	100	0.08	ND
bis(2-Ethylhexyl)phthalate	NS	NS	NS	0.056	ND
Chrysene	1	56	3.9	0.13	ND
Fluoranthene	100	500	100	0.067	ND
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.5	0.046	ND
Phenanthrene	100	500	100	0.065	ND
Pyrene	100	500	100	0.22	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6
Remedial Program Soil Cleanup Objectives (December 14, 2006)
BOLD = Concentration exceeds Residential Use (Track 2) Soil Cleanup Objectives
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives
Underline = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives

Table 4. Summary of Target Analyte List Metals Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

Target Analyte List Metals	Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Residential Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth	
				SB01	SB02
				2/13/2015	2/13/2015
				0.5 - 16.0	0.5 - 15.0
Aluminum	NS	NS	NS	12000	6100
Arsenic	13	16	16	1.6	0.51
Barium	350	400	350	110	38
Beryllium	7.2	590	14	0.28	0.28
Calcium	NS	NS	NS	4700	1900
Chromium	30	1500	36	26	12
Cobalt	NS	NS	NS	9.8	22
Copper	50	270	270	42	19
Iron	NS	NS	NS	22000	15000
Lead	63	1000	400	36	9.6
Magnesium	NS	NS	NS	3800	3700
Manganese	1600	10000	2000	710	180
Mercury	0.18	2.8	0.81	0.19	ND
Nickel	30	310	140	26	30
Potassium	NS	NS	NS	3000	3400
Sodium	NS	NS	NS	290	ND
Vanadium	NS	NS	NS	35	16
Zinc	109	10000	2200	62	100

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6
Remedial Program Soil Cleanup Objectives (December 14, 2006)
BOLD = Concentration exceeds Residential Use (Track 2) Soil Cleanup Objectives
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives
Underline = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives

Table 5. Summary of Target Analyte List Pesticides Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

Pesticides	Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Residential Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth	
				SB01	SB02
				2/13/2015	2/13/2015
				0.5 - 16.0	0.5 - 15.0
No Pesticides were detected	NS	NS	NS	ND	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
BOLD = Concentration exceeds Residential Use (Track 2) Soil Cleanup Objectives
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives
Underline = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives

Table 6. Summary of Herbicides Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

Herbicides	Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Residential Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth	
				SB01	SB02
				2/13/2015	2/13/2015
				0.5 - 16.0	0.5 - 15.0
No Herbicides were detected	NS	NS	NS	ND	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram(ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
BOLD = Concentration exceeds Residential Use (Track 2) Soil Cleanup Objectives
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives
Underline = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives

Table 7. Summary of Polychlorinated Biphenyls Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

PCBs	Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Residential Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth	
				SB01	SB02
				2/13/2015	2/13/2015
				0.5 - 16.0	0.5 - 15.0
No PCBs were detected	0.1*	1*	1*	ND	ND

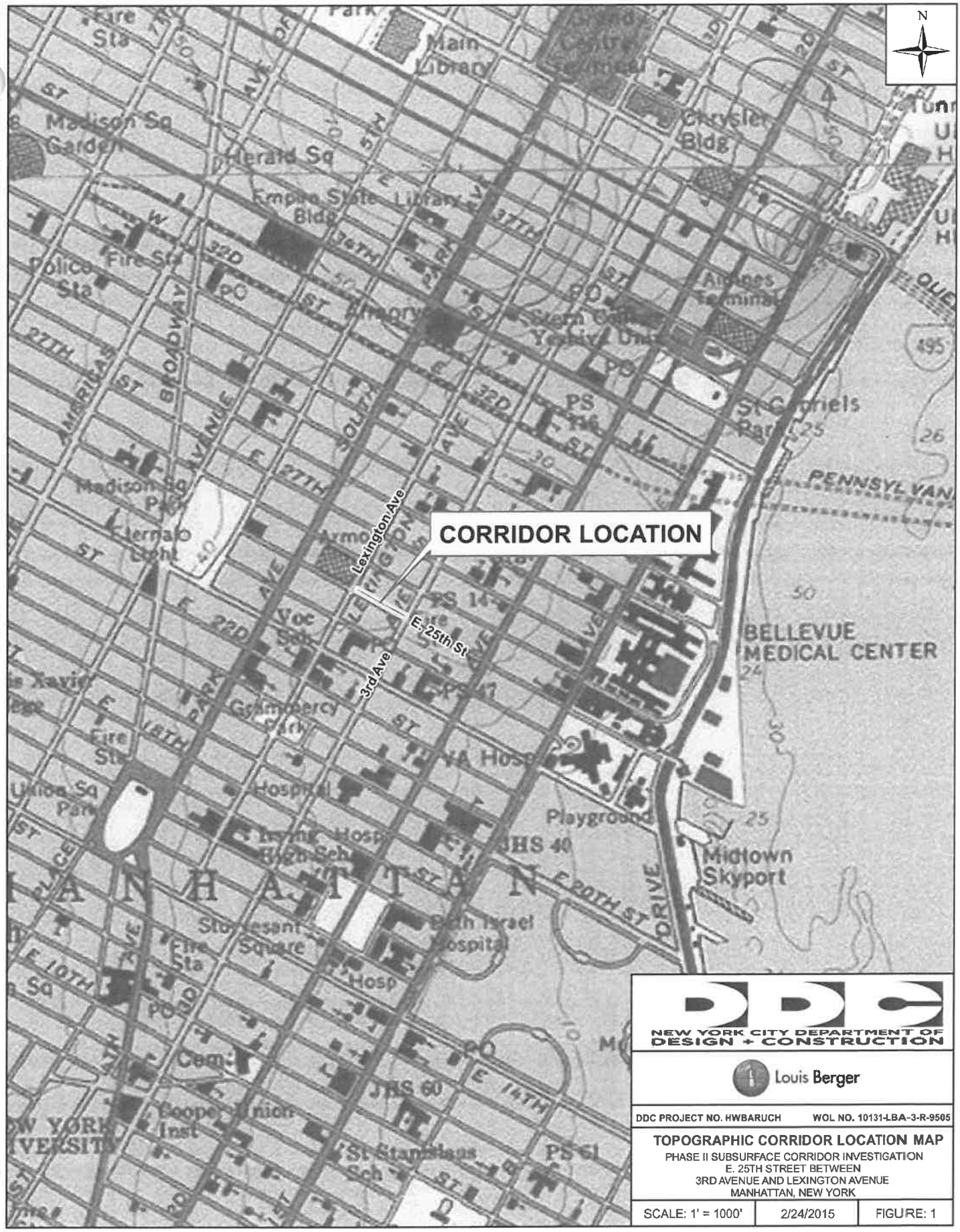
Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
* Refers to the total concentration of PCBs in the sample
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
BOLD = Concentration exceeds Residential Use (Track 2) Soil Cleanup Objectives
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives
Underline = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives

Table 8. Summary of Waste Classification Parameters Detected in Soil
Phase II Subsurface Corridor Investigation at East 25th Street between 3rd Avenue and Lexington Avenue
Manhattan, New York

Parameter	RCRA Hazardous Waste Levels		Sample ID and Date Collected	
			WC01	
			2/13/2015	
Ignitability	>140	°F	NEG	°F
pH	>2 and < 12.5		**11**	
Total Petroleum Hydrocarbons	NS	mg/kg	ND	mg/kg
Reactive Cyanide	250	mg/kg	ND	mg/kg
Reactive Sulfide	500	mg/kg	ND	mg/kg
1,1-Dichloroethene	0.7	mg/L	ND	mg/L
1,2-Dichloroethane	0.5	mg/L	ND	mg/L
1,4-Dichlorobenzene	7.5	mg/L	ND	mg/L
2-Butanone	200	mg/L	ND	mg/L
Benzene	0.5	mg/L	ND	mg/L
Carbon tetrachloride	0.5	mg/L	ND	mg/L
Chlorobenzene	100	mg/L	ND	mg/L
Chloroform	6	mg/L	ND	mg/L
Tetrachloroethene	0.7	mg/L	ND	mg/L
Trichloroethene	0.5	mg/L	ND	mg/L
Vinyl Chloride	0.2	mg/L	ND	mg/L
2,4,5-Trichlorophenol	400	mg/L	ND	mg/L
2,4,6-Trichlorophenol	2	mg/L	ND	mg/L
2,4-Dinitrotoluene	0.13	mg/L	ND	mg/L
2-Methylphenol	200	mg/L	ND	mg/L
3&4-Methylphenol	200	mg/L	ND	mg/L
Hexachlorobenzene	0.13	mg/L	ND	mg/L
Hexachlorobutadiene	0.5	mg/L	ND	mg/L
Hexachloroethane	3	mg/L	ND	mg/L
Nitrobenzene	2	mg/L	ND	mg/L
Pentachlorophenol	100	mg/L	ND	mg/L
Pyridine	5	mg/L	ND	mg/L
Chlorodane	0.03	mg/L	ND	mg/L
Endrin	0.02	mg/L	ND	mg/L
Gamma-BHC	0.4	mg/L	ND	mg/L
Heptachlor	0.008	mg/L	ND	mg/L
Heptachlor epoxide	0.008	mg/L	ND	mg/L
Methoxychlor	10	mg/L	ND	mg/L
Toxaphene	0.5	mg/L	ND	mg/L
2,4-D	10	mg/L	ND	mg/L
Silvex	1	mg/L	ND	mg/L
Arsenic	5	mg/L	ND	mg/L
Barium	100	mg/L	**0.29**	mg/L
Cadmium	1	mg/L	ND	mg/L
Chromium	5	mg/L	ND	mg/L
Lead	5	mg/L	ND	mg/L
Mercury	0.2	mg/L	ND	mg/L
Nickel	NS	mg/L	ND	mg/L
Selenium	1	mg/L	ND	mg/L
Silver	5	mg/L	ND	mg/L

Notes:
All concentrations are in parts per million, milligrams per kilogram, or milligrams per liter (ppm, mg/kg, or mg/L)
NS = No Standard
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
N/A = Not Analyzed
Bold = Positive detection
°F = Degrees Fahrenheit
Shaded = Concentration exceeds RCRA Hazardous Waste Level

FIGURE 1 – TOPOGRAPHIC CORRIDOR LOCATION MAP

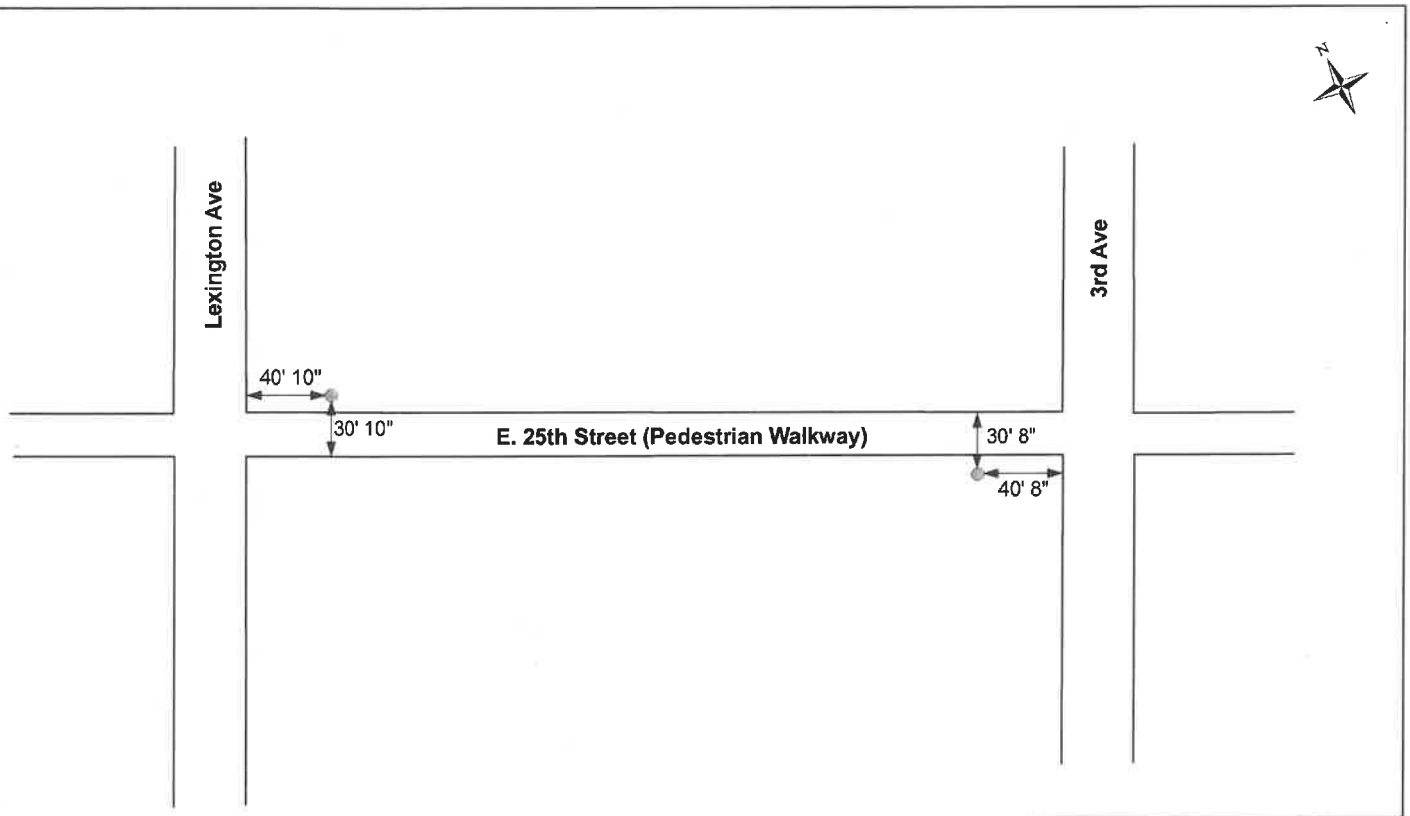


Source: USGS Quadrangle Brooklyn, NY, 1995

FIGURE 2 – SOIL BORING LOCATION PLAN


N
Park Ave
Lexington Ave
3rd Ave
E. 25th St
E. 26th St
E. 24th St
SB01
SB02
WC01
Legend
Soil Boring Location
WC Waste Classification Sample Grouping
Approximate Corridor Area
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION
Louis Berger
DDC PROJECT NO. HWBARUCH
WOI NO. 10131-LBA-3-R-9505
SOIL BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION
E. 25TH STREET BETWEEN
3RD AVENUE AND LEXINGTON AVENUE
MANHATTAN, NEW YORK
SCALE: 1' = 200'
2/24/2015
FIGURE: 2

APPENDIX A
BORING LOCATION PLAN



Legend

Soil Boring Location

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Louis Berger

DDC PROJECT NO. HWBARUCH WOL NO. 10131-LBA-3-R-050

SOIL BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION
E. 25TH STREET BETWEEN
3RD AVENUE AND LEXINGTON AVENUE
MANHATTAN, NEW YORK

SCALE: 1" = 75'	2/24/2015	APPENDIX A

APPENDIX B
GEOLOGIC BORING LOGS

Louis Berger	**Drilling Log** Page 1 of 2	**BORING ID:** SB01 **LOCATION:** Manhattan, NY

CLIENT: New York City Department of Design and Construction			**PROJECT NO:** 3000647.368
PROJECT: Baruch Plaza Phase II SCI			**FMS ID#:** HWBARUCH
DRILLING CONTRACTOR: Aquifer Drilling and Testing, Inc.			**WOL #:** 10131-LBA-3-R-9505
DRILLING METHOD: Direct Push			**DATE STARTED:** 2/13/2015
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 2/13/2015
Diameter (in): 2	**Well Diameter:**	N/A	**DRILLER:** C. Migliore
Total Depth (ft): 16.00	**Total Depth (ft):**	N/A	**LBA INSPECTOR:** B. Gribble
Depth to Refusal (ft): N/A	**Screen Length (ft):**	N/A	**NORTHING:** N/A
Depth to Water (ft): N/A	**Depth to Water (ft):**	N/A	**EASTING:** N/A
Depth to Rock (ft): 16	**Slot Size:**	N/A	**SURFACE ELEVATION:** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart. Soil boring was pre-cleared to 6 ft bgs.

Well Construction	Depth	Lithology	USCS	Sample Interval	Sample Recovery	PID (ppm)	Description	Remarks
	0		CONCRETE			0	Very light gray (N8) CONCRETE; dry.	**Concrete**
	2		FILL			0	Moderate yellowish brown (10YR5/4) coarse to fine SAND, trace Silt (fill material); dry.	**Sand (Fill)**
	4							
	6		FILL			0	Moderate yellowish brown (10YR5/4) to dark yellowish brown (10YR4/2) coarse to fine SAND, trace Silt, little medium to fine Gravel (fill material); moist.	
	8							

Louis Berger	**Drilling Log** Page 2 of 2	**BORING ID:** SB01
		LOCATION: Manhattan, NY
CLIENT: New York City Department of Design and Construction		**PROJECT NO:** 3000647.368
PROJECT: Baruch Plaza Phase II SCI		**FMS ID#:** HWBARUCH
DRILLING CONTRACTOR: Aquifer Drilling and Testing, Inc.		**WOL #:** 10131-LBA-3-R-9505
DRILLING METHOD: Direct Push		**DATE STARTED:** 2/13/2015
BOREHOLE DATA	**WELL DATA**	**DATE FINISHED:** 2/13/2015
Diameter (in): 2	**Well Diameter:** N/A	**DRILLER:** C. Migliore
Total Depth (ft): 16.00	**Total Depth (ft):** N/A	**LBA INSPECTOR:** B. Gribble
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A	**NORTHING:** N/A
Depth to Water (ft): N/A	**Depth to Water (ft):** N/A	**EASTING:** N/A
Depth to Rock (ft): 16	**Slot Size:** N/A	**SURFACE ELEVATION:** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart. Soil boring was pre-cleared to 6 ft bgs.

Well Construction	Depth	Lithology	USCS	Sample Interval	Sample Recovery	PID (ppm)	Description	Remarks
	10		FILL			0	Moderate yellowish brown (10YR5/4) to dark yellowish brown (10YR4/2) coarse to fine SAND, trace Silt, little medium to fine Gravel (fill material); moist.	**Collected grab sample SB01 from 13.0 to 13.5 ft bgs and composite sample from 0.5 to 16.0 ft bgs**
	12							
			FILL			0	Moderate yellowish brown (10YR5/4) to dark yellowish brown (10YR4/2) coarse to fine SAND, trace Silt, little medium to fine Gravel (fill material); wet.	
	14		SP			0	Moderate yellowish brown (10YR5/4) to dark yellowish brown (10YR4/2) fine SAND, trace Silt; dry.	**Sand (weathered schist)**
	16							**End of Boring at 16 ft bgs due to refusal**

Louis Berger	**Drilling Log** Page 1 of 2	**BORING ID:** SB02 **LOCATION:** Manhattan, NY

CLIENT: New York City Department of Design and Construction			**PROJECT NO:** 3000647.368
PROJECT: Baruch Plaza Phase II SCI			**FMS ID#:** HWBARUCH
DRILLING CONTRACTOR: Aquifer Drilling and Testing, Inc.			**WOL #:** 10131-LBA-3-R-9505
DRILLING METHOD: Direct Push			**DATE STARTED:** 2/13/2015
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 2/13/2015
Diameter (in): 2	**Well Diameter:** N/A		**DRILLER:** C. Migliore
Total Depth (ft): 15.00	**Total Depth (ft):** N/A		**LBA INSPECTOR:** B. Gribble
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A		**NORTHING:** N/A
Depth to Water (ft): N/A	**Depth to Water (ft):** N/A		**EASTING:** N/A
Depth to Rock (ft): 15	**Slot Size:** N/A		**SURFACE ELEVATION:** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart. Soil boring was pre-cleared to 6 ft bgs.

Well Construction	Depth	Lithology	USCS	Sample Interval	Sample Recovery	PID (ppm)	Description	Remarks
	0		CONCRETE			0	Very light gray (N8) CONCRETE; dry.	**Concrete**
			FILL			0	Moderate yellowish brown (10YR5/4) coarse to fine SAND, trace Silt, little medium Gravel (fill material); dry.	**Sand (Fill)**
	2							
	4							
			FILL			0	Moderate yellowish brown (10YR5/4) coarse to fine SAND, trace Silt, little medium Gravel (fill material); dry.	
	6							
	8							

Louis Berger	**Drilling Log** Page 2 of 2	**BORING ID:** SB02 **LOCATION:** Manhattan, NY

CLIENT: New York City Department of Design and Construction		**PROJECT NO:**	3000647.368
PROJECT: Baruch Plaza Phase II SCI		**FMS ID#:**	HWBARUCH
DRILLING CONTRACTOR: Aquifer Drilling and Testing, Inc.		**WOL #:**	10131-LBA-3-R-9505
DRILLING METHOD: Direct Push		**DATE STARTED:**	2/13/2015
BOREHOLE DATA	**WELL DATA**	**DATE FINISHED:**	2/13/2015
Diameter (in): 2	**Well Diameter:** N/A	**DRILLER:**	C. Migliore
Total Depth (ft): 15.00	**Total Depth (ft):** N/A	**LBA INSPECTOR:**	B. Gribble
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A	**NORTHING:**	N/A
Depth to Water (ft): N/A	**Depth to Water (ft):** N/A	**EASTING:**	N/A
Depth to Rock (ft): 15	**Slot Size:** N/A	**SURFACE ELEVATION:**	N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart. Soil boring was pre-cleared to 6 ft bgs.

Well Construction	Depth	Lithology	USCS	Sample Interval	Sample Recovery	PID (ppm)	Description	Remarks
	10		FILL			0	Moderate yellowish brown (10YR5/4) to dark yellowish brown (10YR4/2) coarse to fine SAND, little fine Gravel (fill material); dry.	
	12		SP			0	Dusky yellowish brown (10YR2/2) fine SAND, trace Silt; dry.	**Sand (weathered schist); Collected grab sample SB02 from 14.5 to 15.0 ft bgs and composite sample from 0.5 to 15.0 ft bgs**
	14							**End of Boring at 15 ft bgs due to refusal**

APPENDIX C
LABORATORY ANALYTICAL RESULTS

Hampton-Clarke
Analytical & Field Services

175 ROUTE 46 WEST, UNIT D · FAIRFIELD, NJ 07004
2 MADISON ROAD, FAIRFIELD, NJ 07004
800-426-9992 · 973-244-9770
FAX: 973-244-9787
WWW.HCVLAB.COM

Project: Baruch Plaza Phase II SCI

Client PO: 30000647.368.00

Report To: Louis Berger & Associates
48 Wall Street
16th Floor
New York, NY 10005

Attn: Breanna Gribble

Received Date: 2/13/2015

Report Date: 2/27/2015

Deliverables: NYDOH-R

Lab ID: AC83375

Lab Project No: 5021319

This report is a true report of results obtained from our tests of this material. The report relates only to those samples received and analyzed by the laboratory. All results meet the requirements of the NELAC Institute standards. Laboratory reports may not be reproduced, except in full, without the written approval of the laboratory.

In lieu of a formal contract document, the total aggregate liability of Hampton-Clarke to all parties shall not exceed Hampton-Clarke's total fee for analytical services rendered.

Robin Cousineau - Quality Assurance Director OR **Jean Revolus - Laboratory Director**

NJ (07071) NY (ELAP11408) CT (PH-0671)
PA (68-00463) KY (90124)

Hampton-Clarke
WBE/DBE/SBE 800-426-9992

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- Form 8 Internal Standard Area Summary

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- Form 1 Sample and Blank Results
- Form 2 Surrogate Recovery
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- Form 4 Method Blank Summary
- Form 5 Tune Summary
- Form 6,7 Calibration & RT Summary
- Form 8 Internal Standard Area Summary

Semivolatile Data 103

- Form 1 Sample and Blank Results
- Form 2 Surrogate Recovery
- Form 3 Spike Recovery
- Form 4 Method Blank Summary
- Form 5 Tune Summary
- Form 6,7 Calibration & RT Summary

Form 8 Internal Standard Area Summary

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Herbicide Data..... 267

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Form 1 Sample Results

Inorganic Spreadsheet / QC Summary

Inorganic Raw Data

Sample Summary

Client: Louis Berger & Associates
Project: Baruch Plaza Phase II SCI

HC Project #: 5021319

Lab#	SampleID	Matrix	Collection Date	Receipt Date
AC83375-001	SB01	Soil/Encore	2/13/2015	2/13/2015
AC83375-002	SB02	Soil/Encore	2/13/2015	2/13/2015
AC83375-003	WC01	Soil/Encore	2/13/2015	2/13/2015

HC Case Narrative

Client: Louis Berger & Associates
Project: Baruch Plaza Phase II SCI

HC Project: 5021319

This case narrative is in the form of an exception report. Method specific and/or QA/QC anomalies related to this report only are detailed below.

Volatile Organic Analysis:

The Method Blank Spike for batches 42264 and 42268 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

The MS/MSD RPD, Matrix Spike and/or Matrix Spike Duplicate for batch 42268 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

TCLP Volatile Organic Analysis:

The Method Blank Spike for batches 42281 and 42263 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

The MS/MSD RPD, Matrix Spike and/or Matrix Spike Duplicate for batch 42263 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

Base Neutral/Acid Extractable Analysis:

The Method Blank Spike for batches SMB40451 and SMB40422 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

The Matrix Spike and/or Matrix Spike Duplicate for batch SMB40422 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

TCLP Base Neutral/Acid Extractable Analysis:

The Method Blank Spike for batch WMB40638 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

The MS/MSD RPD, Matrix Spike and/or Matrix Spike Duplicate for batch WMB40638 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

Sample AC83375-003 (MS) has a surrogate recovery outside QC limits, but the recovery is greater than 10%, therefore, no corrective action was necessary. Please refer to the applicable Form 2 for the recoveries.

PCB Analysis:

Data conforms to method requirements.

Pesticide Analysis:

Data conforms to method requirements.

TCLP Pesticide Analysis:

Data conforms to method requirements.

Herbicide Analysis:

Data conforms to method requirements.

TCLP Herbicide Analysis:

Data conforms to method requirements.

Total Petroleum Hydrocarbon Analysis:

The Matrix Spike and/or Matrix Spike Duplicate for batch SMB40587 had recoveries outside QC limits. Please refer to the applicable Form 3 for the recoveries.

There is no surrogate recovery data for samples AC83124-001, -001 (MS), and –001 (MSD) due to high sample dilution. Please refer to the applicable Form 2 for the recoveries.

Metals Analysis:

The Matrix Spike and/or Matrix Spike Duplicate for batch 41952 had recoveries outside QC limits. Please refer to the applicable Form 5/7 for the recoveries.

The serial dilution for batch 41951 is outside QC limits for one or more analytes. Please refer to the applicable Form 6/9 for the recoveries.

TCLP Metals Analysis:

Data conforms to method requirements.

Wet Chemistry Analysis:

Sample AC83375-003 was analyzed for Reactivity using SW-846 7.3. SW-846 7.3 is not a NELAP accredited parameter.

Robin Cousineau
Quality Assurance Director

Or

Jean Revolus
Laboratory Director

2/27/2015
Date

HC Executive Summary

Client: Louis Berger & Associates
Project: Baruch Plaza Phase II SCI

HC Project #: 5021319

Lab#: AC83375-001 **Sample ID: SB01**

Analyte	Units	RL	Result	Analytical Method
Aluminum	mg/kg	230	12000	EPA 6010C
Barium	mg/kg	11	110	EPA 6010C
Calcium	mg/kg	1100	4700	EPA 6010C
Chromium	mg/kg	5.7	26	EPA 6010C
Cobalt	mg/kg	2.9	9.8	EPA 6010C
Copper	mg/kg	5.7	42	EPA 6010C
Iron	mg/kg	230	22000	EPA 6010C
Lead	mg/kg	5.7	36	EPA 6010C
Magnesium	mg/kg	570	3800	EPA 6010C
Manganese	mg/kg	11	710	EPA 6010C
Nickel	mg/kg	5.7	26	EPA 6010C
Potassium	mg/kg	570	3000	EPA 6010C
Sodium	mg/kg	290	290	EPA 6010C
Vanadium	mg/kg	11	35	EPA 6010C
Zinc	mg/kg	11	62	EPA 6010C
Arsenic	mg/kg	0.23	1.6	EPA 6020A
Beryllium	mg/kg	0.23	0.28	EPA 6020A
Mercury	mg/kg	0.096	0.19	EPA 7471B
Benzo[a]anthracene	mg/kg	0.038	0.10	EPA 8270D
Benzo[a]pyrene	mg/kg	0.038	0.091	EPA 8270D
Benzo[b]fluoranthene	mg/kg	0.038	0.11	EPA 8270D
Benzo[g,h,i]perylene	mg/kg	0.038	0.080	EPA 8270D
bis(2-Ethylhexyl)phthalate	mg/kg	0.038	0.056	EPA 8270D
Chrysene	mg/kg	0.038	0.13	EPA 8270D
Fluoranthene	mg/kg	0.038	0.067	EPA 8270D
Indeno[1,2,3-cd]pyrene	mg/kg	0.038	0.046	EPA 8270D
Phenanthrene	mg/kg	0.038	0.065	EPA 8270D
Pyrene	mg/kg	0.038	0.22	EPA 8270D

Lab#: AC83375-002 **Sample ID: SB02**

Analyte	Units	RL	Result	Analytical Method
Aluminum	mg/kg	210	6100	EPA 6010C
Barium	mg/kg	11	38	EPA 6010C
Calcium	mg/kg	1100	1900	EPA 6010C
Chromium	mg/kg	5.3	12	EPA 6010C
Cobalt	mg/kg	2.7	22	EPA 6010C
Copper	mg/kg	5.3	19	EPA 6010C
Iron	mg/kg	210	15000	EPA 6010C
Lead	mg/kg	5.3	9.6	EPA 6010C
Magnesium	mg/kg	530	3700	EPA 6010C
Manganese	mg/kg	11	180	EPA 6010C
Nickel	mg/kg	5.3	30	EPA 6010C
Potassium	mg/kg	530	3400	EPA 6010C
Vanadium	mg/kg	11	16	EPA 6010C
Zinc	mg/kg	11	100	EPA 6010C
Arsenic	mg/kg	0.21	0.51	EPA 6020A
Beryllium	mg/kg	0.21	0.28	EPA 6020A

HC Executive Summary

Client: Louis Berger & Associates
Project: Baruch Plaza Phase II SCI

HC Project #: 5021319

Lab#: AC83375-003 **Sample ID: WC01**

Analyte	Units	RL	Result	Analytical Method
pH	ph		11	9040C/9045D
Burning Rate (mm/sec)			NA	EPA 1030
Flame Propagation (POS/NEG)			NA	EPA 1030
Ignitability Screen (POS/NEG)			NEG	EPA 1030
Barium	mg/l	0.25	0.29	EPA 6010C

HC Report of Analysis

Client: Louis Berger & Associates
Project: Baruch Plaza Phase II SCI

HC Project #: 5021319

Sample ID: SB01
Lab#: AC83375-001
Matrix: Soil/Encore

Collection Date: 2/13/2015
Receipt Date: 2/13/2015

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		87

Chlorinated Herbicides 8151

Analyte	DF	Units	RL	Result
2,4,5-T	1	mg/kg	0.011	ND
2,4-D	1	mg/kg	0.011	ND
Dicamba	1	mg/kg	0.011	ND
Silvex	1	mg/kg	0.011	ND

Mercury (Soil/Waste) 7471A

Analyte	DF	Units	RL	Result
Mercury	1	mg/kg	0.096	0.19

Organochlorine Pesticides 8081

Analyte	DF	Units	RL	Result
a-Chlordane	1	mg/kg	0.0057	ND
Aldrin	1	mg/kg	0.0057	ND
Alpha-BHC	1	mg/kg	0.0011	ND
beta-BHC	1	mg/kg	0.0011	ND
delta-BHC	1	mg/kg	0.0057	ND
Dieldrin	1	mg/kg	0.0011	ND
Endosulfan I	1	mg/kg	0.0057	ND
Endosulfan II	1	mg/kg	0.0057	ND
Endosulfan Sulfate	1	mg/kg	0.0057	ND
Endrin	1	mg/kg	0.0057	ND
Endrin Aldehyde	1	mg/kg	0.0057	ND
Endrin Ketone	1	mg/kg	0.0057	ND
gamma-BHC	1	mg/kg	0.0011	ND
Heptachlor	1	mg/kg	0.0057	ND
Heptachlor Epoxide	1	mg/kg	0.0057	ND
Methoxychlor	1	mg/kg	0.0057	ND
p,p'-DDD	1	mg/kg	0.0029	ND
p,p'-DDE	1	mg/kg	0.0029	ND
p,p'-DDT	1	mg/kg	0.0029	ND
Toxaphene	1	mg/kg	0.029	ND
y-Chlordane	1	mg/kg	0.0057	ND

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.029	ND
Aroclor-1016	1	mg/kg	0.029	ND
Aroclor-1221	1	mg/kg	0.029	ND
Aroclor-1232	1	mg/kg	0.029	ND
Aroclor-1242	1	mg/kg	0.029	ND
Aroclor-1248	1	mg/kg	0.029	ND
Aroclor-1254	1	mg/kg	0.029	ND
Aroclor-1260	1	mg/kg	0.029	ND
Aroclor-1262	1	mg/kg	0.029	ND
Aroclor-1268	1	mg/kg	0.029	ND

HAZ. + 87

Sample ID: SB01
Lab#: AC83375-001
Matrix: Soil/Encore

Collection Date: 2/13/2015
Receipt Date: 2/13/2015

Semivolatile Organics (no search) 8270

Analyte	DF	Units	RL	Result
1,1'-Biphenyl	1	mg/kg	0.038	ND
1,2,4,5-Tetrachlorobenzene	1	mg/kg	0.038	ND
2,3,4,6-Tetrachlorophenol	1	mg/kg	0.038	ND
2,4,5-Trichlorophenol	1	mg/kg	0.038	ND
2,4,6-Trichlorophenol	1	mg/kg	0.038	ND
2,4-Dichlorophenol	1	mg/kg	0.0096	ND
2,4-Dimethylphenol	1	mg/kg	0.0096	ND
2,4-Dinitrophenol	1	mg/kg	0.19	ND
2,4-Dinitrotoluene	1	mg/kg	0.038	ND
2,6-Dinitrotoluene	1	mg/kg	0.038	ND
2-Chloronaphthalene	1	mg/kg	0.038	ND
2-Chlorophenol	1	mg/kg	0.038	ND
2-Methylnaphthalene	1	mg/kg	0.038	ND
2-Methylphenol	1	mg/kg	0.0096	ND
2-Nitroaniline	1	mg/kg	0.038	ND
2-Nitrophenol	1	mg/kg	0.038	ND
3&4-Methylphenol	1	mg/kg	0.0096	ND
3,3'-Dichlorobenzidine	1	mg/kg	0.038	ND
3-Nitroaniline	1	mg/kg	0.038	ND
4,6-Dinitro-2-methylphenol	1	mg/kg	0.19	ND
4-Bromophenyl-phenylether	1	mg/kg	0.038	ND
4-Chloro-3-methylphenol	1	mg/kg	0.038	ND
4-Chloroaniline	1	mg/kg	0.0096	ND
4-Chlorophenyl-phenylether	1	mg/kg	0.038	ND
4-Nitroaniline	1	mg/kg	0.038	ND
4-Nitrophenol	1	mg/kg	0.038	ND
Acenaphthene	1	mg/kg	0.038	ND
Acenaphthylene	1	mg/kg	0.038	ND
Acetophenone	1	mg/kg	0.038	ND
Anthracene	1	mg/kg	0.038	ND
Atrazine	1	mg/kg	0.038	ND
Benzaldehyde	1	mg/kg	0.038	ND
Benzo[a]anthracene	**1**	**mg/kg**	**0.038**	**0.10**
Benzo[a]pyrene	**1**	**mg/kg**	**0.038**	**0.091**
Benzo[b]fluoranthene	**1**	**mg/kg**	**0.038**	**0.11**
Benzo[g,h,i]perylene	**1**	**mg/kg**	**0.038**	**0.080**
Benzo[k]fluoranthene	1	mg/kg	0.038	ND
bis(2-Chloroethoxy)methane	1	mg/kg	0.038	ND
bis(2-Chloroethyl)ether	1	mg/kg	0.0096	ND
bis(2-Chloroisopropyl)ether	1	mg/kg	0.038	ND
bis(2-Ethylhexyl)phthalate	**1**	**mg/kg**	**0.038**	**0.056**
Butylbenzylphthalate	1	mg/kg	0.038	ND
Caprolactam	1	mg/kg	0.038	ND
Carbazole	1	mg/kg	0.038	ND
Chrysene	**1**	**mg/kg**	**0.038**	**0.13**
Dibenzo[a,h]anthracene	1	mg/kg	0.038	ND
Dibenzofuran	1	mg/kg	0.0096	ND
Diethylphthalate	1	mg/kg	0.038	ND
Dimethylphthalate	1	mg/kg	0.038	ND
Di-n-butylphthalate	1	mg/kg	0.0096	ND
Di-n-octylphthalate	1	mg/kg	0.038	ND
Fluoranthene	**1**	**mg/kg**	**0.038**	**0.067**
Fluorene	1	mg/kg	0.038	ND
Hexachlorobenzene	1	mg/kg	0.038	ND

NOTE: Soil Results are reported to Dry Weigh

Project #: 5021319

Sample ID: SB01 **Collection Date:** 2/13/2015
Lab#: AC83375-001 **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

Hexachlorobutadiene	1	mg/kg	0.038	ND
Hexachlorocyclopentadiene	1	mg/kg	0.038	ND
Hexachloroethane	1	mg/kg	0.038	ND
Indeno[1,2,3-cd]pyrene	1	**mg/kg**	**0.038**	**0.046**
Isophorone	1	mg/kg	0.038	ND
Naphthalene	1	mg/kg	0.0096	ND
Nitrobenzene	1	mg/kg	0.038	ND
N-Nitroso-di-n-propylamine	1	mg/kg	0.0096	ND
N-Nitrosodiphenylamine	1	mg/kg	0.038	ND
Pentachlorophenol	1	mg/kg	0.19	ND
Phenanthrene	1	**mg/kg**	**0.038**	**0.065**
Phenol	1	mg/kg	0.038	ND
Pyrene	1	**mg/kg**	**0.038**	**0.22**

TAL Metals 6010

Analyte	DF	Units	RL	Result
Aluminum	1	**mg/kg**	**230**	**12000**
Barium	1	**mg/kg**	**11**	**110**
Calcium	1	**mg/kg**	**1100**	**4700**
Chromium	1	**mg/kg**	**5.7**	**26**
Cobalt	1	**mg/kg**	**2.9**	**9.8**
Copper	1	**mg/kg**	**5.7**	**42**
Iron	1	**mg/kg**	**230**	**22000**
Lead	1	**mg/kg**	**5.7**	**36**
Magnesium	1	**mg/kg**	**570**	**3800**
Manganese	1	**mg/kg**	**11**	**710**
Nickel	1	**mg/kg**	**5.7**	**26**
Potassium	1	**mg/kg**	**570**	**3000**
Sodium	1	**mg/kg**	**290**	**290**
Vanadium	1	**mg/kg**	**11**	**35**
Zinc	1	**mg/kg**	**11**	**62**

TAL Metals 6020

Analyte	DF	Units	RL	Result
Antimony	1	mg/kg	0.92	ND
Arsenic	1	**mg/kg**	**0.23**	**1.6**
Beryllium	1	**mg/kg**	**0.23**	**0.28**
Cadmium	1	mg/kg	0.46	ND
Selenium	1	mg/kg	2.3	ND
Silver	1	mg/kg	0.23	ND
Thallium	1	mg/kg	0.46	ND

Volatile Organics (no search) 8260

Analyte	DF	Units	RL	Result
1,1,1-Trichloroethane	0.917	mg/kg	0.0021	ND
1,1,2,2-Tetrachloroethane	0.917	mg/kg	0.0021	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	0.917	mg/kg	0.0021	ND
1,1,2-Trichloroethane	0.917	mg/kg	0.0021	ND
1,1-Dichloroethane	0.917	mg/kg	0.0021	ND
1,1-Dichloroethene	0.917	mg/kg	0.0021	ND
1,2,3-Trichlorobenzene	0.917	mg/kg	0.0021	ND
1,2,4-Trichlorobenzene	0.917	mg/kg	0.0021	ND
1,2-Dibromo-3-chloropropane	0.917	mg/kg	0.0021	ND
1,2-Dibromoethane	0.917	mg/kg	0.0021	ND
1,2-Dichlorobenzene	0.917	mg/kg	0.0021	ND
1,2-Dichloroethane	0.917	mg/kg	0.0011	ND
1,2-Dichloropropane	0.917	mg/kg	0.0021	ND
1,3-Dichlorobenzene	0.917	mg/kg	0.0021	ND

Sample ID: SB01 | **Collection Date: 2/13/2015**
Lab#: AC83375-001 | **Receipt Date: 2/13/2015**
Matrix: Soil/Encore

1,4-Dichlorobenzene	0.917	mg/kg	0.0021	ND
1,4-Dioxane	0.917	mg/kg	0.11	ND
2-Butanone	0.917	mg/kg	0.0021	ND
2-Hexanone	0.917	mg/kg	0.0021	ND
4-Methyl-2-pentanone	0.917	mg/kg	0.0021	ND
Acetone	0.917	mg/kg	0.011	ND
Benzene	0.917	mg/kg	0.0011	ND
Bromochloromethane	0.917	mg/kg	0.0021	ND
Bromodichloromethane	0.917	mg/kg	0.0021	ND
Bromoform	0.917	mg/kg	0.0021	ND
Bromomethane	0.917	mg/kg	0.0021	ND
Carbon disulfide	0.917	mg/kg	0.0021	ND
Carbon tetrachloride	0.917	mg/kg	0.0021	ND
Chlorobenzene	0.917	mg/kg	0.0021	ND
Chloroethane	0.917	mg/kg	0.0021	ND
Chloroform	0.917	mg/kg	0.0021	ND
Chloromethane	0.917	mg/kg	0.0021	ND
cis-1,2-Dichloroethene	0.917	mg/kg	0.0021	ND
cis-1,3-Dichloropropene	0.917	mg/kg	0.0021	ND
Cyclohexane	0.917	mg/kg	0.0021	ND
Dibromochloromethane	0.917	mg/kg	0.0021	ND
Dichlorodifluoromethane	0.917	mg/kg	0.0021	ND
Ethylbenzene	0.917	mg/kg	0.0011	ND
Isopropylbenzene	0.917	mg/kg	0.0011	ND
m&p-Xylenes	0.917	mg/kg	0.0011	ND
Methyl Acetate	0.917	mg/kg	0.0021	ND
Methylcyclohexane	0.917	mg/kg	0.0021	ND
Methylene chloride	0.917	mg/kg	0.0021	ND
Methyl-t-butyl ether	0.917	mg/kg	0.0011	ND
o-Xylene	0.917	mg/kg	0.0011	ND
Styrene	0.917	mg/kg	0.0021	ND
Tetrachloroethene	0.917	mg/kg	0.0021	ND
Toluene	0.917	mg/kg	0.0011	ND
trans-1,2-Dichloroethene	0.917	mg/kg	0.0021	ND
trans-1,3-Dichloropropene	0.917	mg/kg	0.0021	ND
Trichloroethene	0.917	mg/kg	0.0021	ND
Trichlorofluoromethane	0.917	mg/kg	0.0021	ND
Vinyl chloride	0.917	mg/kg	0.0021	ND
Xylenes (Total)	0.917	mg/kg	0.0011	ND

Sample ID: SB02 | **Collection Date:** 2/13/2015
Lab#: AC83375-002 | **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		94

Chlorinated Herbicides 8151

Analyte	DF	Units	RL	Result
2,4,5-T	1	mg/kg	0.011	ND
2,4-D	1	mg/kg	0.011	ND
Dicamba	1	mg/kg	0.011	ND
Silvex	1	mg/kg	0.011	ND

Mercury (Soil/Waste) 7471A

Analyte	DF	Units	RL	Result
Mercury	1	mg/kg	0.089	ND

Organochlorine Pesticides 8081

Analyte	DF	Units	RL	Result
a-Chlordane	1	mg/kg	0.0053	ND
Aldrin	1	mg/kg	0.0053	ND
Alpha-BHC	1	mg/kg	0.0011	ND
beta-BHC	1	mg/kg	0.0011	ND
delta-BHC	1	mg/kg	0.0053	ND
Dieldrin	1	mg/kg	0.0011	ND
Endosulfan I	1	mg/kg	0.0053	ND
Endosulfan II	1	mg/kg	0.0053	ND
Endosulfan Sulfate	1	mg/kg	0.0053	ND
Endrin	1	mg/kg	0.0053	ND
Endrin Aldehyde	1	mg/kg	0.0053	ND
Endrin Ketone	1	mg/kg	0.0053	ND
gamma-BHC	1	mg/kg	0.0011	ND
Heptachlor	1	mg/kg	0.0053	ND
Heptachlor Epoxide	1	mg/kg	0.0053	ND
Methoxychlor	1	mg/kg	0.0053	ND
p,p'-DDD	1	mg/kg	0.0027	ND
p,p'-DDE	1	mg/kg	0.0027	ND
p,p'-DDT	1	mg/kg	0.0027	ND
Toxaphene	1	mg/kg	0.027	ND
γ-Chlordane	1	mg/kg	0.0053	ND

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.027	ND
Aroclor-1016	1	mg/kg	0.027	ND
Aroclor-1221	1	mg/kg	0.027	ND
Aroclor-1232	1	mg/kg	0.027	ND
Aroclor-1242	1	mg/kg	0.027	ND
Aroclor-1248	1	mg/kg	0.027	ND
Aroclor-1254	1	mg/kg	0.027	ND
Aroclor-1260	1	mg/kg	0.027	ND
Aroclor-1262	1	mg/kg	0.027	ND
Aroclor-1268	1	mg/kg	0.027	ND

Semivolatile Organics (no search) 8270

Analyte	DF	Units	RL	Result
1,1'-Biphenyl	1	mg/kg	0.035	ND
1,2,4,5-Tetrachlorobenzene	1	mg/kg	0.035	ND
2,3,4,6-Tetrachlorophenol	1	mg/kg	0.035	ND

Sample ID: SB02 **Collection Date:** 2/13/2015
Lab#: AC83375-002 **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

2,4,5-Trichlorophenol	1	mg/kg	0.035	ND
2,4,6-Trichlorophenol	1	mg/kg	0.035	ND
2,4-Dichlorophenol	1	mg/kg	0.0089	ND
2,4-Dimethylphenol	1	mg/kg	0.0089	ND
2,4-Dinitrophenol	1	mg/kg	0.18	ND
2,4-Dinitrotoluene	1	mg/kg	0.035	ND
2,6-Dinitrotoluene	1	mg/kg	0.035	ND
2-Chloronaphthalene	1	mg/kg	0.035	ND
2-Chlorophenol	1	mg/kg	0.035	ND
2-Methylnaphthalene	1	mg/kg	0.035	ND
2-Methylphenol	1	mg/kg	0.0089	ND
2-Nitroaniline	1	mg/kg	0.035	ND
2-Nitrophenol	1	mg/kg	0.035	ND
3&4-Methylphenol	1	mg/kg	0.0089	ND
3,3'-Dichlorobenzidine	1	mg/kg	0.035	ND
3-Nitroaniline	1	mg/kg	0.035	ND
4,6-Dinitro-2-methylphenol	1	mg/kg	0.18	ND
4-Bromophenyl-phenylether	1	mg/kg	0.035	ND
4-Chloro-3-methylphenol	1	mg/kg	0.035	ND
4-Chloroaniline	1	mg/kg	0.0089	ND
4-Chlorophenyl-phenylether	1	mg/kg	0.035	ND
4-Nitroaniline	1	mg/kg	0.035	ND
4-Nitrophenol	1	mg/kg	0.035	ND
Acenaphthene	1	mg/kg	0.035	ND
Acenaphthylene	1	mg/kg	0.035	ND
Acetophenone	1	mg/kg	0.035	ND
Anthracene	1	mg/kg	0.035	ND
Atrazine	1	mg/kg	0.035	ND
Benzaldehyde	1	mg/kg	0.035	ND
Benzo[a]anthracene	1	mg/kg	0.035	ND
Benzo[a]pyrene	1	mg/kg	0.035	ND
Benzo[b]fluoranthene	1	mg/kg	0.035	ND
Benzo[g,h,i]perylene	1	mg/kg	0.035	ND
Benzo[k]fluoranthene	1	mg/kg	0.035	ND
bis(2-Chloroethoxy)methane	1	mg/kg	0.035	ND
bis(2-Chloroethyl)ether	1	mg/kg	0.0089	ND
bis(2-Chloroisopropyl)ether	1	mg/kg	0.035	ND
bis(2-Ethylhexyl)phthalate	1	mg/kg	0.035	ND
Butylbenzylphthalate	1	mg/kg	0.035	ND
Caprolactam	1	mg/kg	0.035	ND
Carbazole	1	mg/kg	0.035	ND
Chrysene	1	mg/kg	0.035	ND
Dibenzo[a,h]anthracene	1	mg/kg	0.035	ND
Dibenzofuran	1	mg/kg	0.0089	ND
Diethylphthalate	1	mg/kg	0.035	ND
Dimethylphthalate	1	mg/kg	0.035	ND
Di-n-butylphthalate	1	mg/kg	0.0089	ND
Di-n-octylphthalate	1	mg/kg	0.035	ND
Fluoranthene	1	mg/kg	0.035	ND
Fluorene	1	mg/kg	0.035	ND
Hexachlorobenzene	1	mg/kg	0.035	ND
Hexachlorobutadiene	1	mg/kg	0.035	ND
Hexachlorocyclopentadiene	1	mg/kg	0.035	ND
Hexachloroethane	1	mg/kg	0.035	ND
Indeno[1,2,3-cd]pyrene	1	mg/kg	0.035	ND
Isophorone	1	mg/kg	0.035	ND
Naphthalene	1	mg/kg	0.0089	ND

NOTE: Soil Results are reported to Dry Weigh

Sample ID: SB02 **Collection Date:** 2/13/2015
Lab#: AC83375-002 **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

Nitrobenzene	1	mg/kg	0.035	ND
N-Nitroso-di-n-propylamine	1	mg/kg	0.0089	ND
N-Nitrosodiphenylamine	1	mg/kg	0.035	ND
Pentachlorophenol	1	mg/kg	0.18	ND
Phenanthrene	1	mg/kg	0.035	ND
Phenol	1	mg/kg	0.035	ND
Pyrene	1	mg/kg	0.035	ND

TAL Metals 6010

Analyte	DF	Units	RL	Result
Aluminum	1	mg/kg	210	6100
Barium	1	mg/kg	11	38
Calcium	1	mg/kg	1100	1900
Chromium	1	mg/kg	5.3	12
Cobalt	1	mg/kg	2.7	22
Copper	1	mg/kg	5.3	19
Iron	1	mg/kg	210	15000
Lead	1	mg/kg	5.3	9.6
Magnesium	1	mg/kg	530	3700
Manganese	1	mg/kg	11	180
Nickel	1	mg/kg	5.3	30
Potassium	1	mg/kg	530	3400
Sodium	1	mg/kg	270	ND
Vanadium	1	mg/kg	11	16
Zinc	1	mg/kg	11	100

TAL Metals 6020

Analyte	DF	Units	RL	Result
Antimony	1	mg/kg	0.85	ND
Arsenic	1	mg/kg	0.21	0.51
Beryllium	1	mg/kg	0.21	0.28
Cadmium	1	mg/kg	0.43	ND
Selenium	1	mg/kg	2.1	ND
Silver	1	mg/kg	0.21	ND
Thallium	1	mg/kg	0.43	ND

Volatile Organics (no search) 8260

Analyte	DF	Units	RL	Result
1,1,1-Trichloroethane	1.13	mg/kg	0.0024	ND
1,1,2,2-Tetrachloroethane	1.13	mg/kg	0.0024	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	1.13	mg/kg	0.0024	ND
1,1,2-Trichloroethane	1.13	mg/kg	0.0024	ND
1,1-Dichloroethane	1.13	mg/kg	0.0024	ND
1,1-Dichloroethene	1.13	mg/kg	0.0024	ND
1,2,3-Trichlorobenzene	1.13	mg/kg	0.0024	ND
1,2,4-Trichlorobenzene	1.13	mg/kg	0.0024	ND
1,2-Dibromo-3-chloropropane	1.13	mg/kg	0.0024	ND
1,2-Dibromoethane	1.13	mg/kg	0.0024	ND
1,2-Dichlorobenzene	1.13	mg/kg	0.0024	ND
1,2-Dichloroethane	1.13	mg/kg	0.0012	ND
1,2-Dichloropropane	1.13	mg/kg	0.0024	ND
1,3-Dichlorobenzene	1.13	mg/kg	0.0024	ND
1,4-Dichlorobenzene	1.13	mg/kg	0.0024	ND
1,4-Dioxane	1.13	mg/kg	0.12	ND
2-Butanone	1.13	mg/kg	0.0024	ND
2-Hexanone	1.13	mg/kg	0.0024	ND
4-Methyl-2-pentanone	1.13	mg/kg	0.0024	ND
Acetone	1.13	mg/kg	0.012	ND

Sample ID: SB02 **Collection Date:** 2/13/2015
Lab#: AC83375-002 **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

Benzene	1.13	mg/kg	0.0012	ND
Bromochloromethane	1.13	mg/kg	0.0024	ND
Bromodichloromethane	1.13	mg/kg	0.0024	ND
Bromoform	1.13	mg/kg	0.0024	ND
Bromomethane	1.13	mg/kg	0.0024	ND
Carbon disulfide	1.13	mg/kg	0.0024	ND
Carbon tetrachloride	1.13	mg/kg	0.0024	ND
Chlorobenzene	1.13	mg/kg	0.0024	ND
Chloroethane	1.13	mg/kg	0.0024	ND
Chloroform	1.13	mg/kg	0.0024	ND
Chloromethane	1.13	mg/kg	0.0024	ND
cis-1,2-Dichloroethene	1.13	mg/kg	0.0024	ND
cis-1,3-Dichloropropene	1.13	mg/kg	0.0024	ND
Cyclohexane	1.13	mg/kg	0.0024	ND
Dibromochloromethane	1.13	mg/kg	0.0024	ND
Dichlorodifluoromethane	1.13	mg/kg	0.0024	ND
Ethylbenzene	1.13	mg/kg	0.0012	ND
Isopropylbenzene	1.13	mg/kg	0.0012	ND
m&p-Xylenes	1.13	mg/kg	0.0012	ND
Methyl Acetate	1.13	mg/kg	0.0024	ND
Methylcyclohexane	1.13	mg/kg	0.0024	ND
Methylene chloride	1.13	mg/kg	0.0024	ND
Methyl-t-butyl ether	1.13	mg/kg	0.0012	ND
o-Xylene	1.13	mg/kg	0.0012	ND
Styrene	1.13	mg/kg	0.0024	ND
Tetrachloroethene	1.13	mg/kg	0.0024	ND
Toluene	1.13	mg/kg	0.0012	ND
trans-1,2-Dichloroethene	1.13	mg/kg	0.0024	ND
trans-1,3-Dichloropropene	1.13	mg/kg	0.0024	ND
Trichloroethene	1.13	mg/kg	0.0024	ND
Trichlorofluoromethane	1.13	mg/kg	0.0024	ND
Vinyl chloride	1.13	mg/kg	0.0024	ND
Xylenes (Total)	1.13	mg/kg	0.0012	ND

Sample ID: WC01 **Collection Date:** 2/13/2015
Lab#: AC83375-003 **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		93

Ignitability (EPA 1030)

Analyte	DF	Units	RL	Result
Burning Rate (mm/sec)	1			NA
Flame Propagation (POS/NEG)	1			NA
Ignitability Screen (POS/NEG)	1			NEG

Mercury (TCLP) 7470A

Analyte	DF	Units	RL	Result
Mercury	1	mg/l	0.00070	ND

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.027	ND
Aroclor-1016	1	mg/kg	0.027	ND
Aroclor-1221	1	mg/kg	0.027	ND
Aroclor-1232	1	mg/kg	0.027	ND
Aroclor-1242	1	mg/kg	0.027	ND
Aroclor-1248	1	mg/kg	0.027	ND
Aroclor-1254	1	mg/kg	0.027	ND
Aroclor-1260	1	mg/kg	0.027	ND
Aroclor-1262	1	mg/kg	0.027	ND
Aroclor-1268	1	mg/kg	0.027	ND

pH 9040C/9045D

Analyte	DF	Units	RL	Result
pH	1	ph		11

Reactive Cyanide

Analyte	DF	Units	RL	Result
Cyanide (Reactive)	1	mg/kg	0.50	ND

Reactive Sulfide

Analyte	DF	Units	RL	Result
Sulfide (Reactive)	1	mg/kg	100	ND

TCLP Herbicides 8151

Analyte	DF	Units	RL	Result
2,4-D	1	mg/l	0.0050	ND
Silvex	1	mg/l	0.0050	ND

TCLP Metals 6010

Analyte	DF	Units	RL	Result
Arsenic	1	mg/l	0.10	ND
Barium	1	mg/l	0.25	0.29
Cadmium	1	mg/l	0.050	ND
Chromium	1	mg/l	0.10	ND
Lead	1	mg/l	0.050	ND
Nickel	1	mg/l	0.10	ND
Selenium	1	mg/l	0.10	ND
Silver	1	mg/l	0.050	ND

TCLP Pesticides 8081

Analyte	DF	Units	RL	Result
Chlordane	1	mg/l	0.0010	ND

Sample ID: WC01 | **Collection Date:** 2/13/2015
Lab#: AC83375-003 | **Receipt Date:** 2/13/2015
Matrix: Soil/Encore

Endrin	1	mg/l	0.00010	ND
gamma-BHC	1	mg/l	0.00010	ND
Heptachlor	1	mg/l	0.00010	ND
Heptachlor Epoxide	1	mg/l	0.00010	ND
Methoxychlor	1	mg/l	0.00010	ND
Toxaphene	1	mg/l	0.0025	ND

TCLP Semivolatiles 8270

Analyte	DF	Units	RL	Result
2,4,5-Trichlorophenol	1	mg/l	0.0080	ND
2,4,6-Trichlorophenol	1	mg/l	0.0080	ND
2,4-Dinitrotoluene	1	mg/l	0.0080	ND
2-Methylphenol	1	mg/l	0.0020	ND
3&4-Methylphenol	1	mg/l	0.0020	ND
Hexachlorobenzene	1	mg/l	0.0080	ND
Hexachlorobutadiene	1	mg/l	0.0080	ND
Hexachloroethane	1	mg/l	0.0080	ND
Nitrobenzene	1	mg/l	0.0080	ND
Pentachlorophenol	1	mg/l	0.040	ND
Pyridine	1	mg/l	0.040	ND

TCLP Volatiles 8260

Analyte	DF	Units	RL	Result
1,1-Dichloroethene	1	mg/l	0.0010	ND
1,2-Dichloroethane	1	mg/l	0.00050	ND
1,4-Dichlorobenzene	1	mg/l	0.0010	ND
2-Butanone	1	mg/l	0.0010	ND
Benzene	1	mg/l	0.00050	ND
Carbon tetrachloride	1	mg/l	0.0010	ND
Chlorobenzene	1	mg/l	0.0010	ND
Chloroform	1	mg/l	0.0010	ND
Tetrachloroethene	1	mg/l	0.0010	ND
Trichloroethene	1	mg/l	0.0010	ND
Vinyl chloride	1	mg/l	0.0010	ND

Total Petroleum Hydrocarbons 8015B

Analyte	DF	Units	RL	Result
Total Petroleum Hydrocarbons	1	mg/kg	65	ND

HC Reporting Limit Definitions/Data Qualifiers

REPORTING DEFINITIONS

DF = Dilution Factor

MDL = Method Detection Limit

RL* = Reporting Limit

ND = Not Detected

RT = Retention Time

NA = Not Applicable

**Samples with elevated Reporting Limits (RLs) as a result of a dilution may not achieve client reporting limits in some cases. The elevated RLs are unavoidable consequences of sample dilution required to quantitate target analytes that exceed the calibration range of the instrument.*

DATA QUALIFIERS

B- Indicates analyte was present in the Method Blank and sample.

d- For Pesticide and PCB analysis, the concentration between primary and secondary columns is greater than 40%. The lower concentration is generally reported.

E- Indicates the concentration exceeded the upper calibration range of the instrument.

J- Indicates the value is estimated because it is either a Tentatively Identified Compound (TIC) or the reported concentration is greater than the MDL but less than the RL. For samples results between the MDL and RL there is a possibility of false positives or misidentification at the quantitation levels. Additionally, the acceptance criteria for QC samples may not be met.

Laboratory Chronicle

5021319 0017

Client: Louis Berger & Associates

HC Project #: 5021319

Project: Baruch Plaza Phase II SCI

Lab#: AC83375-001 **Sample ID: SB01**

Test Code	Prep Method	Prep Date	By	Analytical Method	Analysis Date	By
% Solids SM2540G				SM 2540G	2/14/15 00:00	Admin
Chlorinated Herbicides 8151		02/18/15	SW	EPA 8151A	2/18/15 18:09	MLC/KD/ZM/A
Mercury (Soil/Waste) 7471A	EPA 7471B	02/18/15	snezana	EPA 7471B	2/18/15 17:33	CJA
Organochlorine Pesticides 8081	3510C/3550C	02/17/15	marie	EPA 8081B	2/18/15 13:41	MLC/KD/ZM
PCB 8082	3510C/3550C	02/17/15	marie	EPA 8082A	2/17/15 22:57	MLC/KD/ZM
Semivolatile Organics (no search) 8270	3510C/3550C	02/17/15	jessica/kvr	EPA 8270D	2/17/15 20:10	AH/JB
TAL Metals 6010	3005&10/3050	02/18/15	snezana	EPA 6010C	2/18/15 18:42	OA
TAL Metals 6010	3005&10/3050	02/18/15	snezana	EPA 6010C	2/18/15 22:10	OA
TAL Metals 6020	3005&10/3050	02/18/15	snezana	EPA 6020A	2/18/15 17:48	PC
Volatile Organics (no search) 8260	EPA5030/5035			EPA 8260C	2/19/15 11:04	SG

Lab#: AC83375-002 **Sample ID: SB02**

Test Code	Prep Method	Prep Date	By	Analytical Method	Analysis Date	By
% Solids SM2540G				SM 2540G	2/14/15 00:00	Admin
Chlorinated Herbicides 8151		02/18/15	SW	EPA 8151A	2/18/15 18:28	MLC/KD/ZM/A
Mercury (Soil/Waste) 7471A	EPA 7471B	02/18/15	snezana	EPA 7471B	2/18/15 17:37	CJA
Organochlorine Pesticides 8081	3510C/3550C	02/17/15	marie	EPA 8081B	2/18/15 13:59	MLC/KD/ZM
PCB 8082	3510C/3550C	02/17/15	marie	EPA 8082A	2/18/15 00:13	MLC/KD/ZM
Semivolatile Organics (no search) 8270	3510C/3550C	02/17/15	jessica/kvr	EPA 8270D	2/17/15 20:33	AH/JB
TAL Metals 6010	3005&10/3050	02/18/15	snezana	EPA 6010C	2/18/15 22:13	OA
TAL Metals 6010	3005&10/3050	02/18/15	snezana	EPA 6010C	2/18/15 18:47	OA
TAL Metals 6020	3005&10/3050	02/18/15	snezana	EPA 6020A	2/18/15 17:54	PC
Volatile Organics (no search) 8260	EPA5030/5035			EPA 8260C	2/19/15 11:21	SG

Laboratory Chronicle

5021319 0018

Client: Louis Berger & Associates

HC Project #: 5021319

Project: Baruch Plaza Phase II SCI

Lab#: AC83375-003 **Sample ID: WC01**

Test Code	Prep Method	Prep Date	By	Analytical Method	Analysis Date	By
% Solids SM2540G				SM 2540G	2/14/15 00:00	Admin
Ignitability (EPA 1030)		02/17/15	SDL	EPA 1030	2/17/15 00:00	SDL
Mercury (TCLP) 7470A	EPA 7470A	02/19/15	aadewusi	EPA 7470A	2/23/15 11:03	CJA
PCB 8082	3510C/3550C	02/17/15	marie	EPA 8082A	2/17/15 22:42	MLC/KD/ZM
pH 9040C/9045D				9040C/9045D	2/17/15 11:55	SDL
Reactive Cyanide	SW846 7.3.3	02/17/15	hossain	SW846 7.3.3	2/18/15 14:58	af
Reactive Sulfide	SW846 7.3.4	02/17/15	HS	SW846 7.3.4	2/17/15 00:00	HS
TCLP Herbicides 8151		02/19/15	divyang	EPA 8151A	2/20/15 13:20	MLC/KD/ZM/A
TCLP Metals 6010	3005&10/3050	02/19/15	aadewusi	EPA 6010C	2/19/15 17:01	OA
TCLP Metals Extraction 1311	EPA 1311	02/18/15	Ramos		2/19/15 00:00	Ramos
TCLP Organics Extraction 1311	EPA 1311	02/18/15	Ramos		2/19/15 00:00	Ramos
TCLP Pesticides 8081	EPA 3510	02/19/15	lynda	EPA 8081B	2/20/15 11:16	MS
TCLP Semivolatiles 8270	EPA 3510	02/19/15	lynda	EPA 8270D	2/19/15 19:39	AH/JB
TCLP Volatiles 8260	EPA 5030C			EPA 8260C	2/20/15 15:19	SG
TCLP Zero Headspace Extraction	EPA 1311	02/18/15	SW			
Total Petroleum Hydrocarbons 8015B	Mod. Shaker	02/19/15	kvr	EPA 8015D	2/19/15 15:40	RA/KD/AH

Chain of Custody

5021319 0020

175 Route 46 West and 2 Madison Road, Fairfield, New Jersey 07004
Ph: 800-426-9992 | 973-244-9770 Fax: 973-244-9787 | 973-439-1458
Service Center: 137-D Gaither Drive, Mount Laurel, New Jersey 08054
Ph (Service Center): 856-780-6057 Fax: 856-780-6056

HC-V HamptonClarke Veritech Laboratories

CHAIN OF CUSTODY RECORD

A Women-Owned, Disadvantaged, Small Business Enterprise

NELAC/NJ #07071 | PA #68-00463 | NY #11408 | CT #PH-0671 | KY #90124

5021319

Page 1 of 1

Customer Information

a) Customer: Louis Berger
Address: 48 Wall Street, 16th Fl
New York, NY 10002
1b) Email/Cell/Fax/Ph: bgribble@louisberger.com
1c) Send Invoice to: Breanna Gribble
1d) Send Report to: Breanna Gribble

Project Information

2a) Project: Baruch Plaza Phase II SCI
2b) Project Mgr: Breanna Gribble
2c) Project Location (City/State): New York, NY
2d) Quote/PO # (If Applicable): 3000647.368.00

3) Reporting Requirements (Please Circle)

Turnaround	Report Type	Electronic Deliv.
24 Hours (100%)	Data Summary	Hazsite/CSV
48 Hours (75%)	Waste	EQuIS 4-File / EZ / NYS
72 Hours (50%)	Red - NJ / NY / PA	EQuIS EPA Region 2 or 5
4 Days (35%; TPH)	CLP	Excel - NJ Regulatory
1 Week (25%; EPH)	Full / Category B	Excel - NY Regulatory
10 Days (10%)	Category A	Excel - PA Regulatory
2 Weeks	Other:	PDF
Other:		Other:

Expedited TAT Not Always Available. Please Check with Lab.

FOR LAB USE ONLY ↓

Batch # AC83375 ~~AC8335~~

D 2/15

Check If Contingent ===>

Matrix Codes
DW - Drinking Water S - Soil A - Air
GW - Ground Water SL - Sludge
WW - Waste Water OL - Oil
OT - Other (please specify under item 9, Comments)

7) Analysis Request <=== Check If Contingent

Lab Sample #	4) Customer Sample ID	5) Matrix	6) Sample Date	6) Sample Time	Sample Type: Composite (C)	Sample Type: Grab (G)	BNA/TAL Metals	PCBs/Pest/Herb	VO-Encore (48-h)	Percent Solids	TCLP-Full, RIC, PCB	TPH	TCLP-VO	8) # of Bottles: None	MeOH	En Core	NaOH	HCl	H2SO4	HNO3	Other:	9) Comments
-001	SB01	S	2/13/15	1100	X	X	X	X	X	X				2		3						
-002	SB02	↓	↓	1245	X	X	X	X	X	X				2		3						
-003	WC01	↓	↓	1308	X						X	X	X	2								

HAZ - 101

10) Relinquished by:	Accepted by:	Date	Time
[signature]	[signature]	2/13/15	1330
[signature]	[signature]	2/13/15	1655

Additional Notes

Comments, Notes, Special Requirements, HAZARDS

Note: Check if low-level groundwater methods required to meet current standards in NJ or PA:
- BN or BNA (8270C SIM)
- VOC (8260B SIM or 8011)
- Metals (ICP-MS 200.8 or 6020)
- Metals-Soil (ICP-MS 6020 for Be & Ag)

Note: Check if applicable:
- Project-Specific Reporting Limits
- High Contaminant Concentrations
- NJ LSRP Project

Cooler Temperature: 2.3

11) Sampler (print name): Breanna Gribble Date: 2/13/15

Please note NUMBERED items. If not completed your analytical work may be delayed.
A fee of $5/sample will be assessed for storage should sample not be activated for analysis.

CONDITION UPON RECEIPT

Batch Number AC83375 Entered By: Ricardo
Date Entered 2/13/2015 5:16:00 PM

1	Yes	Is there a corresponding COC included with the samples?
2	Yes	Are the samples in a container such as a cooler or Ice chest?
3	NO	Are the COC seals intact?
4	Yes	Please specify the Temperature inside the container (in degC) 2.3
5	Yes	Are the samples refrigerated (where required)/have they arrived on ice?
6	Yes	Are the samples within the holding times for the parameters listed on the COC? IF no, list parameters and samples:
7	Yes	Are all of the sample bottles intact? If no, specify sample numbers broken/leaking
8	Yes	Are all of the sample labels or numbers legible? If no specify:
9	Yes	Do the contents match the COC? If no, specify
10	Yes	Is there enough sample sent for the analyses listed on the COC? If no, specify:
11	Yes	Are samples preserved correctly?
12	Yes	Was temperature blank present (Place comment below if not)? If not was temperature of samples verified?
13	NA	Other comments ...Specify
14	NA	Corrective actions (Specify item number and corrective action taken).

Internal Chain of Custody

Lab#:	DateTime:	Loc or User	Bot Nu	A/M	Analysis
AC83375-001	02/13/15 16:55	RICAR	0	M	Received
AC83375-001	02/13/15 17:16	RICAR	0	M	Login
AC83375-001	02/13/15 21:47	R12	2	A	NONE
AC83375-001	02/13/15 21:47	PA	2	A	mixing
AC83375-001	02/14/15 07:59	HS	2	A	tds
AC83375-001	02/14/15 15:20	R12	2	A	NONE
AC83375-001	02/17/15 07:42	JESSI	2	A	bna
AC83375-001	02/17/15 08:34	MARIE	2	A	PEST/PCB
AC83375-001	02/17/15 08:35	R12	2	A	NONE
AC83375-001	02/17/15 09:47	R12	2	A	NONE
AC83375-001	02/18/15 05:07	SW	2	A	her soil
AC83375-001	02/18/15 05:17	R12	2	A	NONE
AC83375-001	02/18/15 06:54	SP	2	A	tdsi-hg
AC83375-001	02/18/15 06:55	SP	2	A	r12
AC83375-001	02/13/15 18:33	R31	4	A	NONE
AC83375-001	02/18/15 11:33	JS	4	A	VOA
AC83375-001	02/18/15 11:34	R31	4	A	NONE
AC83375-001	02/18/15 15:49	WP	4	A	VOA
AC83375-001	02/13/15 18:33	F18	5	A	NONE
AC83375-001	02/19/15 09:46	SG	5	A	VOA
AC83375-001	02/13/15 18:33	F18	6	A	NONE
AC83375-002	02/13/15 16:55	RICAR	0	M	Received
AC83375-002	02/13/15 17:16	RICAR	0	M	Login
AC83375-002	02/13/15 21:47	R12	2	A	NONE
AC83375-002	02/13/15 21:47	PA	2	A	mixing
AC83375-002	02/14/15 07:59	HS	2	A	tds
AC83375-002	02/14/15 15:20	R12	2	A	NONE
AC83375-002	02/17/15 07:42	JESSI	2	A	bna
AC83375-002	02/17/15 08:34	MARIE	2	A	PEST/PCB
AC83375-002	02/17/15 08:35	R12	2	A	NONE
AC83375-002	02/17/15 09:47	R12	2	A	NONE
AC83375-002	02/18/15 05:07	SW	2	A	her soil
AC83375-002	02/18/15 05:17	R12	2	A	NONE
AC83375-002	02/18/15 06:54	SP	2	A	tdsi-hg
AC83375-002	02/18/15 06:55	SP	2	A	r12
AC83375-002	02/13/15 18:33	R31	4	A	NONE
AC83375-002	02/18/15 11:33	JS	4	A	VOA
AC83375-002	02/18/15 11:34	R31	4	A	NONE
AC83375-002	02/18/15 15:49	WP	4	A	VOA
AC83375-002	02/13/15 18:33	F18	5	A	NONE
AC83375-002	02/19/15 09:46	SG	5	A	VOA
AC83375-002	02/13/15 18:33	F18	6	A	NONE
AC83375-003	02/13/15 16:55	RICAR	0	M	Received
AC83375-003	02/13/15 17:16	RICAR	0	M	Login
AC83375-003	02/13/15 21:47	PA	1	A	mixing
AC83375-003	02/13/15 21:47	R12	1	A	NONE
AC83375-003	02/14/15 07:59	HS	1	A	tds
AC83375-003	02/14/15 15:20	R12	1	A	NONE
AC83375-003	02/17/15 08:00	SDL	1	A	IGNIT-1030
AC83375-003	02/17/15 08:34	MARIE	1	A	PEST/PCB
AC83375-003	02/17/15 08:35	R12	1	A	NONE
AC83375-003	02/17/15 10:07	SDL	1	M	PH
AC83375-003	02/17/15 10:28	HS	1	A	RCN/RS
AC83375-003	02/17/15 16:04	R12	1	A	NONE
AC83375-003	02/18/15 07:19	SW	1	A	zhe
AC83375-003	02/18/15 08:03	R12	1	A	NONE
AC83375-003	02/18/15 09:49	RAMO	1	A	TCLP
AC83375-003	02/18/15 09:49	RAMO	1	A	R12
AC83375-003	02/19/15 08:09	KVR	1	A	eph
AC83375-003	02/19/15 08:09	KVR	1	A	tph
AC83375-003	02/19/15 13:31	R12	1	A	NONE

Lab#:	DateTime:	Loc or User	Bot Nu	A/M	Analysis

Samples marked as received are stored in coolers or refrigerator R12, or R24 at 4 deg C until Login

Volatile Data

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC83375-001
Client Id: SB01
Data File: 6M22560.D
Analysis Date: 02/19/15 11:04
Date Rec/Extracted: 02/13/15-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Soil
Initial Vol: 5.45g
Final Vol: NA
Dilution: 0.917
Solids: 87

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	0.0021	U	56-23-5	Carbon Tetrachloride	0.0021	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0021	U	108-90-7	Chlorobenzene	0.0021	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	0.0021	U	75-00-3	Chloroethane	0.0021	U
79-00-5	1,1,2-Trichloroethane	0.0021	U	67-66-3	Chloroform	0.0021	U
75-34-3	1,1-Dichloroethane	0.0021	U	74-87-3	Chloromethane	0.0021	U
75-35-4	1,1-Dichloroethene	0.0021	U	156-59-2	cis-1,2-Dichloroethene	0.0021	U
87-61-6	1,2,3-Trichlorobenzene	0.0021	U	10061-01-5	cis-1,3-Dichloropropene	0.0021	U
120-82-1	1,2,4-Trichlorobenzene	0.0021	U	110-82-7	Cyclohexane	0.0021	U
96-12-8	1,2-Dibromo-3-Chloropropa	0.0021	U	124-48-1	Dibromochloromethane	0.0021	U
106-93-4	1,2-Dibromoethane	0.0021	U	75-71-8	Dichlorodifluoromethane	0.0021	U
95-50-1	1,2-Dichlorobenzene	0.0021	U	100-41-4	Ethylbenzene	0.0011	U
107-06-2	1,2-Dichloroethane	0.0011	U	98-82-8	Isopropylbenzene	0.0011	U
78-87-5	1,2-Dichloropropane	0.0021	U	136777612	m&p-Xylenes	0.0011	U
541-73-1	1,3-Dichlorobenzene	0.0021	U	79-20-9	Methyl Acetate	0.0021	U
106-46-7	1,4-Dichlorobenzene	0.0021	U	108-87-2	Methylcyclohexane	0.0021	U
123-91-1	1,4-Dioxane	0.11	U	75-09-2	Methylene Chloride	0.0021	U
78-93-3	2-Butanone	0.0021	U	1634-04-4	Methyl-t-butyl ether	0.0011	U
591-78-6	2-Hexanone	0.0021	U	95-47-6	o-Xylene	0.0011	U
108-10-1	4-Methyl-2-Pentanone	0.0021	U	100-42-5	Styrene	0.0021	U
67-64-1	Acetone	0.011	U	127-18-4	Tetrachloroethene	0.0021	U
71-43-2	Benzene	0.0011	U	108-88-3	Toluene	0.0011	U
74-97-5	Bromochloromethane	0.0021	U	156-60-5	trans-1,2-Dichloroethene	0.0021	U
75-27-4	Bromodichloromethane	0.0021	U	10061-02-6	trans-1,3-Dichloropropene	0.0021	U
75-25-2	Bromoform	0.0021	U	79-01-6	Trichloroethene	0.0021	U
74-83-9	Bromomethane	0.0021	U	75-69-4	Trichlorofluoromethane	0.0021	U
75-15-0	Carbon Disulfide	0.0021	U	75-01-4	Vinyl Chloride	0.0021	U
1330-20-7	Xylenes (Total)	0.0011	U				

Worksheet #: 334400

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

- Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

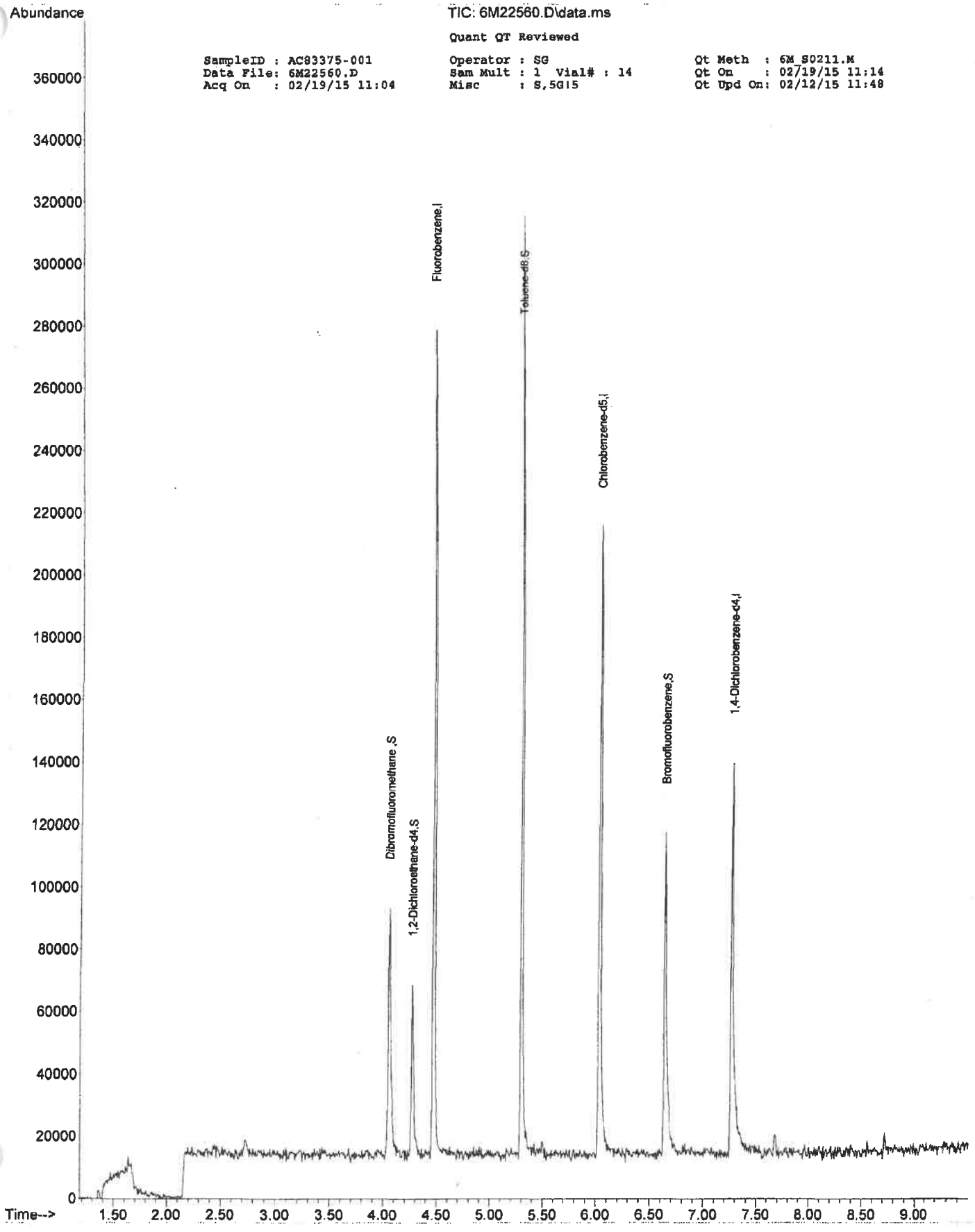
Quantitation Report (QT Reviewed) 5021319 0025

SampleID : AC83375-001 Operator : SG Qt Meth : 6M_S0211.M
Data File: 6M22560.D Sam Mult : 1 Vial# : 14 Qt On : 02/19/15 11:14
Acq On : 02/19/15 11:04 Misc : S,5G!5 Qt Upd On: 02/12/15 11:48

Data Path : G:\GcMsData\2015\GCMS_6\Data\02-19-15\
Qt Path : G:\GcMsData\2015\GCMS_6\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.474	96	157275	30.00	ug/l	0.00
52) Chlorobenzene-d5	6.037	117	94132	30.00	ug/l	0.00
70) 1,4-Dichlorobenzene-d4	7.269	152	38263	30.00	ug/l	0.01
System Monitoring Compounds						
37) Dibromofluoromethane	4.060	111	44959	36.75	ug/l	0.00
Spiked Amount 30.000			Recovery = 122.50%			
39) 1,2-Dichloroethane-d4	4.270	67	16504	31.36	ug/l	0.00
Spiked Amount 30.000			Recovery = 104.53%			
66) Toluene-d8	5.298	98	130803	25.02	ug/l	0.00
Spiked Amount 30.000			Recovery = 83.40%			
76) Bromofluorobenzene	6.638	174	28680	32.26	ug/l	0.00
Spiked Amount 30.000			Recovery = 107.53%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 6M22560.D\data.ms
Quant QT Reviewed
SampleID : AC83375-001
Data File: 6M22560.D
Acq On : 02/19/15 11:04
Operator : SG
Sam Mult : 1 Vial# : 14
Misc : S,5G15
Qt Meth : 6M_S0211.M
Qt On : 02/19/15 11:14
Qt Upd On: 02/12/15 11:48
Dibromofluoromethane,S
1,2-Dichloroethane-d4,S
Fluorobenzene,I
Toluene-d8,S
Chlorobenzene-d5,I
Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Time-->

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC83375-002
Client Id: SB02
Data File: 6M22561.D
Analysis Date: 02/19/15 11:21
Date Rec/Extracted: 02/13/15-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Soil
Initial Vol: 4.44g
Final Vol: NA
Dilution: 1.13
Solids: 94

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	0.0024	U	56-23-5	Carbon Tetrachloride	0.0024	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0024	U	108-90-7	Chlorobenzene	0.0024	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	0.0024	U	75-00-3	Chloroethane	0.0024	U
79-00-5	1,1,2-Trichloroethane	0.0024	U	67-66-3	Chloroform	0.0024	U
75-34-3	1,1-Dichloroethane	0.0024	U	74-87-3	Chloromethane	0.0024	U
75-35-4	1,1-Dichloroethene	0.0024	U	156-59-2	cis-1,2-Dichloroethene	0.0024	U
87-61-6	1,2,3-Trichlorobenzene	0.0024	U	10061-01-5	cis-1,3-Dichloropropene	0.0024	U
120-82-1	1,2,4-Trichlorobenzene	0.0024	U	110-82-7	Cyclohexane	0.0024	U
96-12-8	1,2-Dibromo-3-Chloropropa	0.0024	U	124-48-1	Dibromochloromethane	0.0024	U
106-93-4	1,2-Dibromoethane	0.0024	U	75-71-8	Dichlorodifluoromethane	0.0024	U
95-50-1	1,2-Dichlorobenzene	0.0024	U	100-41-4	Ethylbenzene	0.0012	U
107-06-2	1,2-Dichloroethane	0.0012	U	98-82-8	Isopropylbenzene	0.0012	U
78-87-5	1,2-Dichloropropane	0.0024	U	136777612	m&p-Xylenes	0.0012	U
541-73-1	1,3-Dichlorobenzene	0.0024	U	79-20-9	Methyl Acetate	0.0024	U
106-46-7	1,4-Dichlorobenzene	0.0024	U	108-87-2	Methylcyclohexane	0.0024	U
123-91-1	1,4-Dioxane	0.12	U	75-09-2	Methylene Chloride	0.0024	U
78-93-3	2-Butanone	0.0024	U	1634-04-4	Methyl-t-butyl ether	0.0012	U
591-78-6	2-Hexanone	0.0024	U	95-47-6	o-Xylene	0.0012	U
108-10-1	4-Methyl-2-Pentanone	0.0024	U	100-42-5	Styrene	0.0024	U
67-64-1	Acetone	0.012	U	127-18-4	Tetrachloroethene	0.0024	U
71-43-2	Benzene	0.0012	U	108-88-3	Toluene	0.0012	U
74-97-5	Bromochloromethane	0.0024	U	156-60-5	trans-1,2-Dichloroethene	0.0024	U
75-27-4	Bromodichloromethane	0.0024	U	10061-02-6	trans-1,3-Dichloropropene	0.0024	U
75-25-2	Bromoform	0.0024	U	79-01-6	Trichloroethene	0.0024	U
74-83-9	Bromomethane	0.0024	U	75-69-4	Trichlorofluoromethane	0.0024	U
75-15-0	Carbon Disulfide	0.0024	U	75-01-4	Vinyl Chloride	0.0024	U
1330-20-7	Xylenes (Total)	0.0012	U				

Worksheet #: 334400

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

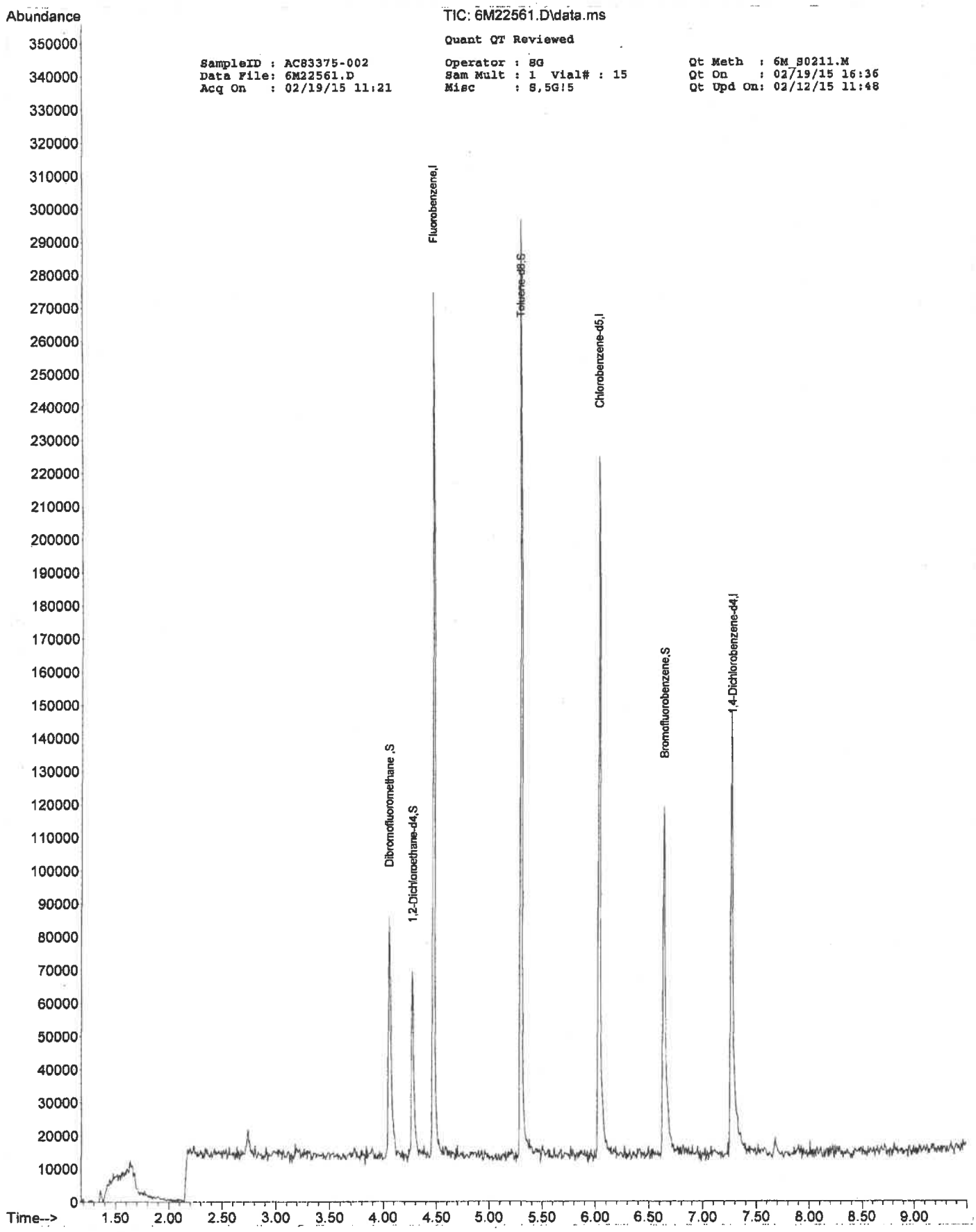
Quantitation Report (QT Reviewed)

SampleID : AC83375-002 Operator : SG Qt Meth : 6M_S0211.M
Data File: 6M22561.D Sam Mult : 1 Vial# : 15 Qt On : 02/19/15 16:36
Acq On : 02/19/15 11:21 Misc : S,5G!5 Qt Upd On: 02/12/15 11:48

Data Path : G:\GcMsData\2015\GCMS_6\Data\02-19-15\
Qt Path : G:\GcMsData\2015\GCMS_6\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.470	96	147700	30.00	ug/l	0.00
52) Chlorobenzene-d5	6.032	117	88395	30.00	ug/l	0.00
70) 1,4-Dichlorobenzene-d4	7.271	152	38565	30.00	ug/l	0.01
System Monitoring Compounds						
37) Dibromofluoromethane	4.055	111	43562	37.92	ug/l	0.00
Spiked Amount 30.000			Recovery = 126.40%			
39) 1,2-Dichloroethane-d4	4.271	67	17019	34.44	ug/l	0.00
Spiked Amount 30.000			Recovery = 114.80%			
66) Toluene-d8	5.299	98	123270	25.11	ug/l	0.00
Spiked Amount 30.000			Recovery = 83.70%			
76) Bromofluorobenzene	6.640	174	25251	28.18	ug/l	0.00
Spiked Amount 30.000			Recovery = 93.93%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 6M22561.D\data.ms
Quant QT Reviewed
SampleID : AC83375-002
Data File: 6M22561.D
Acq On : 02/19/15 11:21
Operator : SG
Sam Mult : 1 Vial# : 15
Misc : S,5G!5
Qt Meth : 6M_S0211.M
Qt On : 02/19/15 16:36
Qt Upd On: 02/12/15 11:48
Dibromofluoromethane,S
1,2-Dichloroethane-d4,S
Fluorobenzene,I
Toluene-d8,S
Chlorobenzene-d5,I
Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Time-->

Form1

ORGANICS VOLATILE REPORT

Sample Number: DAILY BLANK
Client Id:
Data File: 6M22553.D
Analysis Date: 02/19/15 09:06
Date Rec/Extracted:
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Soil
Initial Vol: 5g
Final Vol: NA
Dilution: 1.00
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
71-55-6	1,1,1-Trichloroethane	0.0020	U	56-23-5	Carbon Tetrachloride	0.0020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0020	U	108-90-7	Chlorobenzene	0.0020	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluor	0.0020	U	75-00-3	Chloroethane	0.0020	U
79-00-5	1,1,2-Trichloroethane	0.0020	U	67-66-3	Chloroform	0.0020	U
75-34-3	1,1-Dichloroethane	0.0020	U	74-87-3	Chloromethane	0.0020	U
75-35-4	1,1-Dichloroethene	0.0020	U	156-59-2	cis-1,2-Dichloroethene	0.0020	U
87-61-6	1,2,3-Trichlorobenzene	0.0020	U	10061-01-5	cis-1,3-Dichloropropene	0.0020	U
120-82-1	1,2,4-Trichlorobenzene	0.0020	U	110-82-7	Cyclohexane	0.0020	U
96-12-8	1,2-Dibromo-3-Chloropropa	0.0020	U	124-48-1	Dibromochloromethane	0.0020	U
106-93-4	1,2-Dibromoethane	0.0020	U	75-71-8	Dichlorodifluoromethane	0.0020	U
95-50-1	1,2-Dichlorobenzene	0.0020	U	100-41-4	Ethylbenzene	0.0010	U
107-06-2	1,2-Dichloroethane	0.0010	U	98-82-8	Isopropylbenzene	0.0010	U
78-87-5	1,2-Dichloropropane	0.0020	U	136777612	m&p-Xylenes	0.0010	U
541-73-1	1,3-Dichlorobenzene	0.0020	U	79-20-9	Methyl Acetate	0.0020	U
106-46-7	1,4-Dichlorobenzene	0.0020	U	108-87-2	Methylcyclohexane	0.0020	U
123-91-1	1,4-Dioxane	0.10	U	75-09-2	Methylene Chloride	0.0020	U
78-93-3	2-Butanone	0.0020	U	1634-04-4	Methyl-t-butyl ether	0.0010	U
591-78-6	2-Hexanone	0.0020	U	95-47-6	o-Xylene	0.0010	U
108-10-1	4-Methyl-2-Pentanone	0.0020	U	100-42-5	Styrene	0.0020	U
67-64-1	Acetone	0.010	U	127-18-4	Tetrachloroethene	0.0020	U
71-43-2	Benzene	0.0010	U	108-88-3	Toluene	0.0010	U
74-97-5	Bromochloromethane	0.0020	U	156-60-5	trans-1,2-Dichloroethene	0.0020	U
75-27-4	Bromodichloromethane	0.0020	U	10061-02-6	trans-1,3-Dichloropropene	0.0020	U
75-25-2	Bromoform	0.0020	U	79-01-6	Trichloroethene	0.0020	U
74-83-9	Bromomethane	0.0020	U	75-69-4	Trichlorofluoromethane	0.0020	U
75-15-0	Carbon Disulfide	0.0020	U	75-01-4	Vinyl Chloride	0.0020	U

Worksheet #: 334400 *Total Target Concentration* 0 ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration usea

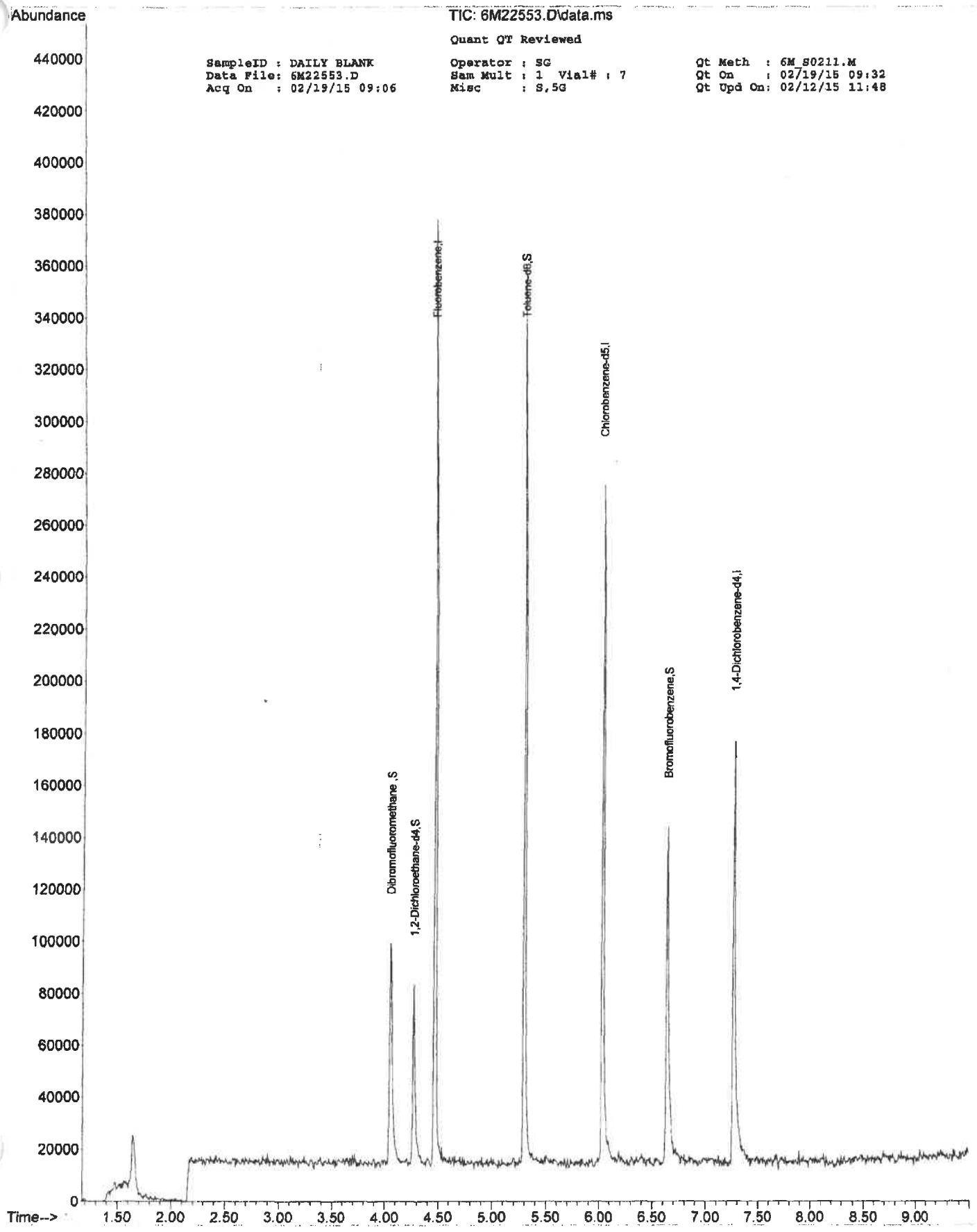
Quantitation Report (QT Reviewed) 5021319 0031

SampleID : DAILY BLANK Operator : SG Qt Meth : 6M_S0211.M
Data File: 6M22553.D Sam Mult : 1 Vial# : 7 Qt On : 02/19/15 09:32
Acq On : 02/19/15 09:06 Misc : S,5G Qt Upd On: 02/12/15 11:48

Data Path : G:\GcMsData\2015\GCMS_6\Data\02-19-15\
Qt Path : G:\GcMsData\2015\GCMS_6\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.470	96	191308	30.00	ug/l	0.00
52) Chlorobenzene-d5	6.032	117	105422	30.00	ug/l	0.00
70) 1,4-Dichlorobenzene-d4	7.265	152	44908	30.00	ug/l	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.055	111	50734	34.09	ug/l	0.00
Spiked Amount 30.000			Recovery =	113.63%		
39) 1,2-Dichloroethane-d4	4.271	67	20244	31.62	ug/l	0.00
Spiked Amount 30.000			Recovery =	105.40%		
66) Toluene-d8	5.299	98	156593	26.74	ug/l	0.00
Spiked Amount 30.000			Recovery =	89.13%		
76) Bromofluorobenzene	6.639	174	32768	31.41	ug/l	0.00
Spiked Amount 30.000			Recovery =	104.70%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 6M22553.D\data.ms
Quant QT Reviewed
SampleID : DAILY BLANK
Data File: 6M22553.D
Acq On : 02/19/15 09:06
Operator : SG
Sam Mult : 1 Vial# : 7
Misc : S,5G
Qt Meth : 6M_S0211.M
Qt On : 02/19/15 09:32
Qt Upd On: 02/12/15 11:48
Dibromofluoromethane,S
1,2-Dichloroethane-d4,S
Fluorobenzene,I
Toluene-d8,S
Chlorobenzene-d5,I
Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Time-->

FORM2

Surrogate Recovery

Method: EPA 8260C

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column1 S3 Recov	Column1 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
6M22510.D	DAILY BLANK	Soil	02/18/15 09:34	1		106	94	91	110		
6M22553.D	DAILY BLANK	Soil	02/19/15 09:06	1		114	105	89	105		
6M22560.D	AC83375-001	Soil	02/19/15 11:04	1		123	105	83	108		
6M22561.D	AC83375-002	Soil	02/19/15 11:21	1		126	115	84	94		
6M22525.D	MBS42264	Soil	02/18/15 14:03	1		99	100	92	100		
6M22535.D	AC83389-001	Soil	02/18/15 16:49	1		114	101	83	104		
6M22554.D	MBS42268	Soil	02/19/15 09:22	1		96	90	97	105		
6M22571.D	AC83389-001(	Soil	02/19/15 14:09	1		104	95	89	102		
6M22572.D	AC83389-001(	Soil	02/19/15 14:26	1		103	103	88	108		

Flags: *SD=Surrogate diluted out*
*=Surrogate out

Method: EPA 8260C

Soil Limits

Compound	Spike Amt	Limits
S1=Dibromofluoromethane	30	70-130
S2=1,2-Dichloroethane-d4	30	70-130
S3=Toluene-d8	30	70-130
S4=Bromofluorobenzene	30	70-130

Form3
Recovery Data
QC Batch: MBS42264

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6M22525.D	MBS42264	2/18/2015 2:03:00 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8260C | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	55.0106	0	50	110	70	130
Dichlorodifluoromethane	1	5.6337	0	50	11*	40	160
Chloromethane	1	6.2211	0	50	12*	40	160
Bromomethane	1	18.7504	0	50	38*	40	160
Vinyl Chloride	1	10.1564	0	50	20*	70	130
Chloroethane	1	20.509	0	50	41	40	160
Trichlorofluoromethane	1	27.8749	0	50	56	40	160
Ethyl ether	1	39.6723	0	50	79	70	130
Furan	1	32.1842	0	50	64*	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	30.725	0	50	61*	70	130
Methylene Chloride	1	44.1777	0	50	88	70	130
Acrolein	1	177.723	0	200	89	70	130
Acrylonitrile	1	25.5986	0	50	51*	70	130
Iodomethane	1	36.669	0	50	73	70	130
Acetone	1	279.9457	0	200	140	40	160
Carbon Disulfide	1	21.5943	0	50	43	40	160
t-Butyl Alcohol	1	267.7716	0	200	134*	70	130
n-Hexane	1	23.6991	0	50	47*	70	130
Di-isopropyl-ether	1	46.2976	0	50	93	70	130
1,1-Dichloroethene	1	34.2015	0	50	68*	70	130
Methyl Acetate	1	43.6339	0	50	87	70	130
Methyl-t-butyl ether	1	51.8358	0	50	104	70	130
1,1-Dichloroethane	1	48.6248	0	50	97	70	130
trans-1,2-Dichloroethene	1	45.8644	0	50	92	70	130
Ethyl-t-butyl ether	1	48.5511	0	50	97	70	130
cis-1,2-Dichloroethene	1	48.2	0	50	96	70	130
Bromochloromethane	1	49.6545	0	50	99	70	130
2,2-Dichloropropane	1	50.1091	0	50	100	70	130
Ethyl acetate	1	44.2217	0	50	88	70	130
1,4-Dioxane	1	2398.391	0	2500	96	40	160
1,1-Dichloropropene	1	45.0255	0	50	90	70	130
Chloroform	1	51.899	0	50	104	70	130
Cyclohexane	1	33.8045	0	50	68*	70	130
1,2-Dichloroethane	1	51.6334	0	50	103	70	130
2-Butanone	1	47.1692	0	50	94	70	130
1,1,1-Trichloroethane	1	55.6875	0	50	111	70	130
Carbon Tetrachloride	1	57.836	0	50	116	70	130
Vinyl Acetate	1	54.7389	0	50	109	70	130
Bromodichloromethane	1	54.1326	0	50	108	70	130
Methylcyclohexane	1	44.9894	0	50	90	70	130
Dibromomethane	1	61.5055	0	50	123	70	130
1,2-Dichloropropane	1	49.2389	0	50	98	70	130
Trichloroethene	1	58.9197	0	50	118	70	130
Benzene	1	52.3401	0	50	105	70	130
tert-Amyl methyl ether	1	52.64	0	50	105	70	130
Iso-propylacetate	1	48.8085	0	50	98	70	130
Methyl methacrylate	1	45.4683	0	50	91	70	130
Dibromochloromethane	1	57.401	0	50	115	70	130
2-Chloroethylvinylether	1	23.8003	0	50	48*	70	130
cis-1,3-Dichloropropene	1	48.4022	0	50	97	70	130
trans-1,3-Dichloropropene	1	50.8483	0	50	102	70	130
Ethyl methacrylate	1	42.1619	0	50	84	70	130
1,1,2-Trichloroethane	1	51.5906	0	50	103	70	130
1,2-Dibromoethane	1	54.9157	0	50	110	70	130
1,3-Dichloropropane	1	49.307	0	50	99	70	130
4-Methyl-2-Pentanone	1	42.388	0	50	85	40	160
2-Hexanone	1	45.3709	0	50	91	40	160
Tetrachloroethene	1	56.8752	0	50	114	70	130
Toluene	1	51.67	0	50	103	70	130
1,1,1,2-Tetrachloroethane	1	59.6052	0	50	119	70	130
Chlorobenzene	1	53.8938	0	50	108	70	130
n-Butyl acrylate	1	41.9277	0	50	84	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42264

n-Amyl acetate	1	44.1041	0	50	88	70	130
Bromoform	1	58.5128	0	50	117	70	130
Ethylbenzene	1	54.287	0	50	109	70	130
1,1,2,2-Tetrachloroethane	1	50.4744	0	50	101	70	130
Styrene	1	46.4955	0	50	93	70	130
m&p-Xylenes	1	99.6276	0	100	100	70	130
o-Xylene	1	48.2099	0	50	96	70	130
trans-1,4-Dichloro-2-butene	1	46.1171	0	50	92	70	130
1,3-Dichlorobenzene	1	56.9516	0	50	114	70	130
1,4-Dichlorobenzene	1	51.6248	0	50	103	70	130
1,2-Dichlorobenzene	1	54.8643	0	50	110	70	130
Isopropylbenzene	1	49.3728	0	50	99	70	130
Cyclohexanone	1	214.3357	0	250	86	70	130
Camphene	1	49.0476	0	50	98	70	130
1,2,3-Trichloropropane	1	49.1446	0	50	98	70	130
2-Chlorotoluene	1	51.4759	0	50	103	70	130
p-Ethyltoluene	1	48.0288	0	50	96	70	130
4-Chlorotoluene	1	47.439	0	50	95	70	130
n-Propylbenzene	1	48.4177	0	50	97	70	130
Bromobenzene	1	50.9846	0	50	102	70	130
1,3,5-Trimethylbenzene	1	56.2902	0	50	113	70	130
Butyl methacrylate	1	39.9492	0	50	80	70	130
t-Butylbenzene	1	56.8155	0	50	114	70	130
1,2,4-Trimethylbenzene	1	48.7193	0	50	97	70	130
sec-Butylbenzene	1	47.7979	0	50	96	70	130
4-Isopropyltoluene	1	52.3625	0	50	105	70	130
n-Butylbenzene	1	49.4108	0	50	99	70	130
p-Diethylbenzene	1	46.8932	0	50	94	70	130
1,2,4,5-Tetramethylbenzene	1	45.1228	0	50	90	70	130
1,2-Dibromo-3-Chloropropane	1	54.7191	0	50	109	40	160
Camphor	1	410.4748	0	500	82	70	130
Hexachlorobutadiene	1	57.6616	0	50	115	70	130
1,2,4-Trichlorobenzene	1	53.6424	0	50	107	70	130
1,2,3-Trichlorobenzene	1	52.6423	0	50	105	70	130
Naphthalene	1	38.064	0	50	76	40	160

* - Indicates outside of limits

- Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42268

Data File	Sample ID:	Analysis Date
Spike or Dup: 6M22554.D	MBS42268	2/19/2015 9:22:00 AM
Non Spike(If applicable):		
Inst Blank(If applicable):		

Method: 8260C Matrix: Soil QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	45.2221	0	50	90	70	130
Dichlorodifluoromethane	1	41.3995	0	50	83	40	160
Chloromethane	1	40.5764	0	50	81	40	160
Bromomethane	1	48.9505	0	50	98	40	160
Vinyl Chloride	1	47.0778	0	50	94	70	130
Chloroethane	1	45.8354	0	50	92	40	160
Trichlorofluoromethane	1	57.6627	0	50	115	40	160
Ethyl ether	1	44.8928	0	50	90	70	130
Furan	1	48.9166	0	50	98	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	53.639	0	50	107	70	130
Methylene Chloride	1	44.4831	0	50	89	70	130
Acrolein	1	188.2058	0	200	94	70	130
Acrylonitrile	1	17.0094	0	50	34*	70	130
Iodomethane	1	59.1076	0	50	118	70	130
Acetone	1	250.0716	0	200	125	40	160
Carbon Disulfide	1	49.1186	0	50	98	40	160
t-Butyl Alcohol	1	235.2549	0	200	118	70	130
n-Hexane	1	47.6252	0	50	95	70	130
Di-isopropyl-ether	1	43.5973	0	50	87	70	130
1,1-Dichloroethene	1	48.3987	0	50	97	70	130
Methyl Acetate	1	39.045	0	50	78	70	130
Methyl-t-butyl ether	1	44.7024	0	50	89	70	130
1,1-Dichloroethane	1	47.112	0	50	94	70	130
trans-1,2-Dichloroethene	1	50.9774	0	50	102	70	130
Ethyl-t-butyl ether	1	43.0992	0	50	86	70	130
cis-1,2-Dichloroethene	1	47.8057	0	50	96	70	130
Bromochloromethane	1	44.6304	0	50	89	70	130
2,2-Dichloropropane	1	53.9389	0	50	108	70	130
Ethyl acetate	1	36.9858	0	50	74	70	130
1,4-Dioxane	1	2329.675	0	2500	93	40	160
1,1-Dichloropropene	1	45.3363	0	50	91	70	130
Chloroform	1	48.724	0	50	97	70	130
Cyclohexane	1	47.2182	0	50	94	70	130
1,2-Dichloroethane	1	45.2028	0	50	90	70	130
2-Butanone	1	42.9872	0	50	86	70	130
1,1,1-Trichloroethane	1	53.0716	0	50	106	70	130
Carbon Tetrachloride	1	51.748	0	50	103	70	130
Vinyl Acetate	1	43.4943	0	50	87	70	130
Bromodichloromethane	1	47.0678	0	50	94	70	130
Methylcyclohexane	1	52.175	0	50	104	70	130
Dibromomethane	1	52.5189	0	50	105	70	130
1,2-Dichloropropane	1	46.518	0	50	93	70	130
Trichloroethene	1	52.0032	0	50	104	70	130
Benzene	1	48.9855	0	50	98	70	130
tert-Amyl methyl ether	1	46.3034	0	50	93	70	130
Iso-propylacetate	1	38.0439	0	50	76	70	130
Methyl methacrylate	1	40.2318	0	50	80	70	130
Dibromochloromethane	1	48.3344	0	50	97	70	130
2-Chloroethylvinylether	1	38.116	0	50	76	70	130
cis-1,3-Dichloropropene	1	45.3302	0	50	91	70	130
trans-1,3-Dichloropropene	1	47.0132	0	50	94	70	130
Ethyl methacrylate	1	34.3359	0	50	69*	70	130
1,1,2-Trichloroethane	1	45.7152	0	50	91	70	130
1,2-Dibromoethane	1	49.9868	0	50	100	70	130
1,3-Dichloropropane	1	45.7873	0	50	92	70	130
4-Methyl-2-Pentanone	1	34.9641	0	50	70	40	160
2-Hexanone	1	24.9822	0	50	50	40	160
Tetrachloroethene	1	56.4496	0	50	113	70	130
Toluene	1	52.0153	0	50	104	70	130
1,1,1,2-Tetrachloroethane	1	50.4665	0	50	101	70	130
Chlorobenzene	1	53.2815	0	50	107	70	130
n-Butyl acrylate	1	31.8782	0	50	64*	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42268

n-Amyl acetate	1	34.5784	0	50	69*	70	130
Bromoform	1	46.3562	0	50	93	70	130
Ethylbenzene	1	50.947	0	50	102	70	130
1,1,2,2-Tetrachloroethane	1	42.8128	0	50	86	70	130
Styrene	1	46.0831	0	50	92	70	130
m&p-Xylenes	1	99.3359	0	100	99	70	130
o-Xylene	1	45.5274	0	50	91	70	130
trans-1,4-Dichloro-2-butene	1	42.9393	0	50	86	70	130
1,3-Dichlorobenzene	1	53.7258	0	50	107	70	130
1,4-Dichlorobenzene	1	48.3264	0	50	97	70	130
1,2-Dichlorobenzene	1	48.7407	0	50	97	70	130
Isopropylbenzene	1	44.2409	0	50	88	70	130
Cyclohexanone	1	223.1077	0	250	89	70	130
Camphene	1	51.9471	0	50	104	70	130
1,2,3-Trichloropropane	1	43.2354	0	50	86	70	130
2-Chlorotoluene	1	48.8837	0	50	98	70	130
p-Ethyltoluene	1	47.4792	0	50	95	70	130
4-Chlorotoluene	1	43.162	0	50	86	70	130
n-Propylbenzene	1	45.5364	0	50	91	70	130
Bromobenzene	1	46.3684	0	50	93	70	130
1,3,5-Trimethylbenzene	1	50.9185	0	50	102	70	130
Butyl methacrylate	1	36.4385	0	50	73	70	130
t-Butylbenzene	1	53.3996	0	50	107	70	130
1,2,4-Trimethylbenzene	1	46.965	0	50	94	70	130
sec-Butylbenzene	1	48.7506	0	50	98	70	130
4-Isopropyltoluene	1	47.1776	0	50	94	70	130
n-Butylbenzene	1	45.8297	0	50	92	70	130
p-Diethylbenzene	1	45.7668	0	50	92	70	130
1,2,4,5-Tetramethylbenzene	1	43.7384	0	50	87	70	130
1,2-Dibromo-3-Chloropropane	1	46.9307	0	50	94	40	160
Camphor	1	267.3034	0	500	53*	70	130
Hexachlorobutadiene	1	50.1882	0	50	100	70	130
1,2,4-Trichlorobenzene	1	45.5352	0	50	91	70	130
1,2,3-Trichlorobenzene	1	42.8084	0	50	86	70	130
Naphthalene	1	32.3853	0	50	65	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42268

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6M22571.D	AC83389-001(MS)	2/19/2015 2:09:00 PM
Non Spike(If applicable):	6M22535.D	AC83389-001	2/18/2015 4:49:00 PM
Inst Blank(If applicable):			

Method: 8260C | Matrix: Soil | QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	37.2726	0	50	75	70	130
Dichlorodifluoromethane	1	75.5888	0	50	151	40	160
Chloromethane	1	49.6738	0	50	99	40	160
Bromomethane	1	51.8229	0	50	104	40	160
Vinyl Chloride	1	50.9045	0	50	102	70	130
Chloroethane	1	40.2564	0	50	81	40	160
Trichlorofluoromethane	1	46.241	0	50	92	40	160
Ethyl ether	1	39.3656	0	50	79	70	130
Furan	1	37.3962	0	50	75	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	32.4431	0	50	65*	70	130
Methylene Chloride	1	36.9804	0	50	74	70	130
Acrolein	1	109.621	0	200	55*	70	130
Acrylonitrile	1	26.5953	0	50	53*	70	130
Iodomethane	1	46.781	0	50	94	70	130
Acetone	1	212.0517	0	200	106	40	160
Carbon Disulfide	1	34.1167	0	50	68	40	160
t-Butyl Alcohol	1	170.5133	0	200	85	70	130
n-Hexane	1	15.7788	0	50	32*	70	130
Di-isopropyl-ether	1	32.9985	0	50	66*	70	130
1,1-Dichloroethene	1	42.2565	0	50	85	70	130
Methyl Acetate	1	30.9475	0	50	62*	70	130
Methyl-t-butyl ether	1	34.6961	0	50	69*	70	130
1,1-Dichloroethane	1	40.0232	0	50	80	70	130
trans-1,2-Dichloroethene	1	41.1811	0	50	82	70	130
Ethyl-t-butyl ether	1	31.6322	0	50	63*	70	130
cis-1,2-Dichloroethene	1	36.5698	0	50	73	70	130
Bromochloromethane	1	35.6742	0	50	71	70	130
2,2-Dichloropropane	1	36.3978	0	50	73	70	130
Ethyl acetate	1	33.5721	0	50	67*	70	130
1,4-Dioxane	1	2171.409	0	2500	87	40	160
1,1-Dichloropropene	1	26.6078	0	50	53*	70	130
Chloroform	1	37.059	0	50	74	70	130
Cyclohexane	1	18.3053	0	50	37*	70	130
1,2-Dichloroethane	1	37.2529	0	50	75	70	130
2-Butanone	1	30.6338	0	50	61*	70	130
1,1,1-Trichloroethane	1	35.6698	0	50	71	70	130
Carbon Tetrachloride	1	34.0432	0	50	68*	70	130
Vinyl Acetate	1	35.5064	0	50	71	70	130
Bromodichloromethane	1	35.5627	0	50	71	70	130
Methylcyclohexane	1	15.0653	0	50	30*	70	130
Dibromomethane	1	43.1315	0	50	86	70	130
1,2-Dichloropropane	1	31.765	0	50	64*	70	130
Trichloroethene	1	33.093	0	50	66*	70	130
Benzene	1	35.8733	0	50	72	70	130
tert-Amyl methyl ether	1	31.6976	0	50	63*	70	130
Iso-propylacetate	1	24.3881	0	50	49*	70	130
Methyl methacrylate	1	25.8316	0	50	52*	70	130
Dibromochloromethane	1	29.6044	0	50	59*	70	130
2-Chloroethylvinylether	1	20.5064	0	50	41*	70	130
cis-1,3-Dichloropropene	1	26.0807	0	50	52*	70	130
trans-1,3-Dichloropropene	1	25.5403	0	50	51*	70	130
Ethyl methacrylate	1	19.2286	0	50	38*	70	130
1,1,2-Trichloroethane	1	30.3176	0	50	61*	70	130
1,2-Dibromoethane	1	27.511	0	50	55*	70	130
1,3-Dichloropropane	1	27.6871	0	50	55*	70	130
4-Methyl-2-Pentanone	1	18.592	0	50	37*	40	160
2-Hexanone	1	12.5779	0	50	25*	40	160
Tetrachloroethene	1	18.2193	0	50	36*	70	130
Toluene	1	22.9721	1.3998	50	43*	70	130
1,1,1,2-Tetrachloroethane	1	22.6942	0	50	45*	70	130
Chlorobenzene	1	21.9631	0	50	44*	70	130
n-Butyl acrylate	1	76.5917	0	50	153*	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42268

n-Amyl acetate	1	71.2547	0	50	143*	70	130
Bromoform	1	25.8263	0	50	52*	70	130
Ethylbenzene	1	15.4529	0	50	31*	70	130
1,1,2,2-Tetrachloroethane	1	22.4002	0	50	45*	70	130
Styrene	1	15.1293	0	50	30*	70	130
m&p-Xylenes	1	27.676	0	100	28*	70	130
o-Xylene	1	16.0006	2.4934	50	27*	70	130
trans-1,4-Dichloro-2-butene	1	35.508	0	50	71	70	130
1,3-Dichlorobenzene	1	12.2038	0	50	24*	70	130
1,4-Dichlorobenzene	1	11.5867	0	50	23*	70	130
1,2-Dichlorobenzene	1	10.9201	0	50	22*	70	130
Isopropylbenzene	1	12.2478	1.6594	50	21*	70	130
Cyclohexanone	1	524.4491	0	250	210*	70	130
Camphene	1	9.4884	0	50	19*	70	130
1,2,3-Trichloropropane	1	23.1666	0	50	46*	70	130
2-Chlorotoluene	1	13.3236	0	50	27*	70	130
p-Ethyltoluene	1	21.3799	0	50	43*	70	130
4-Chlorotoluene	1	10.6787	0	50	21*	70	130
n-Propylbenzene	1	9.8929	0	50	20*	70	130
Bromobenzene	1	17.5046	0	50	35*	70	130
1,3,5-Trimethylbenzene	1	27.7104	0	50	55*	70	130
Butyl methacrylate	1	47.8973	0	50	96	70	130
t-Butylbenzene	1	11.5986	0	50	23*	70	130
1,2,4-Trimethylbenzene	1	9.3128	0	50	19*	70	130
sec-Butylbenzene	1	18.4183	0	50	37*	70	130
4-Isopropyltoluene	1	21.2644	0	50	43*	70	130
n-Butylbenzene	1	18.4317	0	50	37*	70	130
p-Diethylbenzene	1	70.9065	0	50	142*	70	130
1,2,4,5-Tetramethylbenzene	1	41.7217	0	50	83	70	130
1,2-Dibromo-3-Chloropropane	1	21.7802	0	50	44	40	160
Camphor	1	788.2114	0	500	158*	70	130
Hexachlorobutadiene	1	5.2064	0	50	10*	70	130
1,2,4-Trichlorobenzene	1	7.6959	0	50	15*	70	130
1,2,3-Trichlorobenzene	1	8.0204	0	50	16*	70	130
Naphthalene	1	9.9385	0	50	20*	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42268

Data File	Sample ID:	Analysis Date
Spike or Dup: 6M22572.D	AC83389-001(MSD)	2/19/2015 2:26:00 PM
Non Spike(If applicable): 6M22535.D	AC83389-001	2/18/2015 4:49:00 PM
Inst Blank(If applicable):		

Method: 8260C Matrix: Soil QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	40.4506	0	50	81	70	130
Dichlorodifluoromethane	1	63.587	0	50	127	40	160
Chloromethane	1	47.2431	0	50	94	40	160
Bromomethane	1	48.449	0	50	97	40	160
Vinyl Chloride	1	49.8396	0	50	100	70	130
Chloroethane	1	39.4766	0	50	79	40	160
Trichlorofluoromethane	1	39.9027	0	50	80	40	160
Ethyl ether	1	37.7318	0	50	75	70	130
Furan	1	35.9789	0	50	72	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	23.7754	0	50	48*	70	130
Methylene Chloride	1	36.2308	0	50	72	70	130
Acrolein	1	104.4321	0	200	52*	70	130
Acrylonitrile	1	25.3766	0	50	51*	70	130
Iodomethane	1	46.4077	0	50	93	70	130
Acetone	1	207.3142	0	200	104	40	160
Carbon Disulfide	1	34.6416	0	50	69	40	160
t-Butyl Alcohol	1	193.1201	0	200	97	70	130
n-Hexane	1	10.6739	0	50	21*	70	130
Di-isopropyl-ether	1	33.7516	0	50	68*	70	130
1,1-Dichloroethene	1	39.6523	0	50	79	70	130
Methyl Acetate	1	33.3447	0	50	67*	70	130
Methyl-t-butyl ether	1	36.6861	0	50	73	70	130
1,1-Dichloroethane	1	40.4195	0	50	81	70	130
trans-1,2-Dichloroethene	1	43.4017	0	50	87	70	130
Ethyl-t-butyl ether	1	32.8081	0	50	66*	70	130
cis-1,2-Dichloroethene	1	36.6278	0	50	73	70	130
Bromochloromethane	1	37.4392	0	50	75	70	130
2,2-Dichloropropane	1	37.8361	0	50	76	70	130
Ethyl acetate	1	28.4596	0	50	57*	70	130
1,4-Dioxane	1	1989.955	0	2500	80	40	160
1,1-Dichloropropene	1	26.89	0	50	54*	70	130
Chloroform	1	38.5605	0	50	77	70	130
Cyclohexane	1	14.8076	0	50	30*	70	130
1,2-Dichloroethane	1	35.9877	0	50	72	70	130
2-Butanone	1	30.8822	0	50	62*	70	130
1,1,1-Trichloroethane	1	35.6803	0	50	71	70	130
Carbon Tetrachloride	1	30.848	0	50	62*	70	130
Vinyl Acetate	1	34.1732	0	50	68*	70	130
Bromodichloromethane	1	35.1836	0	50	70	70	130
Methylcyclohexane	1	11.5353	0	50	23*	70	130
Dibromomethane	1	36.9263	0	50	74	70	130
1,2-Dichloropropane	1	34.6807	0	50	69*	70	130
Trichloroethene	1	33.1037	0	50	66*	70	130
Benzene	1	37.5619	0	50	75	70	130
tert-Amyl methyl ether	1	34.1414	0	50	68*	70	130
Iso-propylacetate	1	20.4377	0	50	41*	70	130
Methyl methacrylate	1	25.6506	0	50	51*	70	130
Dibromochloromethane	1	30.2359	0	50	60*	70	130
2-Chloroethylvinylether	1	22.79	0	50	46*	70	130
cis-1,3-Dichloropropene	1	27.117	0	50	54*	70	130
trans-1,3-Dichloropropene	1	25.5105	0	50	51*	70	130
Ethyl methacrylate	1	17.0121	0	50	34*	70	130
1,1,2-Trichloroethane	1	28.3042	0	50	57*	70	130
1,2-Dibromoethane	1	28.9013	0	50	58*	70	130
1,3-Dichloropropane	1	27.7764	0	50	56*	70	130
4-Methyl-2-Pentanone	1	20.5688	0	50	41	40	160
2-Hexanone	1	25.7884	0	50	52	40	160
Tetrachloroethene	1	18.2114	0	50	36*	70	130
Toluene	1	22.7962	1.3998	50	43*	70	130
1,1,1,2-Tetrachloroethane	1	22.7079	0	50	45*	70	130
Chlorobenzene	1	20.9798	0	50	42*	70	130
n-Butyl acrylate	1	45.2528	0	50	91	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42268

n-Amyl acetate	1	45.0665	0	50	90	70	130
Bromoform	1	26.2904	0	50	53*	70	130
Ethylbenzene	1	14.1023	0	50	28*	70	130
1,1,2,2-Tetrachloroethane	1	31.71	0	50	63*	70	130
Styrene	1	14.8476	0	50	30*	70	130
m&p-Xylenes	1	23.0746	0	100	23*	70	130
o-Xylene	1	16.3355	2.4934	50	28*	70	130
trans-1,4-Dichloro-2-butene	1	29.4369	0	50	59*	70	130
1,3-Dichlorobenzene	1	10.717	0	50	21*	70	130
1,4-Dichlorobenzene	1	10.4205	0	50	21*	70	130
1,2-Dichlorobenzene	1	9.9915	0	50	20*	70	130
Isopropylbenzene	1	11.4961	1.6594	50	20*	70	130
Cyclohexanone	1	351.562	0	250	141*	70	130
Camphene	1	7.4746	0	50	15*	70	130
1,2,3-Trichloropropane	1	22.5605	0	50	45*	70	130
2-Chlorotoluene	1	12.2801	0	50	25*	70	130
p-Ethyltoluene	1	25.9144	0	50	52*	70	130
4-Chlorotoluene	1	9.8769	0	50	20*	70	130
n-Propylbenzene	1	10.9173	0	50	22*	70	130
Bromobenzene	1	15.2141	0	50	30*	70	130
1,3,5-Trimethylbenzene	1	25.3669	0	50	51*	70	130
Butyl methacrylate	1	29.0628	0	50	58*	70	130
t-Butylbenzene	1	10.2437	0	50	20*	70	130
1,2,4-Trimethylbenzene	1	10.472	0	50	21*	70	130
sec-Butylbenzene	1	17.4486	0	50	35*	70	130
4-Isopropyltoluene	1	18.7857	0	50	38*	70	130
n-Butylbenzene	1	19.0243	0	50	38*	70	130
p-Diethylbenzene	1	66.9075	0	50	134*	70	130
1,2,4,5-Tetramethylbenzene	1	41.8539	0	50	84	70	130
1,2-Dibromo-3-Chloropropane	1	20.2383	0	50	40	40	160
Camphor	1	544.0205	0	500	109	70	130
Hexachlorobutadiene	1	4.8323	0	50	9.7*	70	130
1,2,4-Trichlorobenzene	1	5.8786	0	50	12*	70	130
1,2,3-Trichlorobenzene	1	7.6169	0	50	15*	70	130
Naphthalene	1	7.3636	0	50	15*	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA
QC Batch: MBS42268

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6M22572.D	AC83389-001(MSD)	2/19/2015 2:26:00 PM
Duplicate(If applicable):	6M22571.D	AC83389-001(MS)	2/19/2015 2:09:00 PM
Inst Blank(If applicable):			

Method: 8260C Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Chlorodifluoromethane	1	40.4506	37.2726	8.2	30
Dichlorodifluoromethane	1	63.587	75.5888	17	30
Chloromethane	1	47.2431	49.6738	5	30
Bromomethane	1	48.449	51.8229	6.7	30
Vinyl Chloride	1	49.8396	50.9045	2.1	30
Chloroethane	1	39.4766	40.2564	2	30
Trichlorofluoromethane	1	39.9027	46.241	15	30
Ethyl ether	1	37.7318	39.3656	4.2	30
Furan	1	35.9789	37.3962	3.9	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1	23.7754	32.4431	31*	30
Methylene Chloride	1	36.2308	36.9804	2	30
Acrolein	1	104.4321	109.621	4.8	30
Acrylonitrile	1	25.3766	26.5953	4.7	30
Iodomethane	1	46.4077	46.781	0.8	30
Acetone	1	207.3142	212.0517	2.3	30
Carbon Disulfide	1	34.6416	34.1167	1.5	30
t-Butyl Alcohol	1	193.1201	170.5133	12	30
n-Hexane	1	10.6739	15.7788	39*	30
Di-isopropyl-ether	1	33.7516	32.9985	2.3	30
1,1-Dichloroethene	1	39.6523	42.2565	6.4	30
Methyl Acetate	1	33.3447	30.9475	7.5	30
Methyl-t-butyl ether	1	36.6861	34.6961	5.6	30
1,1-Dichloroethane	1	40.4195	40.0232	0.99	30
trans-1,2-Dichloroethene	1	43.4017	41.1811	5.3	30
Ethyl-t-butyl ether	1	32.8081	31.6322	3.6	30
cis-1,2-Dichloroethene	1	36.6278	36.5698	0.16	30
Bromochloromethane	1	37.4392	35.6742	4.8	30
2,2-Dichloropropane	1	37.8361	36.3978	3.9	30
Ethyl acetate	1	28.4596	33.5721	16	30
1,4-Dioxane	1	1989.955	2171.409	8.7	30
1,1-Dichloropropene	1	26.89	26.6078	1.1	30
Chloroform	1	38.5605	37.059	4	30
Cyclohexane	1	14.8076	18.3053	21	30
1,2-Dichloroethane	1	35.9877	37.2529	3.5	30
2-Butanone	1	30.8822	30.6338	0.81	30
1,1,1-Trichloroethane	1	35.6803	35.6698	0.03	30
Carbon Tetrachloride	1	30.848	34.0432	9.8	30
Vinyl Acetate	1	34.1732	35.5064	3.8	30
Bromodichloromethane	1	35.1836	35.5627	1.1	30
Methylcyclohexane	1	11.5353	15.0653	27	30
Dibromomethane	1	36.9263	43.1315	16	30
1,2-Dichloropropane	1	34.6807	31.765	8.8	30
Trichloroethene	1	33.1037	33.093	0.03	30
Benzene	1	37.5619	35.8733	4.6	30
tert-Amyl methyl ether	1	34.1414	31.6976	7.4	30
Iso-propylacetate	1	20.4377	24.3881	18	30
Methyl methacrylate	1	25.6506	25.8316	0.7	30
Dibromochloromethane	1	30.2359	29.6044	2.1	30
2-Chloroethylvinylether	1	22.79	20.5064	11	30
cis-1,3-Dichloropropene	1	27.117	26.0807	3.9	30
trans-1,3-Dichloropropene	1	25.5105	25.5403	0.12	30
Ethyl methacrylate	1	17.0121	19.2286	12	30
1,1,2-Trichloroethane	1	28.3042	30.3176	6.9	30
1,2-Dibromoethane	1	28.9013	27.511	4.9	30
1,3-Dichloropropane	1	27.7764	27.6871	0.32	30
4-Methyl-2-Pentanone	1	20.5688	18.592	10	30
2-Hexanone	1	25.7884	12.5779	69*	30
Tetrachloroethene	1	18.2114	18.2193	0.04	30
Toluene	1	22.7962	22.9721	0.77	30
1,1,1,2-Tetrachloroethane	1	22.7079	22.6942	0.06	30
Chlorobenzene	1	20.9798	21.9631	4.6	30
n-Butyl acrylate	1	45.2528	76.5917	51*	30
n-Amyl acetate	1	45.0665	71.2547	45*	30
Bromoform	1	26.2904	25.8263	1.8	30

Form3
RPD DATA
QC Batch: MBS42268

Ethylbenzene	1	14.1023	15.4529	9.1	30
1,1,2,2-Tetrachloroethane	1	31.71	22.4002	34*	30
Styrene	1	14.8476	15.1293	1.9	30
m&p-Xylenes	1	23.0746	27.676	18	30
o-Xylene	1	16.3355	16.0006	2.1	30
trans-1,4-Dichloro-2-butene	1	29.4369	35.508	19	30
1,3-Dichlorobenzene	1	10.717	12.2038	13	30
1,4-Dichlorobenzene	1	10.4205	11.5867	11	30
1,2-Dichlorobenzene	1	9.9915	10.9201	8.9	30
Isopropylbenzene	1	11.4961	12.2478	6.3	30
Cyclohexanone	1	351.562	524.4491	39*	30
Camphene	1	7.4746	9.4884	24.	30
1,2,3-Trichloropropane	1	22.5605	23.1666	2.7	30
2-Chlorotoluene	1	12.2801	13.3236	8.2	30
p-Ethyltoluene	1	25.9144	21.3799	19	30
4-Chlorotoluene	1	9.8769	10.6787	7.8	30
n-Propylbenzene	1	10.9173	9.8929	9.8	30
Bromobenzene	1	15.2141	17.5046	14	30
1,3,5-Trimethylbenzene	1	25.3669	27.7104	8.8	30
Butyl methacrylate	1	29.0628	47.8973	49*	30
t-Butylbenzene	1	10.2437	11.5986	12	30
1,2,4-Trimethylbenzene	1	10.472	9.3128	12	30
sec-Butylbenzene	1	17.4486	18.4183	5.4	30
4-Isopropyltoluene	1	18.7857	21.2644	12	30
n-Butylbenzene	1	19.0243	18.4317	3.2	30
p-Diethylbenzene	1	66.9075	70.9065	5.8	30
1,2,4,5-Tetramethylbenzene	1	41.8539	41.7217	0.32	30
1,2-Dibromo-3-Chloropropane	1	20.2383	21.7802	7.3	30
Camphor	1	544.0205	788.2114	37*	30
Hexachlorobutadiene	1	4.8323	5.2064	7.5	30
1,2,4-Trichlorobenzene	1	5.8786	7.6959	27	30
1,2,3-Trichlorobenzene	1	7.6169	8.0204	5.2	30
Naphthalene	1	7.3636	9.9385	30	30

* - Indicates outside of limits

NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: DAILY BLANK
Blank Data File: 6M22510.D
Matrix: Soil

Blank Analysis Date: 02/18/15 09:34
Blank Extraction Date: NA
(If Applicable)
Method: EPA 8260C

Sample Number	Data File	Analysis Date
MBS42264	6M22525.D	02/18/15 14:03
AC83389-001	6M22535.D	02/18/15 16:49

FORM 4
Blank Summary

Blank Number: DAILY BLANK
Blank Data File: 6M22553.D
Matrix: Soil

Blank Analysis Date: 02/19/15 09:06
Blank Extraction Date: NA
(If Applicable)
Method: EPA 8260C

Sample Number	Data File	Analysis Date
AC83375-001	6M22560.D	02/19/15 11:04
AC83375-002	6M22561.D	02/19/15 11:21
AC83389-001(MSD	6M22572.D	02/19/15 14:26
AC83389-001(MS)	6M22571.D	02/19/15 14:09
MBS42268	6M22554.D	02/19/15 09:22

Form 5

Tune Name: BFB TUNE
Instrument: GCMS 6
Data File: 6M22297.D
Analysis Date: 02/11/15 15:09
Method: EPA 8260C

Tune Scan/Time Range: Average of 3.923 to 3.942 min

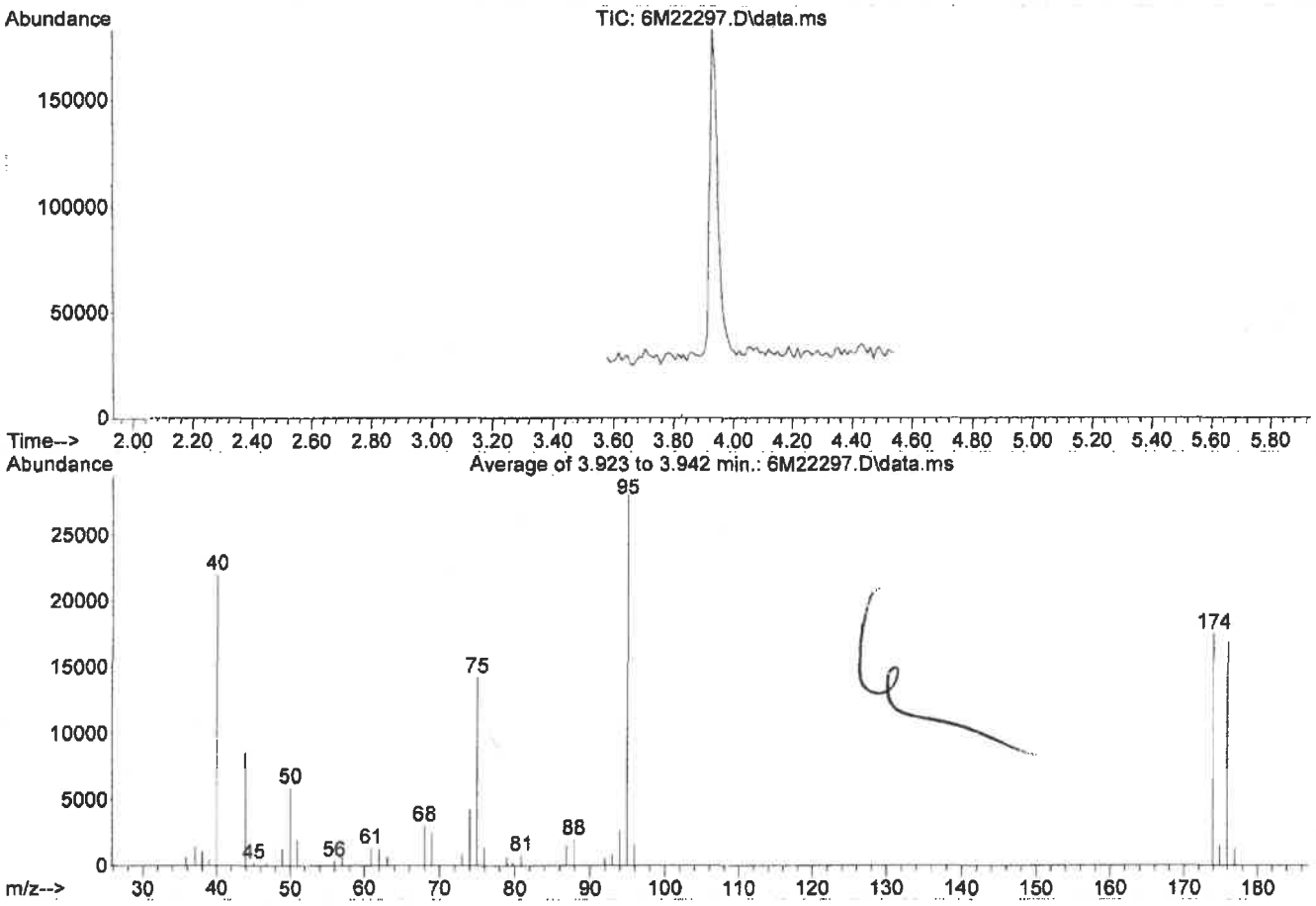
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	21.1	5928	PASS
75	95	30	60	50.8	14235	PASS
95	95	100	100	100.0	28045	PASS
96	95	5	9	5.8	1621	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	62.6	17546	PASS
175	174	5	9	8.3	1459	PASS
176	174	95	101	96.4	16913	PASS
177	176	5	9	7.5	1275	PASS

Data File	Sample Number	Analysis Date:
6M22299.D	BLK	02/11/15 15:49
6M22300.D	CAL @ 0.5 PPB	02/11/15 16:05
6M22301.D	CAL @ 1 PPB	02/11/15 16:22
6M22302.D	2 PPB	02/11/15 16:38
6M22303.D	CAL @ 5 PPB	02/11/15 16:55
6M22304.D	CAL @ 500 PPB	02/11/15 17:11
6M22305.D	CAL @ 250 PPB	02/11/15 17:28
6M22306.D	CAL @ 100 PPB	02/11/15 17:45
6M22307.D	CAL @ 50 PPB	02/11/15 18:01
6M22308.D	CAL @ 20 PPB	02/11/15 18:18
6M22311.D	CAL @ 2 PPB	02/11/15 19:07
6M22312.D	ICV	02/11/15 19:24
6M22313.D	STD	02/11/15 19:57
6M22315.D	DAILY BLANK	02/11/15 20:30
6M22316.D	MBS42224	02/11/15 20:47
6M22317.D	MBS42225	02/11/15 21:03
6M22318.D	AC83255-001	02/11/15 21:20
6M22319.D	AC83255-002	02/11/15 21:36
6M22320.D	AC83255-008	02/11/15 21:53
6M22321.D	AC83255-012	02/11/15 22:09
6M22322.D	AC83255-014	02/11/15 22:26
6M22323.D	AC83271-006	02/11/15 22:42
6M22324.D	AC83271-008	02/11/15 22:58
6M22325.D	AC83271-010	02/11/15 23:15
6M22326.D	AC83258-001	02/11/15 23:31
6M22327.D	AC83212-001	02/11/15 23:48
6M22328.D	AC83212-002	02/12/15 00:04
6M22329.D	AC83260-001	02/12/15 00:21
6M22330.D	AC83260-002	02/12/15 00:37
6M22331.D	AC83260-003	02/12/15 00:54
6M22332.D	AC83260-004	02/12/15 01:10
6M22333.D	AC83260-005	02/12/15 01:27
6M22334.D	AC83260-009	02/12/15 01:43

Data Path : G:\GcMsData\2015\GCMS_6\Data\02-1115\
Data File : 6M22297.D
Acq On : 11 Feb 2015 15:09
Operator : SG
Sample : BFB TUNE
Misc : S,5g
ALS Vial : 30 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_3\MethodQt\3M_A0125.M
Title : @GCMS_3,ug,624,8260
Last Update : Mon Jan 26 12:01:53 2015



Spectrum Information: Average of 3.923 to 3.942 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.1	5928	PASS
75	95	30	60	50.8	14235	PASS
95	95	100	100	100.0	28045	PASS
96	95	5	9	5.8	1621	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	62.6	17546	PASS
175	174	5	9	8.3	1459	PASS
176	174	95	101	96.4	16913	PASS
177	176	5	9	7.5	1275	PASS

Form 5

Tune Name: BFB TUNE
Instrument: GCMS 6
Data File: 6M22505.D
Analysis Date: 02/18/15 08:18
Method: EPA 8260C

Tune Scan/Time Range: Average of 3.871 to 3.970 min

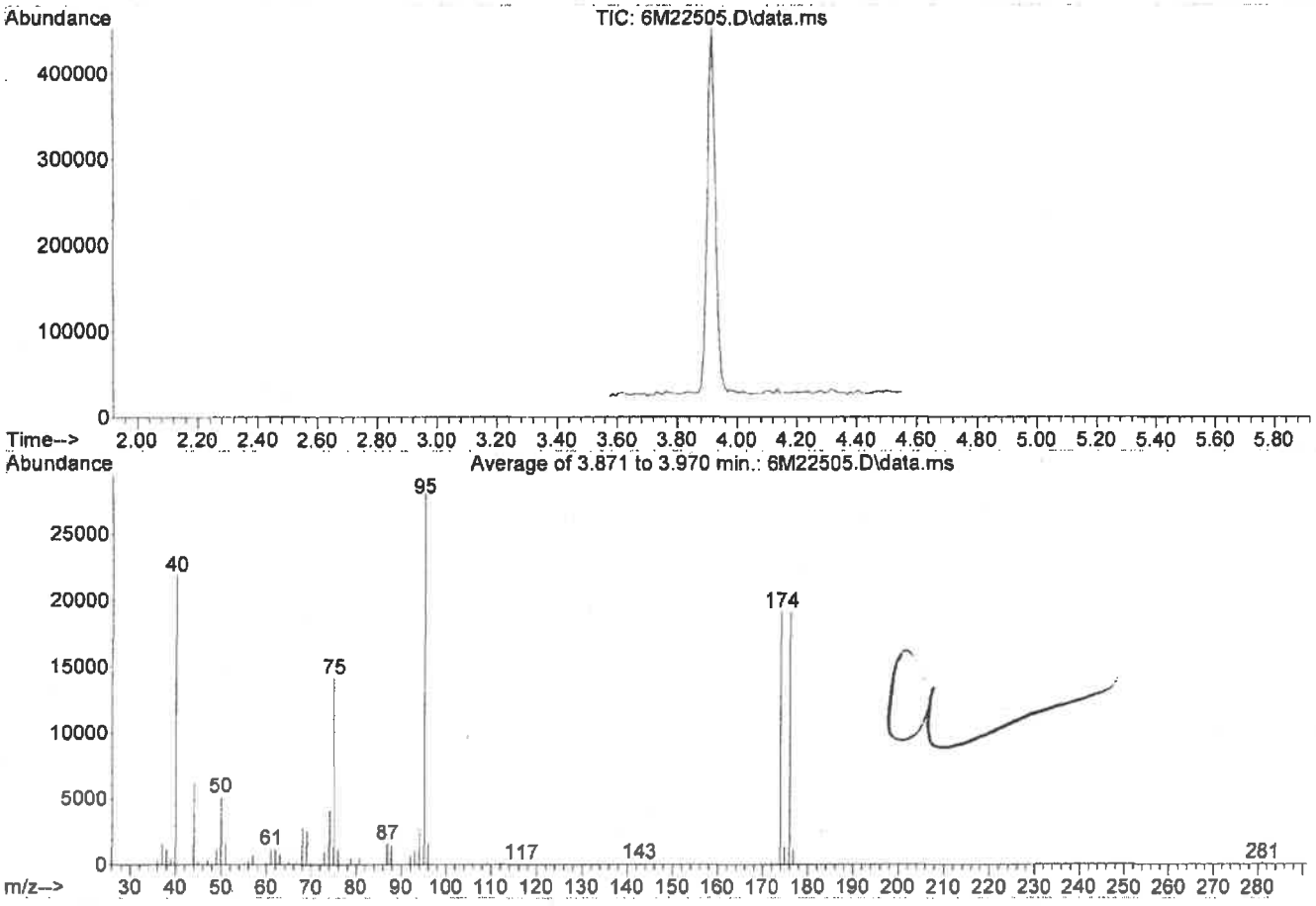
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	18.2	5104	PASS
75	95	30	60	50.3	14118	PASS
95	95	100	100	100.0	28066	PASS
96	95	5	9	6.0	1694	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	68.2	19128	PASS
175	174	5	9	7.1	1350	PASS
176	174	95	101	99.8	19088	PASS
177	176	5	9	6.1	1167	PASS

Data File	Sample Number	Analysis Date:
6M22506.D	BLK	02/18/15 08:28
6M22507.D	CAL @ 50 PPB	02/18/15 08:45
6M22508.D	50 PPB	02/18/15 09:01
6M22509.D	BLK	02/18/15 09:18
6M22510.D	DAILY BLANK	02/18/15 09:34
6M22511.D	MBS42259	02/18/15 09:51
6M22512.D	AC83353-006(MS)	02/18/15 10:08
6M22513.D	AC83353-006(MSD	02/18/15 10:24
6M22514.D	BLK	02/18/15 10:42
6M22515.D	BLK	02/18/15 10:59
6M22516.D	BLK	02/18/15 11:17
6M22517.D	AC83221-002	02/18/15 11:33
6M22518.D	AC83221-003	02/18/15 11:50
6M22519.D	AC83221-006	02/18/15 12:06
6M22520.D	AC83221-007	02/18/15 12:23
6M22521.D	AC83221-010	02/18/15 12:39
6M22522.D	83221-011	02/18/15 12:56
6M22522A.D	AC83221-011	02/18/15 13:13
6M22523.D	AC83221-014	02/18/15 13:30
6M22524.D	AC83221-015	02/18/15 13:46
6M22525.D	MBS42264	02/18/15 14:03
6M22526.D	AC83235-002	02/18/15 14:20
6M22527.D	AC83235-004	02/18/15 14:36
6M22528.D	AC83235-006	02/18/15 14:53
6M22529.D	AC83256-004	02/18/15 15:09
6M22530.D	AC83316-017	02/18/15 15:26
6M22531.D	AC83316-016	02/18/15 15:42
6M22532.D	AC83316-015	02/18/15 15:59
6M22533.D	BLK	02/18/15 16:16
6M22534.D	BLK	02/18/15 16:32
6M22535.D	AC83389-001	02/18/15 16:49
6M22536.D	MBS42267	02/18/15 17:05
6M22537.D	AC83256-004	02/18/15 17:22
6M22538.D	AC83316-016	02/18/15 17:38
6M22539.D	AC83316-015	02/18/15 17:55
6M22540.D	AC83353-004(MS)	02/18/15 18:12
6M22541.D	AC83353-004(MSD	02/18/15 18:28
6M22542.D	BLK	02/18/15 18:45
6M22543.D	BLK	02/18/15 19:01
6M22544.D	AC83307-003	02/18/15 19:18
6M22545.D	BLK	02/18/15 19:34

Data Path : G:\GcMsData\2015\GCMS_6\Data\02-18-15\
Data File : 6M22505.D
Acq On : 18 Feb 2015 8:18
Operator : SG
Sample : BFB TUNE
Misc : S,5G
ALS Vial : 5 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_6\MethodQt\6M_S0211.M
Title : @GCMS_6,ug,624,8260
Last Update : Thu Feb 12 09:44:38 2015



Spectrum Information: Average of 3.871 to 3.970 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.2	5104	PASS
75	95	30	60	50.3	14118	PASS
95	95	100	100	100.0	28066	PASS
96	95	5	9	6.0	1694	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	68.2	19128	PASS
175	174	5	9	7.1	1350	PASS
176	174	95	101	99.8	19088	PASS
177	176	5	9	6.1	1167	PASS

Form 5

Tune Name: BFB TUNE
Instrument: GCMS 6
Data File: 6M22548.D
Analysis Date: 02/19/15 07:43
Method: EPA 8260C

Tune Scan/Time Range: Average of 3.910 to 3.939 min

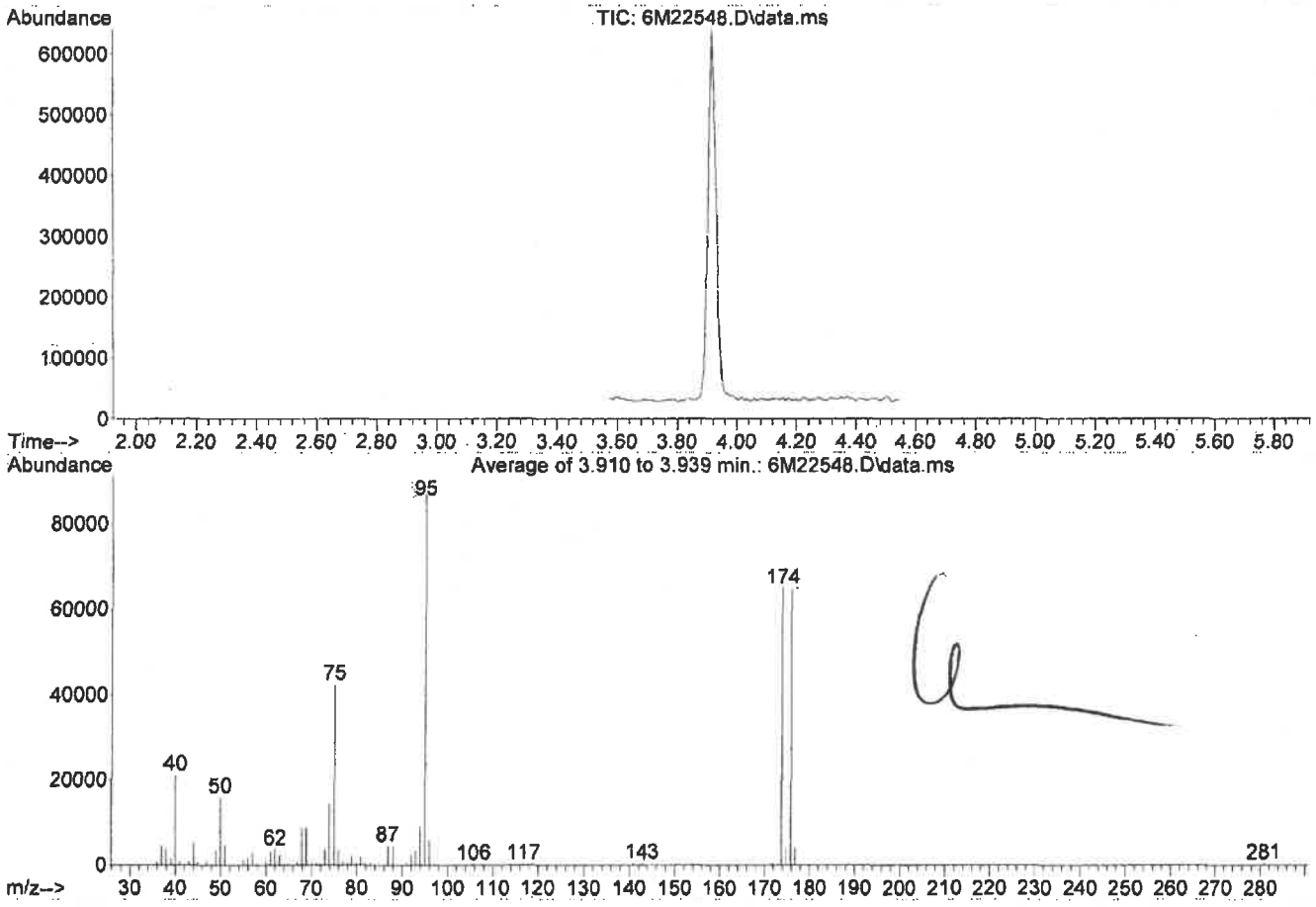
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	18.4	15992	PASS
75	95	30	60	48.6	42284	PASS
95	95	100	100	100.0	86916	PASS
96	95	5	9	6.8	5872	PASS
173	174	0.00	2	0.3	164	PASS
174	95	50	100	74.9	65106	PASS
175	174	5	9	6.3	4076	PASS
176	174	95	101	99.5	64778	PASS
177	176	5	9	6.5	4211	PASS

Data File	Sample Number	Analysis Date:
6M22550.D	50 PPB	02/19/15 08:09
6M22551.D	CAL @ 50 PPB	02/19/15 08:26
6M22552.D	BLK	02/19/15 08:49
6M22553.D	DAILY BLANK	02/19/15 09:06
6M22554.D	MBS42268	02/19/15 09:22
6M22555.D	BLK	02/19/15 09:39
6M22556.D	AC83380-001	02/19/15 09:58
6M22557.D	AC83380-002	02/19/15 10:14
6M22558.D	AC83393-004	02/19/15 10:31
6M22559.D	AC83393-005	02/19/15 10:48
6M22560.D	AC83375-001	02/19/15 11:04
6M22561.D	AC83375-002	02/19/15 11:21
6M22562.D	AC83393-001	02/19/15 11:39
6M22563.D	AC83393-002	02/19/15 11:56
6M22564.D	AC83393-003	02/19/15 12:12
6M22565.D	AC83385-001	02/19/15 12:29
6M22566.D	AC83385-002	02/19/15 12:45
6M22567.D	AC83385-003	02/19/15 13:02
6M22568.D	AC83385-004	02/19/15 13:18
6M22569.D	BLK	02/19/15 13:36
6M22570.D	AC83408-001	02/19/15 13:53
6M22571.D	AC83389-001(MS)	02/19/15 14:09
6M22572.D	AC83389-001(MSD	02/19/15 14:26
6M22573.D	BLK	02/19/15 14:42
6M22574.D	BLK	02/19/15 14:59
6M22575.D	BLK	02/19/15 15:15
6M22576.D	AC83387-017	02/19/15 15:32
6M22577.D	AC83387-019	02/19/15 15:48
6M22578.D	AC83387-020	02/19/15 16:05
6M22579.D	AC83387-021	02/19/15 16:21
6M22580.D	AC83387-022	02/19/15 16:38
6M22581.D	AC83413-014	02/19/15 16:55
6M22582.D	AC83413-016	02/19/15 17:11
6M22583.D	STD	02/19/15 17:28
6M22584.D	AC83404-001	02/19/15 17:44
6M22585.D	AC83407-001	02/19/15 18:01
6M22586.D	MBS42279	02/19/15 18:17
6M22587.D	STD	02/19/15 18:34
6M22588.D	BLK	02/19/15 18:51
6M22589.D	MTL(020515)	02/19/15 19:07
6M22590.D	BLK	02/19/15 19:24

Data Path : G:\GcMsData\2015\GCMS_6\Data\02-19-15\
Data File : 6M22548.D
Acq On : 19 Feb 2015 7:43
Operator : SG
Sample : BFB TUNE
Misc : S,5G
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_6\MethodQt\6M_S0211.M
Title : @GCMS_6,ug,624,8260
Last Update : Thu Feb 12 09:44:38 2015



Spectrum Information: Average of 3.910 to 3.939 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.4	15992	PASS
75	95	30	60	48.6	42284	PASS
95	95	100	100	100.0	86916	PASS
96	95	5	9	6.8	5872	PASS
173	174	0.00	2	0.3	164	PASS
174	95	50	100	74.9	65106	PASS
175	174	5	9	6.3	4076	PASS
176	174	95	101	99.5	64778	PASS
177	176	5	9	6.5	4211	PASS

5021319 0052

Form 6
Initial Calibration

Method: EPA 8260C

Instrument: GCMS_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6M22308.	CAL @ 20 PPB	02/11/15 18:18	2	6M22303.	CAL @ 5 PPB	02/11/15 16:55
3	6M22311.	CAL @ 2 PPB	02/11/15 19:07	4	6M22307.	CAL @ 50 PPB	02/11/15 18:01
5	6M22306.	CAL @ 100 PPB	02/11/15 17:45	6	6M22305.	CAL @ 250 PPB	02/11/15 17:28
7	6M22304.	CAL @ 500 PPB	02/11/15 17:11	8	6M22301.	CAL @ 1 PPB	02/11/15 16:22
9	6M22300.	CAL @ 0.5 PPB	02/11/15 16:05				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Chlorodifluoromethane	1	0	Avg	0.8187	0.8100	0.5261	0.7860	0.8037	0.7794	0.7247	----	----	0.750	1.29	0.999	1.00	14	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dichlorodifluoromethan	1	0	Avg	0.4219	0.3900	0.2818	0.4026	0.4212	0.4097	0.3766	----	----	0.386	1.28	0.998	1.00	13			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chloromethane	1	0	Avg	0.4226	0.4155	0.3228	0.3882	0.4085	0.3888	0.3673	----	----	0.388	1.41	0.999	1.00	8.8	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromomethane	1	0	Avg	0.3156	0.2990	0.2026	0.3135	0.3272	0.3260	0.3110	----	----	0.299	1.74	0.999	1.00	15	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Vinyl Chloride	1	0	Avg	0.3740	0.3630	0.2075	0.3506	0.3651	0.3464	0.3229	----	----	0.333	1.49	0.998	1.00	17	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chloroethane	1	0	Avg	0.3323	0.3600	0.2731	0.3241	0.3251	0.3120	0.2877	----	----	0.316	1.81	0.998	1.00	9.1	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Trichlorofluoromethane	1	0	Avg	0.7014	0.6467	0.4065	0.6749	0.7296	0.6961	0.6191	----	----	0.639	2.01	0.996	1.00	17	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl ether	1	0	Avg	0.1390	0.1023	0.0845	0.1407	0.1522	0.1508	0.1459	----	----	0.131	2.22	1.00	1.00	20	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Furan	1	0	Avg	0.7175	0.5985	0.4102	0.7261	0.7666	0.7173	0.6704	----	----	0.658	2.24	0.998	1.00	18	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.1.2-Trichloro-1.2.2-tri	1	0	Avg	0.5207	0.5182	0.3279	0.5029	0.5002	0.4832	0.4468	----	----	0.471	2.39	0.998	1.00	14	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methylene Chloride	1	0	Avg	0.3762	0.4261	0.3745	0.3387	0.3397	0.3296	0.3167	----	----	0.357	2.73	1.00	1.00	11	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Acrolein	1	0	Qua	0.0175	0.0060	0.0078	0.0167	0.0182	0.0178	0.0166	----	----	0.0144	2.30	0.998	1.00	36			100.0	25.00	10.00	250.0	500.0	1250.	2500.		
Acrylonitrile	1	0	Qua	0.0209	0.0218	0.0317	0.0247	0.0470	0.0467	0.0332	----	----	0.0323	2.92	0.961	0.993	34			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Iodomethane	1	0	Avg	0.4522	0.3950	0.2824	0.4414	0.4532	0.4358	0.4205	----	----	0.412	2.50	1.00	1.00	15			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Acetone	1	0	Avg	0.0320	0.0314	0.0349	0.0283	0.0291	0.0287	0.0265	----	----	0.0302	2.41	0.998	1.00	9.4	0.10	a	100.0	25.00	10.00	250.0	500.0	1250.	2500.		
Carbon Disulfide	1	0	Avg	1.8156	1.7569	1.1725	1.7539	1.7674	1.6734	1.5517	----	----	1.64	2.56	0.998	1.00	14	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
t-Butyl Alcohol	1	0	Avg	0.0046	0.0035	0.0031	0.0045	0.0052	0.0049	0.0049	----	----	0.00443	2.79	1.00	1.00	17			100.0	25.00	10.00	250.0	500.0	1250.	2500.		
n-Hexane	1	0	Avg	0.7694	0.6503	0.4142	0.8033	0.8208	0.7765	0.7216	----	----	0.708	3.17	0.998	1.00	20			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Di-isopropyl-ether	1	0	Avg	1.0332	0.7893	0.6733	1.0137	1.0976	1.0407	0.9767	----	----	0.946	3.32	0.999	1.00	16			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.1-Dichloroethene	1	0	Avg	0.7477	0.6957	0.4661	0.7316	0.7518	0.7015	0.6505	----	----	0.678	2.39	0.998	1.00	15	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methyl Acetate	1	0	Avg	0.1313	0.1237	0.0896	0.1167	0.1234	0.1270	0.1186	----	----	0.119	2.67	0.999	1.00	12	0.10	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methyl-t-butyl ether	1	0	Avg	0.3402	0.3183	0.2671	0.3422	0.3765	0.3693	0.3473	0.3488	----	0.339	2.95	0.999	1.00	10	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1.1-Dichloroethane	1	0	Avg	0.8296	0.7878	0.5620	0.8111	0.8229	0.7855	0.7409	----	----	0.763	3.27	0.999	1.00	12	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
trans-1.2-Dichloroether	1	0	Avg	0.4288	0.3740	0.2768	0.4401	0.4648	0.4427	0.4217	----	----	0.407	2.95	0.999	1.00	16	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl-t-butyl ether	1	0	Avg	0.5735	0.4814	0.4268	0.5906	0.6266	0.6163	0.5848	----	----	0.557	3.61	0.999	1.00	13	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
cis-1.2-Dichloroethene	1	0	Avg	0.7402	0.6556	0.4707	0.7280	0.7371	0.7244	0.6709	----	----	0.675	3.72	0.998	1.00	14	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromochloromethane	1	0	Avg	0.2656	0.2006	0.2265	0.2386	0.2587	0.2440	0.2327	----	----	0.238	3.90	0.999	1.00	9.0			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2.2-Dichloropropane	1	0	Avg	0.5120	0.4726	0.3260	0.4909	0.5107	0.5100	0.5002	----	----	0.475	3.73	1.00	1.00	14			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl acetate	1	0	Qua	0.1352	0.0217	0.0471	0.1158	0.1391	0.1284	0.1342	----	----	0.103	3.78	0.999	0.999	47			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.4-Dioxane	1	0	Avg	0.0014	0.0012	0.0012	0.0013	0.0015	0.0015	0.0014	----	----	0.00140	4.85	0.999	1.00	8.4			1000.	250.0	100.0	2500.	5000.	1250	2500		
1.1-Dichloropropene	1	0	Qua	0.7550	0.6998	0.3541	0.7482	0.7589	0.7084	0.6505	----	----	0.668	4.19	0.998	1.00	22			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chloroform	1	0	Avg	0.7679	0.7052	0.6440	0.7452	0.7743	0.7448	0.7231	----	----	0.729	3.95	1.00	1.00	6.1	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dibromofluoromethane	1	0	Avg	0.2248	0.2337	0.2405	0.2229	0.2123	0.2232	0.2227	0.2637	0.2560	0.233	4.05	-1	-1	7.3			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Cyclohexane	1	0	Avg	0.9291	0.7464	0.5424	0.9635	0.9774	0.9140	0.8139	----	----	0.841	4.13	0.996	1.00	19	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.2-Dichloroethane-d4	1	0	Avg	0.0889	0.1005	0.1037	0.0989	0.0994	0.0995	0.0941	0.1034	0.1147	0.100	4.26	-1	-1	7.0			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
1.2-Dichloroethane	1	0	Avg	0.3711	0.3656	0.3203	0.3547	0.3541	0.3542	0.3314	0.3676	----	0.352	4.31	0.999	1.00	5.1	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
2-Butanone	1	0	Avg	0.0455	0.0585	0.0610	0.0497	0.0503	0.0507	0.0451	----	----	0.0516	3.74	0.996	1.00	12	0.10	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1.1.1-Trichloroethane	1	0	Avg	0.6682	0.6002	0.4407	0.6587	0.6535	0.6231	0.5956	----	----	0.606	4.08	0.999	1.00	13	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Carbon Tetrachloride	1	0	Avg	0.5281	0.5416	0.3477	0.5305	0.5264	0.5045	0.4382	----	----	0.488	4.20	0.994	1.00	15	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Vinyl Acetate	1	0	Avg	0.5717	0.4554	0.3687	0.5381	0.5814	0.5760	0.5515	----	----	0.520	3.32	0.999	1.00	15			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromodichloromethane	1	0	Avg	0.5154	0.5261	0.4040	0.5042	0.5171	0.5024	0.4708	----	----	0.491	4.91	0.999	1.00	8.6	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		

HAZ. - 133

Flags

a - failed the min rf criteria

failed the minimum correlation coeff criteria(if applicable)

Note: Avg Rsd: 18.3

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

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Metho[illegible] A 8260C

Form 6
Initial Calibration

Instrument: [illegible]6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6M22308.	CAL @ 20 PPB	02/11/15 18:18	2	6M22303.	CAL @ 5 PPB	02/11/15 16:55
3	6M22311.	CAL @ 2 PPB	02/11/15 19:07	4	6M22307.	CAL @ 50 PPB	02/11/15 18:01
5	6M22306.	CAL @ 100 PPB	02/11/15 17:45	6	6M22305.	CAL @ 250 PPB	02/11/15 17:28
7	6M22304.	CAL @ 500 PPB	02/11/15 17:11	8	6M22301.	CAL @ 1 PPB	02/11/15 16:22
9	6M22300.	CAL @ 0.5 PPB	02/11/15 16:05				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
																				Calibration Level Concentrations								
Methylcyclohexane	1	0	Avg	0.8594	0.7210	0.5367	0.9023	0.9266	0.8378	0.7567	----	----	0.792	4.78	0.996	1.00	17	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dibromomethane	1	0	Qua	0.1067	0.0229	0.0403	0.1036	0.1083	0.1051	0.1032	----	----	0.0844	4.85	1.00	1.00	43			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dichloropropane	1	0	Avg	0.4512	0.4035	0.2949	0.4186	0.4254	0.3999	0.3546	----	----	0.393	4.78	0.996	1.00	13	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Trichloroethene	1	0	Avg	0.4003	0.3672	0.2710	0.4208	0.4247	0.4050	0.3903	----	----	0.383	4.67	0.999	1.00	14	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Benzene	1	0	Avg	1.7787	1.5260	1.1486	1.7314	1.8149	1.6238	1.3956	1.4609	----	1.56	4.31	0.992	1.00	14	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
tert-Amyl methyl ether	1	0	Avg	0.3596	0.3258	0.2359	0.3584	0.3835	0.3844	0.3750	----	----	0.346	4.37	1.00	1.00	15			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Iso-propylacetate	1	0	Qua	0.3427	0.2433	0.2144	0.3611	0.3685	0.3803	0.4016	----	----	0.330	4.34	0.999	1.00	22	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Methyl methacrylate	1	0	Qua	0.1953	0.1261	0.0357	0.2185	0.2490	0.2327	0.2472	----	----	0.186	4.83	0.999	1.00	42	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Dibromochloromethane	1	0	Avg	0.4477	0.4246	0.3417	0.4509	0.4469	0.4337	0.4226	----	----	0.424	5.73	1.00	1.00	9.0	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2-Chloroethylvinylether	1	0	Qua	0.1405	0.1063	0.0338	0.1668	0.1817	0.1979	0.1997	----	----	0.147	5.07	1.00	1.00	41			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
cis-1,3-Dichloropropene	1	0	Avg	0.9136	0.8546	0.6308	1.0184	1.0576	1.0708	0.9856	----	----	0.933	5.15	0.998	1.00	17	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
trans-1,3-Dichloropropene	1	0	Avg	0.6415	0.5554	0.4173	0.6962	0.7013	0.7351	0.7108	----	----	0.637	5.42	1.00	1.00	18	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethyl methacrylate	1	0	Qua	0.2237	0.1692	0.0331	0.2632	0.2675	0.2945	0.2800	----	----	0.219	5.46	0.999	1.00	42	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,1,2-Trichloroethane	1	0	Avg	0.4209	0.3600	0.3604	0.3987	0.4095	0.3923	0.3772	----	----	0.388	5.51	0.999	1.00	6.1	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dibromoethane	1	0	Avg	0.3395	0.3412	0.1988	0.3560	0.3471	0.3527	0.3211	----	----	0.322	5.80	0.998	1.00	17	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,3-Dichloropropane	1	0	Avg	0.7629	0.7375	0.5104	0.7586	0.7518	0.7313	0.6556	----	----	0.701	5.60	0.997	1.00	13			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
4-Methyl-2-Pentanone	1	0	Qua	0.1764	0.1020	0.1117	0.1878	0.1952	0.2090	0.2097	----	----	0.170	5.22	1.00	1.00	26	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2-Hexanone	1	0	Qua	0.0703	0.0106	0.0306	0.0915	0.1107	0.1269	0.1345	----	----	0.0822	5.66	0.999	1.00	58	0.10	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Tetrachloroethene	1	0	Avg	0.6007	0.6116	0.4303	0.6116	0.5818	0.5464	0.5090	----	----	0.556	5.61	0.998	1.00	12	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Toluene-d8	1	0	Avg	1.6837	1.6252	1.6750	1.7679	1.6809	1.7080	1.6838	1.6786	1.4938	1.67	5.29	-1	-1	4.5			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Toluene	1	0	Avg	1.9446	1.6545	1.3629	1.9714	1.9543	1.7819	1.6103	1.7893	----	1.76	5.33	0.996	1.00	12	0.40		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1,1,1,2-Tetrachloroethane	1	0	Avg	0.5269	0.5218	0.3826	0.5196	0.5051	0.5260	0.4783	----	----	0.494	6.07	0.998	1.00	11			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Chlorobenzene	1	0	Avg	1.8433	1.7446	1.3076	1.8241	1.8491	1.7445	1.6160	----	----	1.70	6.04	0.998	1.00	11	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
n-Butyl acrylate	1	0	Qua	0.8993	0.1894	0.0166	1.0403	1.2012	1.3498	1.5231	----	----	0.889	6.31	0.997	1.00	65	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
n-Amyl acetate	1	0	Qua	0.7919	0.2310	0.0489	0.8663	1.0478	1.1257	1.2242	----	----	0.762	6.42	0.998	1.00	59	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromoform	1	0	Avg	0.4395	0.4183	0.4693	0.4222	0.4486	0.4443	0.4772	----	----	0.446	6.47	0.999	1.00	4.9	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Ethylbenzene	1	0	Qua	2.2538	1.4338	1.1970	2.1867	2.1345	1.8898	2.0796	1.1570	----	1.79	6.09	0.998	0.999	26	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1,1,2,2-Tetrachloroethane	1	0	Avg	0.9704	0.8431	0.9583	0.9295	0.9231	0.8797	0.9224	----	----	0.918	6.68	0.999	1.00	4.8	0.10		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Bromofluorobenzene	1	0	Avg	0.6700	0.6743	0.6463	0.7224	0.6952	0.7296	0.7643	0.7245	0.6453	0.697	6.63	-1	-1	5.9			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Styrene	1	0	Qua	3.8539	2.8200	1.8039	4.0056	3.9597	3.5005	3.4039	----	----	3.34	6.36	0.999	0.999	24	0.30		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
m&p-Xylenes	1	0	Qua	2.7205	2.0129	1.4546	2.7166	2.6819	2.3372	2.2125	1.9104	1.3545	2.16	6.15	0.998	0.999	24	0.10		40.00	10.00	4.00	100.0	200.0	500.0	1000.	2.00	1.00
o-Xylene	1	0	Qua	2.4534	2.0174	1.2839	2.6034	2.5787	2.2193	2.2091	1.7662	----	2.14	6.36	0.999	0.999	21	0.30		20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
trans-1,4-Dichloro-2-bu	1	0	Qua	0.5936	0.4420	0.2567	0.6904	0.6762	0.6480	0.6597	----	----	0.567	6.70	1.00	1.00	28			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,3-Dichlorobenzene	1	0	Avg	2.6530	2.1996	1.5291	2.4445	2.5456	2.2816	2.1894	----	----	2.26	7.23	0.999	1.00	16	0.60		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,4-Dichlorobenzene	1	0	Avg	2.6554	2.3658	2.0792	2.5319	2.4819	2.2559	2.3091	----	----	2.38	7.27	1.00	1.00	8.0	0.50		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dichlorobenzene	1	0	Avg	2.0958	1.8962	1.6451	1.9779	1.9879	1.8491	1.9071	----	----	1.91	7.48	1.00	1.00	7.4	0.40		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Isopropylbenzene	1	0	Qua	7.5322	5.4602	4.1129	7.5728	7.6030	6.9466	6.5686	5.3456	----	6.39	6.54	0.999	1.00	20			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
Cyclohexanone	1	0	Avg	0.0586	0.0501	0.0439	0.0559	0.0578	0.0546	0.0548	----	----	0.0537	6.70	1.00	1.00	9.5			100.0	25.00	10.00	250.0	500.0	1250.	2500.		
Camphene	1	0	Avg	2.6932	2.2414	1.6666	2.8199	2.9213	2.7163	2.6761	----	----	2.53	6.70	1.00	1.00	17			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2,3-Trichloropropane	1	0	Avg	1.0825	0.8985	0.8746	1.0087	1.0258	0.9597	0.9509	----	----	0.972	6.72	1.00	1.00	7.5			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
2-Chlorotoluene	1	0	Qua	6.1467	4.9475	3.0975	6.2721	6.4321	4.7379	4.5303	----	----	5.17	6.82	0.993	0.996	23			20.00	5.00	2.00	50.00	100.0	250.0	500.0		

Flags
a - failed the min rf criteria
c - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 18.3
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

5021319 0054

Form 6
Initial Calibration

Method: EPA 8260C

Instrument: GCMS_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6M22308.	CAL @ 20 PPB	02/11/15 18:18	2	6M22303.	CAL @ 5 PPB	02/11/15 16:55
3	6M22311.	CAL @ 2 PPB	02/11/15 19:07	4	6M22307.	CAL @ 50 PPB	02/11/15 18:01
5	6M22306.	CAL @ 100 PPB	02/11/15 17:45	6	6M22305.	CAL @ 250 PPB	02/11/15 17:28
7	6M22304.	CAL @ 500 PPB	02/11/15 17:11	8	6M22301.	CAL @ 1 PPB	02/11/15 16:22
9	6M22300.	CAL @ 0.5 PPB	02/11/15 16:05				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
o-Ethyltoluene	1	0	Qua	7.6246	5.9113	3.4326	7.8298	7.5073	6.6865	5.8940	----	----	6.41	6.82	0.994	1.00	24			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
4-Chlorotoluene	1	0	Qua	5.4333	3.8914	2.2555	5.7077	5.5849	4.7590	4.4084	----	----	4.58	6.87	0.996	0.999	27			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
n-Propylbenzene	1	0	Qua	10.646	8.2815	5.6539	10.621	10.563	8.8796	7.8153	7.2109	----	8.71	6.76	0.993	0.999	21			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
Bromobenzene	1	0	Avg	3.5633	2.9847	2.4648	3.5482	3.5720	3.2789	3.3273	----	----	3.25	6.72	1.00	1.00	12			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,3,5-Trimethylbenzene	1	0	Avg	6.0702	4.8781	3.4899	5.9834	6.0801	5.2551	4.9746	5.0525	----	5.22	6.85	0.998	0.999	17			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
Butyl methacrylate	1	0	Qua	1.5101	0.5088	0.1652	1.4783	1.6310	1.5323	1.5321	----	----	1.19	6.87	1.00	1.00	50	0.50	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
t-Butylbenzene	1	0	Avg	5.2106	4.0365	2.7079	5.5107	5.3782	5.1757	4.9324	4.3470	----	4.66	7.03	0.999	1.00	20			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
1,2,4-Trimethylbenzene	1	0	Qua	5.4751	4.1894	2.7732	5.7706	5.7091	5.0249	4.8260	4.1041	----	4.73	7.05	0.998	0.999	21			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
sec-Butylbenzene	1	0	Qua	8.1986	6.2216	4.2741	8.3753	8.2209	7.4799	6.9106	5.1093	----	6.85	7.15	0.997	1.00	22			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
4-Isopropyltoluene	1	0	Qua	5.5882	3.9947	2.7509	5.8841	5.8923	5.2287	4.8263	3.5628	----	4.72	7.22	0.997	1.00	25			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
n-Butylbenzene	1	0	Qua	8.3780	6.4250	4.3794	8.8877	8.5489	7.5049	6.9103	4.5489	----	6.95	7.45	0.997	1.00	25			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	
o-Diethylbenzene	1	0	Qua	3.4056	2.6093	1.6943	3.7748	3.7823	3.4479	3.2876	----	----	3.14	7.43	0.999	1.00	24			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2,4,5-Tetramethylber	1	0	Qua	3.1010	2.0404	2.1618	3.7206	4.0233	3.8021	3.8177	----	----	3.24	7.88	1.00	1.00	26			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2-Dibromo-3-Chlorop	1	0	Qua	0.1006	0.0399	0.0578	0.0777	0.0841	0.0770	0.0841	----	----	0.0745	7.91	0.998	0.999	27	0.05	a	20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Camphor	1	0	Qua	0.0255	0.0143	0.0243	0.0230	0.0277	0.0320	0.0326	----	----	0.0257	8.33	0.999	0.999	24			200.0	50.00	20.00	500.0	1000.	2500.	5000.		
Hexachlorobutadiene	1	0	Avg	0.8226	0.6469	0.7164	0.7733	0.7667	0.7250	0.7463	----	----	0.742	8.48	1.00	1.00	7.4			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2,4-Trichlorobenzene	1	0	Avg	0.9175	0.6181	0.7618	0.9891	1.0555	0.9932	0.9926	----	----	0.904	8.39	1.00	1.00	17	0.20		20.00	5.00	2.00	50.00	100.0	250.0	500.0		
1,2,3-Trichlorobenzene	1	0	Avg	0.7448	0.4975	0.7578	0.7702	0.7848	0.7555	0.7296	----	----	0.720	8.68	1.00	1.00	14			20.00	5.00	2.00	50.00	100.0	250.0	500.0		
Naphthalene	1	0	Qua	1.1140	0.6258	0.7998	1.2281	1.4785	1.3933	1.4466	0.6673	----	1.09	8.54	1.00	1.00	32			20.00	5.00	2.00	50.00	100.0	250.0	500.0	1.00	

HAZ. - 135

Flags

a - failed the min rf criteria

c - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 18.3

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form7

Continuing Calibration

Calibration Name: CAL @ 50 PPB **Data File:** 6M22507.D **Instrument:** GCMS 6

Cont Calibration Date/Time 2/18/2015 8:45:00 A Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Fluorobenzene	1	0	I	4.46	30.00	30	**			0.000	0.00	
Chlorodifluoromethane	1	0		1.29	51.72	50	20	0.1	0.750	0.776	3.43	
Dichlorodifluoromethane	1	0		1.28	45.06	50	20		0.386	0.348	9.87	
Chloromethane	1	0		1.41	43.91	50	20	0.1	0.388	0.340	12.18	
Bromomethane	1	0		1.74	50.54	50	20	0.1	0.299	0.303	1.08	
Vinyl Chloride	1	0		1.49	49.36	50	20	0.1	0.333	0.329	1.29	
Chloroethane	1	0		1.81	48.16	50	20	0.1	0.316	0.305	3.68	
Trichlorofluoromethane	1	0		2.01	54.80	50	20	0.1	0.639	0.701	9.60	
Ethyl ether	1	0		2.21	48.71	50	20	0.5	0.131	0.127	2.58	
Furan	1	0		2.23	50.52	50	20	0.5	0.658	0.665	1.05	
1,1,2-Trichloro-1,2,2-trifluoroetha	1	0		2.39	56.21	50	20	0.1	0.471	0.530	12.42	
Methylene Chloride	1	0		2.73	44.44	50	20	0.1	0.357	0.318	11.12	
Acrolein	1	0		2.29	210.54	250	20		0.014	0.016	15.78	
Acrylonitrile	1	0		2.91	36.02	50	20		0.032	0.038	27.96	C1
Iodomethane	1	0		2.50	61.67	50	20		0.412	0.508	23.33	C1
Acetone	1	0		2.40	264.59	250	20	0.1	0.030	0.032	5.84	
Carbon Disulfide	1	0		2.56	51.12	50	20	0.1	1.642	1.678	2.24	
t-Butyl Alcohol	1	0		2.79	262.83	250	20		0.004	0.005	5.13	
n-Hexane	1	0		3.17	52.79	50	20		0.708	0.748	5.57	
Di-isopropyl-ether	1	0		3.32	48.56	50	20		0.946	0.919	2.89	
1,1-Dichloroethene	1	0		2.38	53.03	50	20	0.1	0.678	0.719	6.07	
Methyl Acetate	1	0		2.65	44.43	50	20	0.1	0.119	0.105	11.14	
Methyl-t-butyl ether	1	0		2.94	53.67	50	20	0.1	0.339	0.364	7.34	
1,1-Dichloroethane	1	0		3.27	50.42	50	20	0.2	0.763	0.769	0.85	
trans-1,2-Dichloroethene	1	0		2.95	53.99	50	20	0.1	0.407	0.439	7.97	
Ethyl-t-butyl ether	1	0		3.61	50.59	50	20	0.5	0.557	0.564	1.18	
cis-1,2-Dichloroethene	1	0		3.72	50.67	50	20	0.1	0.675	0.684	1.34	
Bromochloromethane	1	0		3.89	49.73	50	20		0.238	0.237	0.53	
2,2-Dichloropropane	1	0		3.73	57.76	50	20		0.475	0.548	15.53	
Ethyl acetate	1	0		3.77	41.62	50	20		0.103	0.106	16.76	
1,4-Dioxane	1	0		4.84	2413.10	2500	20		0.001	0.001	3.48	
1,1-Dichloropropene	1	0		4.19	46.86	50	20		0.668	0.712	6.28	
Chloroform	1	0		3.95	51.34	50	20	0.2	0.729	0.749	2.68	
Dibromofluoromethane	1	0	S	4.06	28.96	75	**		0.233	0.225	3.47	
Cyclohexane	1	0		4.13	52.42	50	20	0.1	0.841	0.882	4.83	
1,2-Dichloroethane-d4	1	0	S	4.27	25.80	75	**		0.100	0.086	13.99	
1,2-Dichloroethane	1	0		4.31	48.15	50	20	0.1	0.352	0.339	3.70	
2-Butanone	1	0		3.73	50.56	50	20	0.1	0.052	0.052	1.13	
1,1,1-Trichloroethane	1	0		4.09	57.17	50	20	0.1	0.606	0.693	14.35	
Carbon Tetrachloride	1	0		4.19	55.39	50	20	0.1	0.488	0.541	10.77	
Vinyl Acetate	1	0		3.32	48.52	50	20		0.520	0.505	2.95	
Bromodichloromethane	1	0		4.92	50.49	50	20	0.2	0.491	0.496	0.97	
Methylcyclohexane	1	0		4.78	56.62	50	20	0.1	0.792	0.896	13.25	
Dibromomethane	1	0		4.84	56.44	50	20		0.084	0.121	12.88	
1,2-Dichloropropane	1	0		4.78	50.22	50	20	0.1	0.393	0.394	0.44	
Trichloroethene	1	0		4.67	57.60	50	20	0.2	0.383	0.441	15.21	
Benzene	1	0		4.31	52.08	50	20	0.5	1.560	1.625	4.15	
tert-Amyl methyl ether	1	0		4.37	53.34	50	20		0.346	0.369	6.68	
Chlorobenzene-d5	1	0	I	6.03	30.00	30	**			0.000	0.00	
Iso-propylacetate	1	0		4.33	48.84	50	20	0.5	0.330	0.355	2.31	
Methyl methacrylate	1	0		4.82	38.66	50	20	0.5	0.186	0.176	22.68	C1
Dibromochloromethane	1	0		5.73	53.48	50	20	0.1	0.424	0.454	6.96	

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL @ 50 PPB **Data File:** 6M22507.D **Instrument:** GCMS 6

Cont Calibration Date/Time 2/18/2015 8:45:00 A Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
2-Chloroethylvinylether	1	0		5.07	40.66	50	20		0.147	0.153	18.67	
cis-1,3-Dichloropropene	1	0		5.14	48.55	50	20	0.2	0.933	0.906	2.90	
trans-1,3-Dichloropropene	1	0		5.42	49.86	50	20	0.1	0.637	0.635	0.28	
Ethyl methacrylate	1	0		5.46	40.70	50	20	0.5	0.219	0.236	18.59	
1,1,2-Trichloroethane	1	0		5.52	48.84	50	20	0.1	0.388	0.379	2.33	
1,2-Dibromoethane	1	0		5.79	49.77	50	20	0.1	0.322	0.321	0.46	
1,3-Dichloropropane	1	0		5.60	47.04	50	20		0.701	0.660	5.92	
4-Methyl-2-Pentanone	1	0		5.22	40.65	50	20	0.1	0.170	0.164	18.70	
2-Hexanone	1	0		5.64	42.49	50	20	0.1	0.082	0.097	15.03	
Tetrachloroethene	1	0		5.61	55.88	50	20	0.2	0.556	0.621	11.75	
Toluene-d8	1	0	S	5.29	28.97	75	**		1.666	1.609	3.42	
Toluene	1	0		5.33	50.98	50	20	0.4	1.759	1.793	1.96	
1,1,1,2-Tetrachloroethane	1	0		6.08	52.57	50	20		0.494	0.520	5.13	
Chlorobenzene	1	0		6.05	53.84	50	20	0.5	1.704	1.835	7.67	
1,4-Dichlorobenzene-d4	1	0	I	7.26	30.00	30	**			0.000	0.00	
n-Butyl acrylate	1	0		6.30	41.09	50	20	0.5	0.889	0.962	17.82	
n-Amyl acetate	1	0		6.42	43.96	50	20	0.5	0.762	0.895	12.08	
Bromoform	1	0		6.47	49.64	50	20	0.1	0.446	0.442	0.73	
Ethylbenzene	1	0		6.09	58.58	50	20	0.1	1.792	2.221	17.16	
1,1,2,2-Tetrachloroethane	1	0		6.68	45.27	50	20	0.1	0.918	0.831	9.47	
Bromofluorobenzene	1	0	S	6.63	31.26	75	**		0.697	0.726	4.21	
Styrene	1	0		6.36	51.31	50	20	0.3	3.335	3.836	2.62	
m&p-Xylenes	1	0		6.15	98.43	100	20	0.1	2.156	2.506	1.57	
o-Xylene	1	0		6.36	49.51	50	20	0.3	2.141	2.346	0.99	
trans-1,4-Dichloro-2-butene	1	0		6.71	46.32	50	20		0.567	0.605	7.36	
1,3-Dichlorobenzene	1	0		7.22	52.26	50	20	0.6	2.263	2.366	4.53	
1,4-Dichlorobenzene	1	0		7.27	51.06	50	20	0.5	2.383	2.433	2.13	
1,2-Dichlorobenzene	1	0		7.48	50.72	50	20	0.4	1.908	1.936	1.43	
Isopropylbenzene	1	0		6.54	50.08	50	20		6.393	7.419	0.15	
Cyclohexanone	1	0		6.71	254.88	250	20		0.054	0.055	1.95	
Camphene	1	0		6.71	52.97	50	20		2.534	2.684	5.94	
1,2,3-Trichloropropane	1	0		6.71	47.11	50	20		0.972	0.915	5.78	
2-Chlorotoluene	1	0		6.82	52.46	50	20		5.166	5.780	4.93	
p-Ethyltoluene	1	0		6.82	50.42	50	20		6.412	7.531	0.84	
4-Chlorotoluene	1	0		6.87	49.27	50	20		4.577	5.210	1.47	
n-Propylbenzene	1	0		6.76	47.39	50	20		8.709	9.618	5.21	
Bromobenzene	1	0		6.72	48.42	50	20		3.249	3.146	3.15	
1,3,5-Trimethylbenzene	1	0		6.85	54.39	50	20		5.223	5.681	8.77	
Butyl methacrylate	1	0		6.86	42.99	50	20	0.5	1.194	1.338	14.02	
t-Butylbenzene	1	0		7.03	54.13	50	20		4.662	5.048	8.26	
1,2,4-Trimethylbenzene	1	0		7.05	49.66	50	20		4.734	5.372	0.67	
sec-Butylbenzene	1	0		7.15	49.30	50	20		6.849	7.983	1.39	
4-Isopropyltoluene	1	0		7.22	49.98	50	20		4.716	5.702	0.05	
n-Butylbenzene	1	0		7.45	48.76	50	20		6.948	8.067	2.49	
p-Diethylbenzene	1	0		7.43	47.21	50	20		3.143	3.460	5.57	
1,2,4,5-Tetramethylbenzene	1	0		7.87	50.01	50	20		3.238	3.842	0.02	
1,2-Dibromo-3-Chloropropane	1	0		7.91	50.83	50	20	0.05	0.075	0.077	1.67	
Camphor	1	0		8.33	403.43	500	20		0.026	0.024	19.31	
Hexachlorobutadiene	1	0		8.49	50.06	50	20		0.742	0.743	0.12	
1,2,4-Trichlorobenzene	1	0		8.40	52.62	50	20	0.2	0.904	0.951	5.24	
1,2,3-Trichlorobenzene	1	0		8.68	45.63	50	20		0.720	0.657	8.73	
Naphthalene	1	0		8.54	37.32	50	20		1.094	1.022	25.36	C1

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F.
624 limits are compared against the concentration found.

625 limits are compared against the %DIFF.
524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL @ 50 PPB **Data File:** 6M22551.D **Instrument:** GCMS 6

Cont Calibration Date/Time 2/19/2015 8:26:00 A Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Fluorobenzene	1	0	I	4.48	30.00	30	**			0.000	0.00	
Chlorodifluoromethane	1	0		1.29	56.29	50	20	0.1	0.750	0.844	12.57	
Dichlorodifluoromethane	1	0		1.28	41.80	50	20		0.386	0.323	16.41	
Chloromethane	1	0		1.41	42.99	50	20	0.1	0.388	0.333	14.02	
Bromomethane	1	0		1.74	49.63	50	20	0.1	0.299	0.297	0.74	
Vinyl Chloride	1	0		1.49	47.70	50	20	0.1	0.333	0.317	4.61	
Chloroethane	1	0		1.81	45.94	50	20	0.1	0.316	0.291	8.12	
Trichlorofluoromethane	1	0		2.01	58.69	50	20	0.1	0.639	0.750	17.37	
Ethyl ether	1	0		2.22	45.28	50	20	0.5	0.131	0.118	9.44	
Furan	1	0		2.24	48.14	50	20	0.5	0.658	0.634	3.71	
1,1,2-Trichloro-1,2,2-trifluoroetha	1	0		2.39	54.44	50	20	0.1	0.471	0.513	8.88	
Methylene Chloride	1	0		2.73	44.11	50	20	0.1	0.357	0.315	11.78	
Acrolein	1	0		2.30	177.46	250	20		0.014	0.013	29.02	C1
Acrylonitrile	1	0		2.91	34.53	50	20		0.032	0.036	30.95	C1
Iodomethane	1	0		2.50	58.76	50	20		0.412	0.484	17.52	
Acetone	1	0		2.41	254.64	250	20	0.1	0.030	0.031	1.85	
Carbon Disulfide	1	0		2.56	50.11	50	20	0.1	1.642	1.645	0.22	
t-Butyl Alcohol	1	0		2.79	249.23	250	20		0.004	0.004	0.31	
n-Hexane	1	0		3.18	46.69	50	20		0.708	0.661	6.61	
Di-isopropyl-ether	1	0		3.33	43.29	50	20		0.946	0.819	13.42	
1,1-Dichloroethene	1	0		2.39	49.47	50	20	0.1	0.678	0.671	1.05	
Methyl Acetate	1	0		2.66	42.85	50	20	0.1	0.119	0.102	14.30	
Methyl-t-butyl ether	1	0		2.95	47.61	50	20	0.1	0.339	0.323	4.79	
1,1-Dichloroethane	1	0		3.27	49.87	50	20	0.2	0.763	0.761	0.26	
trans-1,2-Dichloroethene	1	0		2.96	52.81	50	20	0.1	0.407	0.430	5.63	
Ethyl-t-butyl ether	1	0		3.62	44.22	50	20	0.5	0.557	0.493	11.55	
cis-1,2-Dichloroethene	1	0		3.73	49.22	50	20	0.1	0.675	0.665	1.56	
Bromochloromethane	1	0		3.91	46.76	50	20		0.238	0.223	6.48	
2,2-Dichloropropane	1	0		3.74	55.16	50	20		0.475	0.524	10.31	
Ethyl acetate	1	0		3.79	41.87	50	20		0.103	0.107	16.26	
1,4-Dioxane	1	0		4.86	2384.37	2500	20		0.001	0.001	4.63	
1,1-Dichloropropene	1	0		4.20	44.53	50	20		0.668	0.677	10.95	
Chloroform	1	0		3.96	51.45	50	20	0.2	0.729	0.750	2.91	
Dibromofluoromethane	1	0	S	4.06	30.52	75	**		0.233	0.237	1.74	
Cyclohexane	1	0		4.15	48.38	50	20	0.1	0.841	0.814	3.24	
1,2-Dichloroethane-d4	1	0	S	4.28	28.51	75	**		0.100	0.095	4.98	
1,2-Dichloroethane	1	0		4.32	47.92	50	20	0.1	0.352	0.338	4.17	
2-Butanone	1	0		3.74	44.02	50	20	0.1	0.052	0.045	11.97	
1,1,1-Trichloroethane	1	0		4.09	56.63	50	20	0.1	0.606	0.686	13.26	
Carbon Tetrachloride	1	0		4.21	54.70	50	20	0.1	0.488	0.534	9.39	
Vinyl Acetate	1	0		3.33	44.65	50	20		0.520	0.465	10.70	
Bromodichloromethane	1	0		4.93	51.53	50	20	0.2	0.491	0.507	3.07	
Methylcyclohexane	1	0		4.79	52.07	50	20	0.1	0.792	0.824	4.15	
Dibromomethane	1	0		4.86	55.83	50	20		0.084	0.119	11.66	
1,2-Dichloropropane	1	0		4.79	48.35	50	20	0.1	0.393	0.380	3.30	
Trichloroethene	1	0		4.67	51.12	50	20	0.2	0.383	0.391	2.24	
Benzene	1	0		4.32	51.20	50	20	0.5	1.560	1.598	2.41	
tert-Amyl methyl ether	1	0		4.38	45.27	50	20		0.346	0.313	9.45	
Chlorobenzene-d5	1	0	I	6.04	30.00	30	**			0.000	0.00	
Iso-propylacetate	1	0		4.34	37.25	50	20	0.5	0.330	0.270	25.49	C1
Methyl methacrylate	1	0		4.84	41.04	50	20	0.5	0.186	0.187	17.91	
Dibromochloromethane	1	0		5.74	51.07	50	20	0.1	0.424	0.433	2.13	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL @ 50 PPB **Data File:** 6M22551.D **Instrument:** GCMS 6

Cont Calibration Date/Time 2/19/2015 8:26:00 A Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
2-Chloroethylvinylether	1	0		5.07	34.27	50	20		0.147	0.129	31.47	C1
cis-1,3-Dichloropropene	1	0		5.16	45.93	50	20	0.2	0.933	0.857	8.13	
trans-1,3-Dichloropropene	1	0		5.43	44.76	50	20	0.1	0.637	0.570	10.48	
Ethyl methacrylate	1	0		5.47	33.48	50	20	0.5	0.219	0.195	33.05	C1
1,1,2-Trichloroethane	1	0		5.53	46.91	50	20	0.1	0.388	0.364	6.19	
1,2-Dibromoethane	1	0		5.80	49.75	50	20	0.1	0.322	0.321	0.50	
1,3-Dichloropropane	1	0		5.61	47.47	50	20		0.701	0.666	5.06	
4-Methyl-2-Pentanone	1	0		5.23	35.34	50	20	0.1	0.170	0.143	29.31	C1
2-Hexanone	1	0		5.66	31.77	50	20	0.1	0.082	0.072	36.47	C1
Tetrachloroethene	1	0		5.62	52.48	50	20	0.2	0.556	0.584	4.97	
Toluene-d8	1	0	S	5.30	28.79	75	**		1.666	1.599	4.04	
Toluene	1	0		5.34	50.34	50	20	0.4	1.759	1.771	0.69	
1,1,1,2-Tetrachloroethane	1	0		6.09	50.50	50	20		0.494	0.499	1.00	
Chlorobenzene	1	0		6.06	50.02	50	20	0.5	1.704	1.705	0.04	
1,4-Dichlorobenzene-d4	1	0	I	7.27	30.00	30	**			0.000	0.00	
n-Butyl acrylate	1	0		6.32	31.34	50	20	0.5	0.889	0.729	37.32	C1
n-Amyl acetate	1	0		6.42	31.06	50	20	0.5	0.762	0.629	37.89	C1
Bromoform	1	0		6.48	45.86	50	20	0.1	0.446	0.409	8.28	
Ethylbenzene	1	0		6.11	44.01	50	20	0.1	1.792	1.664	11.98	
1,1,2,2-Tetrachloroethane	1	0		6.69	40.79	50	20	0.1	0.918	0.749	18.42	
Bromofluorobenzene	1	0	S	6.65	29.96	75	**		0.697	0.696	0.12	
Styrene	1	0		6.37	45.59	50	20	0.3	3.335	3.412	8.81	
m&p-Xylenes	1	0		6.16	94.51	100	20	0.1	2.156	2.408	5.49	
o-Xylene	1	0		6.37	45.32	50	20	0.3	2.141	2.149	9.37	
trans-1,4-Dichloro-2-butene	1	0		6.72	41.09	50	20		0.567	0.536	17.81	
1,3-Dichlorobenzene	1	0		7.24	52.24	50	20	0.6	2.263	2.365	4.47	
1,4-Dichlorobenzene	1	0		7.28	46.73	50	20	0.5	2.383	2.227	6.54	
1,2-Dichlorobenzene	1	0		7.49	48.33	50	20	0.4	1.908	1.845	3.34	
Isopropylbenzene	1	0		6.56	43.12	50	20		6.393	6.400	13.75	
Cyclohexanone	1	0		6.71	212.62	250	20		0.054	0.046	14.95	
Camphene	1	0		6.72	47.24	50	20		2.534	2.394	5.51	
1,2,3-Trichloropropane	1	0		6.72	41.97	50	20		0.972	0.815	16.07	
2-Chlorotoluene	1	0		6.83	47.16	50	20		5.166	5.207	5.68	
p-Ethyltoluene	1	0		6.83	44.38	50	20		6.412	6.648	11.24	
4-Chlorotoluene	1	0		6.89	41.79	50	20		4.577	4.432	16.42	
n-Propylbenzene	1	0		6.77	42.96	50	20		8.709	8.737	14.09	
Bromobenzene	1	0		6.73	44.76	50	20		3.249	2.908	10.48	
1,3,5-Trimethylbenzene	1	0		6.86	49.25	50	20		5.223	5.144	1.51	
Butyl methacrylate	1	0		6.87	36.92	50	20	0.5	1.194	1.150	26.16	C1
t-Butylbenzene	1	0		7.04	50.37	50	20		4.662	4.696	0.73	
1,2,4-Trimethylbenzene	1	0		7.07	45.32	50	20		4.734	4.907	9.36	
sec-Butylbenzene	1	0		7.16	43.11	50	20		6.849	6.995	13.78	
4-Isopropyltoluene	1	0		7.23	45.53	50	20		4.716	5.203	8.94	
n-Butylbenzene	1	0		7.46	43.80	50	20		6.948	7.261	12.39	
p-Diethylbenzene	1	0		7.45	42.81	50	20		3.143	3.140	14.39	
1,2,4,5-Tetramethylbenzene	1	0		7.88	41.26	50	20		3.238	3.170	17.48	
1,2-Dibromo-3-Chloropropane	1	0		7.92	48.82	50	20	0.05	0.075	0.074	2.36	
Camphor	1	0		8.34	302.48	500	20		0.026	0.018	39.50	C1
Hexachlorobutadiene	1	0		8.50	45.44	50	20		0.742	0.675	9.13	
1,2,4-Trichlorobenzene	1	0		8.41	46.48	50	20	0.2	0.904	0.840	7.04	
1,2,3-Trichlorobenzene	1	0		8.69	43.06	50	20		0.720	0.620	13.89	
Naphthalene	1	0		8.55	32.10	50	20		1.094	0.878	35.81	C1

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

FORM8

Internal Standard Areas

Evaluation Std Data File: 6M22308.D Method: EPA 8260C

Analysis Date/Time: 02/11/15 18:18

Lab File ID: CAL @ 20 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	251203	4.47	127881	6.03	59349	7.26						
Eval File Area Limit:	125602-502406		63940-255762		29674-118698							
Eval File Rt Limit:	3.97-4.97		5.53-6.53		6.76-7.76							

Data File	Sample						
6M22299.D	BLK	202058	4.47	107971	6.03	41494	7.26
6M22300.D	CAL @ 0.5 PF	198246	4.47	109398	6.03	45092	7.26
6M22301.D	CAL @ 1 PPB	201481	4.47	102238	6.03	45452	7.26
6M22302.D	2 PPB	218896	4.47	107500	6.03	50075	7.26
6M22303.D	CAL @ 5 PPB	229995	4.47	112542	6.03	54627	7.26
6M22304.D	CAL @ 500 P	253111	4.46	138444	6.03	57774	7.26
6M22305.D	CAL @ 250 P	250718	4.47	132962	6.03	63503	7.26
6M22306.D	CAL @ 100 P	250969	4.47	133358	6.03	62182	7.26
6M22307.D	CAL @ 50 PP	255597	4.46	128130	6.03	61445	7.26
6M22308.D	CAL @ 20 PP	251203	4.47	127881	6.03	59349	7.26
6M22311.D	CAL @ 2 PPB	246747	4.47	125388	6.03	55737	7.26
6M22312.D	ICV	291082	4.47	139126	6.03	64866	7.26
6M22313.D	STD	280548	4.46	139644	6.03	67645	7.25
6M22315.D	DAILY BLANK	245238	4.47	117527	6.03	47724	7.26
6M22316.D	MBS42224	291904	4.47	146410	6.03	69526	7.25
6M22317.D	MBS42225	292188	4.47	138492	6.03	72100	7.26
6M22318.D	AC83255-001	252658	4.47	126146	6.03	50129	7.26
6M22319.D	AC83255-002	236971	4.47	120918	6.03	44023	7.26
6M22320.D	AC83255-008	520200 A	4.57	156758	6.03	69209	7.26
6M22321.D	AC83255-012	238517	4.47	125611	6.03	55041	7.26
6M22322.D	AC83255-014	233566	4.47	117135	6.04	48856	7.27
6M22323.D	AC83271-006	257676	4.47	136819	6.03	60016	7.26
6M22324.D	AC83271-008	239945	4.48	118671	6.04	54877	7.27
6M22325.D	AC83271-010	268270	4.47	141301	6.03	59581	7.26
6M22326.D	AC83258-001	241852	4.47	121509	6.03	46699	7.26
6M22327.D	AC83212-001	224586	4.47	111609	6.03	38742	7.26
6M22328.D	AC83212-002	246770	4.48	125980	6.04	45784	7.27
6M22329.D	AC83260-001	233746	4.47	123577	6.03	47337	7.26
6M22330.D	AC83260-002	282530	4.47	155199	6.03	65762	7.26
6M22331.D	AC83260-003	258194	4.47	128719	6.03	48714	7.26
6M22332.D	AC83260-004	239518	4.47	117713	6.03	44891	7.26
6M22333.D	AC83260-005	236217	4.47	121769	6.03	48771	7.26
6M22334.D	AC83260-009	773503 A	4.57	137476	6.03	34830	7.35

I1 = Fluorobenzene
I2 = Chlorobenzene-d5
I3 = 1,4-Dichlorobenzene-d4
I4 =
I5 =
I6 =

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 6M22507.D Method: EPA 8260C

Analysis Date/Time: 02/18/15 08:45

Lab File ID: CAL @ 50 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	208336	4.46	110940	6.03	54698	7.26						
Eval File Area Limit:	104168-416672		55470-221880		27349-109396							
Eval File Rt Limit:	3.96-4.96		5.53-6.53		6.76-7.76							

Data File	Sample											
6M22506.D	BLK	168892	4.47	102444	6.03	44971	7.26					
6M22508.D	50 PPB	202807	4.47	114526	6.04	54745	7.27					
6M22509.D	BLK	185193	4.47	99876	6.03	44188	7.26					
6M22510.D	DAILY BLANK	193199	4.47	105351	6.03	47079	7.26					
6M22511.D	MBS42259	186127	4.46	103838	6.03	54093	7.26					
6M22512.D	AC83353-006	197102	4.47	111419	6.03	53650	7.26					
6M22513.D	AC83353-006	200285	4.47	109013	6.03	55586	7.26					
6M22514.D	BLK	153587	4.47	92918	6.03	44691	7.26					
6M22515.D	BLK	0A	0.00R	0A	0.00R	0A	0.00R					
6M22516.D	BLK	137404	4.47	76963	6.04	34138	7.27					
6M22517.D	AC83221-002	169485	4.47	98181	6.03	43942	7.27					
6M22518.D	AC83221-003	168301	4.48	97223	6.04	41942	7.27					
6M22519.D	AC83221-006	169046	4.47	95016	6.03	44221	7.26					
6M22520.D	AC83221-007	169088	4.47	100887	6.03	45995	7.26					
6M22521.D	AC83221-010	162181	4.47	101784	6.03	43398	7.26					
6M22522.D	83221-011	0A	0.00R	0A	0.00R	0A	0.00R					
6M22522A.	AC83221-011	176429	4.47	103083	6.04	46889	7.26					
6M22523.D	AC83221-014	171076	4.48	96478	6.05	43450	7.28					
6M22524.D	AC83221-015	167215	4.48	91493	6.04	36843	7.27					
6M22525.D	MBS42264	140537	4.47	77855	6.03	38136	7.26					
6M22526.D	AC83235-002	167267	4.47	85405	6.04	31131	7.27					
6M22527.D	AC83235-004	167139	4.48	96006	6.04	45066	7.27					
6M22528.D	AC83235-006	161670	4.47	104213	6.04	53916	7.26					
6M22529.D	AC83256-004	159633	4.48	89796	6.04	28056	7.27					
6M22530.D	AC83316-017	184166	4.48	106155	6.04	59989	7.26					
6M22531.D	AC83316-016	182830	4.48	103028	6.03	113019A	7.29					
6M22532.D	AC83316-015	191522	4.48	120148	6.04	115609A	7.24					
6M22533.D	BLK	147711	4.48	61907	6.04	25635A	7.27					
6M22534.D	BLK	167160	4.48	103077	6.04	50432	7.28					
6M22535.D	AC83389-001	170930	4.47	111347	6.04	53107	7.26					
6M22536.D	MBS42267	188888	4.47	100685	6.04	50635	7.26					
6M22537.D	AC83256-004	164104	4.48	84023	6.04	19700A	7.27					
6M22538.D	AC83316-016	179442	4.48	107697	6.04	99225	7.29					
6M22539.D	AC83316-015	174241	4.48	110661	6.03	65758	7.27					
6M22540.D	AC83353-004	180978	4.48	110168	6.03	52336	7.27					
6M22541.D	AC83353-004	176134	4.48	101434	6.03	49582	7.26					
6M22542.D	BLK	153025	4.47	91795	6.04	41091	7.26					
6M22543.D	BLK	145914	4.47	77600	6.04	38377	7.27					
6M22544.D	AC83307-003	166789	4.47	92728	6.04	42247	7.26					
6M22545.D	BLK	147853	4.47	85349	6.04	35587	7.27					

I1 = Fluorobenzene
I2 = Chlorobenzene-d5
I3 = 1,4-Dichlorobenzene-d4
I4 =
I5 =
I6 =

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 6M22551.D Method: EPA 8260C

Analysis Date/Time: 02/19/15 08:26

Lab File ID: CAL @ 50 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	181242	4.48	97733	6.04	51195	7.27						
Eval File Area Limit:	90621-362484		48866-195466		25598-102390							
Eval File Rt Limit:	3.98-4.98		5.54-6.54		6.77-7.77							
Data File	Sample											
6M22550.D	50 PPB	194951	4.47	101536	6.03	49172	7.26					
6M22552.D	BLK	166113	4.47	91182	6.03	42527	7.26					
6M22553.D	DAILY BLANK	191308	4.47	105422	6.03	44908	7.26					
6M22554.D	MBS42268	204138	4.47	105786	6.03	52441	7.26					
6M22555.D	BLK	144301	4.47	83842	6.03	36787	7.26					
6M22556.D	AC83380-001	140146	4.47	81511	6.03	35467	7.27					
6M22557.D	AC83380-002	155098	4.47	85876	6.03	36744	7.27					
6M22558.D	AC83393-004	165986	4.47	88615	6.04	37861	7.27					
6M22559.D	AC83393-005	150691	4.47	88772	6.04	37495	7.27					
6M22560.D	AC83375-001	157275	4.47	94132	6.04	38263	7.27					
6M22561.D	AC83375-002	147700	4.47	88395	6.03	38565	7.27					
6M22562.D	AC83393-001	136940	4.47	83894	6.03	38410	7.26					
6M22563.D	AC83393-002	162928	4.47	96687	6.03	38917	7.27					
6M22564.D	AC83393-003	146123	4.47	89313	6.04	36192	7.26					
6M22565.D	AC83385-001	158826	4.48	89257	6.04	38486	7.28					
6M22566.D	AC83385-002	166665	4.48	98692	6.04	40352	7.27					
6M22567.D	AC83385-003	170676	4.47	94778	6.04	35560	7.27					
6M22568.D	AC83385-004	151000	4.47	84803	6.03	37110	7.26					
6M22569.D	BLK	125832	4.47	72762	6.04	28480	7.27					
6M22570.D	AC83408-001	146782	4.47	84690	6.04	35244	7.26					
6M22571.D	AC83389-001(	182768	4.47	111105	6.03	54371	7.26					
6M22572.D	AC83389-001(	189035	4.47	114531	6.03	54374	7.26					
6M22573.D	BLK	165849	4.47	95122	6.03	43065	7.26					
6M22574.D	BLK	138170	4.47	85448	6.03	35011	7.27					
6M22575.D	BLK	156270	4.47	90954	6.04	33806	7.26					
6M22576.D	AC83387-017	162039	4.47	91414	6.03	38228	7.27					
6M22577.D	AC83387-019	182265	4.47	99801	6.04	41713	7.26					
6M22578.D	AC83387-020	171534	4.47	94483	6.03	35921	7.26					
6M22579.D	AC83387-021	161104	4.47	91139	6.03	33515	7.26					
6M22580.D	AC83387-022	159447	4.47	92423	6.03	39892	7.26					
6M22581.D	AC83413-014	181461	4.47	112162	6.03	61945	7.26					
6M22582.D	AC83413-016	187287	4.47	114257	6.03	65178	7.26					
6M22583.D	STD	174291	4.47	100855	6.03	52874	7.26					
6M22584.D	AC83404-001	148516	4.47	83574	6.03	35997	7.26					
6M22585.D	AC83407-001	164016	4.47	88719	6.03	40489	7.26					
6M22586.D	MBS42279	204619	4.46	112236	6.03	54505	7.26					
6M22587.D	STD	185050	4.46	105293	6.03	54221	7.26					
6M22588.D	BLK	179606	4.47	98454	6.03	41129	7.26					
6M22589.D	MTL(020515)	160859	4.47	94195	6.03	39237	7.26					
6M22590.D	BLK	117729	4.47	63898	6.03	24139 A	7.27					

I1 = Fluorobenzene I4 =

I2 = Chlorobenzene-d5 I5 =

I3 = 1,4-Dichlorobenzene-d4 I6 =

625/8270 Internal Standard concentration = 40 me/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

TCLP Volatile Data

Form1

ORGANICS VOLATILE REPORT

Sample Number: AC83375-003(T)
Client Id: WC01
Data File: 3M66742.D
Analysis Date: 02/20/15 15:19
Date Rec/Extracted: 02/13/15-NA
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
75-35-4	1,1-Dichloroethene	0.0010	U	108-90-7	Chlorobenzene	0.0010	U
107-06-2	1,2-Dichloroethane	0.00050	U	67-66-3	Chloroform	0.0010	U
106-46-7	1,4-Dichlorobenzene	0.0010	U	127-18-4	Tetrachloroethene	0.0010	U
78-93-3	2-Butanone	0.0010	U	79-01-6	Trichloroethene	0.0010	U
71-43-2	Benzene	0.00050	U	75-01-4	Vinyl Chloride	0.0010	U
56-23-5	Carbon Tetrachloride	0.0010	U				

Worksheet #: 334454

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed) 5021319 0064

SampleID : AC83375-003(T) Operator : SG Qt Meth : 3M_A0125.M
Data File: 3M66742.D Sam Mult : 1 Vial# : 6 Qt On : 02/20/15 17:14
Acq On : 02/20/15 15:19 Misc : A,5ML!A2 Qt Upd On: 01/26/15 12:10

Data Path : G:\GcMsData\2015\GCMS_3\Data\02-20-15\
Qt Path : G:\GcMsData\2015\GCMS_3\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.401	96	369730	30.00	ug/l	-0.03
52) Chlorobenzene-d5	6.199	117	353301	30.00	ug/l	-0.02
70) 1,4-Dichlorobenzene-d4	7.599	152	244757	30.00	ug/l	-0.03
System Monitoring Compounds						
37) Dibromofluoromethane	3.956	111	127888	31.82	ug/l	-0.04
Spiked Amount 30.000			Recovery = 106.07%			
39) 1,2-Dichloroethane-d4	4.191	67	65311	32.85	ug/l	-0.03
Spiked Amount 30.000			Recovery = 109.50%			
66) Toluene-d8	5.345	98	371047	26.81	ug/l	-0.02
Spiked Amount 30.000			Recovery = 89.37%			
76) Bromofluorobenzene	6.890	174	300998	36.95	ug/l	-0.02
Spiked Amount 30.000			Recovery = 123.17%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

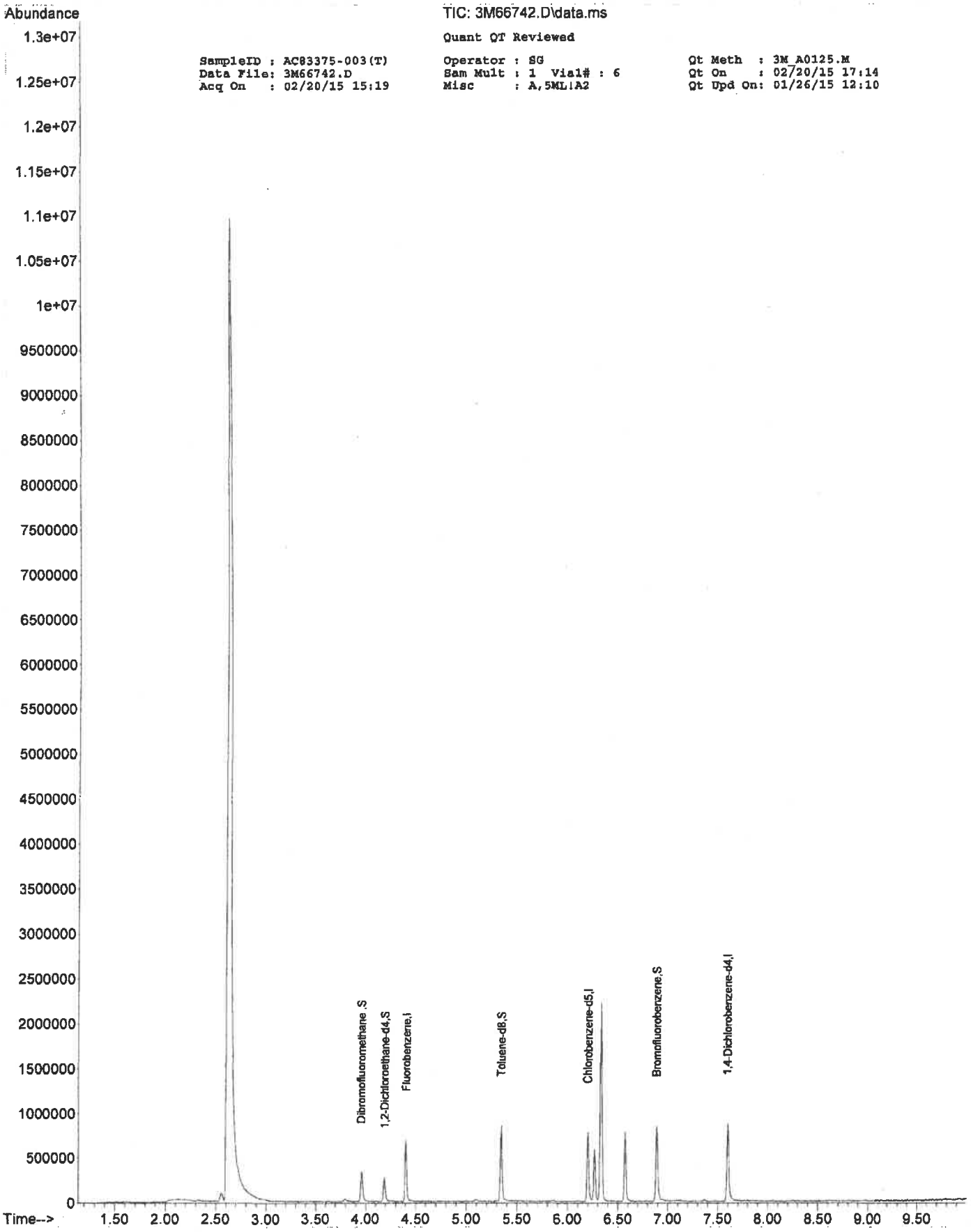
TIC: 3M66742.D\data.ms

Quant QT Reviewed

SampleID : AC83375-003(T)
Data File: 3M66742.D
Acq On : 02/20/15 15:19

Operator : SG
Sam Mult : 1 Vial# : 6
Misc : A,5ML!A2

Qt Meth : 3M_A0125.M
Qt On : 02/20/15 17:14
Qt Upd On: 01/26/15 12:10



Form1

ORGANICS VOLATILE REPORT

Sample Number: DAILY BLANK
Client Id:
Data File: 3M66735.D
Analysis Date: 02/20/15 13:27
Date Rec/Extracted:
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
75-35-4	1,1-Dichloroethene	0.0010	U	108-90-7	Chlorobenzene	0.0010	U
107-06-2	1,2-Dichloroethane	0.00050	U	67-66-3	Chloroform	0.0010	U
106-46-7	1,4-Dichlorobenzene	0.0010	U	127-18-4	Tetrachloroethene	0.0010	U
78-93-3	2-Butanone	0.0010	U	79-01-6	Trichloroethene	0.0010	U
71-43-2	Benzene	0.00050	U	75-01-4	Vinyl Chloride	0.0010	U
56-23-5	Carbon Tetrachloride	0.0010	U				

Worksheet #: 334454

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

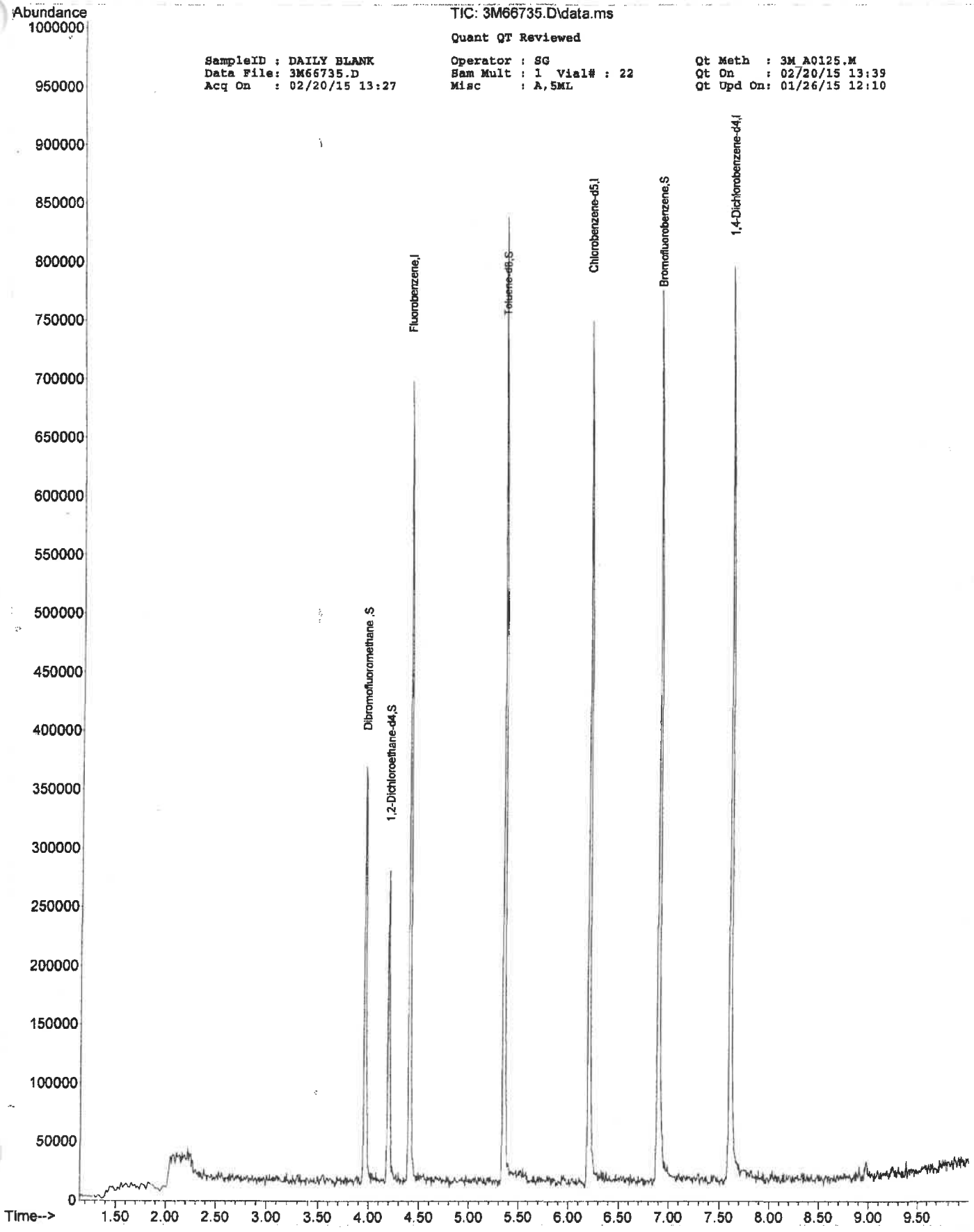
Quantitation Report (QT Reviewed) 5021319 0067

SampleID : DAILY BLANK Operator : SG Qt Meth : 3M_A0125.M
Data File: 3M66735.D Sam Mult : 1 Vial# : 22 Qt On : 02/20/15 13:39
Acq On : 02/20/15 13:27 Misc : A,5ML Qt Upd On: 01/26/15 12:10

Data Path : G:\GcMsData\2015\GCMS_3\Data\02-20-15\
Qt Path : G:\GcMsData\2015\GCMS_3\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.402	96	372601	30.00	ug/l	-0.03
52) Chlorobenzene-d5	6.200	117	334481	30.00	ug/l	-0.02
70) 1,4-Dichlorobenzene-d4	7.606	152	231854	30.00	ug/l	-0.02
System Monitoring Compounds						
37) Dibromofluoromethane	3.963	111	134202	33.13	ug/l	-0.03
Spiked Amount 30.000			Recovery = 110.43%			
39) 1,2-Dichloroethane-d4	4.192	67	61813	30.85	ug/l	-0.03
Spiked Amount 30.000			Recovery = 102.83%			
66) Toluene-d8	5.346	98	360554	27.52	ug/l	-0.02
Spiked Amount 30.000			Recovery = 91.73%			
76) Bromofluorobenzene	6.897	174	253561m	32.86	ug/l	-0.02
Spiked Amount 30.000			Recovery = 109.53%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed



3M_A0125.M Mon Feb 23 11:53:56 2015 SYSTEM1

Form1

ORGANICS VOLATILE REPORT

Sample Number: EF-1V-204478(021915)
Client Id:
Data File: 3M66744.D
Analysis Date: 02/20/15 15:50
Date Rec/Extracted:
Column: DB-624 25M 0.200mm ID 1.12um film

Method: EPA 8260C
Matrix: Aqueous
Initial Vol: 5ml
Final Vol: NA
Dilution: 1.00
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
75-35-4	1,1-Dichloroethene	0.0010	U	108-90-7	Chlorobenzene	0.0010	U
107-06-2	1,2-Dichloroethane	0.00050	U	67-66-3	Chloroform	0.0010	U
106-46-7	1,4-Dichlorobenzene	0.0010	U	127-18-4	Tetrachloroethene	0.0010	U
78-93-3	2-Butanone	0.0010	U	79-01-6	Trichloroethene	0.0010	U
71-43-2	Benzene	0.00050	U	75-01-4	Vinyl Chloride	0.0010	U
56-23-5	Carbon Tetrachloride	0.0010	U				

Worksheet #: 334454

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

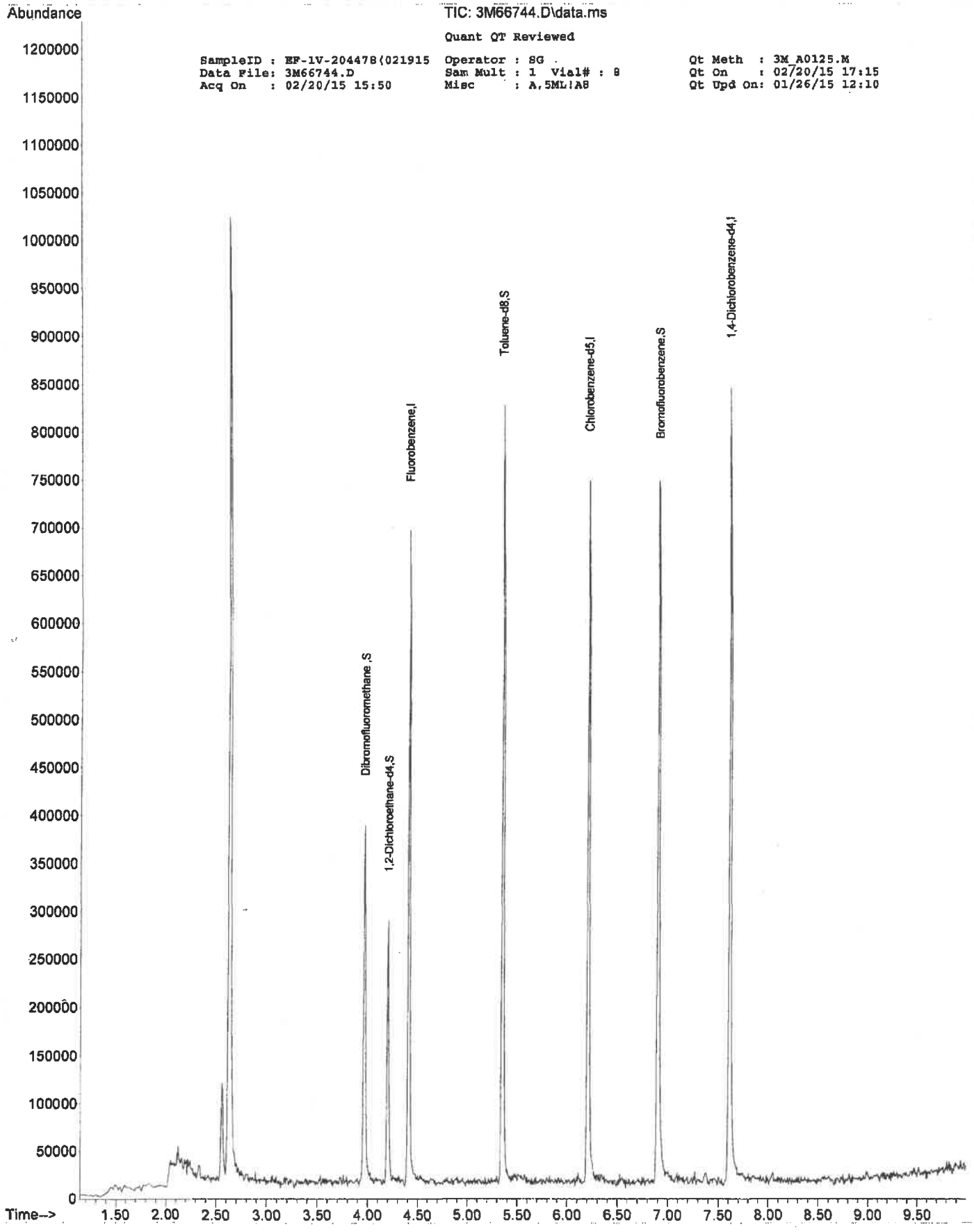
Quantitation Report (QT Reviewed) 5021319 0070

SampleID : EF-1V-204478(021915 Operator : SG Qt Meth : 3M_A0125.M
Data File: 3M66744.D Sam Mult : 1 Vial# : 8 Qt On : 02/20/15 17:15
Acq On : 02/20/15 15:50 Misc : A,5ML!A8 Qt Upd On: 01/26/15 12:10

Data Path : G:\GcMsData\2015\GCMS_3\Data\02-20-15\
Qt Path : G:\GcMsData\2015\GCMS_3\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
4) Fluorobenzene	4.408	96	368208	30.00	ug/l	-0.02
52) Chlorobenzene-d5	6.205	117	341054	30.00	ug/l	-0.02
70) 1,4-Dichlorobenzene-d4	7.606	152	240009	30.00	ug/l	-0.02
System Monitoring Compounds						
37) Dibromofluoromethane	3.963	111	133379	33.32	ug/l	-0.03
Spiked Amount 30.000			Recovery = 111.07%			
39) 1,2-Dichloroethane-d4	4.198	67	69377	35.04	ug/l	-0.02
Spiked Amount 30.000			Recovery = 116.80%			
66) Toluene-d8	5.352	98	356154	26.66	ug/l	-0.02
Spiked Amount 30.000			Recovery = 88.87%			
76) Bromofluorobenzene	6.903	174	279361	34.97	ug/l	-0.01
Spiked Amount 30.000			Recovery = 116.57%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 3M66744.D\data.ms
Quant QT Reviewed
SampleID : EF-1V-204478(021915
Data File: 3M66744.D
Acq On : 02/20/15 15:50
Operator : SG
Sam Mult : 1 Vial# : 8
Misc : A,5ML;A8
Qt Meth : 3M_A0125.M
Qt On : 02/20/15 17:15
Qt Upd On: 01/26/15 12:10
Dibromofluoromethane,S
1,2-Dichloroethane-d4,S
Fluorobenzene,I
Toluene-d8,S
Chlorobenzene-d5,I
Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Time-->

FORM2

Surrogate Recovery

Method: EPA 8260C

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column1 S3 Recov	Column1 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
3M66559.D	DAILY BLANK	Aqueous	02/18/15 11:15	1		100	96	97	112		
3M66735.D	DAILY BLANK	Aqueous	02/20/15 13:27	1		110	103	92	110		
3M66744.D	EF-1V-204478	Aqueous	02/20/15 15:50	1		111	117	89	117		
3M66742.D	AC83375-003(	Aqueous	02/20/15 15:19	1		106	109	89	123		
3M66561.D	MBS42263	Aqueous	02/18/15 11:46	1		91	106	99	111		
3M66569.D	AC83282-012(	Aqueous	02/18/15 13:49	1		98	100	98	109		
3M66580.D	AC83282-012(	Aqueous	02/18/15 16:39	1		103	112	97	109		
3M66581.D	AC83282-012(	Aqueous	02/18/15 16:55	1		100	103	90	111		
3M66737.D	MBS42281	Aqueous	02/20/15 13:58	1		102	100	92	111		

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8260C

Aqueous Limits

Compound	Spike Amt	Limits
S1=Dibromofluoromethane	30	70-130
S2=1,2-Dichloroethane-d4	30	70-130
S3=Toluene-d8	30	70-130
S4=Bromofluorobenzene	30	70-130

Form3
Recovery Data
QC Batch: MBS42263

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3M66561.D	MBS42263	2/18/2015 11:46:00 AM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8260C Matrix: Aqueous QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	27.8177	0	20	139*	70	130
Dichlorodifluoromethane	1	6.0379	0	20	30*	40	160
Chloromethane	1	11.5184	0	20	58	40	160
Bromomethane	1	11.1113	0	20	56	40	160
Vinyl Chloride	1	12.5901	0	20	63*	70	130
Chloroethane	1	13.2854	0	20	66	40	160
Trichlorofluoromethane	1	21.3668	0	20	107	40	160
Ethyl ether	1	16.3857	0	20	82	70	130
Furan	1	14.1543	0	20	71	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	15.8912	0	20	79	70	130
Methylene Chloride	1	17.7091	0	20	89	70	130
Acrolein	1	70.4481	0	100	70	70	130
Acrylonitrile	1	14.8225	0	20	74	70	130
Iodomethane	1	12.8555	0	20	64*	70	130
Acetone	1	114.7783	0	100	115	40	160
Carbon Disulfide	1	12.0849	0	20	60	40	160
t-Butyl Alcohol	1	67.6077	0	100	68*	70	130
n-Hexane	1	13.7216	0	20	69*	70	130
Di-isopropyl-ether	1	17.8652	0	20	89	70	130
1,1-Dichloroethene	1	17.6731	0	20	88	70	130
Methyl Acetate	1	14.853	0	20	74	70	130
Methyl-t-butyl ether	1	16.502	0	20	83	70	130
1,1-Dichloroethane	1	18.4902	0	20	92	70	130
trans-1,2-Dichloroethene	1	16.7716	0	20	84	70	130
Ethyl-t-butyl ether	1	17.1139	0	20	86	70	130
cis-1,2-Dichloroethene	1	19.4199	0	20	97	70	130
Bromochloromethane	1	19.0458	0	20	95	70	130
2,2-Dichloropropane	1	19.0795	0	20	95	70	130
Ethyl acetate	1	16.9757	0	20	85	70	130
1,4-Dioxane	1	702.2608	0	1000	70	40	160
1,1-Dichloropropene	1	17.9742	0	20	90	70	130
Chloroform	1	16.995	0	20	85	70	130
Cyclohexane	1	16.2615	0	20	81	70	130
1,2-Dichloroethane	1	19.5163	0	20	98	70	130
2-Butanone	1	13.0844	0	20	65*	70	130
1,1,1-Trichloroethane	1	17.1162	0	20	86	70	130
Carbon Tetrachloride	1	18.2019	0	20	91	70	130
Vinyl Acetate	1	20.4032	0	20	102	70	130
Bromodichloromethane	1	18.7498	0	20	94	70	130
Methylcyclohexane	1	16.5401	0	20	83	70	130
Dibromomethane	1	20.8307	0	20	104	70	130
1,2-Dichloropropane	1	19.0146	0	20	95	70	130
Trichloroethene	1	19.9408	0	20	100	70	130
Benzene	1	17.0009	0	20	85	70	130
tert-Amyl methyl ether	1	17.0761	0	20	85	70	130
Iso-propylacetate	1	17.8492	0	20	89	70	130
Methyl methacrylate	1	18.3808	0	20	92	70	130
Dibromochloromethane	1	19.1412	0	20	96	70	130
2-Chloroethylvinylether	1	6.5115	0	20	33*	70	130
cis-1,3-Dichloropropene	1	20.4039	0	20	102	70	130
trans-1,3-Dichloropropene	1	20.0149	0	20	100	70	130
Ethyl methacrylate	1	16.3435	0	20	82	70	130
1,1,2-Trichloroethane	1	20.3095	0	20	102	70	130
1,2-Dibromoethane	1	19.4971	0	20	97	70	130
1,3-Dichloropropane	1	22.6838	0	20	113	70	130
4-Methyl-2-Pentanone	1	16.3757	0	20	82	40	160
2-Hexanone	1	8.9994	0	20	45	40	160
Tetrachloroethene	1	27.2781	0	20	136*	70	130
Toluene	1	20.3172	0	20	102	70	130
1,1,1,2-Tetrachloroethane	1	20.7952	0	20	104	70	130
Chlorobenzene	1	22.609	0	20	113	70	130
n-Butyl acrylate	1	11.7557	0	20	59*	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42263

n-Amyl acetate	1	13.648	0	20	68 *	70	130
Bromoform	1	19.7668	0	20	99	70	130
Ethylbenzene	1	17.7048	0	20	89	70	130
1,1,2,2-Tetrachloroethane	1	16.7773	0	20	84	70	130
Styrene	1	18.0584	0	20	90	70	130
m&p-Xylenes	1	37.8669	0	40	95	70	130
o-Xylene	1	19.8407	0	20	99	70	130
trans-1,4-Dichloro-2-butene	1	8.6773	0	20	43 *	70	130
1,3-Dichlorobenzene	1	22.7783	0	20	114	70	130
1,4-Dichlorobenzene	1	21.2292	0	20	106	70	130
1,2-Dichlorobenzene	1	20.8599	0	20	104	70	130
Isopropylbenzene	1	19.098	0	20	95	70	130
Cyclohexanone	1	143.8166	0	100	144 *	70	130
Camphene	1	13.261	0	20	66 *	70	130
1,2,3-Trichloropropane	1	16.9008	0	20	85	70	130
2-Chlorotoluene	1	18.8425	0	20	94	70	130
p-Ethyltoluene	1	19.8194	0	20	99	70	130
4-Chlorotoluene	1	21.5259	0	20	108	70	130
n-Propylbenzene	1	19.0306	0	20	95	70	130
Bromobenzene	1	23.1379	0	20	116	70	130
1,3,5-Trimethylbenzene	1	17.6351	0	20	88	70	130
Butyl methacrylate	1	14.747	0	20	74	70	130
t-Butylbenzene	1	18.8184	0	20	94	70	130
1,2,4-Trimethylbenzene	1	17.2112	0	20	86	70	130
sec-Butylbenzene	1	16.743	0	20	84	70	130
4-Isopropyltoluene	1	17.0112	0	20	85	70	130
n-Butylbenzene	1	15.7124	0	20	79	70	130
p-Diethylbenzene	1	14.32	0	20	72	70	130
1,2,4,5-Tetramethylbenzene	1	14.0445	0	20	70	70	130
1,2-Dibromo-3-Chloropropane	1	16.7341	0	20	84	40	160
Camphor	1	94.8396	0	200	47 *	70	130
Hexachlorobutadiene	1	19.3244	0	20	97	70	130
1,2,4-Trichlorobenzene	1	19.2944	0	20	96	70	130
1,2,3-Trichlorobenzene	1	17.4193	0	20	87	70	130
Naphthalene	1	12.4044	0	20	62	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42281

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3M66737.D	MBS42281	2/20/2015 1:58:00 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8260C Matrix: Aqueous QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	19.6019	0	20	98	70	130
Dichlorodifluoromethane	1	27.4672	0	20	137	40	160
Chloromethane	1	20.284	0	20	101	40	160
Bromomethane	1	17.4802	0	20	87	40	160
Vinyl Chloride	1	25.5913	0	20	128	70	130
Chloroethane	1	19.8154	0	20	99	40	160
Trichlorofluoromethane	1	30.1962	0	20	151	40	160
Ethyl ether	1	15.6612	0	20	78	70	130
Furan	1	16.0583	0	20	80	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	27.485	0	20	137*	70	130
Methylene Chloride	1	18.8127	0	20	94	70	130
Acrolein	1	65.319	0	100	65*	70	130
Acrylonitrile	1	15.6409	0	20	78	70	130
Iodomethane	1	21.6536	0	20	108	70	130
Acetone	1	116.4265	0	100	116	40	160
Carbon Disulfide	1	17.2813	0	20	86	40	160
t-Butyl Alcohol	1	69.2093	0	100	69*	70	130
n-Hexane	1	13.9767	0	20	70	70	130
Di-isopropyl-ether	1	15.8347	0	20	79	70	130
1,1-Dichloroethene	1	27.3479	0	20	137*	70	130
Methyl Acetate	1	12.7301	0	20	64*	70	130
Methyl-t-butyl ether	1	16.367	0	20	82	70	130
1,1-Dichloroethane	1	19.4249	0	20	97	70	130
trans-1,2-Dichloroethene	1	20.5882	0	20	103	70	130
Ethyl-t-butyl ether	1	16.8716	0	20	84	70	130
cis-1,2-Dichloroethene	1	18.9027	0	20	95	70	130
Bromochloromethane	1	18.9795	0	20	95	70	130
2,2-Dichloropropane	1	18.9716	0	20	95	70	130
Ethyl acetate	1	13.3077	0	20	67*	70	130
1,4-Dioxane	1	649.9028	0	1000	65	40	160
1,1-Dichloropropene	1	18.3062	0	20	92	70	130
Chloroform	1	18.1369	0	20	91	70	130
Cyclohexane	1	16.2614	0	20	81	70	130
1,2-Dichloroethane	1	18.4549	0	20	92	70	130
2-Butanone	1	14.4128	0	20	72	70	130
1,1,1-Trichloroethane	1	19.2534	0	20	96	70	130
Carbon Tetrachloride	1	19.8742	0	20	99	70	130
Vinyl Acetate	1	20.2629	0	20	101	70	130
Bromodichloromethane	1	19.1374	0	20	96	70	130
Methylcyclohexane	1	16.8516	0	20	84	70	130
Dibromomethane	1	27.6437	0	20	138*	70	130
1,2-Dichloropropane	1	17.9895	0	20	90	70	130
Trichloroethene	1	20.3781	0	20	102	70	130
Benzene	1	16.7754	0	20	84	70	130
tert-Amyl methyl ether	1	15.7004	0	20	79	70	130
Iso-propylacetate	1	12.9664	0	20	65*	70	130
Methyl methacrylate	1	15.6527	0	20	78	70	130
Dibromochloromethane	1	19.8242	0	20	99	70	130
2-Chloroethylvinylether	1	11.268	0	20	56*	70	130
cis-1,3-Dichloropropene	1	17.6156	0	20	88	70	130
trans-1,3-Dichloropropene	1	18.6224	0	20	93	70	130
Ethyl methacrylate	1	12.9693	0	20	65*	70	130
1,1,2-Trichloroethane	1	16.294	0	20	81	70	130
1,2-Dibromoethane	1	19.5518	0	20	98	70	130
1,3-Dichloropropane	1	19.6668	0	20	98	70	130
4-Methyl-2-Pentanone	1	14.1619	0	20	71	40	160
2-Hexanone	1	9.8529	0	20	49	40	160
Tetrachloroethene	1	30.6274	0	20	153*	70	130
Toluene	1	19.3888	0	20	97	70	130
1,1,1,2-Tetrachloroethane	1	22.5765	0	20	113	70	130
Chlorobenzene	1	20.0978	0	20	100	70	130
n-Butyl acrylate	1	8.7307	0	20	44*	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42281

n-Amyl acetate	1	9.6662	0	20	48*	70	130
Bromoform	1	19.712	0	20	99	70	130
Ethylbenzene	1	16.1646	0	20	81	70	130
1,1,2,2-Tetrachloroethane	1	12.5694	0	20	63*	70	130
Styrene	1	14.9676	0	20	75	70	130
m&p-Xylenes	1	33.1921	0	40	83	70	130
o-Xylene	1	16.4337	0	20	82	70	130
trans-1,4-Dichloro-2-butene	1	6.1383	0	20	31*	70	130
1,3-Dichlorobenzene	1	20.9006	0	20	105	70	130
1,4-Dichlorobenzene	1	19.691	0	20	98	70	130
1,2-Dichlorobenzene	1	18.7817	0	20	94	70	130
Isopropylbenzene	1	15.5893	0	20	78	70	130
Cyclohexanone	1	49.0829	0	100	49*	70	130
Camphene	1	10.5421	0	20	53*	70	130
1,2,3-Trichloropropane	1	12.7274	0	20	64*	70	130
2-Chlorotoluene	1	17.1794	0	20	86	70	130
p-Ethyltoluene	1	16.3375	0	20	82	70	130
4-Chlorotoluene	1	18.0549	0	20	90	70	130
n-Propylbenzene	1	15.3992	0	20	77	70	130
Bromobenzene	1	18.0478	0	20	90	70	130
1,3,5-Trimethylbenzene	1	14.44	0	20	72	70	130
Butyl methacrylate	1	10.9623	0	20	55*	70	130
t-Butylbenzene	1	16.6056	0	20	83	70	130
1,2,4-Trimethylbenzene	1	15.35	0	20	77	70	130
sec-Butylbenzene	1	13.0665	0	20	65*	70	130
4-Isopropyltoluene	1	14.3757	0	20	72	70	130
n-Butylbenzene	1	12.7978	0	20	64*	70	130
p-Diethylbenzene	1	13.3636	0	20	67*	70	130
1,2,4,5-Tetramethylbenzene	1	11.6478	0	20	58*	70	130
1,2-Dibromo-3-Chloropropane	1	15.2758	0	20	76	40	160
Camphor	1	81.2161	0	200	41*	70	130
Hexachlorobutadiene	1	17.1308	0	20	86	70	130
1,2,4-Trichlorobenzene	1	18.5989	0	20	93	70	130
1,2,3-Trichlorobenzene	1	15.9799	0	20	80	70	130
Naphthalene	1	9.6412	0	20	48	40	160

* - Indicates outside of limits

- Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42263

Data File	Sample ID:	Analysis Date
Spike or Dup: 3M66580.D	AC83282-012(T:MS)	2/18/2015 4:39:00 PM
Non Spike(If applicable): 3M66569.D	AC83282-012(T)	2/18/2015 1:49:00 PM
Inst Blank(If applicable):		
Method: 8260C	Matrix: Aqueous	QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	22.4764	0	20	112	70	130
Dichlorodifluoromethane	1	1.3621	0	20	6.8*	40	160
Chloromethane	1	1.5637	0	20	7.8*	40	160
Bromomethane	1	3.5091	0	20	18*	40	160
Vinyl Chloride	1	1.9793	0	20	9.9*	70	130
Chloroethane	1	4.4652	0	20	22*	40	160
Trichlorofluoromethane	1	8.2405	0	20	41	40	160
Ethyl ether	1	13.0595	0	20	65*	70	130
Furan	1	8.7364	0	20	44*	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	8.5028	0	20	43*	70	130
Methylene Chloride	1	152.9638	0	20	765*	70	130
Acrolein	1	67.6589	0	100	68*	70	130
Acrylonitrile	1	15.775	0	20	79	70	130
Iodomethane	1	7.0733	0	20	35*	70	130
Acetone	1	132.4382	0	100	132	40	160
Carbon Disulfide	1	6.3447	0	20	32*	40	160
t-Butyl Alcohol	1	102.9192	0	100	103	70	130
n-Hexane	1	5.7411	0	20	29*	70	130
Di-isopropyl-ether	1	16.4862	0	20	82	70	130
1,1-Dichloroethene	1	9.8412	0	20	49*	70	130
Methyl Acetate	1	44.4305	0	20	222*	70	130
Methyl-t-butyl ether	1	15.7081	0	20	79	70	130
1,1-Dichloroethane	1	14.8225	0	20	74	70	130
trans-1,2-Dichloroethene	1	12.3269	0	20	62*	70	130
Ethyl-t-butyl ether	1	17.6517	0	20	88	70	130
cis-1,2-Dichloroethene	1	17.6136	0	20	88	70	130
Bromochloromethane	1	18.2139	0	20	91	70	130
2,2-Dichloropropane	1	16.0998	0	20	80	70	130
Ethyl acetate	1	16.5997	0	20	83	70	130
1,4-Dioxane	1	861.0101	0	1000	86	40	160
1,1-Dichloropropene	1	15.9156	0	20	80	70	130
Chloroform	1	17.2619	0	20	86	70	130
Cyclohexane	1	10.716	0	20	54*	70	130
1,2-Dichloroethane	1	21.3064	0	20	107	70	130
2-Butanone	1	21.0026	0	20	105	70	130
1,1,1-Trichloroethane	1	16.7189	0	20	84	70	130
Carbon Tetrachloride	1	16.7041	0	20	84	70	130
Vinyl Acetate	1	21.1422	0	20	106	70	130
Bromodichloromethane	1	20.2129	0	20	101	70	130
Methylcyclohexane	1	13.232	0	20	66*	70	130
Dibromomethane	1	24.185	0	20	121	70	130
1,2-Dichloropropane	1	19.4897	0	20	97	70	130
Trichloroethene	1	17.2368	0	20	86	70	130
Benzene	1	15.6781	0	20	78	70	130
tert-Amyl methyl ether	1	17.3232	0	20	87	70	130
Iso-propylacetate	1	19.5284	0	20	98	70	130
Methyl methacrylate	1	18.2464	0	20	91	70	130
Dibromochloromethane	1	19.565	0	20	98	70	130
2-Chloroethylvinylether	1	0	0	20	0*	70	130
cis-1,3-Dichloropropene	1	18.7345	0	20	94	70	130
trans-1,3-Dichloropropene	1	20.5156	0	20	103	70	130
Ethyl methacrylate	1	15.6668	0	20	78	70	130
1,1,2-Trichloroethane	1	18.9764	0	20	95	70	130
1,2-Dibromoethane	1	20.0855	0	20	100	70	130
1,3-Dichloropropane	1	24.055	0	20	120	70	130
4-Methyl-2-Pentanone	1	19.3107	0	20	97	40	160
2-Hexanone	1	13.9828	0	20	70	40	160
Tetrachloroethene	1	25.5665	0	20	128	70	130
Toluene	1	19.0653	0	20	95	70	130
1,1,1,2-Tetrachloroethane	1	23.8274	0	20	119	70	130
Chlorobenzene	1	21.8141	0	20	109	70	130
n-Butyl acrylate	1	12.777	0	20	64*	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42263

n-Amyl acetate	1	13.6953	0	20	68*	70	130
Bromoform	1	20.7962	0	20	104	70	130
Ethylbenzene	1	16.7022	0	20	84	70	130
1,1,2,2-Tetrachloroethane	1	16.6596	0	20	83	70	130
Styrene	1	16.9914	0	20	85	70	130
m&p-Xylenes	1	39.6703	0	40	99	70	130
o-Xylene	1	18.2704	0	20	91	70	130
trans-1,4-Dichloro-2-butene	1	9.9272	0	20	50*	70	130
1,3-Dichlorobenzene	1	23.2693	0	20	116	70	130
1,4-Dichlorobenzene	1	20.3458	0	20	102	70	130
1,2-Dichlorobenzene	1	20.775	0	20	104	70	130
Isopropylbenzene	1	17.6222	0	20	88	70	130
Cyclohexanone	1	42.3168	0	100	42*	70	130
Camphene	1	11.3624	0	20	57*	70	130
1,2,3-Trichloropropane	1	17.1766	0	20	86	70	130
2-Chlorotoluene	1	18.0192	0	20	90	70	130
p-Ethyltoluene	1	18.4674	0	20	92	70	130
4-Chlorotoluene	1	19.1288	0	20	96	70	130
n-Propylbenzene	1	17.5078	0	20	88	70	130
Bromobenzene	1	19.6254	0	20	98	70	130
1,3,5-Trimethylbenzene	1	15.7678	0	20	79	70	130
Butyl methacrylate	1	14.1986	0	20	71	70	130
t-Butylbenzene	1	18.2952	0	20	91	70	130
1,2,4-Trimethylbenzene	1	17.8396	0	20	89	70	130
sec-Butylbenzene	1	14.1713	0	20	71	70	130
4-Isopropyltoluene	1	15.9855	0	20	80	70	130
n-Butylbenzene	1	14.3285	0	20	72	70	130
p-Diethylbenzene	1	13.8487	0	20	69*	70	130
1,2,4,5-Tetramethylbenzene	1	13.7175	0	20	69*	70	130
1,2-Dibromo-3-Chloropropane	1	16.0944	0	20	80	40	160
Camphor	1	111.8907	0	200	56*	70	130
Hexachlorobutadiene	1	17.6217	0	20	88	70	130
1,2,4-Trichlorobenzene	1	18.4266	0	20	92	70	130
1,2,3-Trichlorobenzene	1	14.836	0	20	74	70	130
Naphthalene	1	13.8476	0	20	69	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42263

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3M66581.D	AC83282-012(T:MSD)	2/18/2015 4:55:00 PM
Non Spike(If applicable):	3M66569.D	AC83282-012(T)	2/18/2015 1:49:00 PM
Inst Blank(If applicable):			

Method: 8260C Matrix: Aqueous QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Chlorodifluoromethane	1	21.843	0	20	109	70	130
Dichlorodifluoromethane	1	1.1751	0	20	5.9*	40	160
Chloromethane	1	1.0871	0	20	5.4*	40	160
Bromomethane	1	3.4309	0	20	17*	40	160
Vinyl Chloride	1	1.6342	0	20	8.2*	70	130
Chloroethane	1	3.5799	0	20	18*	40	160
Trichlorofluoromethane	1	7.5289	0	20	38*	40	160
Ethyl ether	1	11.4605	0	20	57*	70	130
Furan	1	7.7488	0	20	39*	70	130
1,1,2-Trichloro-1,2,2-trifluoroethane	1	7.8259	0	20	39*	70	130
Methylene Chloride	1	149.2868	0	20	746*	70	130
Acrolein	1	67.0398	0	100	67*	70	130
Acrylonitrile	1	15.1884	0	20	76	70	130
Iodomethane	1	6.3109	0	20	32*	70	130
Acetone	1	123.6761	0	100	124	40	160
Carbon Disulfide	1	6.076	0	20	30*	40	160
t-Butyl Alcohol	1	85.8383	0	100	86	70	130
n-Hexane	1	4.6936	0	20	23*	70	130
Di-isopropyl-ether	1	15.8353	0	20	79	70	130
1,1-Dichloroethene	1	10.3516	0	20	52*	70	130
Methyl Acetate	1	42.1583	0	20	211*	70	130
Methyl-t-butyl ether	1	14.1779	0	20	71	70	130
1,1-Dichloroethane	1	14.319	0	20	72	70	130
trans-1,2-Dichloroethene	1	12.6923	0	20	63*	70	130
Ethyl-t-butyl ether	1	16.7258	0	20	84	70	130
cis-1,2-Dichloroethene	1	16.5776	0	20	83	70	130
Bromochloromethane	1	18.3002	0	20	92	70	130
2,2-Dichloropropane	1	15.6149	0	20	78	70	130
Ethyl acetate	1	15.8536	0	20	79	70	130
1,4-Dioxane	1	692.8419	0	1000	69	40	160
1,1-Dichloropropene	1	14.4875	0	20	72	70	130
Chloroform	1	17.183	0	20	86	70	130
Cyclohexane	1	9.5335	0	20	48*	70	130
1,2-Dichloroethane	1	19.3036	0	20	97	70	130
2-Butanone	1	20.3491	0	20	102	70	130
1,1,1-Trichloroethane	1	15.894	0	20	79	70	130
Carbon Tetrachloride	1	16.0453	0	20	80	70	130
Vinyl Acetate	1	20.2672	0	20	101	70	130
Bromodichloromethane	1	20.3052	0	20	102	70	130
Methylcyclohexane	1	11.9438	0	20	60*	70	130
Dibromomethane	1	23.6034	0	20	118	70	130
1,2-Dichloropropane	1	18.471	0	20	92	70	130
Trichloroethene	1	17.118	0	20	86	70	130
Benzene	1	14.651	0	20	73	70	130
tert-Amyl methyl ether	1	17.8339	0	20	89	70	130
Iso-propylacetate	1	17.1387	0	20	86	70	130
Methyl methacrylate	1	16.2668	0	20	81	70	130
Dibromochloromethane	1	19.0241	0	20	95	70	130
2-Chloroethylvinylether	1	0	0	20	0*	70	130
cis-1,3-Dichloropropene	1	17.8891	0	20	89	70	130
trans-1,3-Dichloropropene	1	18.0974	0	20	90	70	130
Ethyl methacrylate	1	16.8895	0	20	84	70	130
1,1,2-Trichloroethane	1	18.3003	0	20	92	70	130
1,2-Dibromoethane	1	20.2485	0	20	101	70	130
1,3-Dichloropropane	1	20.4386	0	20	102	70	130
4-Methyl-2-Pentanone	1	18.8836	0	20	94	40	160
2-Hexanone	1	13.3464	0	20	67	40	160
Tetrachloroethene	1	23.4094	0	20	117	70	130
Toluene	1	18.6305	0	20	93	70	130
1,1,1,2-Tetrachloroethane	1	21.952	0	20	110	70	130
Chlorobenzene	1	20.1696	0	20	101	70	130
n-Butyl acrylate	1	14.1063	0	20	71	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: MBS42263

n-Amyl acetate	1	14.33	0	20	72	70	130
Bromoform	1	21.864	0	20	109	70	130
Ethylbenzene	1	18.3526	0	20	92	70	130
1,1,2,2-Tetrachloroethane	1	17.4571	0	20	87	70	130
Styrene	1	17.7118	0	20	89	70	130
m&p-Xylenes	1	37.0691	0	40	93	70	130
o-Xylene	1	17.7654	0	20	89	70	130
trans-1,4-Dichloro-2-butene	1	8.2995	0	20	41 *	70	130
1,3-Dichlorobenzene	1	21.5726	0	20	108	70	130
1,4-Dichlorobenzene	1	20.3983	0	20	102	70	130
1,2-Dichlorobenzene	1	20.1431	0	20	101	70	130
Isopropylbenzene	1	17.2136	0	20	86	70	130
Cyclohexanone	1	35.5241	0	100	36 *	70	130
Camphene	1	12.8543	0	20	64 *	70	130
1,2,3-Trichloropropane	1	17.325	0	20	87	70	130
2-Chlorotoluene	1	17.3131	0	20	87	70	130
p-Ethyltoluene	1	18.6003	0	20	93	70	130
4-Chlorotoluene	1	18.0316	0	20	90	70	130
n-Propylbenzene	1	18.6438	0	20	93	70	130
Bromobenzene	1	20.902	0	20	105	70	130
1,3,5-Trimethylbenzene	1	16.7035	0	20	84	70	130
Butyl methacrylate	1	13.8506	0	20	69 *	70	130
t-Butylbenzene	1	18.1933	0	20	91	70	130
1,2,4-Trimethylbenzene	1	17.7215	0	20	89	70	130
sec-Butylbenzene	1	14.8157	0	20	74	70	130
4-Isopropyltoluene	1	16.0847	0	20	80	70	130
n-Butylbenzene	1	14.6062	0	20	73	70	130
p-Diethylbenzene	1	14.8741	0	20	74	70	130
1,2,4,5-Tetramethylbenzene	1	13.2444	0	20	66 *	70	130
1,2-Dibromo-3-Chloropropane	1	15.1007	0	20	76	40	160
Camphor	1	128.5921	0	200	64 *	70	130
Hexachlorobutadiene	1	19.1421	0	20	96	70	130
1,2,4-Trichlorobenzene	1	19.7019	0	20	99	70	130
1,2,3-Trichlorobenzene	1	17.9387	0	20	90	70	130
Naphthalene	1	13.3554	0	20	67	40	160

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA
QC Batch: MBS42263

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3M66581.D	AC83282-012(T:MSD)	2/18/2015 4:55:00 PM
Duplicate(If applicable):	3M66580.D	AC83282-012(T:MS)	2/18/2015 4:39:00 PM
Inst Blank(If applicable):			

Method: 8260C Matrix: Aqueous QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Chlorodifluoromethane	1	21.843	22.4764	2.9	20
Dichlorodifluoromethane	1	1.1751	1.3621	15	20
Chloromethane	1	1.0871	1.5637	36*	20
Bromomethane	1	3.4309	3.5091	2.3	20
Vinyl Chloride	1	1.6342	1.9793	19	20
Chloroethane	1	3.5799	4.4652	22*	20
Trichlorofluoromethane	1	7.5289	8.2405	9	20
Ethyl ether	1	11.4605	13.0595	13	20
Furan	1	7.7488	8.7364	12	20
1,1,2-Trichloro-1,2,2-trifluoroethane	1	7.8259	8.5028	8.3	20
Methylene Chloride	1	149.2868	152.9638	2.4	20
Acrolein	1	67.0398	67.6589	0.92	20
Acrylonitrile	1	15.1884	15.775	3.8	20
Iodomethane	1	6.3109	7.0733	11	20
Acetone	1	123.6761	132.4382	6.8	20
Carbon Disulfide	1	6.076	6.3447	4.3	20
t-Butyl Alcohol	1	85.8383	102.9192	18	20
n-Hexane	1	4.6936	5.7411	20	20
Di-isopropyl-ether	1	15.8353	16.4862	4	20
1,1-Dichloroethene	1	10.3516	9.8412	5.1	20
Methyl Acetate	1	42.1583	44.4305	5.2	20
Methyl-t-butyl ether	1	14.1779	15.7081	10	20
1,1-Dichloroethane	1	14.319	14.8225	3.5	20
trans-1,2-Dichloroethene	1	12.6923	12.3269	2.9	20
Ethyl-t-butyl ether	1	16.7258	17.6517	5.4	20
cis-1,2-Dichloroethene	1	16.5776	17.6136	6.1	20
Bromochloromethane	1	18.3002	18.2139	0.47	20
2,2-Dichloropropane	1	15.6149	16.0998	3.1	20
Ethyl acetate	1	15.8536	16.5997	4.6	20
1,4-Dioxane	1	692.8419	861.0101	22*	20
1,1-Dichloropropene	1	14.4875	15.9156	9.4	20
Chloroform	1	17.183	17.2619	0.46	20
Cyclohexane	1	9.5335	10.716	12	20
1,2-Dichloroethane	1	19.3036	21.3064	9.9	20
2-Butanone	1	20.3491	21.0026	3.2	20
1,1,1-Trichloroethane	1	15.894	16.7189	5.1	20
Carbon Tetrachloride	1	16.0453	16.7041	4	20
Vinyl Acetate	1	20.2672	21.1422	4.2	20
Bromodichloromethane	1	20.3052	20.2129	0.46	20
Methylcyclohexane	1	11.9438	13.232	10	20
Dibromomethane	1	23.6034	24.185	2.4	20
1,2-Dichloropropane	1	18.471	19.4897	5.4	20
Trichloroethene	1	17.118	17.2368	0.69	20
Benzene	1	14.651	15.6781	6.8	20
tert-Amyl methyl ether	1	17.8339	17.3232	2.9	20
Iso-propylacetate	1	17.1387	19.5284	13	20
Methyl methacrylate	1	16.2668	18.2464	11	20
Dibromochloromethane	1	19.0241	19.565	2.8	20
2-Chloroethylvinylether	1	0	0	NA	20
cis-1,3-Dichloropropene	1	17.8891	18.7345	4.6	20
trans-1,3-Dichloropropene	1	18.0974	20.5156	13	20
Ethyl methacrylate	1	16.8895	15.6668	7.5	20
1,1,2-Trichloroethane	1	18.3003	18.9764	3.6	20
1,2-Dibromoethane	1	20.2485	20.0855	0.81	20
1,3-Dichloropropane	1	20.4386	24.055	16	20
4-Methyl-2-Pentanone	1	18.8836	19.3107	2.2	20
2-Hexanone	1	13.3464	13.9828	4.7	20
Tetrachloroethene	1	23.4094	25.5665	8.8	20
Toluene	1	18.6305	19.0653	2.3	20
1,1,1,2-Tetrachloroethane	1	21.952	23.8274	8.2	20
Chlorobenzene	1	20.1696	21.8141	7.8	20
n-Butyl acrylate	1	14.1063	12.777	9.9	20
n-Amyl acetate	1	14.33	13.6953	4.5	20
Bromoform	1	21.864	20.7962	5	20

Form3
RPD DATA
QC Batch: MBS42263

Ethylbenzene	1	18.3526	16.7022	9.4	20
1,1,2,2-Tetrachloroethane	1	17.4571	16.6596	4.7	20
Styrene	1	17.7118	16.9914	4.2	20
m&p-Xylenes	1	37.0691	39.6703	6.8	20
o-Xylene	1	17.7654	18.2704	2.8	20
trans-1,4-Dichloro-2-butene	1	8.2995	9.9272	18	20
1,3-Dichlorobenzene	1	21.5726	23.2693	7.6	20
1,4-Dichlorobenzene	1	20.3983	20.3458	0.26	20
1,2-Dichlorobenzene	1	20.1431	20.775	3.1	20
Isopropylbenzene	1	17.2136	17.6222	2.3	20
Cyclohexanone	1	35.5241	42.3168	17	20
Camphene	1	12.8543	11.3624	12	20
1,2,3-Trichloropropane	1	17.325	17.1766	0.86	20
2-Chlorotoluene	1	17.3131	18.0192	4	20
p-Ethyltoluene	1	18.6003	18.4674	0.72	20
4-Chlorotoluene	1	18.0316	19.1288	5.9	20
n-Propylbenzene	1	18.6438	17.5078	6.3	20
Bromobenzene	1	20.902	19.6254	6.3	20
1,3,5-Trimethylbenzene	1	16.7035	15.7678	5.8	20
Butyl methacrylate	1	13.8506	14.1986	2.5	20
t-Butylbenzene	1	18.1933	18.2952	0.56	20
1,2,4-Trimethylbenzene	1	17.7215	17.8396	0.66	20
sec-Butylbenzene	1	14.8157	14.1713	4.4	20
4-Isopropyltoluene	1	16.0847	15.9855	0.62	20
n-Butylbenzene	1	14.6062	14.3285	1.9	20
p-Diethylbenzene	1	14.8741	13.8487	7.1	20
1,2,4,5-Tetramethylbenzene	1	13.2444	13.7175	3.5	20
1,2-Dibromo-3-Chloropropane	1	15.1007	16.0944	6.4	20
Camphor	1	128.5921	111.8907	14	20
Hexachlorobutadiene	1	19.1421	17.6217	8.3	20
1,2,4-Trichlorobenzene	1	19.7019	18.4266	6.7	20
1,2,3-Trichlorobenzene	1	17.9387	14.836	19	20
Naphthalene	1	13.3554	13.8476	3.6	20

* - Indicates outside of limits

NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: DAILY BLANK
Blank Data File: 3M66559.D
Matrix: Aqueous

Blank Analysis Date: 02/18/15 11:15
Blank Extraction Date: NA
(If Applicable)
Method: EPA 8260C

Sample Number	Data File	Analysis Date
AC83282-012(T:M	3M66581.D	02/18/15 16:55
AC83282-012(T:M	3M66580.D	02/18/15 16:39
AC83282-012(T)	3M66569.D	02/18/15 13:49
MBS42263	3M66561.D	02/18/15 11:46

FORM 4
Blank Summary

Blank Number: DAILY BLANK
Blank Data File: 3M66735.D
Matrix: Aqueous

Blank Analysis Date: 02/20/15 13:27
Blank Extraction Date: NA
(If Applicable)
Method: EPA 8260C

Sample Number	Data File	Analysis Date
AC83375-003(T)	3M66742.D	02/20/15 15:19
EF-1V-204478(021	3M66744.D	02/20/15 15:50
MBS42281	3M66737.D	02/20/15 13:58

Form 5

Tune Name: BFB TUNE
Instrument: GCMS 3
Data File: 3M65218.D
Analysis Date: 01/25/15 11:06
Method: EPA 8260C

Tune Scan/Time Range: Average of 4.128 to 4.138 min

Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	23.8	11344	PASS
75	95	30	60	55.6	26498	PASS
95	95	100	100	100.0	47638	PASS
96	95	5	9	6.9	3266	PASS
173	174	0.00	2	1.6	714	PASS
174	95	50	100	95.8	45649	PASS
175	174	5	9	6.5	2950	PASS
176	174	95	101	100.2	45720	PASS
177	176	5	9	5.4	2485	PASS

Data File	Sample Number	Analysis Date:
3M65219.D	BLK	01/25/15 11:16
3M65220.D	1 PPB	01/25/15 11:31
3M65221.D	CAL @ 0.5 PPB	01/25/15 11:47
3M65222.D	CAL @ 1 PPB	01/25/15 12:02
3M65223.D	CAL @ 5 PPB	01/25/15 12:19
3M65224.D	CAL @ 10 PPB	01/25/15 12:35
3M65225.D	CAL @ 500 PPB	01/25/15 12:50
3M65226.D	CAL @ 250 PPB	01/25/15 13:05
3M65227.D	CAL @ 100 PPB	01/25/15 13:21
3M65228.D	CAL @ 50 PPB	01/25/15 13:36
3M65229.D	CAL @ 20 PPB	01/25/15 13:51
3M65230.D	ICV	01/25/15 14:07
3M65231.D	STD	01/25/15 14:22
3M65232.D	BLK	01/25/15 14:37
3M65233.D	DAILY BLANK	01/25/15 14:53
3M65234.D	MBS41869	01/25/15 15:08
3M65235.D	AC82927-048	01/25/15 15:23
3M65236.D	AC82927-044	01/25/15 15:39
3M65237.D	AC82927-047	01/25/15 15:54
3M65238.D	AC82927-053	01/25/15 16:09
3M65239.D	AC82927-059	01/25/15 16:25
3M65240.D	AC82927-056	01/25/15 16:40
3M65241.D	AC82984-022	01/25/15 16:55
3M65242.D	AC82984-010	01/25/15 17:11
3M65243.D	AC82984-008	01/25/15 17:26
3M65244.D	AC82984-012	01/25/15 17:41
3M65245.D	AC82984-028	01/25/15 17:56
3M65246.D	AC82984-031	01/25/15 18:12
3M65247.D	STD	01/25/15 18:27
3M65248.D	STD	01/25/15 18:42
3M65249.D	MBS41871	01/25/15 18:58
3M65250.D	BLK	01/25/15 19:10
3M65251.D	BLK	01/25/15 19:20
3M65252.D	BLK	01/25/15 19:33
3M65253.D	AC82913-001	01/25/15 19:43
3M65254.D	AC82984-033	01/25/15 19:59
3M65255.D	AC82927-045	01/25/15 20:14
3M65256.D	AC82984-032	01/25/15 20:29
3M65257.D	AC82927-050	01/25/15 20:45
3M65258.D	AC82927-054	01/25/15 21:00
3M65259.D	AC82927-057	01/25/15 21:15
3M65260.D	AC82927-060	01/25/15 21:31
3M65261.D	AC82927-063	01/25/15 21:46
3M65262.D	AC82913-001(MS)	01/25/15 22:01
3M65263.D	AC82913-001(MSD	01/25/15 22:17
3M65264.D	MBS42038	01/25/15 22:32
3M65265.D	STD	01/25/15 22:47
3M65266.D	STD	01/25/15 23:03
3M65267.D	MBS42039	01/25/15 23:18
3M65268.D	BLK	01/25/15 23:33
3M65269.D	BLK	01/25/15 23:48
3M65270.D	BLK	01/26/15 00:03
3M65271.D	BLK	01/26/15 00:17
3M65272.D	BLK	01/26/15 00:32
3M65273.D	BLK	01/26/15 00:47
3M65274.D	BLK	01/26/15 01:02
3M65275.D	BLK	01/26/15 01:17
3M65276.D	BLK	01/26/15 01:32
3M65277.D	BLK	01/26/15 01:47
3M65278.D	BLK	01/26/15 02:01
3M65279.D	BLK	01/26/15 02:16
3M65280.D	BLK	01/26/15 02:31
3M65281.D	BLK	01/26/15 02:46
3M65282.D	BLK	01/26/15 03:01
3M65283.D	BLK	01/26/15 03:16

Form 5

Tune Name: BFB TUNE
Instrument: GCMS 3
Data File: 3M65218.D
Analysis Date: 01/25/15 11:06
Method: EPA 8260C

Tune Scan/Time Range: Average of 4.128 to 4.138 min

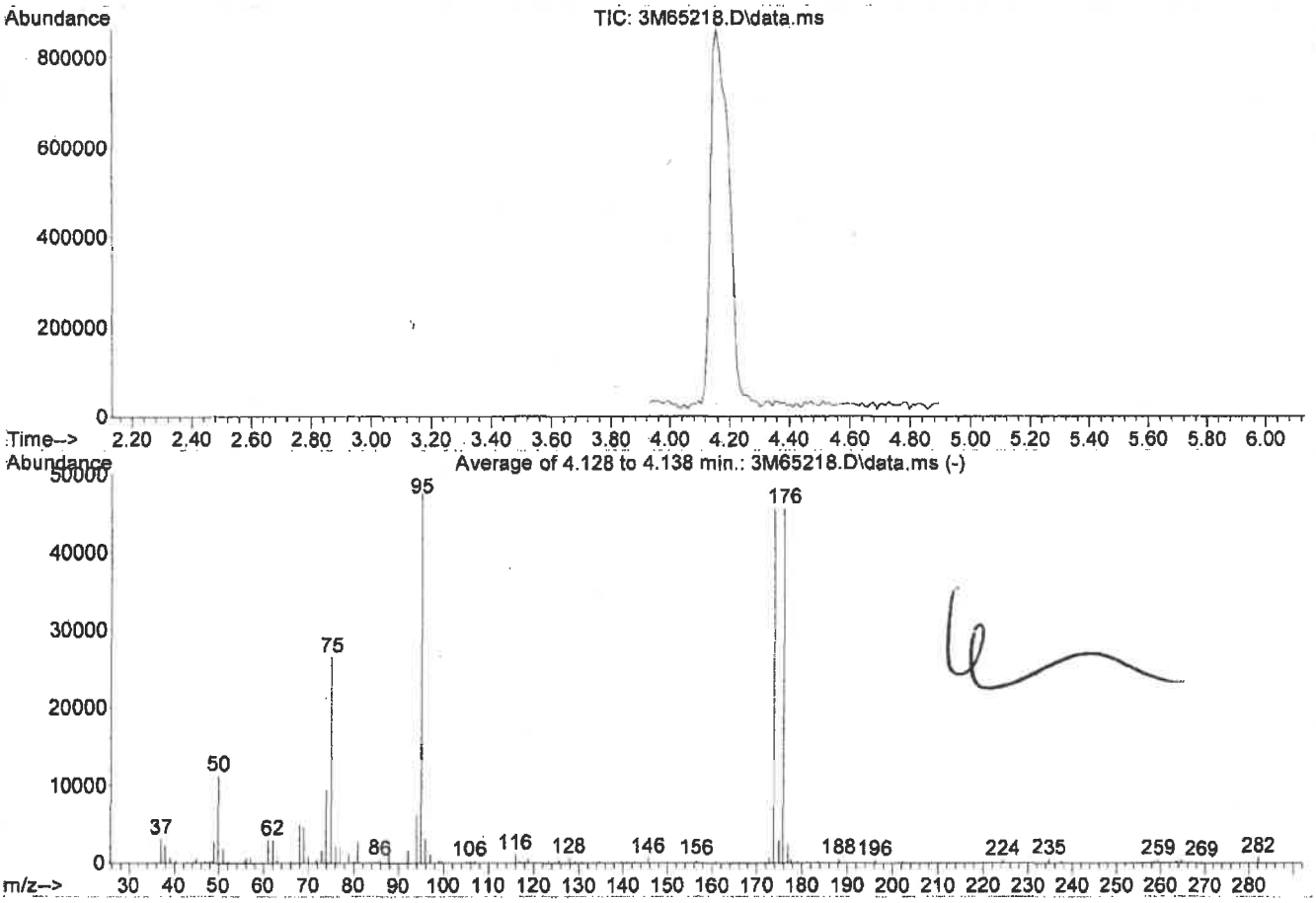
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	23.8	11344	PASS
75	95	30	60	55.6	26498	PASS
95	95	100	100	100.0	47638	PASS
96	95	5	9	6.9	3266	PASS
173	174	0.00	2	1.6	714	PASS
174	95	50	100	95.8	45649	PASS
175	174	5	9	6.5	2950	PASS
176	174	95	101	100.2	45720	PASS
177	176	5	9	5.4	2485	PASS

3M65284.D	BLK	01/26/15 03:31
3M65285.D	BLK	01/26/15 03:45
3M65286.D	BLK	01/26/15 04:00
3M65287.D	BLK	01/26/15 04:15

Data Path : G:\GcMsData\2015\GCMS_3\Data\01-25-15\
Data File : 3M65218.D
Acq On : 25 Jan 2015 11:06
Operator : WP
Sample : BFB TUNE
Misc : A,5ML
ALS Vial : 7 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_3\MethodQt\3M_A0119.M
Title : @GCMS_3,ug,624,8260
Last Update : Mon Jan 19 15:35:03 2015



Spectrum Information: Average of 4.128 to 4.138 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.8	11344	PASS
75	95	30	60	55.6	26498	PASS
95	95	100	100	100.0	47638	PASS
96	95	5	9	6.9	3266	PASS
173	174	0.00	2	1.6	714	PASS
174	95	50	100	95.8	45649	PASS
175	174	5	9	6.5	2950	PASS
176	174	95	101	100.2	45720	PASS
177	176	5	9	5.4	2485	PASS

Form 5

Tune Name: BFB TUNE
Instrument: GCMS 3
Data File: 3M66553.D
Analysis Date: 02/18/15 09:19
Method: EPA 8260C

Tune Scan/Time Range: Average of 4.241 to 4.260 min

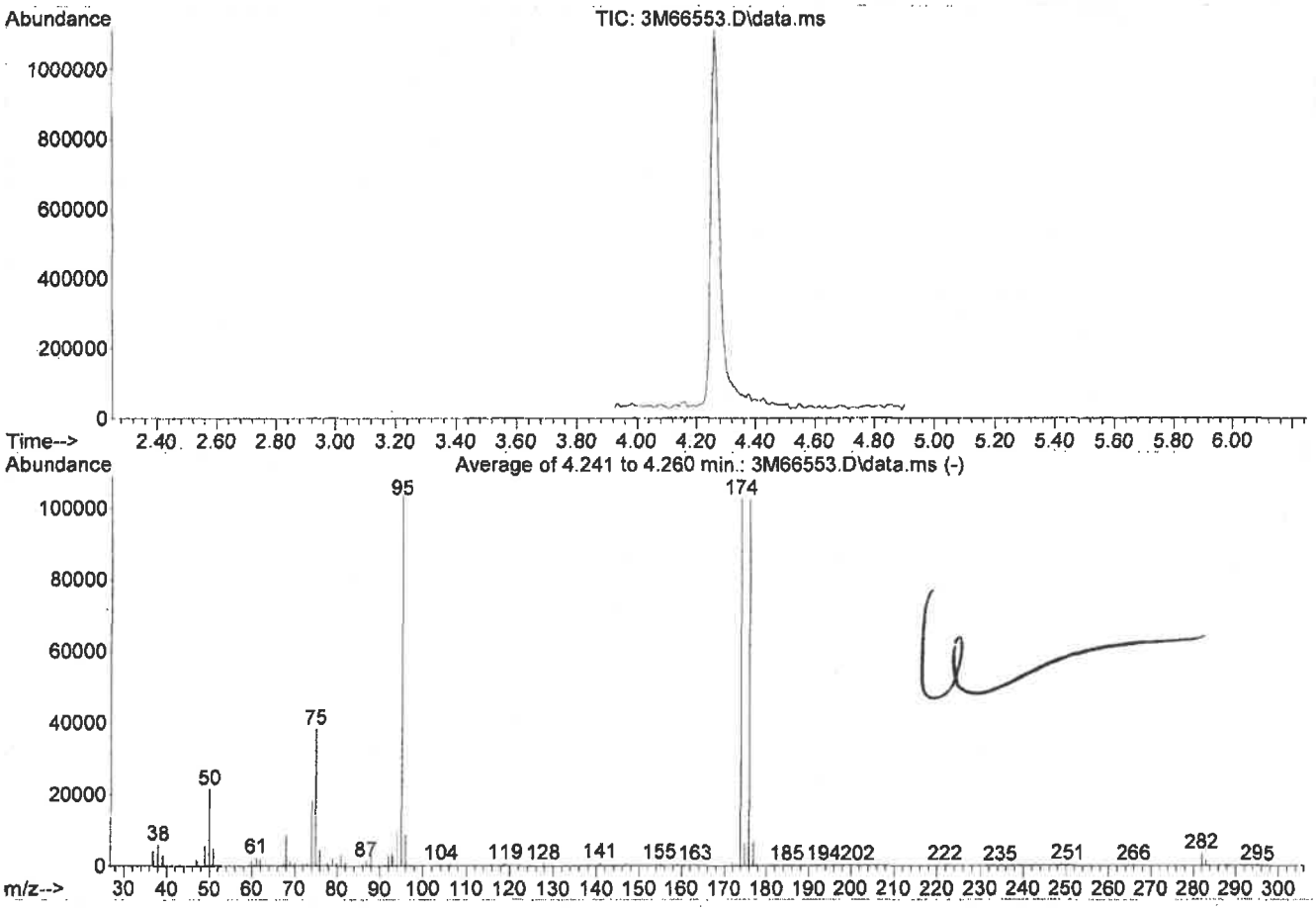
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	20.8	21572	PASS
75	95	30	60	36.9	38320	PASS
95	95	100	100	100.0	103824	PASS
96	95	5	9	8.7	9010	PASS
173	174	0.00	2	0.5	535	PASS
174	95	50	100	99.1	102925	PASS
175	174	5	9	6.3	6503	PASS
176	174	95	101	99.6	102505	PASS
177	176	5	9	6.5	6704	PASS

Data File	Sample Number	Analysis Date:
3M66554.D	CAL @ 20 PPB	02/18/15 09:49
3M66556.D	STD	02/18/15 10:19
3M66557.D	BLK	02/18/15 10:36
3M66558.D	DAILY BLANK	02/18/15 10:51
3M66559.D	DAILY BLANK	02/18/15 11:15
3M66560.D	MBS42262	02/18/15 11:30
3M66561.D	MBS42263	02/18/15 11:46
3M66562.D	BLK	02/18/15 12:01
3M66563.D	AC83341-001	02/18/15 12:16
3M66564.D	AC83392-001(50X)	02/18/15 12:32
3M66565.D	AC83392-003	02/18/15 12:47
3M66566.D	AC83396-002	02/18/15 13:02
3M66567.D	AC83392-001	02/18/15 13:18
3M66568.D	AC83392-002	02/18/15 13:33
3M66569.D	AC83282-012(T)	02/18/15 13:49
3M66570.D	AC83235-002	02/18/15 14:04
3M66571.D	AC83235-004	02/18/15 14:19
3M66572.D	AC83235-006	02/18/15 14:35
3M66573.D	AC83282-014(T)	02/18/15 14:50
3M66574.D	AC83363-005	02/18/15 15:06
3M66575.D	AC83363-004(5X)	02/18/15 15:22
3M66576.D	AC83363-002(5X)	02/18/15 15:38
3M66577.D	BLK	02/18/15 15:53
3M66578.D	AC83369-008	02/18/15 16:08
3M66579.D	AC83282-016(T)	02/18/15 16:24
3M66580.D	AC83282-012(T:M	02/18/15 16:39
3M66581.D	AC83282-012(T:M	02/18/15 16:55
3M66582.D	BLK	02/18/15 17:10
3M66583.D	AC83348-002	02/18/15 17:26
3M66584.D	AC83348-003	02/18/15 17:41
3M66585.D	AC83402-002	02/18/15 17:56
3M66586.D	AC83402-003	02/18/15 18:12
3M66587.D	AC83395-002	02/18/15 18:27
3M66588.D	BLK	02/18/15 18:42
3M66589.D	MBS42265	02/18/15 18:58
3M66590.D	BLK	02/18/15 19:14
3M66591.D	AC83399-003	02/18/15 19:30
3M66592.D	AC83399-004	02/18/15 19:45
3M66593.D	AC83397-001	02/18/15 20:01
3M66594.D	AC83397-002	02/18/15 20:17
3M66595.D	AC83395-001	02/18/15 20:32
3M66596.D	AC83396-001	02/18/15 20:48
3M66597.D	AC83394-001	02/18/15 21:03
3M66598.D	AC83348-001	02/18/15 21:19
3M66599.D	AC83402-001	02/18/15 21:34
3M66600.D	AC83399-001(10X)	02/18/15 21:49
3M66601.D	AC83399-002(10X)	02/18/15 22:05
3M66602.D	STD	02/18/15 22:20
3M66603.D	STD	02/18/15 22:36
3M66604.D	STD	02/18/15 22:51
3M66605.D	BLK	02/18/15 23:06

Data Path : G:\GcMsData\2015\GCMS_3\Data\02-18-15\
Data File : 3M66553.D
Acq On : 18 Feb 2015 9:19
Operator : SG
Sample : BFB TUNE
Misc : A,5ML
ALS Vial : 9 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_3\MethodQt\3M_A0125.M
Title : @GCMS_3,ug,624,8260
Last Update : Mon Jan 26 12:01:53 2015



Spectrum Information: Average of 4.241 to 4.260 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	21572	PASS
75	95	30	60	36.9	38320	PASS
95	95	100	100	100.0	103824	PASS
96	95	5	9	8.7	9010	PASS
173	174	0.00	2	0.5	535	PASS
174	95	50	100	99.1	102925	PASS
175	174	5	9	6.3	6503	PASS
176	174	95	101	99.6	102505	PASS
177	176	5	9	6.5	6704	PASS

Form 5

Tune Name: BFB TUNE **Data File:** 3M66729.D
Instrument: GCMS 3 **Analysis Date:** 02/20/15 11:42
Method: EPA 8260C
Tune Scan/Time Range: Average of 4.094 to 4.104 min

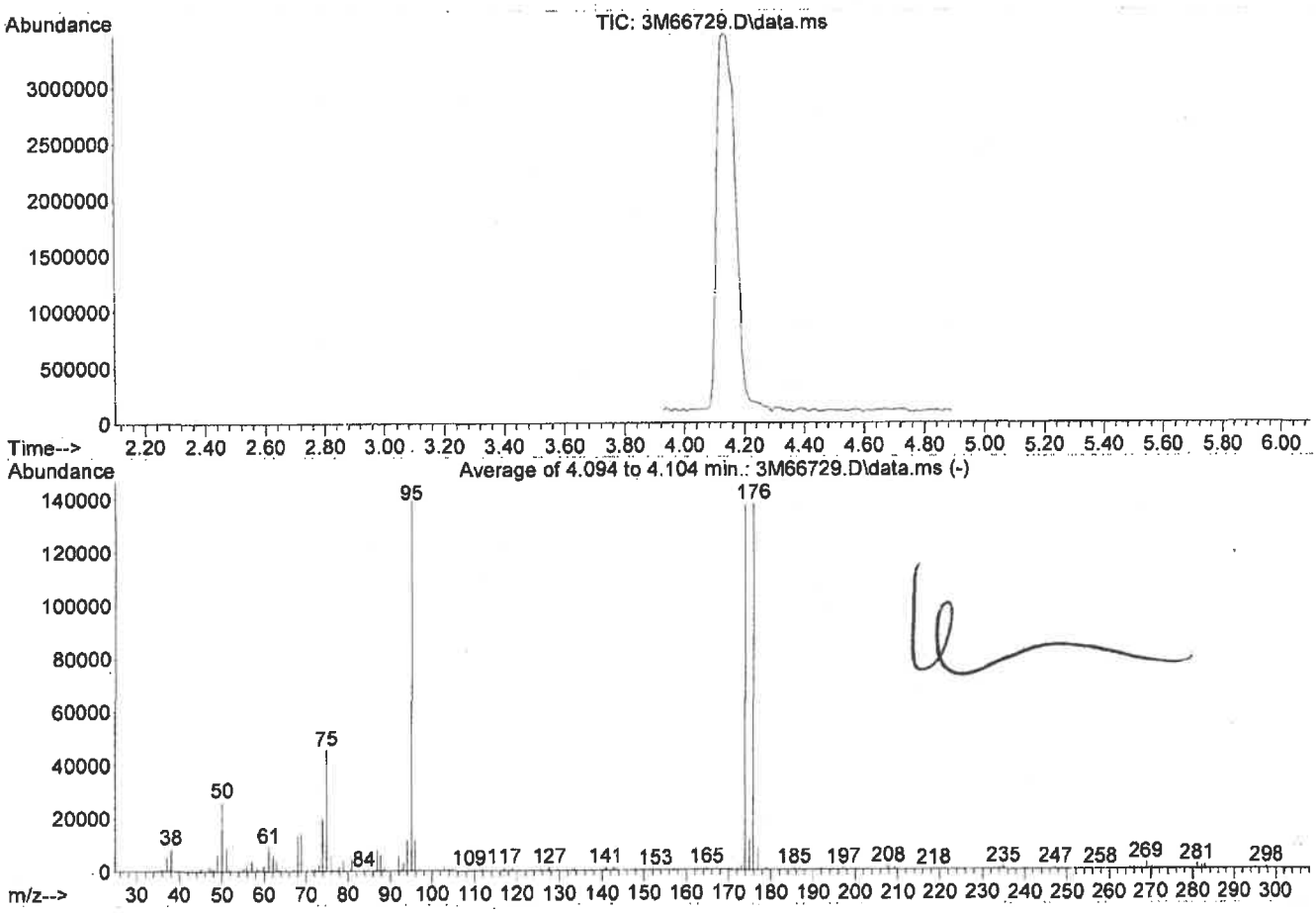
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
50	95	15	40	18.8	26336	PASS
75	95	30	60	32.7	45708	PASS
95	95	100	100	100.0	139746	PASS
96	95	5	9	8.4	11699	PASS
173	174	0.00	2	1.4	1869	PASS
174	95	50	100	98.5	137690	PASS
175	174	5	9	8.4	11622	PASS
176	174	95	101	100.4	138265	PASS
177	176	5	9	6.1	8411	PASS

Data File	Sample Number	Analysis Date:
3M66730.D	CAL @ 20 PPB	02/20/15 11:51
3M66730A.D	STD	02/20/15 12:10
3M66731.D	BLK	02/20/15 12:26
3M66732.D	BLK	02/20/15 12:41
3M66733.D	BLK	02/20/15 12:57
3M66734.D	DAILY BLANK	02/20/15 13:12
3M66735.D	DAILY BLANK	02/20/15 13:27
3M66736.D	MBS42280	02/20/15 13:43
3M66737.D	MBS42281	02/20/15 13:58
3M66738.D	AC83446-001	02/20/15 14:14
3M66739.D	AC83409-004	02/20/15 14:33
3M66740.D	AC83415-023	02/20/15 14:48
3M66741.D	AC83446-002	02/20/15 15:04
3M66742.D	AC83375-003(T)	02/20/15 15:19
3M66743.D	AC83323-006(T)	02/20/15 15:35
3M66744.D	EF-1V-204478(021	02/20/15 15:50
3M66745.D	AC83423-012	02/20/15 16:05
3M66746.D	AC83423-013	02/20/15 16:21
3M66747.D	AC83427-018	02/20/15 16:36
3M66748.D	BLK	02/20/15 16:51
3M66749.D	AC83423-001	02/20/15 17:07
3M66750.D	AC83423-002	02/20/15 17:22
3M66751.D	AC83423-003	02/20/15 17:37
3M66752.D	AC83423-004	02/20/15 17:53
3M66753.D	AC83423-005	02/20/15 18:08
3M66754.D	AC83423-006	02/20/15 18:23
3M66755.D	AC83423-007	02/20/15 18:39
3M66756.D	AC83423-008	02/20/15 18:54
3M66757.D	AC83423-009	02/20/15 19:09
3M66758.D	AC83423-010	02/20/15 19:25
3M66759.D	AC83423-011	02/20/15 19:40
3M66760.D	MBS42284	02/20/15 19:55
3M66761.D	AC83387-001	02/20/15 20:11
3M66762.D	AC83387-002	02/20/15 20:26
3M66763.D	AC83387-004	02/20/15 20:41
3M66764.D	AC83387-005	02/20/15 20:57
3M66765.D	AC83387-006	02/20/15 21:12
3M66766.D	AC83387-011	02/20/15 21:28
3M66767.D	AC83387-028(400u	02/20/15 21:43
3M66768.D	AC83387-015(400u	02/20/15 21:59
3M66769.D	AC83387-003(40uL	02/20/15 22:14
3M66770.D	AC83387-018(40uL	02/20/15 22:29
3M66771.D	AC83387-009(8uL)	02/20/15 22:45
3M66772.D	AC83387-002(MS)	02/20/15 23:00
3M66773.D	AC83387-002(MSD	02/20/15 23:15

Data Path : G:\GcMsData\2015\GCMS_3\Data\02-20-15\
Data File : 3M66729.D
Acq On : 20 Feb 2015 11:42
Operator : SG
Sample : BFB TUNE
Misc : A,5ML
ALS Vial : 13 Sample Multiplier: 1

Integration File: RTEINT.P

Method : G:\GcMsData\2015\GCMS_3\MethodQt\3M_A0125.M
Title : @GCMS_3,ug,624,8260
Last Update : Mon Jan 26 12:01:53 2015



Spectrum Information: Average of 4.094 to 4.104 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.8	26336	PASS
75	95	30	60	32.7	45708	PASS
95	95	100	100	100.0	139746	PASS
96	95	5	9	8.4	11699	PASS
173	174	0.00	2	1.4	1869	PASS
174	95	50	100	98.5	137690	PASS
175	174	5	9	8.4	11622	PASS
176	174	95	101	100.4	138265	PASS
177	176	5	9	6.1	8411	PASS

5021319 0092

Method: EPA 8260C

Form 6
Initial Calibration

Instrument: GCMS_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3M65229.	CAL @ 20 PPB	01/25/15 13:51	2	3M65223.	CAL @ 5 PPB	01/25/15 12:19
3	3M65224.	CAL @ 10 PPB	01/25/15 12:35	4	3M65228.	CAL @ 50 PPB	01/25/15 13:36
5	3M65227.	CAL @ 100 PPB	01/25/15 13:21	6	3M65226.	CAL @ 250 PPB	01/25/15 13:05
7	3M65225.	CAL @ 500 PPB	01/25/15 12:50	8	3M65222.	CAL @ 1 PPB	01/25/15 12:02
9	3M65221.	CAL @ 0.5 PPB	01/25/15 11:47				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Chlorodifluoromethane	1	0	Avg	0.5155	0.7972	0.5549	0.5371	0.5365	0.4988	0.4528	0.5792	----	0.559	1.33	0.997	1.00	19	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Dichlorodifluoromethan	1	0	Avg	0.2857	0.3328	0.2923	0.2885	0.2761	0.2697	0.2451	0.3244	----	0.289	1.31	0.998	1.00	9.8			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Chloromethane	1	0	Qua	0.3133	0.4760	0.3179	0.2950	0.2870	0.2860	0.2759	0.4471	----	0.337	1.43	1.00	1.00	23	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Bromomethane	1	0	Qua	0.1549	0.2313	0.1457	0.1313	0.1184	----	----	0.1803	----	0.160	1.73	0.996	0.999	25	0.10		20.00	5.00	10.00	50.00	100.0			1.00	
Vinyl Chloride	1	0	Qua	0.2003	0.3111	0.2002	0.1893	0.1883	0.1752	0.1726	0.2031	----	0.205	1.51	1.00	1.00	22	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Chloroethane	1	0	Qua	0.1389	0.2051	0.1249	0.1183	0.1052	0.0979	----	0.2042	----	0.142	1.79	0.998	0.999	31	0.10	a	20.00	5.00	10.00	50.00	100.0	250.0		1.00	
Trichlorofluoromethane	1	0	Qua	0.2111	0.3443	0.2525	0.1849	0.2372	0.1623	0.1577	0.4104	----	0.245	1.96	0.991	0.994	37	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Ethyl ether	1	0	Qua	0.1133	0.1641	0.1171	0.1029	0.1051	0.0991	0.0882	0.1607	----	0.119	2.16	0.996	1.00	24	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Furan	1	0	Qua	0.3895	0.5168	0.3819	0.3595	0.3614	0.3466	0.2920	0.5627	----	0.401	2.19	0.992	1.00	23	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.1.2-Trichloro-1.2.2-tri	1	0	Qua	0.1342	0.2002	0.1245	0.1233	0.1109	0.0962	----	0.2817	----	0.153	2.32	0.996	1.00	43	0.10	a	20.00	5.00	10.00	50.00	100.0	250.0		1.00	
Methylene Chloride	1	0	Qua	0.2637	0.3617	0.2646	0.2463	0.2377	0.2229	0.1998	0.4312	----	0.279	2.66	0.997	1.00	28	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Acrolein	1	0	Qua	0.0220	0.0136	0.0177	0.0189	0.0197	0.0175	0.0155	0.0415	----	0.0209	2.26	0.995	1.00	42			100.0	25.00	50.00	250.0	500.0	1250.	2500.	5.00	
Acrylonitrile	1	0	Qua	0.0858	0.0633	0.0631	0.0826	0.0810	0.0750	0.0636	0.1543	----	0.0836	2.86	0.992	1.00	36			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Iodomethane	1	0	Avg	0.4843	0.6158	0.4609	0.4444	0.4513	0.4041	0.3542	0.5021	----	0.465	2.44	0.995	1.00	16			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Acetone	1	0	Qua	0.0681	0.0907	0.0664	0.0638	0.0570	0.0507	0.0498	0.1736	----	0.0776	2.37	0.999	0.999	53	0.10	a	100.0	25.00	50.00	250.0	500.0	1250.	2500.	5.00	
Carbon Disulfide	1	0	Avg	0.7858	1.0587	0.7483	0.7215	0.6918	0.6495	0.5509	0.8759	----	0.760	2.48	0.993	1.00	20	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
t-Butyl Alcohol	1	0	Qua	0.0193	0.0248	0.0175	0.0199	0.0216	0.0189	0.0171	0.0345	----	0.0217	2.75	0.996	1.00	26			100.0	25.00	50.00	250.0	500.0	1250.	2500.	5.00	
n-Hexane	1	0	Avg	0.2308	0.2685	0.1965	0.2471	0.2347	0.2271	0.1992	0.2958	----	0.238	3.06	0.995	1.00	14			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Di-isopropyl-ether	1	0	Avg	0.9200	1.1147	0.8046	0.8698	0.8544	0.7827	0.6308	0.9169	----	0.862	3.22	0.986	1.00	16			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.1-Dichloroethene	1	0	Qua	0.2467	0.4315	0.2337	0.2215	0.2236	0.2100	0.1823	0.3794	----	0.266	2.33	0.995	1.00	33	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Methyl Acetate	1	0	Avg	0.2610	0.2937	0.2476	0.2552	0.2522	0.2491	0.2288	0.3731	----	0.270	2.60	0.998	1.00	17	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Methyl-t-butyl ether	1	0	Qua	0.6744	0.7833	0.5873	0.6104	0.5997	0.5145	0.4070	0.9355	0.7581	0.652	2.87	0.982	1.00	24	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	0.50
1.1-Dichloroethane	1	0	Avg	0.4480	0.6323	0.4004	0.4308	0.4292	0.4012	0.3639	0.4997	----	0.451	3.19	0.997	1.00	19	0.20		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
trans-1.2-Dichloroether	1	0	Avg	0.2373	0.2896	0.2295	0.2194	0.2147	0.1937	0.1565	0.2807	----	0.228	2.86	0.987	1.00	19	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Ethyl-t-butyl ether	1	0	Avg	0.8534	0.9825	0.7541	0.8037	0.7772	0.7162	0.5902	0.8614	----	0.792	3.51	0.989	1.00	15	0.50		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
cis-1.2-Dichloroethene	1	0	Avg	0.4234	0.4810	0.3546	0.3994	0.3985	0.3579	0.2927	0.4503	----	0.395	3.64	0.988	1.00	15	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Bromochloromethane	1	0	Avg	0.2050	0.2966	0.2281	0.2154	0.2147	0.2036	0.1839	0.1644	----	0.214	3.82	0.997	1.00	18			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
2.2-Dichloropropane	1	0	Avg	0.3541	0.4807	0.3579	0.3415	0.3310	0.3056	0.2449	0.4164	----	0.354	3.64	0.986	1.00	20			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Ethyl acetate	1	0	Avg	0.2829	0.2721	0.2625	0.2643	0.2370	0.2458	0.2134	0.3062	----	0.261	3.69	0.995	0.999	11			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.4-Dioxane	1	0	Qua	0.0027	0.0039	0.0020	0.0027	0.0026	0.0024	0.0020	0.0014	----	0.00250	4.87	0.990	1.00	29			1000.	250.0	500.0	2500.	5000.	1250	2500	50.00	
1.1-Dichloropropene	1	0	Qua	0.3362	0.4435	0.2924	0.3217	0.3046	0.2589	0.2013	0.3330	----	0.312	4.12	0.979	1.00	22			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Chloroform	1	0	Avg	0.4793	0.6793	0.4783	0.4486	0.4479	0.4161	0.3675	0.5777	----	0.487	3.88	0.996	1.00	20	0.20		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Dibromofluoromethane	1	0	Avg	0.3355	0.3607	0.3268	0.3135	0.3140	0.2911	0.2774	0.3607	0.3548	0.326	3.99	-1	-1	9.2			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Cyclohexane	1	0	Avg	0.3358	0.3579	0.2812	0.3375	0.3214	0.3070	0.2651	0.3179	----	0.316	4.05	0.994	1.00	9.7	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.2-Dichloroethane-d4	1	0	Avg	0.1672	0.1624	0.1626	0.1559	0.1554	0.1613	0.1554	0.1707	0.1605	0.161	4.22	-1	-1	3.3			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
1.2-Dichloroethane	1	0	Qua	0.4057	0.5094	0.4063	0.3639	0.3375	0.3030	0.2368	0.6324	0.4470	0.405	4.27	0.982	1.00	29	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	0.50
2-Butanone	1	0	Qua	0.1035	0.0590	0.0444	0.1002	0.0995	0.0851	0.0829	0.0771	----	0.0815	3.66	0.998	0.999	26	0.10	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.1.1-Trichloroethane	1	0	Avg	0.4174	0.5276	0.3853	0.3845	0.3736	0.3441	0.2875	0.4977	----	0.402	4.01	0.991	1.00	19	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Carbon Tetrachloride	1	0	Qua	0.3539	0.4631	0.3553	0.3231	0.3144	0.2665	----	0.5173	----	0.371	4.12	0.995	1.00	24	0.10		20.00	5.00	10.00	50.00	100.0	250.0		1.00	
Vinyl Acetate	1	0	Avg	0.5556	0.7463	0.5160	0.5530	0.5824	0.5204	0.4442	0.5794	----	0.562	3.22	0.992	1.00	15			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Bromodichloromethane	1	0	Avg	0.4251	0.5329	0.3697	0.3851	0.3811	0.3456	0.2872	0.3799	----	0.388	4.95	0.990	1.00	18	0.20		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	

HAZ. - 173

Flags
a - failed the min rf criteria
f - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 20.9
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

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1 .m 6
Initial Calibration

Method: EPA 8260C

Instrument: GCMS_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3M65229.	CAL @ 20 PPB	01/25/15 13:51	2	3M65223.	CAL @ 5 PPB	01/25/15 12:19
3	3M65224.	CAL @ 10 PPB	01/25/15 12:35	4	3M65228.	CAL @ 50 PPB	01/25/15 13:36
5	3M65227.	CAL @ 100 PPB	01/25/15 13:21	6	3M65226.	CAL @ 250 PPB	01/25/15 13:05
7	3M65225.	CAL @ 500 PPB	01/25/15 12:50	8	3M65222.	CAL @ 1 PPB	01/25/15 12:02
9	3M65221.	CAL @ 0.5 PPB	01/25/15 11:47				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd			Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Methylcyclohexane	1	0	Avg	0.3060	0.3048	0.2936	0.3161	0.2965	0.2559	0.2035	0.3225	----	0.287	4.76	0.982	1.00	14	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Dibromomethane	1	0	Avg	0.3296	0.4214	0.2815	0.3101	0.2961	0.2649	----	0.3643	----	0.324	4.86	0.997	1.00	17			20.00	5.00	10.00	50.00	100.0	250.0		1.00	
1.2-Dichloropropane	1	0	Avg	0.2915	0.3337	0.2517	0.2668	0.2707	0.2469	0.1976	0.2950	----	0.269	4.79	0.985	1.00	15	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Trichloroethene	1	0	Avg	0.3662	0.4012	0.3250	0.3155	0.3115	0.2656	----	0.3516	----	0.334	4.65	0.995	1.00	13	0.20		20.00	5.00	10.00	50.00	100.0	250.0		1.00	
Benzene	1	0	Avg	0.9433	1.2087	0.9252	0.8609	0.8305	0.6938	----	1.0993	1.1293	0.961	4.26	0.994	1.00	18	0.50		20.00	5.00	10.00	50.00	100.0	250.0		1.00	0.50
tert-Amyl methyl ether	1	0	Avg	0.7359	0.9002	0.6782	0.7070	0.6618	0.5806	0.4579	0.7451	----	0.683	4.32	0.982	1.00	19			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Iso-propylacetate	1	0	Avg	0.5521	0.4437	0.5227	0.5979	0.5641	0.5323	0.5144	0.7557	----	0.560	4.29	0.999	1.00	16	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Methyl methacrylate	1	0	Avg	0.2376	0.2031	0.2041	0.2835	0.2687	0.2742	0.2422	0.2058	----	0.240	4.84	0.996	1.00	14	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Dibromochloromethane	1	0	Avg	0.4453	0.4696	0.4062	0.4474	0.4122	0.4009	0.3501	0.4735	----	0.426	5.88	0.995	1.00	9.7	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
2-Chloroethylvinylether	1	0	Avg	0.1633	0.1343	0.1470	0.1854	0.1714	0.1812	0.1773	0.2248	----	0.173	5.11	1.00	1.00	16			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
cis-1.3-Dichloropropene	1	0	Avg	0.4876	0.4115	0.4350	0.5235	0.4728	0.4787	0.4053	0.4047	----	0.452	5.21	0.993	1.00	9.8	0.20		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
trans-1.3-Dichloropropene	1	0	Avg	0.4247	0.3650	0.3881	0.4627	0.4240	0.4188	0.3751	0.2906	----	0.394	5.53	0.997	1.00	13	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Ethyl methacrylate	1	0	Qua	0.2640	0.1795	0.2102	0.2753	0.2770	0.2728	0.2499	0.0988	----	0.228	5.57	0.998	1.00	28	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.1.2-Trichloroethane	1	0	Avg	0.2963	0.3017	0.2634	0.2958	0.2744	0.2545	0.2319	0.3877	----	0.288	5.64	0.997	1.00	16	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.2-Dibromoethane	1	0	Avg	0.3270	0.3281	0.3135	0.3411	0.3240	0.3162	0.2922	0.2741	----	0.315	5.96	0.998	1.00	6.9	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.3-Dichloropropane	1	0	Avg	0.4644	0.4624	0.4562	0.4930	0.4434	0.3978	0.3272	0.2816	----	0.416	5.74	0.988	1.00	18			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
4-Methyl-2-Pentanone	1	0	Avg	0.2844	0.2298	0.2211	0.2869	0.2654	0.2765	0.2639	0.1586	----	0.248	5.29	0.999	1.00	18	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
2-Hexanone	1	0	Qua	0.1649	0.0590	0.0862	0.1787	0.1721	0.1862	0.1730	0.0434	----	0.133	5.78	0.998	1.00	45	0.10	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Tetrachloroethene	1	0	Avg	0.3197	0.3654	0.3116	0.3456	0.3107	0.2656	0.2034	0.2530	----	0.297	5.74	0.976	1.00	18	0.20		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Toluene-d8	1	0	Avg	1.1533	1.0726	1.2444	1.2341	1.1731	1.2436	1.2979	1.0937	1.0635	1.18	5.37	-1	-1	7.3			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Toluene	1	0	Avg	0.7120	0.7230	0.6886	0.7322	0.6522	0.5728	0.4633	0.6406	----	0.648	5.41	0.985	1.00	14	0.40		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.1.1.2-Tetrachloroethane	1	0	Qua	0.3639	0.3836	0.3373	0.3696	0.3178	0.2647	0.2044	0.4986	----	0.343	6.28	0.976	0.999	25			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Chlorobenzene	1	0	Avg	0.8744	0.9160	0.8589	0.8513	0.7811	0.7043	0.5546	0.6628	----	0.775	6.24	0.983	1.00	16	0.50		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
n-Butyl acrylate	1	0	Qua	0.8782	0.4817	0.6896	0.9871	0.9845	0.9391	0.8683	0.1316	----	0.745	6.53	0.998	1.00	40	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
n-Amyl acetate	1	0	Qua	0.8544	0.3949	0.6180	0.9128	0.9113	0.9043	0.8332	0.0731	----	0.688	6.66	0.998	1.00	45	0.50	a	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Bromoform	1	0	Avg	0.6593	0.5811	0.5440	0.6237	0.6458	0.6109	0.5916	0.5207	----	0.597	6.73	1.00	1.00	8.0	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Ethylbenzene	1	0	Qua	0.6148	0.5639	0.4690	0.5250	0.4756	0.3654	0.2600	0.3604	----	0.454	6.29	0.954	0.999	26	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.1.2.2-Tetrachloroethane	1	0	Avg	0.5905	0.5800	0.5326	0.6074	0.5295	0.4970	0.4483	0.6725	----	0.557	6.98	0.997	1.00	13	0.10		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Bromofluorobenzene	1	0	Avg	0.9567	1.0039	0.9655	0.9923	0.9746	1.0033	1.1532	0.9706	0.9657	0.998	6.91	-1	-1	6.1			30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Styrene	1	0	Qua	1.4812	1.2920	1.3493	1.3950	1.2711	0.9537	0.7204	1.0868	----	1.19	6.60	0.965	0.998	21	0.30		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
m&p-Xylenes	1	0	Qua	0.8263	0.7412	0.7673	0.7775	0.6653	0.4992	0.3647	0.6325	0.5550	0.648	6.35	0.957	0.997	23	0.10		40.00	10.00	20.00	100.0	200.0	500.0	1000.	2.00	1.00
o-Xylene	1	0	Qua	0.8342	0.8455	0.7785	0.7907	0.7019	0.5467	0.4116	0.6335	----	0.693	6.59	0.967	0.999	22	0.30		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
trans-1.4-Dichloro-2-bu	1	0	Qua	0.1665	0.0998	0.1492	0.1393	0.2315	0.2038	0.1174	0.0744	----	0.148	7.01	0.896	0.993	35			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.3-Dichlorobenzene	1	0	Avg	1.1391	0.9853	0.9635	1.0757	1.0272	0.8847	0.6844	0.7447	----	0.938	7.59	0.978	1.00	17	0.60		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.4-Dichlorobenzene	1	0	Avg	1.1213	1.1650	1.0145	1.1088	1.0607	0.9652	0.7735	1.0101	----	1.03	7.64	0.985	1.00	12	0.50		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.2-Dichlorobenzene	1	0	Avg	1.0777	1.0078	0.9851	1.1097	1.0461	0.9430	0.7898	0.8880	----	0.981	7.88	0.990	1.00	11	0.40		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Isopropylbenzene	1	0	Avg	1.8512	1.8040	1.7396	1.7674	1.6838	1.4251	1.1551	1.3410	----	1.60	6.80	0.984	1.00	16			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Cyclohexanone	1	0	Qua	0.0345	0.0202	0.0299	0.0311	0.0277	0.0256	0.0221	0.0781	----	0.0337	6.89	0.994	1.00	55			100.0	25.00	50.00	250.0	500.0	1250.	2500.	5.00	
Camphene	1	0	Qua	0.6143	0.2765	0.3769	0.5398	0.5110	0.4182	0.2903	0.4806	----	0.438	6.98	0.951	1.00	27			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1.2.3-Trichloropropane	1	0	Avg	0.7528	0.6969	0.6689	0.7046	0.6645	0.5848	0.4761	0.7189	----	0.658	7.01	0.986	1.00	13			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
2-Chlorotoluene	1	0	Qua	1.1813	1.1998	1.0291	1.0511	0.9973	0.7432	0.5290	0.7131	----	0.931	7.12	0.952	0.998	26			20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	

Calibration Level Concentrations: Lvl1–Lvl9

Avg Rsd: 20.9

Flags
a - failed the min rf criteria
c - failed the minimum correlation coeff criteria (if applicable)

Note:
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

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Form 6
Initial Calibration

Method: EPA 8260C

Instrument: GCMS_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3M65229.	CAL @ 20 PPB	01/25/15 13:51	2	3M65223.	CAL @ 5 PPB	01/25/15 12:19
3	3M65224.	CAL @ 10 PPB	01/25/15 12:35	4	3M65228.	CAL @ 50 PPB	01/25/15 13:36
5	3M65227.	CAL @ 100 PPB	01/25/15 13:21	6	3M65226.	CAL @ 250 PPB	01/25/15 13:05
7	3M65225.	CAL @ 500 PPB	01/25/15 12:50	8	3M65222.	CAL @ 1 PPB	01/25/15 12:02
9	3M65221.	CAL @ 0.5 PPB	01/25/15 11:47				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
o-Ethyltoluene	1	0	Avg	1.7556	1.6116	1.5852	1.6532	1.6080	1.2081	----	0.9780	----	1.49	7.12	0.982	1.00	19		20.00	5.00	10.00	50.00	100.0	250.0		1.00	
4-Chlorotoluene	1	0	Avg	1.0775	0.9950	0.9497	1.0835	1.0039	0.8772	0.6514	0.9052	----	0.943	7.19	0.971	1.00	15		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
n-Propylbenzene	1	0	Avg	1.9068	1.6843	1.6029	1.8043	1.7586	1.5224	1.2358	1.6025	----	1.64	7.05	0.985	1.00	13		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Bromobenzene	1	0	Avg	1.0757	0.9111	1.0553	1.0784	1.1797	0.9472	0.7803	0.9851	----	1.00	7.02	0.984	0.999	12		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1,3,5-Trimethylbenzene	1	0	Qua	1.5000	1.4607	1.2761	1.3488	1.2256	1.1004	0.7582	0.9507	----	1.20	7.15	0.956	1.00	21		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Butyl methacrylate	1	0	Qua	0.7340	0.4270	0.5482	0.7139	0.6985	0.7153	0.6208	0.2998	----	0.595	7.17	0.995	1.00	27	0.50	a 20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
t-Butylbenzene	1	0	Avg	1.3402	0.8623	1.1447	1.2808	1.2094	1.0486	0.8808	1.0051	----	1.10	7.36	0.989	1.00	16		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1,2,4-Trimethylbenzene	1	0	Qua	1.6170	1.5571	1.3407	1.4364	1.4111	1.1849	0.9702	0.8665	----	1.30	7.39	0.986	1.00	21		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
sec-Butylbenzene	1	0	Qua	1.5513	1.0333	1.0918	1.4168	1.3530	1.1541	0.9396	0.8248	----	1.17	7.49	0.985	1.00	21		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
4-Isopropyltoluene	1	0	Qua	1.3908	0.9640	0.9993	1.2390	1.1673	0.9152	0.7090	0.7687	----	1.02	7.57	0.973	0.999	23		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
n-Butylbenzene	1	0	Qua	1.3689	0.8398	0.9314	1.2791	1.2018	1.0244	0.8196	0.7496	----	1.03	7.83	0.982	1.00	23		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
o-Diethylbenzene	1	0	Qua	0.8011	0.5475	0.6041	0.8083	0.7804	0.6411	0.4959	0.4300	----	0.639	7.81	0.975	1.00	23		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1,2,4,5-Tetramethylber	1	0	Qua	1.4146	0.9287	0.8734	1.3234	1.2334	1.0826	0.8423	0.5715	----	1.03	8.31	0.979	1.00	27		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1,2-Dibromo-3-Chloropr	1	0	Qua	0.1434	0.0980	0.0936	0.1670	0.1601	0.1676	0.1600	0.1273	----	0.140	8.37	0.999	1.00	22	0.05	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Camphor	1	0	Qua	0.0602	0.0346	0.0377	0.0580	0.0565	0.0496	0.0422	0.0292	0.0166	0.0428	8.85	0.991	1.00	34		200.0	50.00	100.0	500.0	1000.	2500	5000	10.00	5.00
Hexachlorobutadiene	1	0	Qua	0.6340	0.2160	0.2248	0.4384	0.3612	0.2798	----	0.3035	----	0.351	9.00	0.972	0.993	42		20.00	5.00	10.00	50.00	100.0	250.0		1.00	
1,2,4-Trichlorobenzene	1	0	Qua	0.7222	0.4134	0.4017	0.6629	0.6457	0.5979	0.4906	0.3073	----	0.530	8.91	0.988	1.00	28	0.20	20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
1,2,3-Trichlorobenzene	1	0	Qua	0.7561	0.4347	0.3448	0.6742	0.6499	0.5739	0.4343	0.4683	----	0.542	9.24	0.974	1.00	26		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	
Naphthalene	1	0	Qua	1.6472	0.8551	0.8727	1.5096	1.5186	1.2957	1.0041	0.7578	----	1.18	9.08	0.977	1.00	30		20.00	5.00	10.00	50.00	100.0	250.0	500.0	1.00	

HAZ. - 175

Flags

a - failed the min rf criteria

f - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 20.9

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit: Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form7

Continuing Calibration

Calibration Name: CAL @ 20 PPB **Data File:** 3M66554.D **Instrument:** GCMS 3

Cont Calibration Date/Time 2/18/2015 9:49:00 A Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Fluorobenzene	1	0	I	4.41	30.00	30	**			0.000	0.00	
Chlorodifluoromethane	1	0		1.28	23.32	20	20	0.1	0.559	0.652	16.62	
Dichlorodifluoromethane	1	0		1.28	7.95	20	20		0.289	0.115	60.26	C1
Chloromethane	1	0		1.39	12.75	20	20	0.1	0.337	0.188	36.23	C1
Bromomethane	1	0		1.69	16.01	20	20	0.1	0.160	0.117	19.93	
Vinyl Chloride	1	0		1.46	17.01	20	20	0.1	0.205	0.156	14.97	
Chloroethane	1	0		1.76	19.28	20	20	0.1	0.142	0.111	3.59	
Trichlorofluoromethane	1	0		1.93	22.72	20	20	0.1	0.245	0.219	13.58	
Ethyl ether	1	0		2.12	16.57	20	20	0.5	0.119	0.090	17.13	
Furan	1	0		2.15	18.27	20	20	0.5	0.401	0.355	8.64	
1,1,2-Trichloro-1,2,2-trifluoroetha	1	0		2.27	41.79	20	20	0.1	0.153	0.251	108.95	C1
Methylene Chloride	1	0		2.63	20.31	20	20	0.1	0.279	0.249	1.53	
Acrolein	1	0		2.22	90.90	100	20		0.021	0.018	9.10	
Acrylonitrile	1	0		2.81	17.99	20	20		0.084	0.076	10.06	
Iodomethane	1	0		2.40	16.89	20	20		0.465	0.392	15.55	
Acetone	1	0		2.33	116.65	100	20	0.1	0.078	0.064	16.65	
Carbon Disulfide	1	0		2.45	17.55	20	20	0.1	0.760	0.667	12.27	
t-Butyl Alcohol	1	0		2.71	63.66	100	20		0.022	0.013	36.34	C1
n-Hexane	1	0		3.02	20.82	20	20		0.238	0.247	4.10	
Di-isopropyl-ether	1	0		3.19	18.97	20	20		0.862	0.817	5.17	
1,1-Dichloroethene	1	0		2.29	23.27	20	20	0.1	0.266	0.272	16.33	
Methyl Acetate	1	0		2.55	16.50	20	20	0.1	0.270	0.223	17.52	
Methyl-t-butyl ether	1	0		2.83	16.09	20	20	0.1	0.652	0.502	19.54	
1,1-Dichloroethane	1	0		3.15	18.45	20	20	0.2	0.451	0.416	7.73	
trans-1,2-Dichloroethene	1	0		2.83	19.45	20	20	0.1	0.228	0.221	2.77	
Ethyl-t-butyl ether	1	0		3.48	17.94	20	20	0.5	0.792	0.711	10.32	
cis-1,2-Dichloroethene	1	0		3.61	19.23	20	20	0.1	0.395	0.380	3.83	
Bromochloromethane	1	0		3.80	19.08	20	20		0.214	0.204	4.62	
2,2-Dichloropropane	1	0		3.61	20.57	20	20		0.354	0.364	2.85	
Ethyl acetate	1	0		3.66	16.26	20	20		0.261	0.212	18.70	
1,4-Dioxane	1	0		4.85	802.87	1000	20		0.003	0.002	19.71	
1,1-Dichloropropene	1	0		4.09	20.19	20	20		0.312	0.320	0.93	
Chloroform	1	0		3.85	17.98	20	20	0.2	0.487	0.438	10.12	
Dibromofluoromethane	1	0	S	3.96	27.39	30	**		0.326	0.298	8.70	
Cyclohexane	1	0		4.02	22.05	20	20	0.1	0.316	0.348	10.24	
1,2-Dichloroethane-d4	1	0	S	4.20	28.35	30	**		0.161	0.152	5.49	
1,2-Dichloroethane	1	0		4.25	19.14	20	20	0.1	0.405	0.348	4.32	
2-Butanone	1	0		3.63	16.74	20	20	0.1	0.081	0.078	16.28	
1,1,1-Trichloroethane	1	0		3.99	18.79	20	20	0.1	0.402	0.378	6.03	
Carbon Tetrachloride	1	0		4.10	19.12	20	20	0.1	0.371	0.325	4.39	
Vinyl Acetate	1	0		3.19	18.34	20	20		0.562	0.516	8.29	
Bromodichloromethane	1	0		4.92	18.34	20	20	0.2	0.388	0.356	8.29	
Methylcyclohexane	1	0		4.74	19.67	20	20	0.1	0.287	0.283	1.63	
Dibromomethane	1	0		4.84	23.29	20	20		0.324	0.377	16.43	
1,2-Dichloropropane	1	0		4.77	18.53	20	20	0.1	0.269	0.249	7.36	
Trichloroethene	1	0		4.63	20.01	20	20	0.2	0.334	0.334	0.07	
Benzene	1	0		4.24	18.27	20	20	0.5	0.961	0.878	8.63	
tert-Amyl methyl ether	1	0		4.30	17.41	20	20		0.683	0.595	12.96	
Chlorobenzene-d5	1	0	I	6.20	30.00	30	**			0.000	0.00	
Iso-propylacetate	1	0		4.27	17.35	20	20	0.5	0.560	0.486	13.24	
Methyl methacrylate	1	0		4.82	16.84	20	20	0.5	0.240	0.202	15.79	
Dibromochloromethane	1	0		5.87	19.37	20	20	0.1	0.426	0.412	3.17	

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F.
624 limits are compared against the concentration found

625 limits are compared against the %DIFF.
524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL @ 20 PPB **Data File:** 3M66554.D **Instrument:** GCMS 3

Cont Calibration Date/Time 2/18/2015 9:49:00 A Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
2-Chloroethylvinylether	1	0		5.10	14.25	20	20		0.173	0.123	28.73	C1
cis-1,3-Dichloropropene	1	0		5.19	20.51	20	20	0.2	0.452	0.464	2.54	
trans-1,3-Dichloropropene	1	0		5.51	19.33	20	20	0.1	0.394	0.381	3.35	
Ethyl methacrylate	1	0		5.55	16.01	20	20	0.5	0.228	0.231	19.93	
1,1,2-Trichloroethane	1	0		5.63	19.60	20	20	0.1	0.288	0.282	2.00	
1,2-Dibromoethane	1	0		5.94	21.29	20	20	0.1	0.315	0.335	6.47	
1,3-Dichloropropane	1	0		5.72	22.39	20	20		0.416	0.465	11.93	
4-Methyl-2-Pentanone	1	0		5.28	16.99	20	20	0.1	0.248	0.211	15.06	
2-Hexanone	1	0		5.76	12.56	20	20	0.1	0.133	0.119	37.18	C1
Tetrachloroethene	1	0		5.72	30.06	20	20	0.2	0.297	0.446	50.29	C1
Toluene-d8	1	0	S	5.35	28.52	30	**		1.175	1.117	4.93	
Toluene	1	0		5.39	22.40	20	20	0.4	0.648	0.726	11.98	
1,1,1,2-Tetrachloroethane	1	0		6.26	22.72	20	20		0.343	0.376	13.60	
Chlorobenzene	1	0		6.22	23.48	20	20	0.5	0.775	0.910	17.40	
1,4-Dichlorobenzene-d4	1	0	I	7.61	30.00	30	**			0.000	0.00	
n-Butyl acrylate	1	0		6.52	13.55	20	20	0.5	0.745	0.679	32.25	C1
n-Amyl acetate	1	0		6.65	13.05	20	20	0.5	0.688	0.621	34.77	C1
Bromoform	1	0		6.72	21.53	20	20	0.1	0.597	0.643	7.67	
Ethylbenzene	1	0		6.27	20.26	20	20	0.1	0.454	0.493	1.28	
1,1,2,2-Tetrachloroethane	1	0		6.97	16.12	20	20	0.1	0.557	0.449	19.41	
Bromofluorobenzene	1	0	S	6.90	33.47	30	**		0.998	1.114	11.55	
Styrene	1	0		6.59	19.25	20	20	0.3	1.194	1.208	3.77	
m&p-Xylenes	1	0		6.34	42.35	40	20	0.1	0.648	0.708	5.87	
o-Xylene	1	0		6.58	20.84	20	20	0.3	0.693	0.740	4.22	
trans-1,4-Dichloro-2-butene	1	0		7.00	10.06	20	20		0.148	0.133	49.70	C1
1,3-Dichlorobenzene	1	0		7.57	23.25	20	20	0.6	0.938	1.091	16.27	
1,4-Dichlorobenzene	1	0		7.62	22.36	20	20	0.5	1.027	1.149	11.79	
1,2-Dichlorobenzene	1	0		7.87	20.26	20	20	0.4	0.981	0.993	1.28	
Isopropylbenzene	1	0		6.79	19.46	20	20		1.596	1.553	2.71	
Cyclohexanone	1	0		6.87	80.35	100	20		0.034	0.023	19.65	
Camphene	1	0		6.97	13.36	20	20		0.439	0.365	33.19	C1
1,2,3-Trichloropropane	1	0		7.00	16.67	20	20		0.659	0.549	16.64	
2-Chlorotoluene	1	0		7.11	20.38	20	20		0.931	1.016	1.92	
p-Ethyltoluene	1	0		7.10	20.54	20	20		1.486	1.526	2.72	
4-Chlorotoluene	1	0		7.17	21.16	20	20		0.943	0.998	5.79	
n-Propylbenzene	1	0		7.04	20.08	20	20		1.640	1.646	0.41	
Bromobenzene	1	0		7.00	23.12	20	20		1.002	1.158	15.60	
1,3,5-Trimethylbenzene	1	0		7.14	17.26	20	20		1.203	1.201	13.71	
Butyl methacrylate	1	0		7.16	16.25	20	20	0.5	0.595	0.626	18.74	
t-Butylbenzene	1	0		7.35	20.73	20	20		1.097	1.137	3.67	
1,2,4-Trimethylbenzene	1	0		7.37	18.14	20	20		1.298	1.294	9.31	
sec-Butylbenzene	1	0		7.48	17.26	20	20		1.171	1.197	13.70	
4-Isopropyltoluene	1	0		7.56	17.10	20	20		1.019	0.998	14.50	
n-Butylbenzene	1	0		7.82	16.93	20	20		1.027	1.052	15.33	
p-Diethylbenzene	1	0		7.80	16.39	20	20		0.639	0.654	18.07	
1,2,4,5-Tetramethylbenzene	1	0		8.30	14.29	20	20		1.034	0.940	28.53	C1
1,2-Dibromo-3-Chloropropane	1	0		8.36	13.33	20	20	0.05	0.140	0.113	33.33	C1
Camphor	1	0		8.83	101.25	200	20		0.043	0.029	49.37	C1
Hexachlorobutadiene	1	0		8.98	20.45	20	20		0.351	0.441	2.27	
1,2,4-Trichlorobenzene	1	0		8.90	17.54	20	20	0.2	0.530	0.605	12.30	
1,2,3-Trichlorobenzene	1	0		9.22	13.41	20	20		0.542	0.470	32.96	C1
Naphthalene	1	0		9.07	9.27	20	20		1.183	0.736	53.67	C1

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. HAZ. - 177 **524.2 limits are compared against the %DIFF**

Form7

Continuing Calibration

Calibration Name: CAL @ 20 PPB **Data File:** 3M66730.D **Instrument:** GCMS 3

Cont Calibration Date/Time 2/20/2015 11:51:00 Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Fluorobenzene	1	0	I	4.40	30.00	30	**			0.000	0.00	
Chlorodifluoromethane	1	0		1.28	19.45	20	20	0.1	0.559	0.544	2.77	
Dichlorodifluoromethane	1	0		1.28	18.75	20	20		0.289	0.271	6.24	
Chloromethane	1	0		1.39	20.95	20	20	0.1	0.337	0.308	4.77	
Bromomethane	1	0		1.69	18.53	20	20	0.1	0.160	0.135	7.34	
Vinyl Chloride	1	0		1.46	21.07	20	20	0.1	0.205	0.193	5.34	
Chloroethane	1	0		1.76	22.62	20	20	0.1	0.142	0.130	13.08	
Trichlorofluoromethane	1	0		1.93	21.85	20	20	0.1	0.245	0.210	9.25	
Ethyl ether	1	0		2.12	19.26	20	20	0.5	0.119	0.105	3.69	
Furan	1	0		2.15	22.93	20	20	0.5	0.401	0.444	14.67	
1,1,2-Trichloro-1,2,2-trifluoroetha	1	0		2.27	44.20	20	20	0.1	0.153	0.265	121.00	C1
Methylene Chloride	1	0		2.63	23.51	20	20	0.1	0.279	0.288	17.57	
Acrolein	1	0		2.22	137.46	100	20		0.021	0.027	37.46	C1
Acrylonitrile	1	0		2.81	18.94	20	20		0.084	0.081	5.31	
Iodomethane	1	0		2.39	23.82	20	20		0.465	0.553	19.11	
Acetone	1	0		2.32	137.27	100	20	0.1	0.078	0.075	37.27	C1
Carbon Disulfide	1	0		2.45	21.30	20	20	0.1	0.760	0.810	6.48	
t-Butyl Alcohol	1	0		2.71	79.26	100	20		0.022	0.017	20.74	C1
n-Hexane	1	0		3.02	21.45	20	20		0.238	0.255	7.26	
Di-isopropyl-ether	1	0		3.18	20.16	20	20		0.862	0.869	0.79	
1,1-Dichloroethene	1	0		2.28	32.61	20	20	0.1	0.266	0.379	63.07	C1
Methyl Acetate	1	0		2.55	17.64	20	20	0.1	0.270	0.238	11.81	
Methyl-t-butyl ether	1	0		2.83	19.90	20	20	0.1	0.652	0.619	0.49	
1,1-Dichloroethane	1	0		3.14	20.98	20	20	0.2	0.451	0.473	4.90	
trans-1,2-Dichloroethene	1	0		2.82	21.38	20	20	0.1	0.228	0.243	6.89	
Ethyl-t-butyl ether	1	0		3.47	20.73	20	20	0.5	0.792	0.821	3.65	
cis-1,2-Dichloroethene	1	0		3.60	22.85	20	20	0.1	0.395	0.451	14.25	
Bromochloromethane	1	0		3.79	19.84	20	20		0.214	0.212	0.80	
2,2-Dichloropropane	1	0		3.60	24.16	20	20		0.354	0.428	20.82	C1
Ethyl acetate	1	0		3.66	17.33	20	20		0.261	0.226	13.36	
1,4-Dioxane	1	0		4.84	788.54	1000	20		0.003	0.002	21.15	C1
1,1-Dichloropropene	1	0		4.09	23.20	20	20		0.312	0.367	16.00	
Chloroform	1	0		3.84	21.68	20	20	0.2	0.487	0.528	8.41	
Dibromofluoromethane	1	0	S	3.96	30.98	30	**		0.326	0.337	3.27	
Cyclohexane	1	0		4.02	21.99	20	20	0.1	0.316	0.347	9.97	
1,2-Dichloroethane-d4	1	0	S	4.19	29.25	30	**		0.161	0.157	2.50	
1,2-Dichloroethane	1	0		4.24	23.11	20	20	0.1	0.405	0.420	15.55	
2-Butanone	1	0		3.61	16.84	20	20	0.1	0.081	0.078	15.81	
1,1,1-Trichloroethane	1	0		3.97	22.91	20	20	0.1	0.402	0.461	14.54	
Carbon Tetrachloride	1	0		4.09	22.03	20	20	0.1	0.371	0.373	10.16	
Vinyl Acetate	1	0		3.18	19.52	20	20		0.562	0.549	2.38	
Bromodichloromethane	1	0		4.92	21.56	20	20	0.2	0.388	0.419	7.81	
Methylcyclohexane	1	0		4.74	21.38	20	20	0.1	0.287	0.307	6.91	
Dibromomethane	1	0		4.83	30.66	20	20		0.324	0.497	53.29	C1
1,2-Dichloropropane	1	0		4.76	21.13	20	20	0.1	0.269	0.285	5.65	
Trichloroethene	1	0		4.62	23.62	20	20	0.2	0.334	0.394	18.11	
Benzene	1	0		4.23	19.83	20	20	0.5	0.961	0.953	0.86	
tert-Amyl methyl ether	1	0		4.29	19.54	20	20		0.683	0.668	2.31	
Chlorobenzene-d5	1	0	I	6.19	30.00	30	**			0.000	0.00	
Iso-propylacetate	1	0		4.26	19.45	20	20	0.5	0.560	0.545	2.76	
Methyl methacrylate	1	0		4.81	19.25	20	20	0.5	0.240	0.231	3.75	
Dibromochloromethane	1	0		5.86	23.10	20	20	0.1	0.426	0.492	15.49	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL @ 20 PPB **Data File:** 3M66730.D **Instrument:** GCMS 3

Cont Calibration Date/Time 2/20/2015 11:51:00 Method: EPA 8260C

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
2-Chloroethylvinylether	1	0		5.09	14.54	20	20		0.173	0.126	27.31	C1
cis-1,3-Dichloropropene	1	0		5.18	21.48	20	20	0.2	0.452	0.486	7.41	
trans-1,3-Dichloropropene	1	0		5.50	21.80	20	20	0.1	0.394	0.429	9.01	
Ethyl methacrylate	1	0		5.54	17.10	20	20	0.5	0.228	0.247	14.53	
1,1,2-Trichloroethane	1	0		5.62	19.74	20	20	0.1	0.288	0.284	1.30	
1,2-Dibromoethane	1	0		5.93	22.17	20	20	0.1	0.315	0.349	10.83	
1,3-Dichloropropane	1	0		5.71	23.85	20	20		0.416	0.496	19.25	
4-Methyl-2-Pentanone	1	0		5.27	18.51	20	20	0.1	0.248	0.230	7.46	
2-Hexanone	1	0		5.75	17.18	20	20	0.1	0.133	0.162	14.08	
Tetrachloroethene	1	0		5.71	34.85	20	20	0.2	0.297	0.517	74.26	C1
Toluene-d8	1	0	S	5.34	27.59	30	**		1.175	1.081	8.04	
Toluene	1	0		5.38	23.09	20	20	0.4	0.648	0.748	15.46	
1,1,1,2-Tetrachloroethane	1	0		6.25	26.04	20	20		0.343	0.430	30.19	C1
Chlorobenzene	1	0		6.21	24.05	20	20	0.5	0.775	0.932	20.25	
1,4-Dichlorobenzene-d4	1	0	I	7.60	30.00	30	**			0.000	0.00	
n-Butyl acrylate	1	0		6.51	12.65	20	20	0.5	0.745	0.634	36.75	C1
n-Amyl acetate	1	0		6.64	13.30	20	20	0.5	0.688	0.633	33.51	C1
Bromoform	1	0		6.71	24.34	20	20	0.1	0.597	0.727	21.70	C1
Ethylbenzene	1	0		6.27	19.28	20	20	0.1	0.454	0.470	3.58	
1,1,2,2-Tetrachloroethane	1	0		6.95	16.92	20	20	0.1	0.557	0.472	15.38	
Bromofluorobenzene	1	0	S	6.89	35.16	30	**		0.998	1.170	17.21	
Styrene	1	0		6.58	19.72	20	20	0.3	1.194	1.237	1.39	
m&p-Xylenes	1	0		6.33	43.00	40	20	0.1	0.648	0.719	7.50	
o-Xylene	1	0		6.57	20.88	20	20	0.3	0.693	0.741	4.42	
trans-1,4-Dichloro-2-butene	1	0		6.98	12.72	20	20		0.148	0.167	36.41	C1
1,3-Dichlorobenzene	1	0		7.56	25.50	20	20	0.6	0.938	1.196	27.49	C1
1,4-Dichlorobenzene	1	0		7.61	23.92	20	20	0.5	1.027	1.229	19.58	
1,2-Dichlorobenzene	1	0		7.86	24.03	20	20	0.4	0.981	1.178	20.13	
Isopropylbenzene	1	0		6.78	20.08	20	20		1.596	1.603	0.41	
Cyclohexanone	1	0		6.87	87.95	100	20		0.034	0.026	12.05	
Camphene	1	0		6.96	13.95	20	20		0.439	0.381	30.25	C1
1,2,3-Trichloropropane	1	0		6.99	17.01	20	20		0.659	0.560	14.95	
2-Chlorotoluene	1	0		7.09	20.84	20	20		0.931	1.039	4.20	
p-Ethyltoluene	1	0		7.09	22.83	20	20		1.486	1.696	14.15	
4-Chlorotoluene	1	0		7.16	23.46	20	20		0.943	1.106	17.29	
n-Propylbenzene	1	0		7.03	20.75	20	20		1.640	1.702	3.77	
Bromobenzene	1	0		6.99	22.07	20	20		1.002	1.105	10.33	
1,3,5-Trimethylbenzene	1	0		7.12	17.91	20	20		1.203	1.245	10.46	
Butyl methacrylate	1	0		7.15	16.06	20	20	0.5	0.595	0.618	19.70	
t-Butylbenzene	1	0		7.34	21.71	20	20		1.097	1.190	8.57	
1,2,4-Trimethylbenzene	1	0		7.36	20.04	20	20		1.298	1.427	0.19	
sec-Butylbenzene	1	0		7.47	17.41	20	20		1.171	1.207	12.97	
4-Isopropyltoluene	1	0		7.55	18.79	20	20		1.019	1.095	6.04	
n-Butylbenzene	1	0		7.80	15.99	20	20		1.027	0.994	20.04	
p-Diethylbenzene	1	0		7.79	17.05	20	20		0.639	0.680	14.77	
1,2,4,5-Tetramethylbenzene	1	0		8.29	17.13	20	20		1.034	1.125	14.33	
1,2-Dibromo-3-Chloropropane	1	0		8.35	17.64	20	20	0.05	0.140	0.149	11.82	
Camphor	1	0		8.82	112.53	200	20		0.043	0.032	43.74	C1
Hexachlorobutadiene	1	0		8.97	23.93	20	20		0.351	0.513	19.67	
1,2,4-Trichlorobenzene	1	0		8.89	23.80	20	20	0.2	0.530	0.817	18.99	
1,2,3-Trichlorobenzene	1	0		9.20	20.37	20	20		0.542	0.711	1.87	
Naphthalene	1	0		9.05	12.90	20	20		1.183	1.022	35.49	C1

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. HAZ. - 179 **625 limits are compared against the %DIFF.**

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

FORM8

Internal Standard Areas

Evaluation Std Data File: 3M65229.D Method: EPA 8260C

Analysis Date/Time: 01/25/15 13:51

Lab File ID: CAL @ 20 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	359602	4.43	319034	6.22	184899	7.63						
Eval File Area Limit:	179801-719204		159517-638068		92450-369798							
Eval File Rt Limit:	3.93-4.93		5.72-6.72		7.13-8.13							

Data File	Sample						
3M65219.D	BLK	188043	4.43	189350	6.22	111295	7.62
3M65220.D	1 PPB	174468	4.43	182612	6.22	110873	7.62
3M65221.D	CAL @ 0.5 PF	182653	4.43	185820	6.22	107497	7.63
3M65222.D	CAL @ 1 PPB	270382	4.44	284340	6.23	160395	7.63
3M65223.D	CAL @ 5 PPB	274956	4.43	290127	6.22	171298	7.62
3M65224.D	CAL @ 10 PP	346544	4.43	291308	6.23	169348	7.63
3M65225.D	CAL @ 500 P	369216	4.43	285261	6.22	163861	7.63
3M65226.D	CAL @ 250 P	373061	4.43	309206	6.22	184825	7.62
3M65227.D	CAL @ 100 P	375137	4.43	327125	6.22	194814	7.62
3M65228.D	CAL @ 50 PP	373755	4.43	305856	6.22	189650	7.62
3M65229.D	CAL @ 20 PP	359602	4.43	319034	6.22	184899	7.63
3M65230.D	ICV	358399	4.43	309331	6.22	177004	7.63
3M65231.D	STD	358821	4.43	320182	6.22	188982	7.63
3M65232.D	BLK	353405	4.42	293428	6.22	172226	7.63
3M65233.D	DAILY BLANK	352185	4.42	288983	6.22	164260	7.63
3M65234.D	MBS41869	359276	4.43	300219	6.22	180597	7.62
3M65235.D	AC82927-048	348172	4.42	298779	6.22	165250	7.63
3M65236.D	AC82927-044	355842	4.43	297607	6.22	178661	7.63
3M65237.D	AC82927-047	357289	4.42	295057	6.22	176045	7.63
3M65238.D	AC82927-053	348069	4.42	294438	6.22	173016	7.63
3M65239.D	AC82927-059	346641	4.43	282713	6.22	169314	7.63
3M65240.D	AC82927-056	358661	4.42	297391	6.22	174988	7.62
3M65241.D	AC82984-022	355176	4.42	283530	6.22	169131	7.63
3M65242.D	AC82984-010	354718	4.42	288241	6.22	193202	7.62
3M65243.D	AC82984-008	355929	4.42	280865	6.22	186032	7.62
3M65244.D	AC82984-012	375775	4.42	295603	6.22	179705	7.62
3M65245.D	AC82984-028	348659	4.42	285900	6.22	180852	7.62
3M65246.D	AC82984-031	346511	4.42	295986	6.22	170606	7.62
3M65247.D	STD	292996	4.42	242491	6.22	154725	7.62
3M65248.D	STD	297518	4.41	264825	6.21	161949	7.62
3M65249.D	MBS41871	304719	4.42	262874	6.22	156309	7.62
3M65250.D	BLK	3300 A	4.49	0 A	0.00 R	0 A	0.00 R
3M65251.D	BLK	249603	4.42	268304	6.22	172531	7.62
3M65252.D	BLK	2331 A	4.37	0 A	0.00 R	0 A	0.00 R
3M65253.D	AC82913-001	228852	4.41	251868	6.21	151811	7.62
3M65254.D	AC82984-033	223148	4.41	237303	6.21	154969	7.62
3M65255.D	AC82927-045	218663	4.41	241698	6.21	153247	7.62
3M65256.D	AC82984-032	221022	4.41	241461	6.21	153409	7.61
3M65257.D	AC82927-050	219547	4.41	244045	6.21	147638	7.62
3M65258.D	AC82927-054	220963	4.41	234151	6.22	157723	7.62
3M65259.D	AC82927-057	215045	4.41	253959	6.21	151070	7.62
3M65260.D	AC82927-060	299222	4.41	246282	6.21	147617	7.62
3M65261.D	AC82927-063	290707	4.41	239534	6.21	160072	7.62
3M65262.D	AC82913-001	298348	4.41	253862	6.21	155817	7.61
3M65263.D	AC82913-001	297469	4.41	257473	6.21	151229	7.62
3M65264.D	MBS42038	298777	4.42	259243	6.21	163259	7.62
3M65265.D	STD	288908	4.42	247858	6.22	149680	7.62
3M65266.D	STD	285397	4.41	247467	6.22	153715	7.62
3M65267.D	MBS42039	287191	4.41	260043	6.21	149058	7.61
3M65268.D	BLK	236936	4.42	256035	6.21	144057	7.61
3M65269.D	BLK	216480	4.42	245561	6.21	134692	7.62
3M65270.D	BLK	220782	4.42	245558	6.21	137721	7.62
3M65271.D	BLK	213253	4.41	249899	6.21	140114	7.62

I1 = Fluorobenzene
I2 = Chlorobenzene-d5
I3 = 1,4-Dichlorobenzene-d4
I4 =
I5 =
I6 =

625/8270 Internal Standard concentration = 40 me/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 3M65229.D Method: EPA 8260C

Analysis Date/Time: 01/25/15 13:51

Lab File ID: CAL @ 20 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	359602	4.43	319034	6.22	184899	7.63						
Eval File Area Limit:	179801-719204		159517-638068		92450-369798							
Eval File Rt Limit:	3.93-4.93		5.72-6.72		7.13-8.13							
Data File Sample												
3M65272.D BLK	214810	4.41	245752	6.21	142684	7.62						
3M65273.D BLK	214672	4.42	250343	6.22	134061	7.62						
3M65274.D BLK	217785	4.42	246918	6.21	139430	7.62						
3M65275.D BLK	210591	4.41	243116	6.21	128617	7.62						
3M65276.D BLK	216492	4.41	244434	6.21	138124	7.62						
3M65277.D BLK	210959	4.41	239644	6.21	132098	7.62						
3M65278.D BLK	205202	4.41	244616	6.21	138858	7.62						
3M65279.D BLK	211840	4.41	233455	6.21	129436	7.62						
3M65280.D BLK	210910	4.42	232171	6.21	129314	7.61						
3M65281.D BLK	210491	4.41	231829	6.21	136826	7.62						
3M65282.D BLK	216601	4.41	236922	6.21	133468	7.62						
3M65283.D BLK	195549	4.41	234811	6.21	130845	7.62						
3M65284.D BLK	207376	4.41	222695	6.21	130792	7.62						
3M65285.D BLK	202087	4.41	230608	6.21	124805	7.62						
3M65286.D BLK	215813	4.41	222356	6.21	121744	7.62						
3M65287.D BLK	204746	4.41	225292	6.21	122143	7.61						

I1 = Fluorobenzene
I2 = Chlorobenzene-d5
I3 = 1,4-Dichlorobenzene-d4
I4 =
I5 =
I6 =

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 3M66554.D Method: EPA 8260C

Analysis Date/Time: 02/18/15 09:49

Lab File ID: CAL @ 20 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	397805	4.41	334044	6.20	228638	7.61						
Eval File Area Limit:	198902-795610		167022-668088		114319-457276							
Eval File Rt Limit:	3.91-4.91		5.7-6.7		7.11-8.110001							

Data File	Sample						
3M66556.D	STD	395447	4.41	319755	6.20	214511	7.61
3M66557.D	BLK	377324	4.41	315205	6.22	195858	7.62
3M66558.D	DAILY BLANK	376071	4.41	311474	6.21	203689	7.62
3M66559.D	DAILY BLANK	359057	4.41	304221	6.21	200354	7.62
3M66560.D	MBS42262	381493	4.41	321409	6.20	224108	7.61
3M66561.D	MBS42263	373838	4.41	315486	6.21	224203	7.61
3M66562.D	BLK	368266	4.41	304608	6.21	193138	7.62
3M66563.D	AC83341-001	358860	4.41	307068	6.21	200812	7.62
3M66564.D	AC83392-001	345886	4.41	307188	6.21	199548	7.62
3M66565.D	AC83392-003	353979	4.41	302773	6.21	201447	7.62
3M66566.D	AC83396-002	360224	4.41	310342	6.21	202685	7.62
3M66567.D	AC83392-001	367445	4.41	306886	6.21	209678	7.62
3M66568.D	AC83392-002	351857	4.41	310204	6.22	217110	7.62
3M66569.D	AC83282-012	351917	4.41	314127	6.22	202995	7.62
3M66570.D	AC83235-002	367719	4.41	319180	6.21	192576	7.62
3M66571.D	AC83235-004	367084	4.41	307665	6.22	195779	7.62
3M66572.D	AC83235-006	371965	4.43	304459	6.23	196810	7.64
3M66573.D	AC83282-014	361674	4.42	307228	6.22	197442	7.62
3M66574.D	AC83363-005	357150	4.42	313198	6.22	206421	7.62
3M66575.D	AC83363-004	347554	4.42	313661	6.22	207734	7.62
3M66576.D	AC83363-002	349079	4.42	307770	6.22	211149	7.62
3M66577.D	BLK	342908	4.42	303430	6.22	194405	7.63
3M66578.D	AC83369-008	354718	4.42	305319	6.22	191288	7.62
3M66579.D	AC83282-016	344467	4.42	296812	6.22	193291	7.62
3M66580.D	AC83282-012	327187	4.42	299359	6.22	216632	7.62
3M66581.D	AC83282-012	343615	4.42	316198	6.22	220893	7.62
3M66582.D	BLK	334810	4.42	287182	6.22	187138	7.62
3M66583.D	AC83348-002	313021	4.42	277927	6.22	186410	7.62
3M66584.D	AC83348-003	317519	4.42	274714	6.22	196199	7.62
3M66585.D	AC83402-002	303999	4.42	283729	6.22	192345	7.62
3M66586.D	AC83402-003	319563	4.42	289243	6.22	184343	7.62
3M66587.D	AC83395-002	325554	4.42	290928	6.22	193562	7.62
3M66588.D	BLK	294194	4.42	283647	6.22	189502	7.62
3M66589.D	MBS42265	332381	4.42	299608	6.22	233116	7.62
3M66590.D	BLK	313113	4.42	289705	6.22	206480	7.62
3M66591.D	AC83399-003	310319	4.42	290660	6.22	201107	7.62
3M66592.D	AC83399-004	306374	4.42	285319	6.22	203797	7.62
3M66593.D	AC83397-001	307917	4.42	291716	6.22	207414	7.62
3M66594.D	AC83397-002	309569	4.42	286669	6.22	195697	7.62
3M66595.D	AC83395-001	302895	4.42	303354	6.22	205091	7.62
3M66596.D	AC83396-001	309639	4.42	301535	6.22	214495	7.62
3M66597.D	AC83394-001	305418	4.41	288682	6.22	214444	7.62
3M66598.D	AC83348-001	317090	4.42	297375	6.22	203820	7.62
3M66599.D	AC83402-001	307361	4.42	298480	6.22	207021	7.62
3M66600.D	AC83399-001	306512	4.42	296341	6.22	216132	7.62
3M66601.D	AC83399-002	308971	4.42	298285	6.22	208267	7.62
3M66602.D	STD	327020	4.42	318231	6.22	254475	7.62
3M66603.D	STD	320701	4.42	325128	6.22	248154	7.62
3M66604.D	STD	323285	4.42	314718	6.22	253390	7.62
3M66605.D	BLK	302371	4.42	312196	6.22	226122	7.62

I1 = Fluorobenzene
I2 = Chlorobenzene-d5
I3 = 1,4-Dichlorobenzene-d4
I4 =
I5 =
I6 =

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 3M66730.D Method: EPA 8260C

Analysis Date/Time: 02/20/15 11:51

Lab File ID: CAL @ 20 PPB

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	406054	4.40	363924	6.19	259966	7.60						
Eval File Area Limit:	203027-812108		181962-727848		129983-519932							
Eval File Rt Limit:	3.9-4.9		5.69-6.69		7.1-8.1							

Data File	Sample						
3M66730A	STD	403198	4.40	356444	6.20	261358	7.60
3M66731.D	BLK	382507	4.40	332860	6.20	240588	7.60
3M66732.D	BLK	386319	4.40	330994	6.20	240581	7.60
3M66733.D	BLK	373845	4.40	338705	6.20	235424	7.61
3M66734.D	DAILY BLANK	378190	4.40	337964	6.20	243836	7.60
3M66735.D	DAILY BLANK	372601	4.40	334481	6.20	231854	7.61
3M66736.D	MBS42280	396046	4.40	355164	6.20	277496	7.60
3M66737.D	MBS42281	390440	4.40	351566	6.20	273164	7.60
3M66738.D	AC83446-001	371425	4.40	336849	6.20	233310	7.61
3M66739.D	AC83409-004	368126	4.40	336290	6.20	234682	7.60
3M66740.D	AC83415-023	363985	4.41	338141	6.20	250167	7.60
3M66741.D	AC83446-002	357980	4.40	339638	6.20	242808	7.61
3M66742.D	AC83375-003(	369730	4.40	353301	6.20	244757	7.60
3M66743.D	AC83323-006(	369409	4.41	342866	6.21	248798	7.61
3M66744.D	EF-1V-20447E	368208	4.41	341054	6.21	240009	7.61
3M66745.D	AC83423-012	356721	4.40	331504	6.20	241324	7.60
3M66746.D	AC83423-013	358871	4.40	344451	6.20	237094	7.60
3M66747.D	AC83427-018	353078	4.41	339380	6.20	237483	7.61
3M66748.D	BLK	350479	4.40	329701	6.19	234577	7.61
3M66749.D	AC83423-001	355920	4.40	334097	6.20	242990	7.60
3M66750.D	AC83423-002	353263	4.41	339675	6.20	249039	7.60
3M66751.D	AC83423-003	357244	4.40	341252	6.20	233017	7.61
3M66752.D	AC83423-004	345713	4.40	337845	6.20	236539	7.60
3M66753.D	AC83423-005	349545	4.40	328415	6.20	248691	7.60
3M66754.D	AC83423-006	349965	4.40	344657	6.20	238210	7.59
3M66755.D	AC83423-007	347097	4.40	332452	6.20	241417	7.60
3M66756.D	AC83423-008	343867	4.40	332479	6.20	256548	7.60
3M66757.D	AC83423-009	359083	4.40	353162	6.20	265776	7.60
3M66758.D	AC83423-010	369623	4.40	357256	6.20	263335	7.60
3M66759.D	AC83423-011	386503	4.40	362218	6.19	242952	7.60
3M66760.D	MBS42284	376253	4.40	357840	6.19	261703	7.60
3M66761.D	AC83387-001	378498	4.40	344260	6.19	237734	7.60
3M66762.D	AC83387-002	374955	4.40	341102	6.19	227701	7.60
3M66763.D	AC83387-004	371672	4.40	336176	6.19	236340	7.60
3M66764.D	AC83387-005	365628	4.39	325340	6.20	233021	7.60
3M66765.D	AC83387-006	360703	4.40	339397	6.19	238050	7.60
3M66766.D	AC83387-011	358516	4.39	335553	6.19	244409	7.60
3M66767.D	AC83387-028(	349717	4.40	333429	6.19	239323	7.59
3M66768.D	AC83387-015(	353799	4.40	330661	6.19	248888	7.59
3M66769.D	AC83387-003(	347418	4.40	342791	6.19	242595	7.60
3M66770.D	AC83387-018(	333210	4.41	333214	6.21	245780	7.62
3M66771.D	AC83387-009(	330654	4.40	328006	6.19	249989	7.60
3M66772.D	AC83387-002(	360892	4.40	370507	6.19	296533	7.59
3M66773.D	AC83387-002(	359528	4.39	374571	6.19	294491	7.60

I1 = Fluorobenzene
I2 = Chlorobenzene-d5
I3 = 1,4-Dichlorobenzene-d4
I4 =
I5 =
I6 =

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Semi-Volatile Data

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: AC83375-001
Client Id: SB01
Data File: 7M69827.D
Analysis Date: 02/17/15 20:10
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 87

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
92-52-4	1,1'-Biphenyl	0.038	U	**205-99-2**	**Benzo[b]fluoranthene**	**0.038**	**0.11**
95-94-3	1,2,4,5-Tetrachlorobenzene	0.038	U	**191-24-2**	**Benzo[g,h,i]perylene**	**0.038**	**0.080**
58-90-2	2,3,4,6-Tetrachlorophenol	0.038	U	207-08-9	Benzo[k]fluoranthene	0.038	U
95-95-4	2,4,5-Trichlorophenol	0.038	U	111-91-1	bis(2-Chloroethoxy)methan	0.038	U
88-06-2	2,4,6-Trichlorophenol	0.038	U	111-44-4	bis(2-Chloroethyl)ether	0.0096	U
120-83-2	2,4-Dichlorophenol	0.0096	U	108-60-1	bis(2-chloroisopropyl)ether	0.038	U
105-67-9	2,4-Dimethylphenol	0.0096	U	**117-81-7**	**bis(2-Ethylhexyl)phthalate**	**0.038**	**0.056**
51-28-5	2,4-Dinitrophenol	0.19	U	85-68-7	Butylbenzylphthalate	0.038	U
121-14-2	2,4-Dinitrotoluene	0.038	U	105-60-2	Caprolactam	0.038	U
606-20-2	2,6-Dinitrotoluene	0.038	U	86-74-8	Carbazole	0.038	U
91-58-7	2-Chloronaphthalene	0.038	U	**218-01-9**	**Chrysene**	**0.038**	**0.13**
95-57-8	2-Chlorophenol	0.038	U	53-70-3	Dibenzo[a,h]anthracene	0.038	U
91-57-6	2-Methylnaphthalene	0.038	U	132-64-9	Dibenzofuran	0.0096	U
95-48-7	2-Methylphenol	0.0096	U	84-66-2	Diethylphthalate	0.038	U
88-74-4	2-Nitroaniline	0.038	U	131-11-3	Dimethylphthalate	0.038	U
88-75-5	2-Nitrophenol	0.038	U	84-74-2	Di-n-butylphthalate	0.0096	U
106-44-5	3&4-Methylphenol	0.0096	U	117-84-0	Di-n-octylphthalate	0.038	U
91-94-1	3,3'-Dichlorobenzidine	0.038	U	**206-44-0**	**Fluoranthene**	**0.038**	**0.067**
99-09-2	3-Nitroaniline	0.038	U	86-73-7	Fluorene	0.038	U
534-52-1	4,6-Dinitro-2-methylphenol	0.19	U	118-74-1	Hexachlorobenzene	0.038	U
101-55-3	4-Bromophenyl-phenylether	0.038	U	87-68-3	Hexachlorobutadiene	0.038	U
59-50-7	4-Chloro-3-methylphenol	0.038	U	77-47-4	Hexachlorocyclopentadiene	0.038	U
106-47-8	4-Chloroaniline	0.0096	U	67-72-1	Hexachloroethane	0.038	U
7005-72-3	4-Chlorophenyl-phenylether	0.038	U	**193-39-5**	**Indeno[1,2,3-cd]pyrene**	**0.038**	**0.046**
100-01-6	4-Nitroaniline	0.038	U	78-59-1	Isophorone	0.038	U
100-02-7	4-Nitrophenol	0.038	U	91-20-3	Naphthalene	0.0096	U
83-32-9	Acenaphthene	0.038	U	98-95-3	Nitrobenzene	0.038	U
208-96-8	Acenaphthylene	0.038	U	621-64-7	N-Nitroso-di-n-propylamine	0.0096	U
98-86-2	Acetophenone	0.038	U	86-30-6	n-Nitrosodiphenylamine	0.038	U
120-12-7	Anthracene	0.038	U	87-86-5	Pentachlorophenol	0.19	U
1912-24-9	Atrazine	0.038	U	**85-01-8**	**Phenanthrene**	**0.038**	**0.065**
100-52-7	Benzaldehyde	0.038	U	108-95-2	Phenol	0.038	U
56-55-3	**Benzo[a]anthracene**	**0.038**	**0.10**	**129-00-0**	**Pyrene**	**0.038**	**0.22**
50-32-8	**Benzo[a]pyrene**	**0.038**	**0.091**				

Worksheet #: 334323

Total Target Concentration 0.96

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

N-Nitrosodiphenylamine decomposes in the GC inlet and is detected as diphenylamine

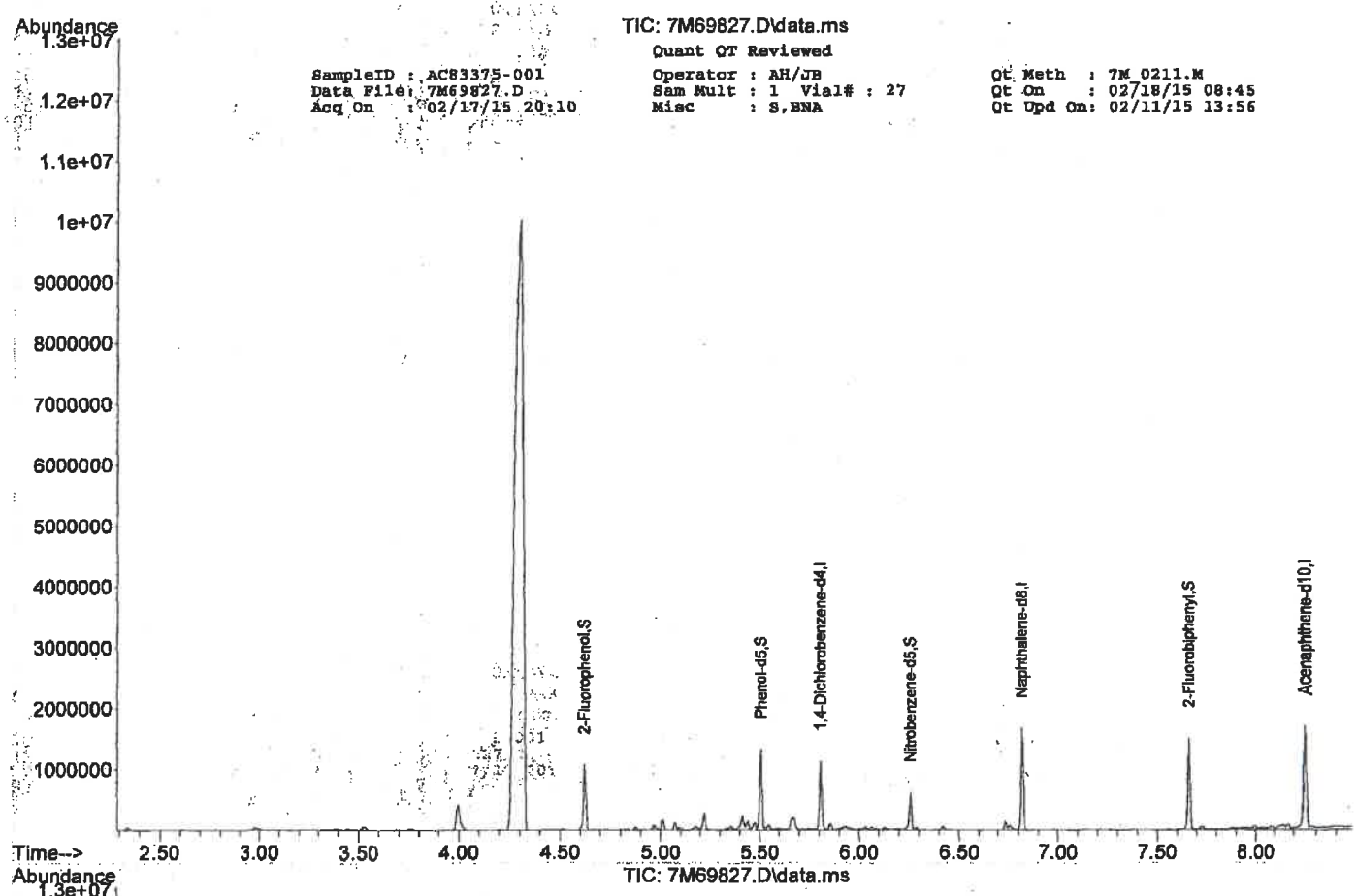
Quantitation Report (QT Reviewed) 5021319 0105

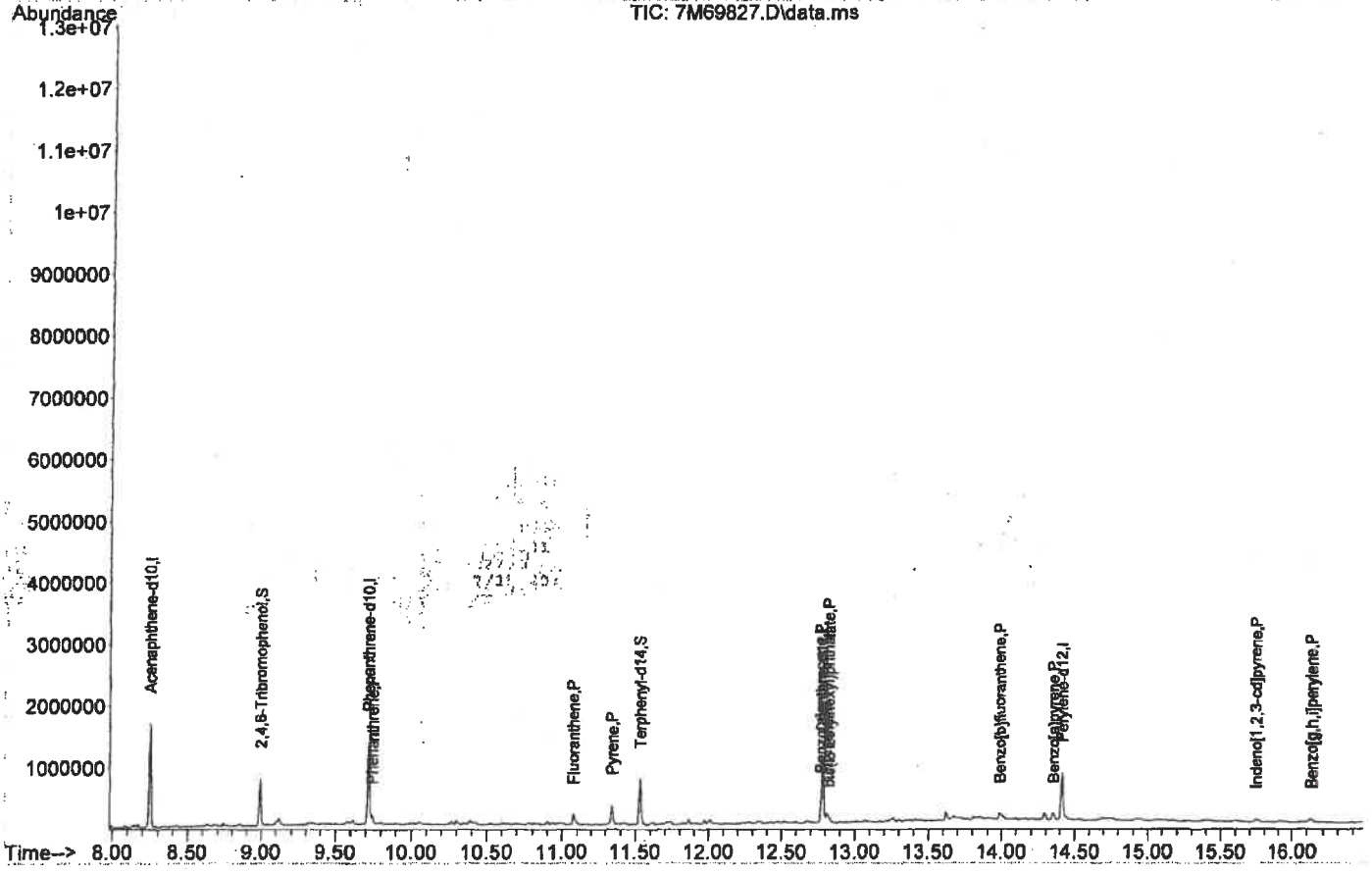
SampleID : AC83375-001 Operator : AH/JB Qt Meth : 7M_0211.M
Data File: 7M69827.D Sam Mult : 1 Vial# : 27 Qt On : 02/18/15 08:45
Acq On : 02/17/15 20:10 Misc : S,BNA Qt Upd On: 02/11/15 13:56

Data Path : G:\GcMsData\2015\GCMS_7\Data\02-17-15\
Qt Path : G:\GCMSDATA\2015\GCMS_7\METHODQT\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.808	152	157327	40.00	ng	0.00
29) Naphthalene-d8	6.817	136	626859	40.00	ng	-0.02
47) Acenaphthene-d10	8.254	164	358101	40.00	ng	-0.03
74) Phenanthrene-d10	9.724	188	542224	40.00	ng	-0.02
88) Chrysene-d12	12.785	240	362878	40.00	ng	-0.02
100) Perylene-d12	14.419	264	319273	40.00	ng	-0.04
System Monitoring Compounds						
10) 2-Fluorophenol	4.622	112	302305	59.35	ng	0.02
Spiked Amount 100.000			Recovery = 59.35%			
15) Phenol-d5	5.509	99	447836	58.95	ng	0.02
Spiked Amount 100.000			Recovery = 58.95%			
30) Nitrobenzene-d5	6.256	128	82543	30.65	ng	0.00
Spiked Amount 50.000			Recovery = 61.30%			
52) 2-Fluorobiphenyl	7.661	172	403698	32.71	ng	-0.03
Spiked Amount 50.000			Recovery = 65.42%			
77) 2,4,6-Tribromophenol	8.997	330	98977	61.96	ng	-0.03
Spiked Amount 100.000			Recovery = 61.96%			
91) Terphenyl-d14	11.535	244	230416	43.48	ng	-0.02
Spiked Amount 50.000			Recovery = 86.96%			
Target Compounds						Qvalue
83) Phenanthrene	9.745	178	54905	3.4035	ng	97
87) Fluoranthene	11.081	202	71289	3.4986	ng	93
89) Pyrene	11.348	202	128130	11.4127	ng	87
97) Benzo[a]anthracene	12.774	228	60369	5.4042	ng	95
98) Chrysene	12.817	228	64338	6.6466	ng	97
99) bis(2-Ethylhexyl)phtha	12.833	149	18976	2.9174	ng	87
102) Benzo[b]fluoranthene	13.997	252	60583m	5.5768	ng	
104) Benzo[a]pyrene	14.355	252	48309	4.7521	ng	93
105) Indeno[1,2,3-cd]pyrene	15.750	276	27739	2.3897	ng	90
107) Benzo[g,h,i]perylene	16.134	276	39124	4.1812	ng	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 7M69827.D\data.ms
Quant QT Reviewed
SampleID : AC83375-001
Data File: 7M69827.D
Acq On : 02/17/15 20:10
Operator : AH/JB
Sam Mult : 1 Vial# : 27
Misc : S,BNA
Qt Meth : 7M_0211.M
Qt On : 02/18/15 08:45
Qt Upd On: 02/11/15 13:56
2-Fluorophenol,S
Phenol-d5,S
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
Time-->


Abundance
TIC: 7M69827.D\data.ms
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Fluoranthene,P
Pyrene,P
Terphenyl-d14,S
Benzo(b)fluoranthene,P
Perylene-d12,I
Indeno[1,2,3-cd]pyrene,P
Benzo[g,h,i]perylene,P
Time-->

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: AC83375-002
Client Id: SB02
Data File: 7M69828.D
Analysis Date: 02/17/15 20:33
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 94

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
92-52-4	1,1'-Biphenyl	0.035	U	205-99-2	Benzo[b]fluoranthene	0.035	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.035	U	191-24-2	Benzo[g,h,i]perylene	0.035	U
58-90-2	2,3,4,6-Tetrachlorophenol	0.035	U	207-08-9	Benzo[k]fluoranthene	0.035	U
95-95-4	2,4,5-Trichlorophenol	0.035	U	111-91-1	bis(2-Chloroethoxy)methan	0.035	U
88-06-2	2,4,6-Trichlorophenol	0.035	U	111-44-4	bis(2-Chloroethyl)ether	0.0089	U
120-83-2	2,4-Dichlorophenol	0.0089	U	108-60-1	bis(2-chloroisopropyl)ether	0.035	U
105-67-9	2,4-Dimethylphenol	0.0089	U	117-81-7	bis(2-Ethylhexyl)phthalate	0.035	U
51-28-5	2,4-Dinitrophenol	0.18	U	85-68-7	Butylbenzylphthalate	0.035	U
121-14-2	2,4-Dinitrotoluene	0.035	U	105-60-2	Caprolactam	0.035	U
606-20-2	2,6-Dinitrotoluene	0.035	U	86-74-8	Carbazole	0.035	U
91-58-7	2-Chloronaphthalene	0.035	U	218-01-9	Chrysene	0.035	U
95-57-8	2-Chlorophenol	0.035	U	53-70-3	Dibenzo[a,h]anthracene	0.035	U
91-57-6	2-Methylnaphthalene	0.035	U	132-64-9	Dibenzofuran	0.0089	U
95-48-7	2-Methylphenol	0.0089	U	84-66-2	Diethylphthalate	0.035	U
88-74-4	2-Nitroaniline	0.035	U	131-11-3	Dimethylphthalate	0.035	U
88-75-5	2-Nitrophenol	0.035	U	84-74-2	Di-n-butylphthalate	0.0089	U
106-44-5	3&4-Methylphenol	0.0089	U	117-84-0	Di-n-octylphthalate	0.035	U
91-94-1	3,3'-Dichlorobenzidine	0.035	U	206-44-0	Fluoranthene	0.035	U
99-09-2	3-Nitroaniline	0.035	U	86-73-7	Fluorene	0.035	U
534-52-1	4,6-Dinitro-2-methylphenol	0.18	U	118-74-1	Hexachlorobenzene	0.035	U
101-55-3	4-Bromophenyl-phenylether	0.035	U	87-68-3	Hexachlorobutadiene	0.035	U
59-50-7	4-Chloro-3-methylphenol	0.035	U	77-47-4	Hexachlorocyclopentadiene	0.035	U
106-47-8	4-Chloroaniline	0.0089	U	67-72-1	Hexachloroethane	0.035	U
7005-72-3	4-Chlorophenyl-phenylether	0.035	U	193-39-5	Indeno[1,2,3-cd]pyrene	0.035	U
100-01-6	4-Nitroaniline	0.035	U	78-59-1	Isophorone	0.035	U
100-02-7	4-Nitrophenol	0.035	U	91-20-3	Naphthalene	0.0089	U
83-32-9	Acenaphthene	0.035	U	98-95-3	Nitrobenzene	0.035	U
208-96-8	Acenaphthylene	0.035	U	621-64-7	N-Nitroso-di-n-propylamine	0.0089	U
98-86-2	Acetophenone	0.035	U	86-30-6	n-Nitrosodiphenylamine	0.035	U
120-12-7	Anthracene	0.035	U	87-86-5	Pentachlorophenol	0.18	U
1912-24-9	Atrazine	0.035	U	85-01-8	Phenanthrene	0.035	U
100-52-7	Benzaldehyde	0.035	U	108-95-2	Phenol	0.035	U
56-55-3	Benzo[a]anthracene	0.035	U	129-00-0	Pyrene	0.035	U
50-32-8	Benzo[a]pyrene	0.035	U				

Worksheet #: 334323

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

N-Nitrosodiphenylamine decomposes in the GC inlet and is detected as diphenylamine

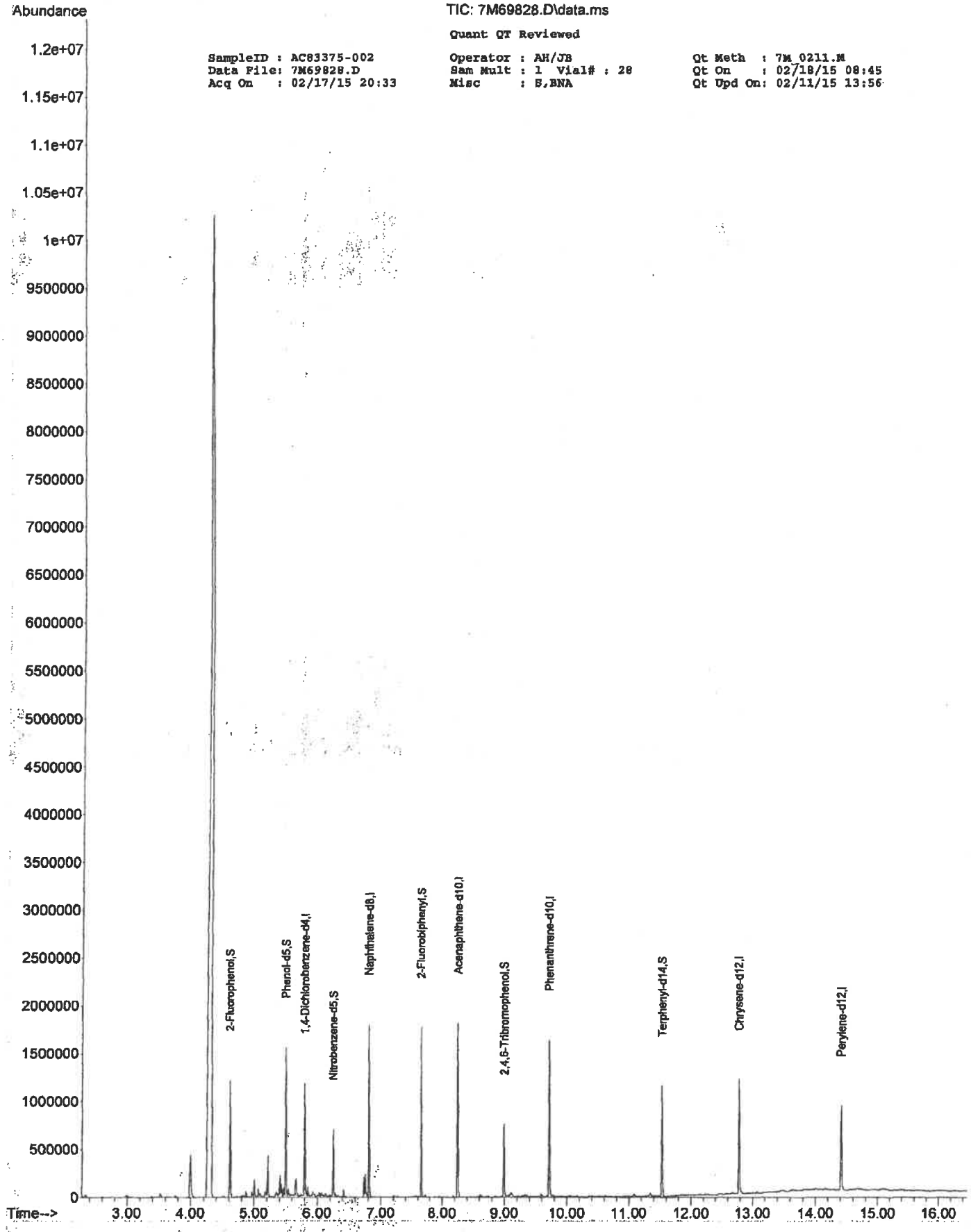
Quantitation Report (QT Reviewed)

SampleID : AC83375-002 Operator : AH/JB Qt Meth : 7M_0211.M
Data File: 7M69828.D Sam Mult : 1 Vial# : 28 Qt On : 02/18/15 08:45
Acq On : 02/17/15 20:33 Misc : S,BNA Qt Upd On: 02/11/15 13:56

Data Path : G:\GcMsData\2015\GCMS_7\Data\02-17-15\
Qt Path : G:\GCMSDATA\2015\GCMS_7\METHODQT\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.808	152	164786	40.00	ng	0.00
29) Naphthalene-d8	6.818	136	666237	40.00	ng	-0.02
47) Acenaphthene-d10	8.255	164	398451	40.00	ng	-0.03
74) Phenanthrene-d10	9.718	188	691781	40.00	ng	-0.03
88) Chrysene-d12	12.785	240	474753	40.00	ng	-0.02
100) Perylene-d12	14.420	264	374294	40.00	ng	-0.04
System Monitoring Compounds						
10) 2-Fluorophenol	4.622	112	341197	63.95	ng	0.02
Spiked Amount 100.000			Recovery =	63.95%		
15) Phenol-d5	5.509	99	527491	66.30	ng	0.02
Spiked Amount 100.000			Recovery =	66.30%		
30) Nitrobenzene-d5	6.257	128	95516	33.38	ng	0.00
Spiked Amount 50.000			Recovery =	66.76%		
52) 2-Fluorobiphenyl	7.662	172	484682	35.30	ng	-0.03
Spiked Amount 50.000			Recovery =	70.60%		
77) 2,4,6-Tribromophenol	8.997	330	104775	51.41	ng	-0.03
Spiked Amount 100.000			Recovery =	51.41%		
91) Terphenyl-d14	11.535	244	363104	52.37	ng	-0.02
Spiked Amount 50.000			Recovery =	104.74%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 7M69828.D\data.ms
Quant QT Reviewed
SampleID : AC83375-002
Data File: 7M69828.D
Acq On : 02/17/15 20:33
Operator : AH/JB
Sam Mult : 1 Vial# : 28
Misc : S,BNA
Qt Meth : 7M_0211.M
Qt On : 02/18/15 08:45
Qt Upd On: 02/11/15 13:56
1.2e+07
1.15e+07
1.1e+07
1.05e+07
1e+07
9500000
9000000
8500000
8000000
7500000
7000000
6500000
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2-Fluorophenol,S
Phenol-d5,S
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I
Time-->
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: SMB40451
Client Id:
Data File: 7M69817.D
Analysis Date: 02/17/15 16:23
Date Rec/Extracted: NA-02/17/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Soil
Initial Vol: 30g
Final Vol: 0.5ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
92-52-4	1,1'-Biphenyl	0.033	U	205-99-2	Benzo[b]fluoranthene	0.033	U
95-94-3	1,2,4,5-Tetrachlorobenzene	0.033	U	191-24-2	Benzo[g,h,i]perylene	0.033	U
58-90-2	2,3,4,6-Tetrachlorophenol	0.033	U	207-08-9	Benzo[k]fluoranthene	0.033	U
95-95-4	2,4,5-Trichlorophenol	0.033	U	111-91-1	bis(2-Chloroethoxy)methan	0.033	U
88-06-2	2,4,6-Trichlorophenol	0.033	U	111-44-4	bis(2-Chloroethyl)ether	0.0083	U
120-83-2	2,4-Dichlorophenol	0.0083	U	108-60-1	bis(2-chloroisopropyl)ether	0.033	U
105-67-9	2,4-Dimethylphenol	0.0083	U	117-81-7	bis(2-Ethylhexyl)phthalate	0.033	U
51-28-5	2,4-Dinitrophenol	0.17	U	85-68-7	Butylbenzylphthalate	0.033	U
121-14-2	2,4-Dinitrotoluene	0.033	U	105-60-2	Caprolactam	0.033	U
606-20-2	2,6-Dinitrotoluene	0.033	U	86-74-8	Carbazole	0.033	U
91-58-7	2-Chloronaphthalene	0.033	U	218-01-9	Chrysene	0.033	U
95-57-8	2-Chlorophenol	0.033	U	53-70-3	Dibenzo[a,h]anthracene	0.033	U
91-57-6	2-Methylnaphthalene	0.033	U	132-64-9	Dibenzofuran	0.0083	U
95-48-7	2-Methylphenol	0.0083	U	84-66-2	Diethylphthalate	0.033	U
88-74-4	2-Nitroaniline	0.033	U	131-11-3	Dimethylphthalate	0.033	U
88-75-5	2-Nitrophenol	0.033	U	84-74-2	Di-n-butylphthalate	0.0083	U
106-44-5	3&4-Methylphenol	0.0083	U	117-84-0	Di-n-octylphthalate	0.033	U
91-94-1	3,3'-Dichlorobenzidine	0.033	U	206-44-0	Fluoranthene	0.033	U
99-09-2	3-Nitroaniline	0.033	U	86-73-7	Fluorene	0.033	U
534-52-1	4,6-Dinitro-2-methylphenol	0.17	U	118-74-1	Hexachlorobenzene	0.033	U
101-55-3	4-Bromophenyl-phenylether	0.033	U	87-68-3	Hexachlorobutadiene	0.033	U
59-50-7	4-Chloro-3-methylphenol	0.033	U	77-47-4	Hexachlorocyclopentadiene	0.033	U
106-47-8	4-Chloroaniline	0.0083	U	67-72-1	Hexachloroethane	0.033	U
7005-72-3	4-Chlorophenyl-phenylether	0.033	U	193-39-5	Indeno[1,2,3-cd]pyrene	0.033	U
100-01-6	4-Nitroaniline	0.033	U	78-59-1	Isophorone	0.033	U
100-02-7	4-Nitrophenol	0.033	U	91-20-3	Naphthalene	0.0083	U
83-32-9	Acenaphthene	0.033	U	98-95-3	Nitrobenzene	0.033	U
208-96-8	Acenaphthylene	0.033	U	621-64-7	N-Nitroso-di-n-propylamine	0.0083	U
98-86-2	Acetophenone	0.033	U	86-30-6	n-Nitrosodiphenylamine	0.033	U
120-12-7	Anthracene	0.033	U	87-86-5	Pentachlorophenol	0.17	U
1912-24-9	Atrazine	0.033	U	85-01-8	Phenanthrene	0.033	U
100-52-7	Benzaldehyde	0.033	U	108-95-2	Phenol	0.033	U
56-55-3	Benzo[a]anthracene	0.033	U	129-00-0	Pyrene	0.033	U
50-32-8	Benzo[a]pyrene	0.033	U				

Worksheet #: 334323

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

N-Nitrosodiphenylamine decomposes in the GC inlet and is detected as diphenylamine

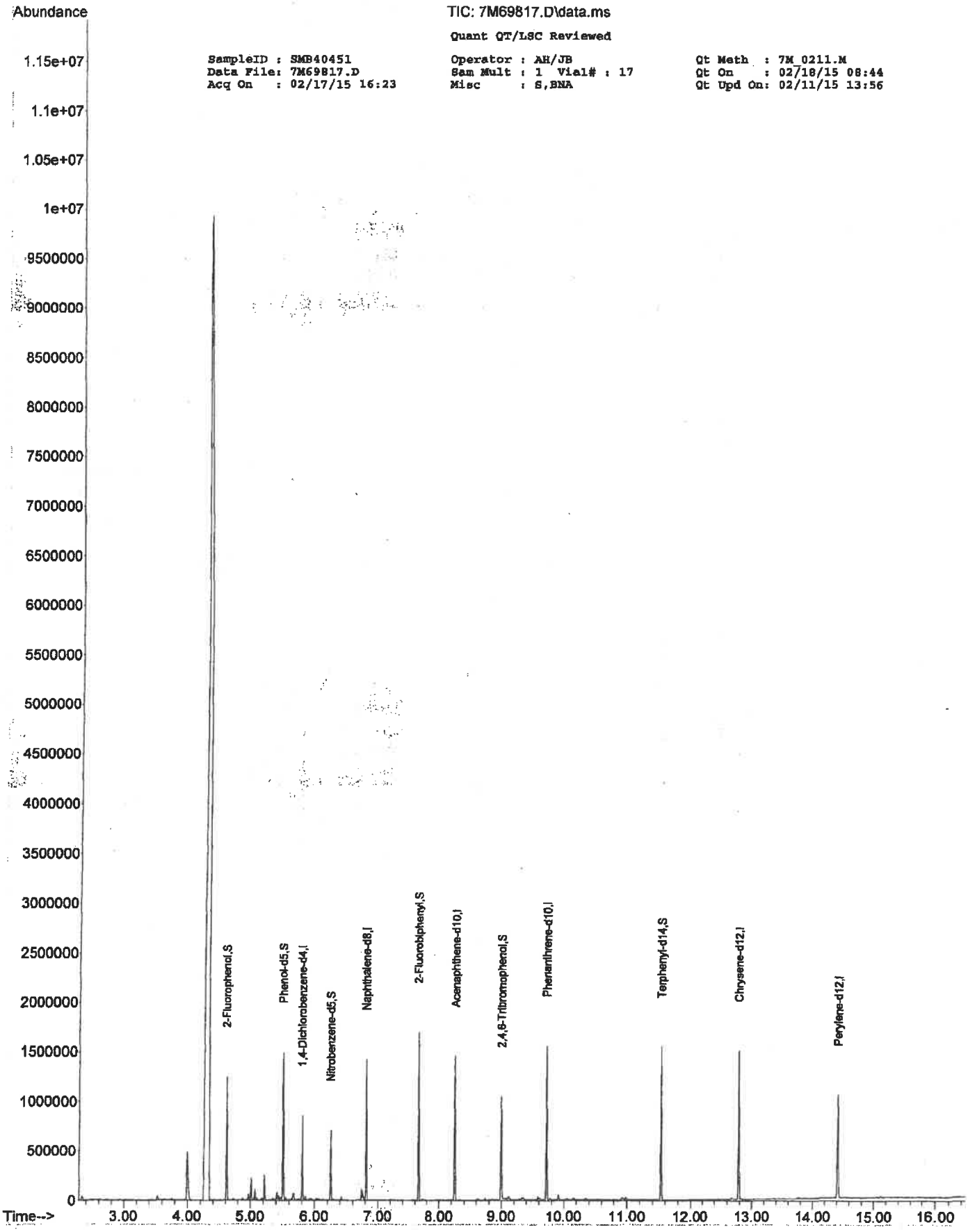
Quantitation Report (QT/LSC Reviewed)

SampleID : SMB40451 Operator : AH/JB Qt Meth : 7M_0211.M
Data File: 7M69817.D Sam Mult : 1 Vial# : 17 Qt On : 02/18/15 08:44
Acq On : 02/17/15 16:23 Misc : S,BNA Qt Upd On: 02/11/15 13:56

Data Path : G:\GcMsData\2015\GCMS_7\Data\02-17-15\
Qt Path : G:\GCMSDATA\2015\GCMS_7\METHODQT\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
7) 1,4-Dichlorobenzene-d4	5.808	152	119261	40.00 ng	0.00
29) Naphthalene-d8	6.817	136	505060	40.00 ng	-0.02
47) Acenaphthene-d10	8.254	164	330646	40.00 ng	-0.03
74) Phenanthrene-d10	9.718	188	639787	40.00 ng	-0.03
88) Chrysene-d12	12.785	240	598597	40.00 ng	-0.02
100) Perylene-d12	14.419	264	462684	40.00 ng	-0.04
System Monitoring Compounds					
10) 2-Fluorophenol	4.622	112	341189	88.36 ng	0.02
Spiked Amount 100.000			Recovery = 88.36%		
15) Phenol-d5	5.509	99	523937	90.99 ng	0.02
Spiked Amount 100.000			Recovery = 90.99%		
30) Nitrobenzene-d5	6.256	128	93320	43.01 ng	0.00
Spiked Amount 50.000			Recovery = 86.02%		
52) 2-Fluorobiphenyl	7.661	172	472292	41.45 ng	-0.03
Spiked Amount 50.000			Recovery = 82.90%		
77) 2,4,6-Tribromophenol	8.997	330	144173	76.49 ng	-0.03
Spiked Amount 100.000			Recovery = 76.49%		
91) Terphenyl-d14	11.535	244	501575	57.38 ng	-0.02
Spiked Amount 50.000			Recovery = 114.76%		
Target Compounds					Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 7M69817.D\data.ms
Quant QT/LSC Reviewed
SampleID : SMB40451
Data File: 7M69817.D
Acq On : 02/17/15 16:23
Operator : AH/JB
Sam Mult : 1 Vial# : 17
Misc : S,BNA
Qt Meth : 7M_0211.M
Qt On : 02/18/15 08:44
Qt Upd On: 02/11/15 13:56
1.15e+07
1.1e+07
1.05e+07
1e+07
9500000
9000000
8500000
8000000
7500000
7000000
6500000
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2-Fluorophenol,S
Phenol-d5,S
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I
Time-->
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00

FORM2

Surrogate Recovery

Method: EPA 8270D

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column1 S3 Recov	Column1 S4 Recov	Column1 S5 Recov	Column1 S6 Recov
5M88994.D	SMB40422	Soil	02/12/15 14:49	1		78	80	79	81	85	93
7M69817.D	SMB40451	Soil	02/17/15 16:23	1		88	91	86	83	76	115
7M69827.D	AC83375-001	Soil	02/17/15 20:10	1		59	59	61	65	62	87
7M69828.D	AC83375-002	Soil	02/17/15 20:33	1		64	66	67	71	51	105
5M88995.D	SMB40422(M	Soil	02/12/15 15:12	1		89	92	93	94	108	98
5M89002.D	AC83314-001	Soil	02/12/15 17:54	1		65	67	69	73	78	86
5M89003.D	AC83314-001(	Soil	02/12/15 18:18	1		80	81	87	86	100	92
5M89004.D	AC83314-001(	Soil	02/12/15 18:41	1		77	79	84	83	96	95
7M69842.D	SMB40451(M	Soil	02/18/15 11:40	1		90	89	94	95	108	107

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8270D

Soil Limits

Compound	Spike Amt	Limits
S1=2-Fluorophenol	100	30-130
S2=Phenol-d5	100	30-130
S3=Nitrobenzene-d5	50	30-130
S4=2-Fluorobiphenyl	50	30-130
S5=2,4,6-Tribromophenol	100	30-130
S6=Terphenyl-d14	50	30-130

Form3
Recovery Data
QC Batch: SMB40422

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5M88995.D	SMB40422(MS)	2/12/2015 3:12:00 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8270D Matrix: Soil QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	34.9456	0	50	70	20	160
N-Nitrosodimethylamine	1	39.5985	0	50	79	20	160
Benzaldehyde	1	63.5086	0	50	127	20	160
Aniline	1	21.1886	0	50	42	20	160
Pentachloroethane	1	46.6888	0	50	93	20	160
bis(2-Chloroethyl)ether	1	37.2193	0	50	74	70	130
Phenol	1	77.1765	0	100	77	20	160
2-Chlorophenol	1	79.2028	0	100	79	70	130
N-Decane	1	44.4978	0	50	89	20	160
1,3-Dichlorobenzene	1	39.3494	0	50	79	70	130
1,4-Dichlorobenzene	1	38.6847	0	50	77	70	130
1,2-Dichlorobenzene	1	39.0782	0	50	78	70	130
Benzyl alcohol	1	40.0523	0	50	80	20	160
bis(2-chloroisopropyl)ether	1	35.8424	0	50	72	70	130
2-Methylphenol	1	80.636	0	100	81	70	130
Acetophenone	1	44.5992	0	50	89	70	130
Hexachloroethane	1	39.4398	0	50	79	20	160
N-Nitroso-di-n-propylamine	1	37.855	0	50	76	70	130
3&4-Methylphenol	1	82.899	0	100	83	20	160
Nitrobenzene	1	45.2373	0	50	90	70	130
Isophorone	1	35.8108	0	50	72	70	130
2-Nitrophenol	1	83.8315	0	100	84	70	130
2,4-Dimethylphenol	1	80.2247	0	100	80	70	130
Benzoic Acid	1	36.9774	0	100	37	20	160
bis(2-Chloroethoxy)methane	1	40.5135	0	50	81	70	130
2,4-Dichlorophenol	1	83.4982	0	100	83	70	130
1,2,4-Trichlorobenzene	1	39.5061	0	50	79	70	130
Naphthalene	1	39.1818	0	50	78	70	130
4-Chloroaniline	1	17.78	0	50	36*	70	130
Hexachlorobutadiene	1	38.0772	0	50	76	70	130
Caprolactam	1	43.2322	0	50	86	20	160
4-Chloro-3-methylphenol	1	88.2706	0	100	88	70	130
2-Methylnaphthalene	1	39.6904	0	50	79	70	130
1,1'-Biphenyl	1	42.2107	0	50	84	70	130
1,2,4,5-Tetrachlorobenzene	1	45.991	0	50	92	70	130
Hexachlorocyclopentadiene	1	43.806	0	50	88	20	160
2,4,6-Trichlorophenol	1	83.1963	0	100	83	70	130
2,4,5-Trichlorophenol	1	97.8122	0	100	98	70	130
2-Chloronaphthalene	1	41.6896	0	50	83	70	130
1,4-Dimethylnaphthalene	1	45.5926	0	50	91	70	130
Diphenyl Ether	1	45.5124	0	50	91	70	130
2-Nitroaniline	1	46.31	0	50	93	70	130
Coumarin	1	46.0169	0	50	92	70	130
Acenaphthylene	1	41.6311	0	50	83	70	130
Dimethylphthalate	1	40.2941	0	50	81	70	130
2,6-Dinitrotoluene	1	40.3409	0	50	81	70	130
Acenaphthene	1	40.0516	0	50	80	70	130
3-Nitroaniline	1	28.7457	0	50	57*	70	130
2,4-Dinitrophenol	1	90.6577	0	100	91	20	160
Dibenzofuran	1	42.2756	0	50	85	70	130
2,4-Dinitrotoluene	1	39.6256	0	50	79	70	130
4-Nitrophenol	1	90.9091	0	100	91	20	160
2,3,4,6-Tetrachlorophenol	1	86.1543	0	100	86	70	130
Fluorene	1	41.0273	0	50	82	70	130
4-Chlorophenyl-phenylether	1	41.5893	0	50	83	70	130
Diethylphthalate	1	42.2062	0	50	84	70	130
4-Nitroaniline	1	40.8206	0	50	82	70	130
Atrazine	1	47.3824	0	50	95	70	130
4,6-Dinitro-2-methylphenol	1	94.3036	0	100	94	70	130
n-Nitrosodiphenylamine	1	32.5819	0	50	65*	70	130
1,2-Diphenylhydrazine	1	44.0693	0	50	88	70	130
4-Bromophenyl-phenylether	1	41.8348	0	50	84	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40422

Hexachlorobenzene	1	41.8506	0	50	84	70	130
N-Octadecane	1	56.0931	0	50	112	70	130
Pentachlorophenol	1	95.2957	0	100	95	20	160
Phenanthrene	1	43.0422	0	50	86	70	130
Anthracene	1	42.3662	0	50	85	70	130
Carbazole	1	44.8848	0	50	90	70	130
Di-n-butylphthalate	1	46.3965	0	50	93	70	130
Fluoranthene	1	42.9913	0	50	86	70	130
Pyrene	1	40.025	0	50	80	70	130
Benzidine	1	0	0	50	0*	20	160
Butylbenzylphthalate	1	41.2448	0	50	82	70	130
3,3'-Dichlorobenzidine	1	21.0181	0	50	42*	70	130
Benzo[a]anthracene	1	40.5088	0	50	81	70	130
Chrysene	1	37.9661	0	50	76	70	130
bis(2-Ethylhexyl)phthalate	1	40.7194	0	50	81	70	130
Di-n-octylphthalate	1	43.5505	0	50	87	70	130
Benzo[b]fluoranthene	1	44.8457	0	50	90	70	130
Benzo[k]fluoranthene	1	42.1028	0	50	84	70	130
Benzo[a]pyrene	1	40.3566	0	50	81	70	130
Indeno[1,2,3-cd]pyrene	1	41.9971	0	50	84	70	130
Dibenzo[a,h]anthracene	1	39.3789	0	50	79	70	130
Benzo[g,h,i]perylene	1	40.76	0	50	82	70	130

* - Indicates outside of limits

- Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40451

Data File	Sample ID:	Analysis Date
Spike or Dup: 7M69842.D	SMB40451(MS)	2/18/2015 11:40:00 AM
Non Spike(If applicable):		
Inst Blank(If applicable):		

Method: 8270D | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	30.9551	0	50	62	20	160
N-Nitrosodimethylamine	1	33.8125	0	50	68	20	160
Benzaldehyde	1	74.2806	0	50	149	20	160
Aniline	1	16.5217	0	50	33	20	160
Pentachloroethane	1	40.1161	0	50	80	20	160
bis(2-Chloroethyl)ether	1	32.8104	0	50	66*	70	130
Phenol	1	76.528	0	100	77	20	160
2-Chlorophenol	1	84.202	0	100	84	70	130
N-Decane	1	34.3221	0	50	69	20	160
1,3-Dichlorobenzene	1	36.5982	0	50	73	70	130
1,4-Dichlorobenzene	1	35.395	0	50	71	70	130
1,2-Dichlorobenzene	1	36.2327	0	50	72	70	130
Benzyl alcohol	1	36.4114	0	50	73	20	160
bis(2-chloroisopropyl)ether	1	29.7974	0	50	60*	70	130
2-Methylphenol	1	83.237	0	100	83	70	130
Acetophenone	1	39.167	0	50	78	70	130
Hexachloroethane	1	34.6342	0	50	69	20	160
N-Nitroso-di-n-propylamine	1	32.5736	0	50	65*	70	130
3&4-Methylphenol	1	80.5546	0	100	81	20	160
Nitrobenzene	1	39.3606	0	50	79	70	130
Isophorone	1	29.5089	0	50	59*	70	130
2-Nitrophenol	1	91.4294	0	100	91	70	130
2,4-Dimethylphenol	1	78.8736	0	100	79	70	130
Benzoic Acid	1	42.5755	0	100	43	20	160
bis(2-Chloroethoxy)methane	1	35.9246	0	50	72	70	130
2,4-Dichlorophenol	1	89.0334	0	100	89	70	130
1,2,4-Trichlorobenzene	1	37.4925	0	50	75	70	130
Naphthalene	1	35.1781	0	50	70	70	130
4-Chloroaniline	1	7.9063	0	50	16*	70	130
Hexachlorobutadiene	1	37.4842	0	50	75	70	130
Caprolactam	1	31.6728	0	50	63	20	160
4-Chloro-3-methylphenol	1	82.9155	0	100	83	70	130
2-Methylnaphthalene	1	37.2599	0	50	75	70	130
1,1'-Biphenyl	1	37.5721	0	50	75	70	130
1,2,4,5-Tetrachlorobenzene	1	43.2943	0	50	87	70	130
Hexachlorocyclopentadiene	1	36.8104	0	50	74	20	160
2,4,6-Trichlorophenol	1	79.393	0	100	79	70	130
2,4,5-Trichlorophenol	1	87.8299	0	100	88	70	130
2-Chloronaphthalene	1	35.7291	0	50	71	70	130
1,4-Dimethylnaphthalene	1	40.129	0	50	80	70	130
Diphenyl Ether	1	41.9725	0	50	84	70	130
2-Nitroaniline	1	37.7695	0	50	76	70	130
Coumarin	1	35.856	0	50	72	70	130
Acenaphthylene	1	35.2486	0	50	70	70	130
Dimethylphthalate	1	33.2694	0	50	67*	70	130
2,6-Dinitrotoluene	1	34.7609	0	50	70	70	130
Acenaphthene	1	35.0163	0	50	70	70	130
3-Nitroaniline	1	24.1147	0	50	48*	70	130
2,4-Dinitrophenol	1	60.8706	0	100	61	20	160
Dibenzofuran	1	37.463	0	50	75	70	130
2,4-Dinitrotoluene	1	33.6764	0	50	67*	70	130
4-Nitrophenol	1	61.0185	0	100	61	20	160
2,3,4,6-Tetrachlorophenol	1	69.8958	0	100	70	70	130
Fluorene	1	34.5094	0	50	69*	70	130
4-Chlorophenyl-phenylether	1	36.3666	0	50	73	70	130
Diethylphthalate	1	33.6804	0	50	67*	70	130
4-Nitroaniline	1	30.1657	0	50	60*	70	130
Atrazine	1	37.2124	0	50	74	70	130
4,6-Dinitro-2-methylphenol	1	85.9049	0	100	86	70	130
n-Nitrosodiphenylamine	1	32.8885	0	50	66*	70	130
1,2-Diphenylhydrazine	1	43.7449	0	50	87	70	130
4-Bromophenyl-phenylether	1	39.42	0	50	79	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40451

Hexachlorobenzene	1	36.8383	0	50	74	70	130
N-Octadecane	1	53.175	0	50	106	70	130
Pentachlorophenol	1	60.3836	0	100	60	20	160
Phenanthrene	1	37.6551	0	50	75	70	130
Anthracene	1	37.095	0	50	74	70	130
Carbazole	1	40.0997	0	50	80	70	130
Di-n-butylphthalate	1	38.4096	0	50	77	70	130
Fluoranthene	1	35.2501	0	50	71	70	130
Pyrene	1	39.2723	0	50	79	70	130
Benzidine	1	0	0	50	0*	20	160
Butylbenzylphthalate	1	38.4321	0	50	77	70	130
3,3'-Dichlorobenzidine	1	15.6198	0	50	31*	70	130
Benzo[a]anthracene	1	35.5263	0	50	71	70	130
Chrysene	1	34.5357	0	50	69*	70	130
bis(2-Ethylhexyl)phthalate	1	39.201	0	50	78	70	130
Di-n-octylphthalate	1	40.0547	0	50	80	70	130
Benzo[b]fluoranthene	1	39.058	0	50	78	70	130
Benzo[k]fluoranthene	1	37.9531	0	50	76	70	130
Benzo[a]pyrene	1	35.5994	0	50	71	70	130
Indeno[1,2,3-cd]pyrene	1	31.5208	0	50	63*	70	130
Dibenzo[a,h]anthracene	1	29.2548	0	50	59*	70	130
Benzo[g,h,i]perylene	1	30.8558	0	50	62*	70	130

* - Indicates outside of limits

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Form3
Recovery Data
QC Batch: SMB40422

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5M89003.D	AC83314-001(MS)	2/12/2015 6:18:00 PM
Non Spike(If applicable):	5M89002.D	AC83314-001	2/12/2015 5:54:00 PM
Inst Blank(If applicable):			

Method: 8270D Matrix: Soil QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	33.9061	0	50	68	20	160
N-Nitrosodimethylamine	1	36.5245	0	50	73	20	160
Benzaldehyde	1	57.7917	0	50	116	20	160
Aniline	1	24.5931	0	50	49	20	160
Pentachloroethane	1	40.6929	0	50	81	20	160
bis(2-Chloroethyl)ether	1	35.2197	0	50	70	70	130
Phenol	1	72.9259	0	100	73	20	160
2-Chlorophenol	1	76.2561	0	100	76	70	130
N-Decane	1	38.3833	0	50	77	20	160
1,3-Dichlorobenzene	1	37.3024	0	50	75	70	130
1,4-Dichlorobenzene	1	36.6608	0	50	73	70	130
1,2-Dichlorobenzene	1	36.4921	0	50	73	70	130
Benzyl alcohol	1	38.1457	0	50	76	20	160
bis(2-chloroisopropyl)ether	1	33.9295	0	50	68*	70	130
2-Methylphenol	1	76.0469	0	100	76	70	130
Acetophenone	1	41.3985	0	50	83	70	130
Hexachloroethane	1	37.7749	0	50	76	20	160
N-Nitroso-di-n-propylamine	1	34.7569	0	50	70	70	130
3&4-Methylphenol	1	77.8445	0	100	78	20	160
Nitrobenzene	1	43.2726	0	50	87	70	130
Isophorone	1	35.4163	0	50	71	70	130
2-Nitrophenol	1	82.471	0	100	82	70	130
2,4-Dimethylphenol	1	74.9152	0	100	75	70	130
Benzoic Acid	1	30.9309	0	100	31	20	160
bis(2-Chloroethoxy)methane	1	38.145	0	50	76	70	130
2,4-Dichlorophenol	1	81.688	0	100	82	70	130
1,2,4-Trichlorobenzene	1	39.1075	0	50	78	70	130
Naphthalene	1	37.973	0	50	76	70	130
4-Chloroaniline	1	21.2926	0	50	43*	70	130
Hexachlorobutadiene	1	37.9076	0	50	76	70	130
Caprolactam	1	41.2704	0	50	83	20	160
4-Chloro-3-methylphenol	1	85.2154	0	100	85	70	130
2-Methylnaphthalene	1	38.9794	0	50	78	70	130
1,1'-Biphenyl	1	39.0044	0	50	78	70	130
1,2,4,5-Tetrachlorobenzene	1	43.9711	0	50	88	70	130
Hexachlorocyclopentadiene	1	34.0093	0	50	68	20	160
2,4,6-Trichlorophenol	1	81.6749	0	100	82	70	130
2,4,5-Trichlorophenol	1	93.8132	0	100	94	70	130
2-Chloronaphthalene	1	40.2573	0	50	81	70	130
1,4-Dimethylnaphthalene	1	42.0917	0	50	84	70	130
Diphenyl Ether	1	41.6431	0	50	83	70	130
2-Nitroaniline	1	43.2127	0	50	86	70	130
Coumarin	1	42.0696	0	50	84	70	130
Acenaphthylene	1	40.3715	0	50	81	70	130
Dimethylphthalate	1	38.3307	0	50	77	70	130
2,6-Dinitrotoluene	1	39.2311	0	50	78	70	130
Acenaphthene	1	39.5261	0	50	79	70	130
3-Nitroaniline	1	30.7947	0	50	62*	70	130
2,4-Dinitrophenol	1	70.659	0	100	71	20	160
Dibenzofuran	1	40.9819	0	50	82	70	130
2,4-Dinitrotoluene	1	37.581	0	50	75	70	130
4-Nitrophenol	1	85.9636	0	100	86	20	160
2,3,4,6-Tetrachlorophenol	1	83.194	0	100	83	70	130
Fluorene	1	40.1704	0	50	80	70	130
4-Chlorophenyl-phenylether	1	40.7143	0	50	81	70	130
Diethylphthalate	1	40.7222	0	50	81	70	130
4-Nitroaniline	1	40.7361	0	50	81	70	130
Atrazine	1	43.6608	0	50	87	70	130
4,6-Dinitro-2-methylphenol	1	82.53	0	100	83	70	130
n-Nitrosodiphenylamine	1	31.448	0	50	63*	70	130
1,2-Diphenylhydrazine	1	42.571	0	50	85	70	130
4-Bromophenyl-phenylether	1	40.6959	0	50	81	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40422

Hexachlorobenzene	1	40.8996	0	50	82	70	130
N-Octadecane	1	53.8055	0	50	108	70	130
Pentachlorophenol	1	84.53	0	100	85	20	160
Phenanthrene	1	41.7377	0	50	83	70	130
Anthracene	1	41.2898	0	50	83	70	130
Carbazole	1	42.4671	0	50	85	70	130
Di-n-butylphthalate	1	45.3809	0	50	91	70	130
Fluoranthene	1	41.6954	0	50	83	70	130
Pyrene	1	39.6447	0	50	79	70	130
Benzidine	1	3.113	0	50	6.2*	20	160
Butylbenzylphthalate	1	41.5552	0	50	83	70	130
3,3'-Dichlorobenzidine	1	28.3813	0	50	57*	70	130
Benzo[a]anthracene	1	39.6037	0	50	79	70	130
Chrysene	1	37.0251	0	50	74	70	130
bis(2-Ethylhexyl)phthalate	1	41.4373	0	50	83	70	130
Di-n-octylphthalate	1	44.2233	0	50	88	70	130
Benzo[b]fluoranthene	1	43.6134	0	50	87	70	130
Benzo[k]fluoranthene	1	40.4035	0	50	81	70	130
Benzo[a]pyrene	1	40.976	0	50	82	70	130
Indeno[1,2,3-cd]pyrene	1	40.2552	0	50	81	70	130
Dibenzo[a,h]anthracene	1	38.0951	0	50	76	70	130
Benzo[g,h,i]perylene	1	39.6102	0	50	79	70	130

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Form3
Recovery Data
QC Batch: SMB40422

	Data File	Sample ID:	Analysis Date
Spike or Dup:	5M89004.D	AC83314-001(MSD)	2/12/2015 6:41:00 PM
Non Spike(If applicable):	5M89002.D	AC83314-001	2/12/2015 5:54:00 PM
Inst Blank(If applicable):			

Method: 8270D | Matrix: Soil | QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	29.9864	0	50	60	20	160
N-Nitrosodimethylamine	1	33.4262	0	50	67	20	160
Benzaldehyde	1	54.9973	0	50	110	20	160
Aniline	1	25.0499	0	50	50	20	160
Pentachloroethane	1	38.4978	0	50	77	20	160
bis(2-Chloroethyl)ether	1	33.8239	0	50	68*	70	130
Phenol	1	69.988	0	100	70	20	160
2-Chlorophenol	1	71.8757	0	100	72	70	130
N-Decane	1	37.7533	0	50	76	20	160
1,3-Dichlorobenzene	1	33.8924	0	50	68*	70	130
1,4-Dichlorobenzene	1	33.3331	0	50	67*	70	130
1,2-Dichlorobenzene	1	34.2534	0	50	69*	70	130
Benzyl alcohol	1	37.3001	0	50	75	20	160
bis(2-chloroisopropyl)ether	1	32.541	0	50	65*	70	130
2-Methylphenol	1	73.7189	0	100	74	70	130
Acetophenone	1	39.6643	0	50	79	70	130
Hexachloroethane	1	35.307	0	50	71	20	160
N-Nitroso-di-n-propylamine	1	34.0046	0	50	68*	70	130
3&4-Methylphenol	1	76.1989	0	100	76	20	160
Nitrobenzene	1	42.1473	0	50	84	70	130
Isophorone	1	33.0695	0	50	66*	70	130
2-Nitrophenol	1	79.1457	0	100	79	70	130
2,4-Dimethylphenol	1	74.5038	0	100	75	70	130
Benzoic Acid	1	33.527	0	100	34	20	160
bis(2-Chloroethoxy)methane	1	37.0511	0	50	74	70	130
2,4-Dichlorophenol	1	78.6741	0	100	79	70	130
1,2,4-Trichlorobenzene	1	36.1491	0	50	72	70	130
Naphthalene	1	36.2523	0	50	73	70	130
4-Chloroaniline	1	18.3305	0	50	37*	70	130
Hexachlorobutadiene	1	36.1399	0	50	72	70	130
Caprolactam	1	36.2741	0	50	73	20	160
4-Chloro-3-methylphenol	1	81.784	0	100	82	70	130
2-Methylnaphthalene	1	36.6686	0	50	73	70	130
1,1'-Biphenyl	1	37.994	0	50	76	70	130
1,2,4,5-Tetrachlorobenzene	1	41.1144	0	50	82	70	130
Hexachlorocyclopentadiene	1	36.9651	0	50	74	20	160
2,4,6-Trichlorophenol	1	75.4244	0	100	75	70	130
2,4,5-Trichlorophenol	1	89.7933	0	100	90	70	130
2-Chloronaphthalene	1	37.5231	0	50	75	70	130
1,4-Dimethylnaphthalene	1	41.1589	0	50	82	70	130
Diphenyl Ether	1	39.9458	0	50	80	70	130
2-Nitroaniline	1	41.879	0	50	84	70	130
Coumarin	1	39.7467	0	50	79	70	130
Acenaphthylene	1	37.9574	0	50	76	70	130
Dimethylphthalate	1	36.6978	0	50	73	70	130
2,6-Dinitrotoluene	1	38.3052	0	50	77	70	130
Acenaphthene	1	37.616	0	50	75	70	130
3-Nitroaniline	1	28.7977	0	50	58*	70	130
2,4-Dinitrophenol	1	64.6916	0	100	65	20	160
Dibenzofuran	1	38.6578	0	50	77	70	130
2,4-Dinitrotoluene	1	34.6184	0	50	69*	70	130
4-Nitrophenol	1	77.5497	0	100	78	20	160
2,3,4,6-Tetrachlorophenol	1	76.9715	0	100	77	70	130
Fluorene	1	37.1805	0	50	74	70	130
4-Chlorophenyl-phenylether	1	38.2344	0	50	76	70	130
Diethylphthalate	1	37.5852	0	50	75	70	130
4-Nitroaniline	1	35.6474	0	50	71	70	130
Atrazine	1	40.598	0	50	81	70	130
4,6-Dinitro-2-methylphenol	1	77.469	0	100	77	70	130
n-Nitrosodiphenylamine	1	30.5391	0	50	61*	70	130
1,2-Diphenylhydrazine	1	38.403	0	50	77	70	130
4-Bromophenyl-phenylether	1	39.1264	0	50	78	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40422

Hexachlorobenzene	1	37.6843	0	50	75	70	130
N-Octadecane	1	51.2347	0	50	102	70	130
Pentachlorophenol	1	79.2781	0	100	79	20	160
Phenanthrene	1	38.8745	0	50	78	70	130
Anthracene	1	38.5261	0	50	77	70	130
Carbazole	1	38.8599	0	50	78	70	130
Di-n-butylphthalate	1	42.1248	0	50	84	70	130
Fluoranthene	1	37.8036	0	50	76	70	130
Pyrene	1	41.052	0	50	82	70	130
Benzidine	1	2.6558	0	50	5.3*	20	160
Butylbenzylphthalate	1	41.8164	0	50	84	70	130
3,3'-Dichlorobenzidine	1	27.3474	0	50	55*	70	130
Benzo[a]anthracene	1	38.5372	0	50	77	70	130
Chrysene	1	35.6256	0	50	71	70	130
bis(2-Ethylhexyl)phthalate	1	40.9582	0	50	82	70	130
Di-n-octylphthalate	1	44.873	0	50	90	70	130
Benzo[b]fluoranthene	1	40.457	0	50	81	70	130
Benzo[k]fluoranthene	1	43.1115	0	50	86	70	130
Benzo[a]pyrene	1	39.1034	0	50	78	70	130
Indeno[1,2,3-cd]pyrene	1	38.7636	0	50	78	70	130
Dibenzo[a,h]anthracene	1	36.4736	0	50	73	70	130
Benzo[g,h,i]perylene	1	37.4592	0	50	75	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA

QC Batch: SMB40422

Data File	Sample ID:	Analysis Date
Spike or Dup: 5M89004.D	AC83314-001(MSD)	2/12/2015 6:41:00 PM
Duplicate(If applicable): 5M89003.D	AC83314-001(MS)	2/12/2015 6:18:00 PM
Inst Blank(If applicable):		

Method: 8270D Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Pyridine	1	29.9864	33.9061	12	30
N-Nitrosodimethylamine	1	33.4262	36.5245	8.9	30
Benzaldehyde	1	54.9973	57.7917	5	30
Aniline	1	25.0499	24.5931	1.8	30
Pentachloroethane	1	38.4978	40.6929	5.5	30
bis(2-Chloroethyl)ether	1	33.8239	35.2197	4	30
Phenol	1	69.988	72.9259	4.1	30
2-Chlorophenol	1	71.8757	76.2561	5.9	30
N-Decane	1	37.7533	38.3833	1.7	30
1,3-Dichlorobenzene	1	33.8924	37.3024	9.6	30
1,4-Dichlorobenzene	1	33.3331	36.6608	9.5	30
1,2-Dichlorobenzene	1	34.2534	36.4921	6.3	30
Benzyl alcohol	1	37.3001	38.1457	2.2	30
bis(2-chloroisopropyl)ether	1	32.541	33.9295	4.2	30
2-Methylphenol	1	73.7189	76.0469	3.1	30
Acetophenone	1	39.6643	41.3985	4.3	30
Hexachloroethane	1	35.307	37.7749	6.8	30
N-Nitroso-di-n-propylamine	1	34.0046	34.7569	2.2	30
3&4-Methylphenol	1	76.1989	77.8445	2.1	30
Nitrobenzene	1	42.1473	43.2726	2.6	30
Isophorone	1	33.0695	35.4163	6.9	30
2-Nitrophenol	1	79.1457	82.471	4.1	30
2,4-Dimethylphenol	1	74.5038	74.9152	0.55	30
Benzoic Acid	1	33.527	30.9309	8.1	30
bis(2-Chloroethoxy)methane	1	37.0511	38.145	2.9	30
2,4-Dichlorophenol	1	78.6741	81.688	3.8	30
1,2,4-Trichlorobenzene	1	36.1491	39.1075	7.9	30
Naphthalene	1	36.2523	37.973	4.6	30
4-Chloroaniline	1	18.3305	21.2926	15	30
Hexachlorobutadiene	1	36.1399	37.9076	4.8	30
Caprolactam	1	36.2741	41.2704	13	30
4-Chloro-3-methylphenol	1	81.784	85.2154	4.1	30
2-Methylnaphthalene	1	36.6686	38.9794	6.1	30
1,1'-Biphenyl	1	37.994	39.0044	2.6	30
1,2,4,5-Tetrachlorobenzene	1	41.1144	43.9711	6.7	30
Hexachlorocyclopentadiene	1	36.9651	34.0093	8.3	30
2,4,6-Trichlorophenol	1	75.4244	81.6749	8	30
2,4,5-Trichlorophenol	1	89.7933	93.8132	4.4	30
2-Chloronaphthalene	1	37.5231	40.2573	7	30
1,4-Dimethylnaphthalene	1	41.1589	42.0917	2.2	30
Diphenyl Ether	1	39.9458	41.6431	4.2	30
2-Nitroaniline	1	41.879	43.2127	3.1	30
Coumarin	1	39.7467	42.0696	5.7	30
Acenaphthylene	1	37.9574	40.3715	6.2	30
Dimethylphthalate	1	36.6978	38.3307	4.4	30
2,6-Dinitrotoluene	1	38.3052	39.2311	2.4	30
Acenaphthene	1	37.616	39.5261	5	30
3-Nitroaniline	1	28.7977	30.7947	6.7	30
2,4-Dinitrophenol	1	64.6916	70.659	8.8	30
Dibenzofuran	1	38.6578	40.9819	5.8	30
2,4-Dinitrotoluene	1	34.6184	37.581	8.2	30
4-Nitrophenol	1	77.5497	85.9636	10	30
2,3,4,6-Tetrachlorophenol	1	76.9715	83.194	7.8	30
Fluorene	1	37.1805	40.1704	7.7	30
4-Chlorophenyl-phenylether	1	38.2344	40.7143	6.3	30
Diethylphthalate	1	37.5852	40.7222	8	30
4-Nitroaniline	1	35.6474	40.7361	13	30
Atrazine	1	40.598	43.6608	7.3	30
4,6-Dinitro-2-methylphenol	1	77.469	82.53	6.3	30
n-Nitrosodiphenylamine	1	30.5391	31.448	2.9	30
1,2-Diphenylhydrazine	1	38.403	42.571	10	30
4-Bromophenyl-phenylether	1	39.1264	40.6959	3.9	30
Hexachlorobenzene	1	37.6843	40.8996	8.2	30
N-Octadecane	1	51.2347	53.8055	4.9	30

Form3
RPD DATA
QC Batch: SMB40422

Pentachlorophenol	1	79.2781	84.53	6.4	30
Phenanthrene	1	38.8745	41.7377	7.1	30
Anthracene	1	38.5261	41.2898	6.9	30
Carbazole	1	38.8599	42.4671	8.9	30
Di-n-butylphthalate	1	42.1248	45.3809	7.4	30
Fluoranthene	1	37.8036	41.6954	9.8	30
Pyrene	1	41.052	39.6447	3.5	30
Benzidine	1	2.6558	3.113	16	30
Butylbenzylphthalate	1	41.8164	41.5552	0.63	30
3,3'-Dichlorobenzidine	1	27.3474	28.3813	3.7	30
Benzo[a]anthracene	1	38.5372	39.6037	2.7	30
Chrysene	1	35.6256	37.0251	3.9	30
bis(2-Ethylhexyl)phthalate	1	40.9582	41.4373	1.2	30
Di-n-octylphthalate	1	44.873	44.2233	1.5	30
Benzo[b]fluoranthene	1	40.457	43.6134	7.5	30
Benzo[k]fluoranthene	1	43.1115	40.4035	6.5	30
Benzo[a]pyrene	1	39.1034	40.976	4.7	30
Indeno[1,2,3-cd]pyrene	1	38.7636	40.2552	3.8	30
Dibenzo[a,h]anthracene	1	36.4736	38.0951	4.3	30
Benzo[g,h,i]perylene	1	37.4592	39.6102	5.6	30

* - Indicates outside of limits

NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB40422
Blank Data File: 5M88994.D
Matrix: Soil

Blank Analysis Date: 02/12/15 14:49
Blank Extraction Date: 02/12/15
(If Applicable)
Method: EPA 8270D

Sample Number	Data File	Analysis Date
AC83314-001(MSD	5M89004.D	02/12/15 18:41
AC83314-001(MS)	5M89003.D	02/12/15 18:18
AC83314-001	5M89002.D	02/12/15 17:54
SMB40422(MS)	5M88995.D	02/12/15 15:12

FORM 4
Blank Summary

Blank Number: SMB40451
Blank Data File: 7M69817.D
Matrix: Soil

Blank Analysis Date: 02/17/15 16:23
Blank Extraction Date: 02/17/15
(If Applicable)
Method: EPA 8270D

Sample Number	Data File	Analysis Date
AC83375-001	7M69827.D	02/17/15 20:10
AC83375-002	7M69828.D	02/17/15 20:33
SMB40451(MS)	7M69842.D	02/18/15 11:40

Form 5

Tune Name: CAL DFTPP
Instrument: GCMS 5
Data File: 5M88684.D
Analysis Date: 01/21/15 09:33
Method: EPA 8270D

Tune Scan/Time Range: Scan 1353

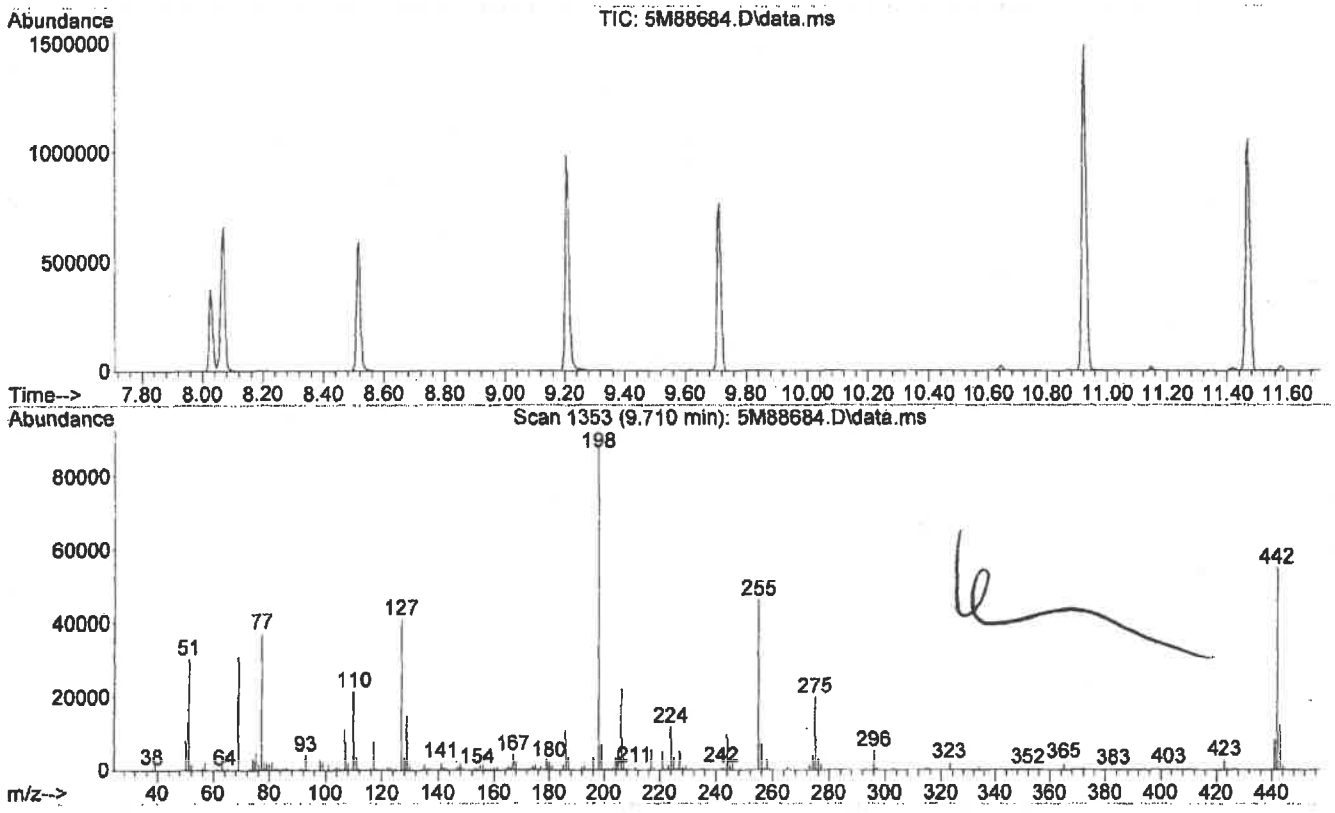
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	34.1	30048	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	34.6	30536	PASS
70	69	0.00	2	0.7	201	PASS
127	198	40	60	46.2	40728	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88184	PASS
199	198	5	9	7.4	6492	PASS
275	198	10	30	22.2	19568	PASS
365	198	1	100	2.0	1774	PASS
441	443	0.01	100	70.3	8270	PASS
442	198	40	100	62.3	54920	PASS
443	442	17	23	21.4	11760	PASS

Data File	Sample Number	Analysis Date:
5M88685.D	CAL BNA@50PPM	01/21/15 10:09
5M88686.D	CAL BNA@10PPM	01/21/15 10:38
5M88687.D	CAL BNA@20PPM	01/21/15 11:11
5M88688.D	CAL BNA@2PPM	01/21/15 11:34
5M88689.D	CAL BNA@.5PPM	01/21/15 11:58
5M88690.D	CAL BNA@196PP	01/21/15 12:21
5M88691.D	CAL BNA@160PP	01/21/15 12:44
5M88692.D	CAL BNA@120PP	01/21/15 13:07
5M88693.D	CAL BNA@80PPM	01/21/15 13:30
5M88694.D	CAL BNA@50PPM	01/21/15 13:53
5M88695.D	ICV BNA@50PPM	01/21/15 14:37

Data Path : G:\GcMsData\2015\GCMS_5\Data\01-21-15\
Data File : 5M88684.D
Acq On : 21 Jan 2015 9:33
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_5\MethodQt\5M_0107.M
Title : @GCMS_5,mg,625,8270D
Last Update : Wed Jan 07 14:54:22 2015



Spectrum Information: Scan 1353

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	34.1	30048	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	34.6	30536	PASS
70	69	0.00	2	0.7	201	PASS
127	198	40	60	46.2	40728	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88184	PASS
199	198	5	9	7.4	6492	PASS
275	198	10	30	22.2	19568	PASS
365	198	1	100	2.0	1774	PASS
441	443	0.01	100	70.3	8270	PASS
442	198	40	100	62.3	54920	PASS
443	442	17	23	21.4	11760	PASS

Form 5

Tune Name: CALDFTPP **Data File:** 7M69717.D
Instrument: GCMS 7 **Analysis Date:** 02/11/15 09:06
Method: EPA 8270D

Tune Scan/Time Range: Average of 10.017 to 10.028 min

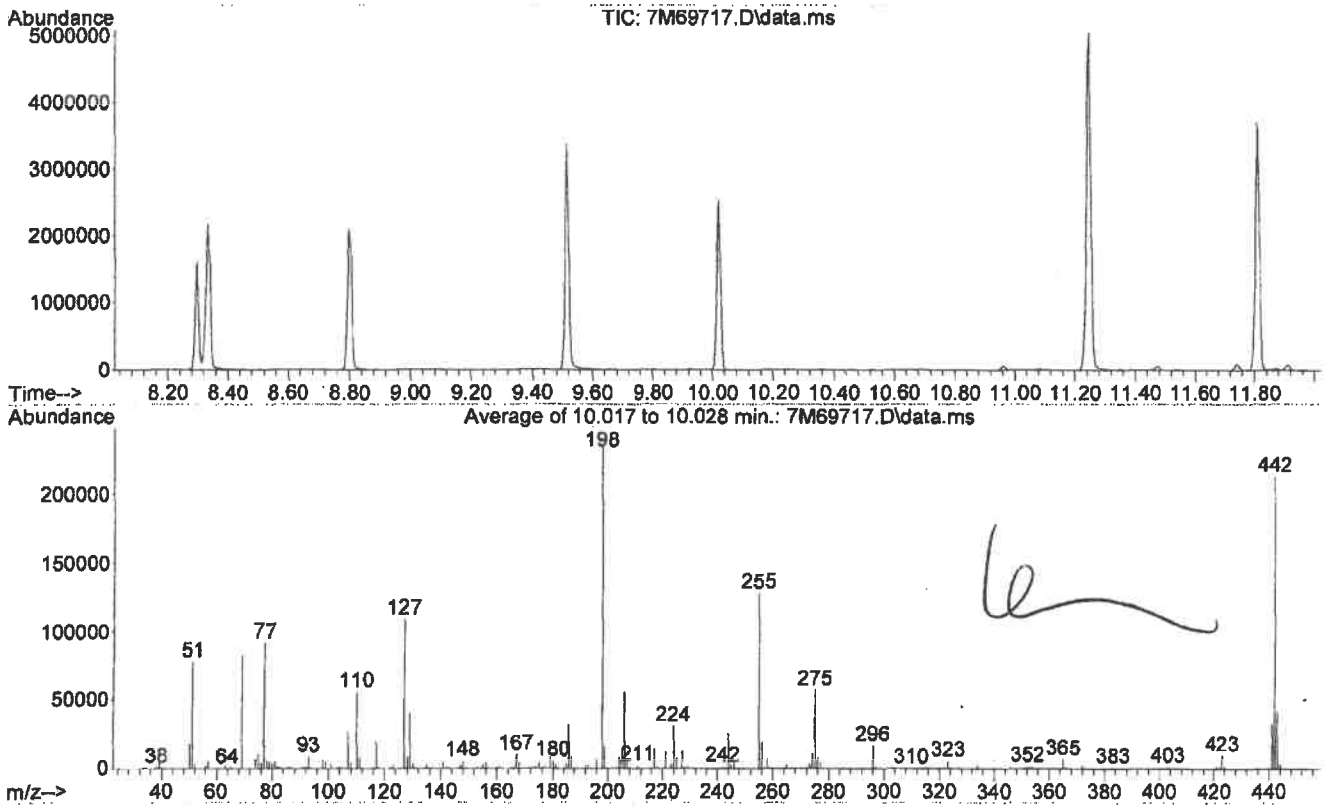
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	33.0	77944	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	35.4	83525	PASS
70	69	0.00	2	0.4	368	PASS
127	198	40	60	45.9	108392	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	236245	PASS
199	198	5	9	6.6	15639	PASS
275	198	10	30	24.2	57112	PASS
365	198	1	100	2.8	6720	PASS
441	443	0.01	100	79.0	32523	PASS
442	198	40	100	90.3	213437	PASS
443	442	17	23	19.3	41179	PASS

Data File	Sample Number	Analysis Date:
7M69718.D	CAL BNA@50PPM	02/11/15 09:41
7M69719.D	CAL BNA@10PPM	02/11/15 10:08
7M69720.D	CAL BNA@20PPM	02/11/15 10:33
7M69721.D	CAL BNA@2PPM	02/11/15 10:56
7M69722.D	CAL BNA@.5PPM	02/11/15 11:19
7M69723.D	CAL BNA@196PP	02/11/15 11:42
7M69724.D	CAL BNA@160PP	02/11/15 12:05
7M69725.D	CAL BNA@120PP	02/11/15 12:28
7M69726.D	CAL BNA@80PPM	02/11/15 12:51
7M69727.D	CAL BNA@50PPM	02/11/15 13:14
7M69728.D	CAL BNA@20PPM	02/11/15 13:39
7M69729.D	ICV BNA@50PPM	02/11/15 14:02

Data Path : G:\GcMsData\2015\GCMS_7\Data\02-11-15\
Data File : 7M69717.D
Acq On : 11 Feb 2015 9:06
Operator : AH/JB
Sample : CALDFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_7\METHODQT\7M_0210.M
Title : @GCMS_7,mg,625,8270D
Last Update : Tue Feb 10 14:28:53 2015



Spectrum Information: Average of 10.017 to 10.028 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.0	77944	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	35.4	83525	PASS
70	69	0.00	2	0.4	368	PASS
127	198	40	60	45.9	108392	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	236245	PASS
199	198	5	9	6.6	15639	PASS
275	198	10	30	24.2	57112	PASS
365	198	1	100	2.8	6720	PASS
441	443	0.01	100	79.0	32523	PASS
442	198	40	100	90.3	213437	PASS
443	442	17	23	19.3	41179	PASS

Form 5

Tune Name: CAL DFTPP
Instrument: GCMS 5
Data File: 5M88991.D
Analysis Date: 02/12/15 08:52
Method: EPA 8270D

Tune Scan/Time Range: Average of 9.705 to 9.710 min

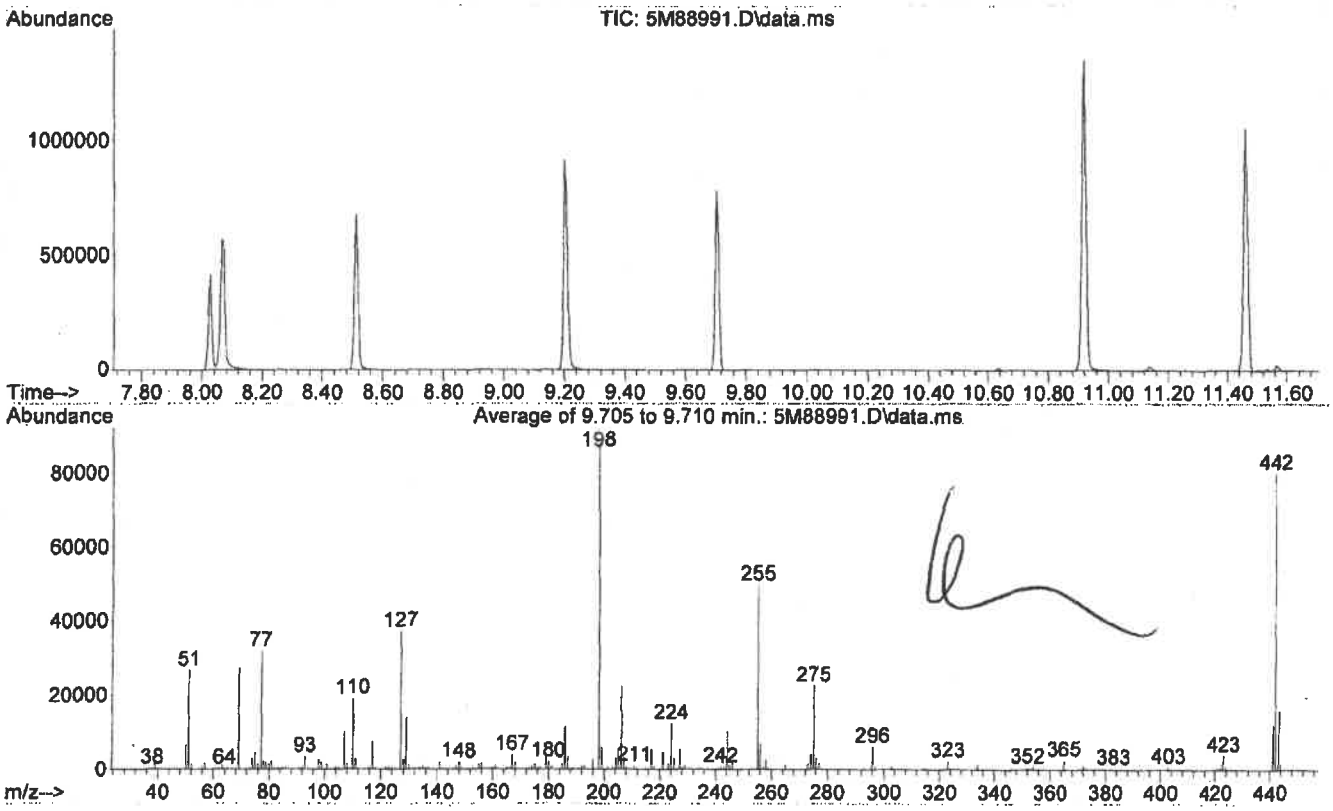
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	30.5	26768	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	31.1	27304	PASS
70	69	0.00	2	0.3	80	PASS
127	198	40	60	42.4	37192	PASS
197	198	0.00	1	0.2	209	PASS
198	198	100	100	100.0	87804	PASS
199	198	5	9	6.8	5959	PASS
275	198	10	30	25.8	22640	PASS
365	198	1	100	2.9	2523	PASS
441	443	0.01	100	75.4	12041	PASS
442	198	40	100	91.2	80040	PASS
443	442	17	23	20.0	15972	PASS

Data File	Sample Number	Analysis Date:
5M88992.D	CAL BNA@50PPM	02/12/15 09:25
5M88993.D	10PPM	02/12/15 09:56
5M88994.D	SMB40422	02/12/15 14:49
5M88995.D	SMB40422(MS)	02/12/15 15:12
5M88996.D	MBS-1	02/12/15 15:35
5M88997.D	MBS-2	02/12/15 15:58
5M88998.D	MBS-3	02/12/15 16:21
5M88999.D	MBS-4	02/12/15 16:45
5M89000.D	MBS-5	02/12/15 17:08
5M89001.D	MBS-6	02/12/15 17:31
5M89002.D	AC83314-001	02/12/15 17:54
5M89003.D	AC83314-001(MS)	02/12/15 18:18
5M89004.D	AC83314-001(MSD	02/12/15 18:41
5M89005.D	SMB40423(MS)	02/12/15 19:04
5M89006.D	SMB40423	02/12/15 19:28
5M89007.D	AC83316-018	02/12/15 19:51
5M89008.D	AC83316-018(MS)	02/12/15 20:14
5M89009.D	AC83316-018(MSD	02/12/15 20:38

Data Path : G:\GcMsData\2015\GCMS_5\Data\02-12-15\
Data File : 5M88991.D
Acq On : 12 Feb 2015 8:52
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_5\MethodQt\5M_0121.M
Title : @GCMS_5,mg,625,8270D
Last Update : Wed Jan 21 14:33:26 2015



Spectrum Information: Average of 9.705 to 9.710 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.5	26768	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	31.1	27304	PASS
70	69	0.00	2	0.3	80	PASS
127	198	40	60	42.4	37192	PASS
197	198	0.00	1	0.2	209	PASS
198	198	100	100	100.0	87804	PASS
199	198	5	9	6.8	5959	PASS
275	198	10	30	25.8	22640	PASS
365	198	1	100	2.9	2523	PASS
441	443	0.01	100	75.4	12041	PASS
442	198	40	100	91.2	80040	PASS
443	442	17	23	20.0	15972	PASS

Form 5

Tune Name: CALDFTPP **Data File:** 7M69801.D
Instrument: GCMS 7 **Analysis Date:** 02/17/15 10:03
Method: EPA 8270D
Tune Scan/Time Range: Average of 10.012 to 10.017 min

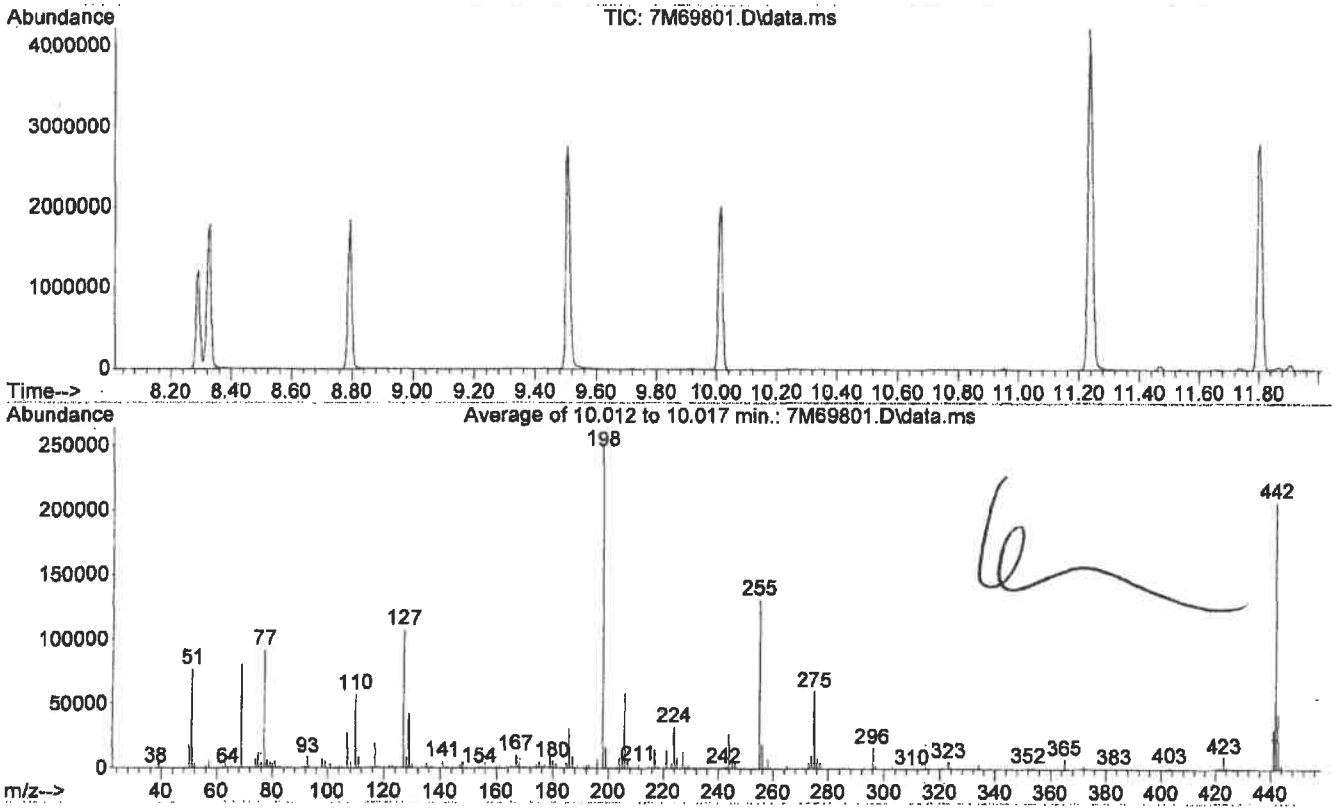
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	30.5	76952	PASS
68	69	0.00	2	0.8	682	PASS
69	198	0.00	100	31.9	80484	PASS
70	69	0.00	2	0.4	287	PASS
127	198	40	60	42.6	107264	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	251968	PASS
199	198	5	9	6.7	16972	PASS
275	198	10	30	23.8	59996	PASS
365	198	1	100	3.1	7783	PASS
441	443	0.01	100	73.7	31492	PASS
442	198	40	100	82.2	207200	PASS
443	442	17	23	20.6	42732	PASS

Data File	Sample Number	Analysis Date:
7M69802.D	CAL BNA@50PPM	02/17/15 10:27
7M69803.D	SMB40439	02/17/15 11:04
7M69804.D	AC83106-004(T)	02/17/15 11:26
7M69805.D	AC83335-001	02/17/15 11:49
7M69806.D	AC83335-002	02/17/15 12:12
7M69807.D	AC83335-003	02/17/15 12:35
7M69808.D	AC83336-004	02/17/15 12:57
7M69809.D	AC83330-015	02/17/15 13:20
7M69810.D	AC83354-001	02/17/15 13:43
7M69811.D	AC83354-002	02/17/15 14:05
7M69812.D	EF-SPLP V-204046	02/17/15 14:30
7M69813.D	AC83102-006(T)	02/17/15 14:52
7M69814.D	AC83325-002	02/17/15 15:15
7M69815.D	AC83325-003	02/17/15 15:38
7M69816.D	SMB40451(MS)	02/17/15 16:00
7M69817.D	SMB40451	02/17/15 16:23
7M69818.D	AC83331-001	02/17/15 16:46
7M69819.D	AC83331-002	02/17/15 17:08
7M69820.D	AC83331-003	02/17/15 17:31
7M69821.D	AC83331-004	02/17/15 17:54
7M69822.D	OMB40450	02/17/15 18:17
7M69823.D	OMB40450(MS)	02/17/15 18:39
7M69824.D	AC83360-002	02/17/15 19:02
7M69825.D	AC83360-001	02/17/15 19:25
7M69826.D	AC83358-001	02/17/15 19:48
7M69827.D	AC83375-001	02/17/15 20:10
7M69828.D	AC83375-002	02/17/15 20:33
7M69829.D	AC83335-002	02/17/15 20:56
7M69830.D	AC83335-003(30X)	02/17/15 21:19
7M69831.D	AC83330-015(5X)	02/17/15 21:42
7M69832.D	TEST	02/17/15 22:04
7M69833.D	TEST	02/17/15 22:27
7M69834.D	TEST	02/17/15 22:50
7M69835.D	TEST	02/17/15 23:13
7M69836.D	TEST	02/17/15 23:36

Data Path : G:\GcMsData\2015\GCMS_7\Data\02-17-15\
Data File : 7M69801.D
Acq On : 17 Feb 2015 10:03
Operator : AH/JB
Sample : CALDFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_7\METHODQT\7M_0211.M
Title : @GCMS_7,mg,625,8270D
Last Update : Wed Feb 11 13:55:36 2015



Spectrum Information: Average of 10.012 to 10.017 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.5	76952	PASS
68	69	0.00	2	0.8	682	PASS
69	198	0.00	100	31.9	80484	PASS
70	69	0.00	2	0.4	287	PASS
127	198	40	60	42.6	107264	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	251968	PASS
199	198	5	9	6.7	16972	PASS
275	198	10	30	23.8	59996	PASS
365	198	1	100	3.1	7783	PASS
441	443	0.01	100	73.7	31492	PASS
442	198	40	100	82.2	207200	PASS
443	442	17	23	20.6	42732	PASS

Form 5

Tune Name: CALDFTPP
Instrument: GCMS 7
Data File: 7M69837.D
Analysis Date: 02/18/15 09:22
Method: EPA 8270D

Tune Scan/Time Range: Average of 10.012 to 10.017 min

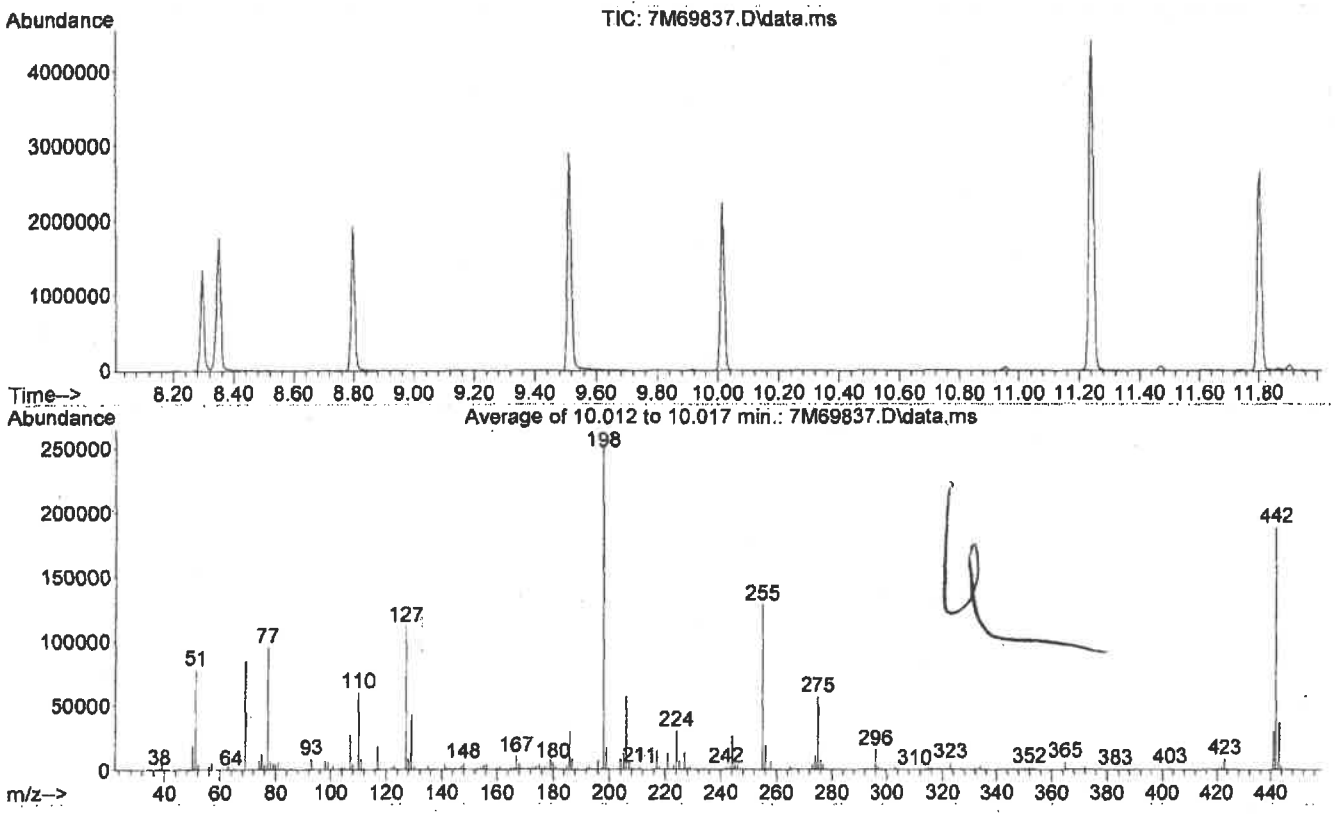
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	30.8	77868	PASS
68	69	0.00	2	0.5	382	PASS
69	198	0.00	100	33.3	84140	PASS
70	69	0.00	2	0.5	380	PASS
127	198	40	60	44.2	111856	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	252800	PASS
199	198	5	9	6.7	17039	PASS
275	198	10	30	22.4	56648	PASS
365	198	1	100	2.4	6191	PASS
441	443	0.01	100	84.5	30360	PASS
442	198	40	100	74.5	188440	PASS
443	442	17	23	19.1	35924	PASS

Data File	Sample Number	Analysis Date:
7M69838.D	CAL BNA@50PPM	02/18/15 09:44
7M69839.D	WMB40445(MS)	02/18/15 10:31
7M69840.D	WMB40445	02/18/15 10:54
7M69841.D	OMB40450(MS)	02/18/15 11:17
7M69842.D	SMB40451(MS)	02/18/15 11:40
7M69843.D	AC83363-001	02/18/15 12:02
7M69844.D	AC83358-001	02/18/15 12:25
7M69845.D	AC83363-001(MS)	02/18/15 12:48
7M69846.D	AC83363-001(MSD	02/18/15 13:11
7M69847.D	AC83354-001	02/18/15 13:34
7M69848.D	AC83354-002	02/18/15 13:57
7M69849.D	AC83363-002	02/18/15 14:20
7M69850.D	AC83363-003	02/18/15 14:43
7M69851.D	AC83363-004	02/18/15 15:05
7M69852.D	AC83363-005	02/18/15 15:28
7M69853.D	SMB40457	02/18/15 15:51
7M69854.D	AC83221-003	02/18/15 16:14
7M69855.D	AC83221-006	02/18/15 16:37
7M69856.D	AC83221-007	02/18/15 17:00
7M69857.D	AC83221-011	02/18/15 17:23
7M69858.D	AC83221-010	02/18/15 17:46
7M69859.D	AC83221-014	02/18/15 18:09
7M69860.D	AC83221-015	02/18/15 18:32
7M69861.D	AC83380-005	02/18/15 18:55
7M69862.D	AC83380-006	02/18/15 19:18
7M69863.D	AC83385-001	02/18/15 19:40
7M69864.D	AC83385-002	02/18/15 20:03
7M69865.D	AC83385-003	02/18/15 20:26
7M69866.D	AC83385-004	02/18/15 20:49

Data Path : G:\GcMsData\2015\GCMS_7\Data\02-18-15\
Data File : 7M69837.D
Acq On : 18 Feb 2015 9:22
Operator : AH/JB
Sample : CALDFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GCMSDATA\2015\GCMS_7\METHODQT\7M_0211.M
Title : @GCMS_7,mg,625,8270D
Last Update : Wed Feb 11 13:55:36 2015



Spectrum Information: Average of 10.012 to 10.017 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.8	77868	PASS
68	69	0.00	2	0.5	382	PASS
69	198	0.00	100	33.3	84140	PASS
70	69	0.00	2	0.5	380	PASS
127	198	40	60	44.2	111856	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	252800	PASS
199	198	5	9	6.7	17039	PASS
275	198	10	30	22.4	56648	PASS
365	198	1	100	2.4	6191	PASS
441	443	0.01	100	84.5	30360	PASS
442	198	40	100	74.5	188440	PASS
443	442	17	23	19.1	35924	PASS

Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5M88685.	CAL BNA@50PPM	01/21/15 10:09	2	5M88688.	CAL BNA@2PPM	01/21/15 11:34
3	5M88686.	CAL BNA@10PPM	01/21/15 10:38	4	5M88687.	CAL BNA@20PPM	01/21/15 11:11
5	5M88693.	CAL BNA@80PPM	01/21/15 13:30	6	5M88692.	CAL BNA@120PPM	01/21/15 13:07
7	5M88691.	CAL BNA@160PPM	01/21/15 12:44	8	5M88690.	CAL BNA@196PPM	01/21/15 12:21
9	5M88689.	CAL BNA@.5PPM	01/21/15 11:58				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Pvridine	1	0	Qua	1.4870	0.6479	1.2877	1.3307	1.3450	1.5088	1.4713	1.5218	----	1.33	2.67	0.999	0.999	22		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitrosodimethvlamin	1	0	Avg	0.8220	0.6236	0.8110	0.7310	0.7985	0.8550	0.8322	0.8480	----	0.790	2.61	0.999	0.999	9.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorophenol	1	0	Avg	1.2812	1.1940	1.2565	1.1690	1.2839	1.3183	1.2905	1.3373	----	1.27	4.34	0.999	1.00	4.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzaldehvde	1	0	Qua	0.5773	0.6557	0.6088	0.5735	0.4915	0.4504	0.4088	0.3802	----	0.518	5.20	0.979	0.999	19	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Aniline	1	0	Avg	1.8507	1.6452	1.7312	1.8082	1.9941	2.0265	1.9665	1.9186	1.9063	1.87	5.29	0.999	0.999	6.7		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Pentachloroethane	1	0	Avg	0.4638	0.4501	0.4629	0.4273	0.4510	0.4480	0.4490	0.4430	----	0.449	5.33	1.00	1.00	2.6	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethvl)ether	1	0	Qua	1.4061	1.4517	1.4355	1.3115	1.3386	1.3465	1.3341	1.3260	1.9388	1.43	5.36	1.00	1.00	14	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Phenol-d5	1	0	Avg	1.8341	1.6910	1.8055	1.6693	1.7927	1.8224	1.8015	1.7726	----	1.77	5.26	1.00	1.00	3.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Phenol	1	0	Avg	1.9601	1.8444	1.9717	1.8344	1.8982	1.9246	1.8966	1.8165	----	1.89	5.27	0.999	1.00	3.1	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Chlorophenol	1	0	Avg	1.4617	1.4284	1.4574	1.3486	1.4352	1.4322	1.4236	1.4067	----	1.42	5.39	1.00	1.00	2.5	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Decane	1	0	Avg	1.4758	1.6664	1.5745	1.4321	1.4015	1.3781	1.3602	1.3299	----	1.45	5.44	0.999	1.00	7.9	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.3-Dichlorobenzene	1	0	Avg	1.5383	1.7696	1.6454	1.5062	1.5477	1.5236	1.5194	1.5073	----	1.57	5.53	1.00	1.00	5.9		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dichlorobenzene	1	0	Avg	1.6140	1.7238	1.6684	1.5429	1.5400	1.5508	1.5311	1.5345	----	1.59	5.59	1.00	1.00	4.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Dichlorobenzene	1	0	Avg	1.5331	1.7263	1.6218	1.4707	1.4854	1.4829	1.4637	1.4449	----	1.53	5.71	1.00	1.00	6.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzvl alcohol	1	0	Avg	0.9591	0.8658	0.9495	0.8686	0.9226	0.9425	0.9288	0.9262	----	0.920	5.70	1.00	1.00	3.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-chloroisopropvl)e	1	0	Avg	1.8973	2.0277	1.9795	1.7840	1.8189	1.8135	1.7839	1.7798	----	1.86	5.82	1.00	1.00	5.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methvlphenol	1	0	Avg	1.3201	1.2602	1.3269	1.2284	1.2948	1.2997	1.2839	1.2548	1.5339	1.31	5.79	1.00	1.00	6.8	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Acetophenone	1	0	Avg	1.7257	1.7760	1.8830	1.6862	1.6175	1.6105	1.5886	1.5194	----	1.68	5.91	0.998	1.00	7.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachloroethane	1	0	Avg	0.5571	0.6088	0.5705	0.5155	0.5484	0.5524	0.5413	0.5284	----	0.553	5.99	0.999	1.00	5.1	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitroso-di-n-propvlar	1	0	Avg	0.9356	0.9052	1.0018	0.8856	0.8688	0.8678	0.8545	0.8413	1.0122	0.908	5.92	0.999	1.00	6.9	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
3&4-Methvlphenol	1	0	Avg	1.3293	1.3512	1.3959	1.2944	1.2404	1.2345	1.1941	1.1569	1.5915	1.31	5.91	0.998	1.00	10		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Nitrobenzene-d5	1	0	Avg	0.1775	0.1589	0.1746	0.1624	0.1770	0.1830	0.1802	0.1803	----	0.174	6.03	1.00	1.00	5.1		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
Nitrobenzene	1	0	Avg	0.3845	0.3846	0.3971	0.3631	0.3851	0.3814	0.3723	0.3761	----	0.381	6.05	1.00	1.00	2.7	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Isophorone	1	0	Avg	0.7054	0.6025	0.7184	0.6636	0.7056	0.6998	0.6844	0.6835	----	0.683	6.24	1.00	1.00	5.4	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitrophenol	1	0	Qua	0.2042	0.1403	0.1937	0.1809	0.2090	0.2106	0.2078	0.2031	----	0.194	6.30	0.999	0.999	12	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dimethvlphenol	1	0	Avg	0.3868	0.3681	0.3981	0.3740	0.3793	0.3803	0.3689	0.3694	0.4572	0.387	6.33	1.00	1.00	7.3	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Benzoic Acid	1	0	Qua	0.1899	----	0.0476	0.0725	0.2787	0.3058	0.2790	0.2577	----	0.204	6.41	0.982	0.991	51		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethoxy)mel	1	0	Avg	0.4166	0.4388	0.4618	0.4094	0.4118	0.4071	0.4034	0.4054	----	0.419	6.41	1.00	1.00	4.9	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dichlorophenol	1	0	Avg	0.3513	0.2990	0.3534	0.3216	0.3474	0.3455	0.3310	0.3322	0.3401	0.336	6.48	0.999	1.00	5.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
1.2.4-Trichlorobenzene	1	0	Avg	0.3665	0.4014	0.3941	0.3487	0.3587	0.3562	0.3498	0.3455	----	0.365	6.55	1.00	1.00	5.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Naphthalene	1	0	Qua	1.1311	1.2627	1.2061	1.0896	1.0727	1.0759	1.0452	1.0364	1.6738	1.18	6.61	0.999	1.00	17	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
4-Chloroaniline	1	0	Qua	0.3723	0.3588	0.3855	0.3944	0.4045	0.3637	0.3384	0.3074	0.4564	0.376	6.65	0.986	0.999	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Hexachlorobutadiene	1	0	Avg	0.2249	0.2334	0.2404	0.2114	0.2179	0.2170	0.2107	0.2091	----	0.221	6.70	0.999	1.00	5.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Caprolactam	1	0	Qua	0.1260	0.0671	0.1140	0.1081	0.1272	0.1400	0.1373	0.1346	----	0.119	6.92	0.998	0.999	20	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chloro-3-methvlphen	1	0	Avg	0.3387	0.2812	0.3348	0.3105	0.3380	0.3363	0.3269	0.3228	----	0.324	7.01	0.999	1.00	6.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methvlnaphthalene	1	0	Avg	0.8044	0.8669	0.8809	0.7870	0.7749	0.7576	0.7378	0.7313	----	0.793	7.13	0.999	1.00	7.0	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Methvlnaphthalenes (T	1	0	Avg	1.5609	1.6983	1.7192	1.5036	1.4982	1.4643	1.4326	1.4258	----	1.54	7.21	0.999	1.00	7.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.1'-Biphenvl	1	0	Avg	0.9610	1.0785	1.0791	0.9662	0.9620	0.9511	0.9072	0.8698	----	0.972	7.50	0.997	1.00	7.6	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2.4.5-Tetrachloroben	1	0	Avg	0.5847	0.6674	0.6218	0.5581	0.5443	0.5602	0.5360	0.5193	----	0.574	7.26	0.998	1.00	8.6	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorocvclopentac	1	0	Avg	0.3207	0.2052	0.2944	0.2617	0.2964	0.3082	0.3038	0.2973	----	0.286	7.25	0.999	0.999	13	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Trichlorophenol	1	0	Avg	0.4925	0.3563	0.4430	0.3999	0.3924	0.4522	0.4280	0.4014	----	0.421	7.35	0.993	0.995	10	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags
a - failed the min rf criteria
... failed the minimum correlation coeff criteria(if applicable

Note: Avg Rsd: 8.53
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

HAZ. - 21

5021319 0137

Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5M88685.	CAL BNA@50PPM	01/21/15 10:09	2	5M88688.	CAL BNA@2PPM	01/21/15 11:34
3	5M88686.	CAL BNA@10PPM	01/21/15 10:38	4	5M88687.	CAL BNA@20PPM	01/21/15 11:11
5	5M88693.	CAL BNA@80PPM	01/21/15 13:30	6	5M88692.	CAL BNA@120PPM	01/21/15 13:07
7	5M88691.	CAL BNA@160PPM	01/21/15 12:44	8	5M88690.	CAL BNA@196PPM	01/21/15 12:21
9	5M88689.	CAL BNA@.5PPM	01/21/15 11:58				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
2.4.5-Trichlorophenol	1	0	Avg	0.3796	0.3032	0.4031	0.3879	0.4262	0.4001	0.3934	0.4014	----	0.387	7.38	0.999	0.999	9.4	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorobiphenyl	1	0	Avg	1.4842	1.5751	1.4775	1.3221	1.3805	1.4281	1.3776	1.3720	----	1.43	7.42	0.999	0.999	5.7		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
2-Chloronaphthalene	1	0	Avg	1.2028	1.3025	1.2898	1.1588	1.1241	1.1379	1.1016	1.0718	----	1.17	7.52	0.999	1.00	7.2	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dimethylnaphthaler	1	0	Avg	0.8788	0.9298	0.9452	0.8393	0.7820	0.7815	0.7453	0.7175	----	0.827	7.79	0.996	0.999	10		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylnaphthalenes	1	0	Avg	0.8788	0.9298	0.9452	0.8393	0.7820	0.7815	0.7453	0.7175	----	0.827	7.79	0.996	0.999	10		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diphenyl Ether	1	0	Avg	0.8557	0.9494	0.9430	0.8393	0.8036	0.7874	0.7910	0.7568	----	0.841	7.58	0.999	1.00	8.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitroaniline	1	0	Avg	0.3871	0.2933	0.3831	0.3591	0.3715	0.3698	0.3637	0.3566	----	0.361	7.60	0.999	1.00	8.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Coumarin	1	0	Avg	0.4922	0.4961	0.5135	0.4693	0.4508	0.4463	0.4216	0.4052	----	0.462	7.78	0.996	1.00	8.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthylene	1	0	Avg	1.8376	1.7868	1.9467	1.7388	1.7211	1.7567	1.6523	1.6400	----	1.76	7.87	0.998	1.00	5.7	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylphthalate	1	0	Avg	1.4164	1.3997	1.4811	1.3419	1.3451	1.3464	1.3133	1.2773	----	1.37	7.74	0.999	1.00	4.7	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.6-Dinitrotoluene	1	0	Avg	0.3177	0.2756	0.3283	0.3054	0.2939	0.2959	0.2848	0.2816	----	0.298	7.80	0.999	1.00	6.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthene	1	0	Avg	1.1964	1.2856	1.2556	1.1352	1.1202	1.1276	1.0724	1.0632	----	1.16	8.02	0.999	1.00	7.0	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3-Nitroaniline	1	0	Qua	0.3227	0.2680	0.3385	0.3209	0.3190	0.3116	0.2877	0.2641	----	0.304	7.94	0.993	0.999	9.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dinitrophenol	1	0	Qua	0.1509	----	0.0647	0.0730	0.1535	0.1784	0.1622	0.1657	----	0.136	8.03	0.995	0.995	34	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzofuran	1	0	Qua	1.7490	1.9516	1.8986	1.6887	1.6422	1.6815	1.6229	1.5762	2.4235	1.80	8.17	0.999	1.00	15	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
2.4-Dinitrotoluene	1	0	Qua	0.4512	0.3075	0.4216	0.3989	0.4261	0.4501	0.4301	0.4170	----	0.413	8.15	0.998	0.999	11	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitrophenol	1	0	Qua	0.2305	0.0793	0.2044	0.1941	0.2507	0.2404	0.2303	0.2260	----	0.207	8.07	0.998	0.998	26	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.3.4.6-Tetrachlorophe	1	0	Avg	0.3959	0.2463	0.3781	0.3532	0.3766	0.3803	0.3706	0.3679	----	0.359	8.27	0.999	1.00	13	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Fluorene	1	0	Avg	1.4447	1.5374	1.5344	1.3994	1.3182	1.3536	1.2678	1.2565	----	1.39	8.48	0.998	0.999	7.9	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chlorophenyl-phenyl	1	0	Avg	0.7042	0.7771	0.7703	0.6795	0.6512	0.6690	0.6400	0.6214	----	0.689	8.48	0.998	1.00	8.4	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diethylphthalate	1	0	Avg	1.3454	1.2821	1.3957	1.2464	1.2769	1.3194	1.2555	1.2417	----	1.30	8.36	0.999	1.00	4.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitroaniline	1	0	Avg	0.3782	0.2795	0.3554	0.3418	0.3621	0.3816	0.3571	0.3554	----	0.351	8.50	0.999	0.999	9.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Atrazine	1	0	Avg	0.4003	0.3017	0.3849	0.3709	0.3781	0.3972	0.3797	0.3762	----	0.374	9.12	0.999	1.00	8.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.6-Dinitro-2-methylphe	1	0	Qua	0.1295	----	0.0783	0.0858	0.1317	0.1393	0.1316	0.1335	----	0.119	8.52	0.998	0.998	21	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
n-Nitrosodiphenylamine	1	0	Avg	0.6539	0.6811	0.6916	0.6226	0.6504	0.6339	0.6110	0.6129	----	0.645	8.59	0.999	1.00	4.7	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Tribromophenol	1	0	Avg	0.1161	0.0776	0.1127	0.1074	0.1181	0.1168	0.1128	0.1127	----	0.109	8.71	0.999	1.00	12		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Diphenylhydrazine	1	0	Avg	0.7319	0.6840	0.6941	0.6946	0.7192	0.7125	0.6783	0.6810	----	0.700	8.63	0.999	1.00	2.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Bromophenyl-phenyl	1	0	Avg	0.2229	0.2259	0.2349	0.2126	0.2250	0.2188	0.2119	0.2122	----	0.221	8.96	0.999	1.00	3.7	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorobenzene	1	0	Avg	0.2411	0.2523	0.2582	0.2303	0.2383	0.2298	0.2211	0.2226	----	0.237	9.02	0.998	0.999	5.7	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Octadecane	1	0	Avg	0.4274	0.3751	0.4284	0.4005	0.4080	0.3921	0.3691	0.3690	----	0.396	9.29	0.997	1.00	6.1	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pentachlorophenol	1	0	Avg	0.1576	----	0.1244	0.1180	0.1659	0.1644	0.1611	0.1629	----	0.151	9.21	0.999	0.999	13	0.05	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Phenanthrene	1	0	Avg	1.1371	1.2572	1.2030	1.0829	1.0973	1.0690	1.0420	1.0348	----	1.12	9.45	0.999	1.00	7.1	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Anthracene	1	0	Avg	1.1467	1.1671	1.1928	1.0788	1.1118	1.1077	1.0482	1.0409	----	1.11	9.50	0.998	1.00	4.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Carbazole	1	0	Avg	1.1015	1.0570	1.1439	1.0402	1.0799	1.0697	1.0141	1.0122	----	1.06	9.67	0.999	1.00	4.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-butylphthalate	1	0	Avg	1.2178	0.8942	1.1608	1.0845	1.2185	1.2046	1.1441	1.1427	0.9905	1.12	10.06	0.999	0.999	9.9	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Fluoranthene	1	0	Avg	1.3518	1.2613	1.3922	1.2606	1.3391	1.3005	1.2491	1.2281	----	1.30	10.76	0.998	1.00	4.5	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pyrene	1	0	Avg	1.1931	1.1197	1.2294	1.1696	1.2120	1.1972	1.1888	1.2039	----	1.19	11.02	1.00	1.00	2.8	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzidine	1	0	Qua	0.3864	0.1425	0.2432	0.3475	0.4241	0.3927	0.3410	0.3276	----	0.326	10.92	0.982	0.997	28		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Terphenyl-d14	1	0	Avg	0.6670	0.5870	0.6386	0.6278	0.6710	0.6850	0.6761	0.7151	----	0.658	11.22	0.999	1.00	6.0		25.00	1.00	5.00	10.00	40.00	60.00	80.00	96.00	
4.4'-DDE	1	0	Avg	0.2651	0.2505	0.2624	0.2561	0.2686	0.2625	0.2629	0.2652	----	0.262	11.15	1.00	1.00	2.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.4'-DDD	1	0	Avg	0.4293	0.3262	0.4180	0.3948	0.4293	0.4408	0.4269	0.4342	----	0.412	11.55	1.00	1.00	9.1		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

HAZ. - 218

Flags
a - failed the min rf criteria
b - failed the minimum correlation coeff criteria(if applicable)

Note: Avg Rsd: 8.53
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

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Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_5

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	5M88685.	CAL BNA@50PPM	01/21/15 10:09	2	5M88688.	CAL BNA@2PPM	01/21/15 11:34
3	5M88686.	CAL BNA@10PPM	01/21/15 10:38	4	5M88687.	CAL BNA@20PPM	01/21/15 11:11
5	5M88693.	CAL BNA@80PPM	01/21/15 13:30	6	5M88692.	CAL BNA@120PPM	01/21/15 13:07
7	5M88691.	CAL BNA@160PPM	01/21/15 12:44	8	5M88690.	CAL BNA@196PPM	01/21/15 12:21
9	5M88689.	CAL BNA@.5PPM	01/21/15 11:58				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Butylbenzylphthalate	1	0	Qua	0.4703	0.2487	0.4238	0.4211	0.4887	0.4906	0.4872	0.5004	---	0.441	11.81	1.00	1.00	19	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,4'-DDT	1	0	Avg	0.4021	---	0.3639	0.3552	0.3914	0.3883	0.3822	0.3921	---	0.382	11.91	0.999	0.999	4.4		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
3,3'-Dichlorobenzidine	1	0	Qua	0.2886	0.2239	0.3155	0.2983	0.3469	0.3299	0.3083	0.2953	---	0.301	12.42	0.993	0.997	12	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]anthracene	1	0	Avg	1.1479	1.0923	1.1565	1.0986	1.1181	1.1229	1.1101	1.1152	---	1.12	12.44	1.00	1.00	2.0	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Chrysene	1	0	Avg	1.0477	1.1013	1.1182	1.0222	1.0361	1.0218	1.0123	1.0121	---	1.05	12.48	1.00	1.00	3.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Ethylhexyl)phthal	1	0	Qua	0.6553	0.3837	0.5954	0.5943	0.6479	0.6632	0.6515	0.6534	---	0.606	12.51	1.00	1.00	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-octylphthalate	1	0	Qua	1.1816	0.5231	0.9781	1.0074	1.1948	1.2196	1.1853	1.1869	---	1.06	13.26	0.999	0.999	22	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[b]fluoranthene	1	0	Avg	1.1883	1.0269	1.1694	1.1003	1.1319	1.1160	1.1647	1.1116	---	1.13	13.65	0.999	0.999	4.5	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[k]fluoranthene	1	0	Avg	1.1151	1.0922	1.1691	1.0985	1.1336	1.0166	1.0278	1.0677	---	1.09	13.68	0.998	0.998	4.7	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]pyrene	1	0	Avg	1.1379	0.9467	1.0940	1.0601	1.0637	1.0917	1.0622	1.0587	---	1.06	13.99	0.999	1.00	5.1	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Indeno[1,2,3-cd]pyrene	1	0	Avg	1.2495	1.0894	1.1898	1.1213	1.1752	1.1861	1.1815	1.1668	---	1.17	15.24	1.00	1.00	4.1	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzo[a,h]anthracen	1	0	Avg	1.0402	0.8920	1.0108	0.9402	0.9805	0.9732	0.9725	0.9509	---	0.970	15.26	0.999	1.00	4.6	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[g,h,i]perylene	1	0	Avg	1.0609	0.9794	1.0479	0.9686	1.0067	1.0271	1.0216	1.0254	---	1.02	15.58	1.00	1.00	3.1	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

HAZ. - 219

Flags
a - failed the min rf criteria

Note: Avg Rsd: 8.53
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

if applicable, failed the minimum correlation coeff criteria (if applicable)

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Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_7

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	7M69727.	CAL BNA@50PPM	02/11/15 13:14	2	7M69721.	CAL BNA@2PPM	02/11/15 10:56
3	7M69719.	CAL BNA@10PPM	02/11/15 10:08	4	7M69728.	CAL BNA@20PPM	02/11/15 13:39
5	7M69726.	CAL BNA@80PPM	02/11/15 12:51	6	7M69725.	CAL BNA@120PPM	02/11/15 12:28
7	7M69724.	CAL BNA@160PPM	02/11/15 12:05	8	7M69723.	CAL BNA@196PPM	02/11/15 11:42
9	7M69722.	CAL BNA@.5PPM	02/11/15 11:19				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Pyridine	1	0	Avg	1.2464	0.9704	1.3799	1.3045	1.3527	1.3363	1.4187	1.5903	----	1.32	3.04	0.993	0.998	13		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitrosodimethylamin	1	0	Avg	0.8163	0.7988	0.8612	0.8361	0.8737	0.8616	0.8847	1.0362	----	0.871	2.96	0.986	0.996	8.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorophenol	1	0	Avg	1.2175	1.1738	1.1743	1.1988	1.3397	1.3538	1.3809	1.5218	----	1.30	4.60	0.995	0.999	9.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzaldehyde	1	0	Qua	0.4888	0.4707	0.5183	0.4933	0.4239	0.3833	0.3441	0.3438	----	0.433	5.43	0.982	0.998	16	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Aniline	1	0	Qua	2.0835	1.3996	1.5231	2.1124	2.2215	2.2428	2.1960	2.3026	1.6893	1.97	5.52	0.998	0.999	17		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Pentachloroethane	1	0	Avg	0.4451	0.4510	0.4796	0.4737	0.5045	0.4810	0.4960	0.5035	----	0.479	5.57	0.999	0.999	4.7	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethyl)ether	1	0	Avg	1.4593	1.4187	1.4950	1.5123	1.5813	1.5355	1.5147	1.6094	1.7883	1.55	5.58	0.998	0.999	7.0	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Phenol-d5	1	0	Avg	1.9213	1.5933	1.7548	1.8638	2.0860	2.0742	1.9951	2.1618	----	1.93	5.49	0.997	0.998	9.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Phenol	1	0	Avg	2.0444	1.7798	1.8766	2.0427	2.2030	2.1921	2.1059	2.2405	----	2.06	5.50	0.998	0.999	7.9	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Chlorophenol	1	0	Avg	1.4458	1.3646	1.3810	1.4344	1.5875	1.5651	1.5335	1.6075	----	1.49	5.63	0.999	0.999	6.4	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Decane	1	0	Avg	1.3759	1.5172	1.5122	1.4392	1.4476	1.4097	1.4672	1.4731	----	1.46	5.68	0.999	1.00	3.3	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,3-Dichlorobenzene	1	0	Avg	1.4825	1.6235	1.4959	1.5660	1.5684	1.5657	1.5944	1.6123	----	1.56	5.76	1.00	1.00	3.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,4-Dichlorobenzene	1	0	Avg	1.5241	1.7240	1.5880	1.6007	1.6386	1.6280	1.6299	1.6756	----	1.63	5.82	0.999	1.00	3.7		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,2-Dichlorobenzene	1	0	Avg	1.4838	1.5490	1.5684	1.5440	1.6056	1.5674	1.5670	1.5774	----	1.56	5.95	1.00	1.00	2.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzyl alcohol	1	0	Avg	1.0491	0.8653	0.9488	1.0108	1.1374	1.1433	1.0735	1.1102	----	1.04	5.93	0.999	0.999	9.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-chloroisopropyl)e	1	0	Avg	2.2823	2.4093	2.3848	2.4189	2.4772	2.3872	2.2763	2.2960	----	2.37	6.04	0.999	0.999	3.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylphenol	1	0	Avg	1.3634	1.1978	1.2879	1.3914	1.5037	1.4736	1.3888	1.4267	1.3563	1.38	6.02	0.999	0.999	6.7	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Acetophenone	1	0	Avg	1.9768	1.8173	1.8921	1.9968	2.1549	2.1133	1.8482	1.9213	----	1.97	6.14	0.994	0.996	6.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachloroethane	1	0	Avg	0.5713	0.6114	0.5887	0.6076	0.6359	0.6052	0.6231	0.6086	----	0.607	6.23	0.999	0.999	3.2	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitroso-di-n-propylar	1	0	Avg	1.1229	1.0598	1.0395	1.1332	1.2217	1.1750	0.9869	1.0376	1.0632	1.09	6.14	0.990	0.994	6.9	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
3&4-Methylphenol	1	0	Avg	1.5322	1.2679	1.3448	1.4766	1.6884	1.6256	1.4113	1.4832	1.5787	1.49	6.14	0.993	0.996	9.0		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Nitrobenzene-d5	1	0	Avg	0.1715	0.1388	0.1657	0.1554	0.1822	0.1798	0.1872	0.1936	----	0.172	6.26	0.998	1.00	10		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
Nitrobenzene	1	0	Avg	0.3782	0.3452	0.3730	0.3682	0.3929	0.3946	0.4032	0.4219	----	0.385	6.28	0.998	1.00	6.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Isophorone	1	0	Avg	0.7523	0.6854	0.7299	0.7360	0.7979	0.8058	0.7825	0.8215	----	0.764	6.47	0.999	0.999	6.0	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitrophenol	1	0	Qua	0.1829	0.1116	0.1598	0.1589	0.2018	0.2059	0.2114	0.2139	----	0.181	6.53	0.997	0.999	20	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4-Dimethylphenol	1	0	Avg	0.3489	0.3149	0.3342	0.3289	0.3640	0.3710	0.3695	0.3735	0.3402	0.350	6.56	0.999	1.00	6.1	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Benzoic Acid	1	0	Qua	0.2298	----	0.0107	0.0463	0.3314	0.4325	0.4394	0.4327	----	0.275	6.64	0.992	0.993	67		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethoxy)met	1	0	Avg	0.4495	0.4524	0.4447	0.4540	0.4764	0.4762	0.4761	0.4819	----	0.464	6.64	1.00	1.00	3.2	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4-Dichlorophenol	1	0	Avg	0.3177	0.2752	0.2907	0.3047	0.3276	0.3364	0.3364	0.3397	0.3161	0.316	6.72	1.00	1.00	7.0	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
1,2,4-Trichlorobenzene	1	0	Avg	0.3318	0.3722	0.3271	0.3296	0.3366	0.3410	0.3518	0.3580	----	0.344	6.79	0.999	1.00	4.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Naphthalene	1	0	Avg	1.1215	1.2248	1.1343	1.1370	1.1782	1.1931	1.2136	1.2509	1.4389	1.21	6.85	0.999	1.00	8.0	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
4-Chloroaniline	1	0	Qua	0.4451	0.4608	0.3206	0.4305	0.4616	0.3914	0.3165	0.2933	0.3673	0.388	6.89	0.951	0.995	17	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Hexachlorobutadiene	1	0	Avg	0.1768	0.1951	0.1797	0.1853	0.1819	0.1872	0.1938	0.1974	----	0.187	6.95	0.999	1.00	4.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Caprolactam	1	0	Qua	0.1627	0.1207	0.1285	0.1520	0.1633	0.1743	0.1654	0.1677	----	0.154	7.16	0.999	0.999	13	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chloro-3-methylphen	1	0	Avg	0.3284	0.2618	0.2879	0.3180	0.3452	0.3585	0.3433	0.3454	----	0.324	7.26	0.999	0.999	10	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylnaphthalene	1	0	Avg	0.7888	0.7564	0.7493	0.7669	0.8186	0.8416	0.8239	0.8417	----	0.798	7.40	1.00	1.00	4.7	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Methylnaphthalenes (T	1	0	Avg	1.5195	1.4871	1.4644	1.4927	1.5875	1.6215	1.5815	1.6214	----	1.55	7.40	1.00	1.00	4.1		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,1'-Biphenyl	1	0	Avg	1.0315	1.0131	0.9811	1.0213	1.0840	1.1107	1.0637	1.1089	----	1.05	7.78	0.999	0.999	4.5	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,2,4,5-Tetrachloroben	1	0	Avg	0.5393	0.6024	0.5626	0.5311	0.5646	0.5553	0.5741	0.5822	----	0.564	7.53	0.999	1.00	4.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorocyclopentac	1	0	Qua	0.2748	0.1834	0.2523	0.2499	0.3068	0.3050	0.3421	0.3313	----	0.281	7.53	0.995	0.999	18	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4,6-Trichlorophenol	1	0	Qua	0.4037	0.2556	0.3778	0.3893	0.4696	0.4501	0.4280	0.4262	----	0.400	7.62	0.997	0.999	16	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags

a - failed the min rf criteria

Note: Avg Rsd: 8.97

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit: Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound

CAZ - 250

5021319 0140

Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_7

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	7M69727.	CAL BNA@50PPM	02/11/15 13:14	2	7M69721.	CAL BNA@2PPM	02/11/15 10:56
3	7M69719.	CAL BNA@10PPM	02/11/15 10:08	4	7M69728.	CAL BNA@20PPM	02/11/15 13:39
5	7M69726.	CAL BNA@80PPM	02/11/15 12:51	6	7M69725.	CAL BNA@120PPM	02/11/15 12:28
7	7M69724.	CAL BNA@160PPM	02/11/15 12:05	8	7M69723.	CAL BNA@196PPM	02/11/15 11:42
9	7M69722.	CAL BNA@.5PPM	02/11/15 11:19				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
2,4,5-Trichlorophenol	1	0	Qua	0.3631	0.3016	0.3899	0.3433	0.4646	0.4492	0.4562	0.4706	----	0.405	7.65	0.997	0.998	16	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorobiphenyl	1	0	Avg	1.3031	1.3958	1.3772	1.3086	1.4164	1.3614	1.4288	1.4366	----	1.38	7.69	0.999	1.00	3.7		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
2-Chloronaphthalene	1	0	Avg	1.2799	1.4061	1.3187	1.3201	1.3396	1.3016	1.3319	1.3484	----	1.33	7.80	1.00	1.00	2.8	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,4-Dimethylnaphthalei	1	0	Avg	0.9419	0.9638	0.9247	0.9336	1.0021	0.9794	0.9307	0.9514	----	0.954	8.08	0.999	0.999	2.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylnaphthalenes	1	0	Avg	0.9419	0.9638	0.9247	0.9336	1.0021	0.9794	0.9307	0.9514	----	0.954	8.08	0.999	0.999	2.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diphenyl Ether	1	0	Avg	0.8112	0.8319	0.8334	0.8399	0.8832	0.8518	0.8775	0.8910	----	0.853	7.86	0.999	1.00	3.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitroaniline	1	0	Avg	0.4248	0.3184	0.3838	0.3992	0.4524	0.4372	0.4331	0.4328	----	0.410	7.88	1.00	1.00	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Coumarin	1	0	Avg	0.6170	0.5904	0.5623	0.6015	0.6670	0.6466	0.6136	0.6182	----	0.615	8.06	0.998	0.999	5.2		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthylene	1	0	Avg	2.0659	2.0296	2.0390	2.0741	2.2399	2.2302	2.2468	2.2724	----	2.15	8.16	0.999	1.00	4.9	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylphthalate	1	0	Avg	1.5614	1.4376	1.4646	1.5212	1.6837	1.6739	1.6310	1.6480	----	1.58	8.02	1.00	1.00	6.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,6-Dinitrotoluene	1	0	Avg	0.3774	0.3077	0.3349	0.3508	0.4083	0.3913	0.3549	0.3577	----	0.360	8.08	0.995	0.998	8.8	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthene	1	0	Avg	1.3201	1.3752	1.2841	1.2908	1.4200	1.4035	1.3955	1.4251	----	1.36	8.31	1.00	1.00	4.2	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3-Nitroaniline	1	0	Avg	0.4302	0.3343	0.3413	0.4089	0.4481	0.4182	0.3774	0.3691	----	0.391	8.23	0.991	0.999	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4-Dinitrophenol	1	0	Qua	0.1957	----	0.0933	0.1344	0.2305	0.2323	0.2328	0.2321	----	0.193	8.32	0.999	0.999	29	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzofuran	1	0	Avg	1.8199	1.8748	1.7601	1.8093	1.9422	1.8965	1.8998	1.9358	2.3427	1.92	8.47	1.00	1.00	8.8	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
2,4-Dinitrotoluene	1	0	Avg	0.5189	0.3669	0.4278	0.4871	0.5546	0.5494	0.5210	0.5301	----	0.495	8.44	0.999	0.999	13	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitrophenol	1	0	Qua	0.2751	0.1294	0.2092	0.2486	0.3053	0.2951	0.2794	0.2870	----	0.254	8.36	0.998	0.999	23	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,3,4,6-Tetrachlorophe	1	0	Qua	0.4066	0.2032	0.3336	0.3900	0.4511	0.4469	0.4304	0.4340	----	0.387	8.58	0.999	0.999	22	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Fluorene	1	0	Avg	1.6758	1.5668	1.5438	1.6117	1.7953	1.7582	1.6680	1.7212	----	1.67	8.79	0.999	0.999	5.4	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chlorophenyl-phenyle	1	0	Avg	0.7350	0.7070	0.6982	0.7104	0.7890	0.7703	0.7348	0.7535	----	0.737	8.78	0.999	0.999	4.4	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diethylphthalate	1	0	Avg	1.6464	1.4921	1.4634	1.5936	1.7773	1.7604	1.6934	1.7219	----	1.64	8.67	0.999	0.999	7.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitroaniline	1	0	Avg	0.5249	0.3833	0.4169	0.4926	0.5483	0.5351	0.4820	0.4894	----	0.484	8.79	0.997	0.998	12	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Atrazine	1	0	Avg	0.4217	0.3373	0.3552	0.3916	0.4456	0.4451	0.4218	0.4224	----	0.405	9.42	0.999	0.999	9.9	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,6-Dinitro-2-methylphe	1	0	Qua	0.1270	----	0.0864	0.1030	0.1388	0.1389	0.1430	0.1409	----	0.125	8.83	0.999	1.00	18	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
n-Nitrosodiphenylamine	1	0	Avg	0.6101	0.5732	0.6092	0.5921	0.6449	0.6401	0.6512	0.6665	----	0.623	8.90	0.999	1.00	5.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4,6-Tribromophenol	1	0	Avg	0.1191	0.0809	0.1108	0.1130	0.1313	0.1274	0.1300	0.1299	----	0.118	9.02	0.999	0.999	14		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,2-Diphenylhydrazine	1	0	Avg	0.6421	0.6191	0.6451	0.6449	0.6859	0.6588	0.6846	0.6892	----	0.659	8.94	0.999	1.00	3.9		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Bromophenyl-phenyle	1	0	Avg	0.2175	0.2076	0.2159	0.2181	0.2350	0.2298	0.2341	0.2368	----	0.224	9.27	1.00	1.00	4.9	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorobenzene	1	0	Avg	0.2653	0.2750	0.2730	0.2721	0.2891	0.2775	0.2800	0.2838	----	0.277	9.34	0.999	0.999	2.7	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Octadecane	1	0	Avg	0.4082	0.3782	0.4252	0.4099	0.4400	0.4239	0.4363	0.4453	----	0.421	9.61	0.999	1.00	5.2	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pentachlorophenol	1	0	Qua	0.1564	----	0.0979	0.1255	0.1726	0.1781	0.1838	0.1861	----	0.157	9.54	0.999	1.00	21	0.05	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Phenanthrene	1	0	Avg	1.1470	1.2227	1.0955	1.1385	1.2120	1.2175	1.2296	1.2572	----	1.19	9.77	0.999	1.00	4.7	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Anthracene	1	0	Avg	1.1584	1.1814	1.1228	1.1403	1.2509	1.2410	1.2412	1.2587	----	1.20	9.83	1.00	1.00	4.6	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Carbazole	1	0	Avg	1.1490	1.0866	1.0403	1.1408	1.2470	1.2056	1.2007	1.2232	----	1.16	9.99	1.00	1.00	6.1	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-butylphthalate	1	0	Avg	1.4422	1.2351	1.2744	1.3911	1.5792	1.5315	1.5264	1.5566	1.4669	1.44	10.38	1.00	1.00	8.5	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Fluoranthene	1	0	Avg	1.5052	1.3257	1.3074	1.4434	1.6704	1.6135	1.5612	1.5983	----	1.50	11.10	0.999	0.999	8.9	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pyrene	1	0	Avg	1.2294	1.0060	1.1669	1.1347	1.3009	1.3253	1.3582	1.3786	----	1.24	11.36	0.999	1.00	10	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzidine	1	0	Qua	0.5306	0.1457	0.2332	0.4755	0.5320	0.4763	0.4440	0.4258	----	0.408	11.25	0.988	0.999	35		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Terphenyl-d14	1	0	Avg	0.5732	0.5079	0.5597	0.5528	0.5965	0.5982	0.6340	0.6502	----	0.584	11.55	0.998	1.00	7.8		25.00	1.00	5.00	10.00	40.00	60.00	80.00	96.00	
4,4'-DDE	1	0	Avg	0.2348	0.1940	0.2229	0.2208	0.2465	0.2528	0.2582	0.2582	----	0.236	11.49	1.00	1.00	9.5		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,4'-DDD	1	0	Avg	0.4171	0.3447	0.3910	0.3886	0.4386	0.4412	0.4420	0.4471	----	0.414	11.89	0.999	1.00	8.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

HAZ. - 221

Flags
a - failed the min rf criteria
b - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 8.97
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit - Indicates whether Avg RF, Linear or Quadratic Curve was used for compound.

5021319 0141

Metho 8270D

I m6
Initial Calibration

Instrument: GCMS_7

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	7M69727.	CAL BNA@50PPM	02/11/15 13:14	2	7M69721.	CAL BNA@2PPM	02/11/15 10:56
3	7M69719.	CAL BNA@10PPM	02/11/15 10:08	4	7M69728.	CAL BNA@20PPM	02/11/15 13:39
5	7M69726.	CAL BNA@80PPM	02/11/15 12:51	6	7M69725.	CAL BNA@120PPM	02/11/15 12:28
7	7M69724.	CAL BNA@160PPM	02/11/15 12:05	8	7M69723.	CAL BNA@196PPM	02/11/15 11:42
9	7M69722.	CAL BNA@.5PPM	02/11/15 11:19				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Butylbenzylphthalate	1	0	Avg	0.5675	0.4406	0.5240	0.5325	0.6067	0.6047	0.6193	0.6309	----	0.566	12.14	0.999	1.00	11	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,4'-DDT	1	0	Avg	0.3713	0.2683	0.3398	0.3487	0.3923	0.3748	0.3545	0.3509	----	0.350	12.25	0.997	0.999	11		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3,3'-Dichlorobenzidine	1	0	Qua	0.4327	0.2818	0.3344	0.4095	0.4454	0.3970	0.3604	0.3501	----	0.376	12.76	0.987	0.998	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]anthracene	1	0	Avg	1.1867	1.1927	1.1762	1.1666	1.2848	1.2781	1.2767	1.2887	----	1.23	12.79	1.00	1.00	4.5	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Chrysene	1	0	Avg	1.0754	1.1431	1.0643	1.0593	1.1364	1.0989	0.9882	0.9701	----	1.07	12.83	0.993	0.999	5.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Ethylhexyl)phthal	1	0	Avg	0.7382	0.6476	0.7013	0.6979	0.7929	0.7609	0.7098	0.6868	----	0.717	12.84	0.997	0.999	6.4	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-octylphthalate	1	0	Qua	1.4488	1.0141	1.3060	1.3605	1.5374	1.5708	1.6920	1.6354	----	1.45	13.61	0.998	0.999	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[b]fluoranthene	1	0	Avg	1.3274	1.2319	1.2186	1.2830	1.4633	1.4350	1.4612	1.4673	----	1.36	14.03	0.999	0.999	7.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[k]fluoranthene	1	0	Avg	1.2366	1.1833	1.2146	1.2143	1.2984	1.3371	1.3734	1.3646	----	1.28	14.07	0.999	1.00	5.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]pyrene	1	0	Avg	1.2434	1.1038	1.1547	1.2075	1.3509	1.3537	1.3737	1.4009	----	1.27	14.40	0.999	1.00	8.7	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Indeno[1,2,3-cd]pyrene	1	0	Avg	1.4697	1.2664	1.2408	1.3944	1.6254	1.6035	1.4504	1.5832	----	1.45	15.81	0.996	0.996	10	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzo[a,h]anthracene	1	0	Avg	1.1864	1.0776	1.0134	1.1471	1.3132	1.2954	1.1906	1.2939	----	1.19	15.84	0.998	0.998	9.1	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[g,h,i]perylene	1	0	Avg	1.1959	1.1217	1.0206	1.1511	1.3147	1.2574	1.0980	1.2186	----	1.17	16.19	0.992	0.993	8.0	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

HAZ. - 222

Flags
a - failed the min rf criteria

Note: Avg Rsd: 8.97
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

b - failed the minimum correlation coeff criteria (if applicable). Fit: Indicates whether Avg RF, Linear, or Quadratic Curve has used for compound

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 5M88992.D **Instrument:** GCMS 5

Cont Calibration Date/Time 2/12/2015 9:25:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.57	40.00	40	**			0.000	0.00	
Pyridine	1	0		2.67	55.27	50	**		1.325	1.539	10.55	
N-Nitrosodimethylamine	1	0		2.61	53.11	50	**		0.790	0.839	6.22	
2-Fluorophenol	1	0	S	4.34	52.06	50	**		1.266	1.318	4.11	
Benzaldehyde	1	0		5.19	36.67	50	20	0.01	0.518	0.380	26.67	C1
Aniline	1	0		5.29	53.48	50	**		1.872	2.002	6.95	
Pentachloroethane	1	0		5.33	53.30	50	**	0.05	0.449	0.479	6.61	
bis(2-Chloroethyl)ether	1	0		5.35	53.14	50	20	0.7	1.432	1.449	6.29	
Phenol-d5	1	0	S	5.25	51.99	50	**		1.774	1.844	3.98	
Phenol	1	0		5.27	51.16	50	20	0.8	1.893	1.937	2.31	
2-Chlorophenol	1	0		5.39	50.13	50	20	0.8	1.424	1.428	0.25	
N-Decane	1	0		5.44	57.10	50	**	0.05	1.452	1.659	14.21	
1,3-Dichlorobenzene	1	0		5.52	52.07	50	**		1.570	1.635	4.13	
1,4-Dichlorobenzene	1	0		5.59	52.27	50	20		1.588	1.660	4.53	
1,2-Dichlorobenzene	1	0		5.71	51.69	50	**		1.529	1.580	3.37	
Benzyl alcohol	1	0		5.69	51.93	50	**		0.920	0.956	3.85	
bis(2-chloroisopropyl)ether	1	0		5.81	57.03	50	20	0.01	1.861	2.122	14.06	
2-Methylphenol	1	0		5.78	49.51	50	20	0.7	1.311	1.299	0.98	
Acetophenone	1	0		5.91	53.79	50	20	0.01	1.676	1.803	7.59	
Hexachloroethane	1	0		5.99	53.58	50	20	0.3	0.553	0.592	7.16	
N-Nitroso-di-n-propylamine	1	0		5.91	52.80	50	20	0.5	0.908	0.959	5.61	
3&4-Methylphenol	1	0		5.91	49.64	50	20		1.310	1.300	0.73	
Naphthalene-d8	1	0	I	6.58	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.03	25.34	25	**		0.174	0.177	1.34	
Nitrobenzene	1	0		6.05	56.45	50	20	0.2	0.381	0.430	12.90	
Isophorone	1	0		6.23	56.59	50	20	0.4	0.683	0.773	13.18	
2-Nitrophenol	1	0		6.30	50.46	50	20	0.1	0.194	0.205	0.92	
2,4-Dimethylphenol	1	0		6.32	48.46	50	20	0.2	0.387	0.375	3.07	
Benzoic Acid	1	0		6.41	24.76	50	**		0.204	0.076	50.49	
bis(2-Chloroethoxy)methane	1	0		6.40	54.54	50	20	0.3	0.419	0.457	9.07	
2,4-Dichlorophenol	1	0		6.48	50.92	50	20	0.2	0.336	0.342	1.83	
1,2,4-Trichlorobenzene	1	0		6.54	52.14	50	**		0.365	0.381	4.27	
Naphthalene	1	0		6.60	54.18	50	20	0.7	1.177	1.203	8.36	
4-Chloroaniline	1	0		6.64	53.79	50	20	0.01	0.376	0.438	7.57	
Hexachlorobutadiene	1	0		6.69	53.91	50	20	0.01	0.221	0.238	7.82	
Caprolactam	1	0		6.92	49.39	50	20	0.01	0.119	0.124	1.21	
4-Chloro-3-methylphenol	1	0		7.00	50.77	50	20	0.2	0.324	0.329	1.54	
2-Methylnaphthalene	1	0		7.12	49.75	50	**	0.4	0.793	0.789	0.50	
Methylnaphthalenes	1	0		7.20	49.64	50	20			1.527	0.72	
1,1'-Biphenyl	1	0		7.49	51.64	50	20	0.01	0.972	1.004	3.28	
Acenaphthene-d10	1	0	I	7.98	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.25	54.83	50	20	0.01	0.574	0.629	9.67	
Hexachlorocyclopentadiene	1	0		7.25	65.95	50	20	0.05	0.286	0.377	31.90	C1
2,4,6-Trichlorophenol	1	0		7.34	48.89	50	20	0.2	0.421	0.411	2.23	
2,4,5-Trichlorophenol	1	0		7.38	57.30	50	20	0.2	0.387	0.443	14.60	
2-Fluorobiphenyl	1	0	S	7.41	25.73	25	**		1.427	1.469	2.90	
2-Chloronaphthalene	1	0		7.51	54.48	50	20	0.8	1.174	1.279	8.95	
1,4-Dimethylnaphthalene	1	0		7.79	55.04	50	**		0.827	0.911	10.09	
Dimethylnaphthalenes	1	0		7.79	55.04	50	20			0.911	10.09	
Diphenyl Ether	1	0		7.58	55.05	50	**		0.841	0.926	10.11	
2-Nitroaniline	1	0		7.59	59.44	50	20	0.01	0.361	0.429	18.88	
Coumarin	1	0		7.78	55.11		**		0.462			

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.FHAZ. - 223
624 limits are compared against the concentration found.
625 limits are compared against the %DIFF.
524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 5M88992.D **Instrument:** GCMS 5

Cont Calibration Date/Time 2/12/2015 9:25:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		7.86	57.85	50	20	0.9	1.760	2.036	15.70	
Dimethylphthalate	1	0		7.74	55.53	50	20	0.01	1.365	1.516	11.05	
2,6-Dinitrotoluene	1	0		7.79	57.61	50	20	0.2	0.298	0.343	15.23	
Acenaphthene	1	0		8.01	54.89	50	20	0.9	1.157	1.270	9.77	
3-Nitroaniline	1	0		7.94	55.61	50	20	0.01	0.304	0.362	11.23	
2,4-Dinitrophenol	1	0		8.03	58.36	50	20	0.01	0.136	0.165	16.72	
Dibenzofuran	1	0		8.16	53.37	50	20	0.8	1.804	1.842	6.74	
2,4-Dinitrotoluene	1	0		8.14	52.50	50	20	0.2	0.413	0.472	5.00	
4-Nitrophenol	1	0		8.06	51.94	50	20	0.01	0.207	0.241	3.89	
2,3,4,6-Tetrachlorophenol	1	0		8.27	55.76	50	20	0.01	0.359	0.400	11.52	
Fluorene	1	0		8.48	55.28	50	20	0.9	1.389	1.536	10.57	
4-Chlorophenyl-phenylether	1	0		8.47	55.39	50	20	0.4	0.689	0.763	10.78	
Diethylphthalate	1	0		8.36	55.48	50	20	0.01	1.295	1.437	10.96	
4-Nitroaniline	1	0		8.49	54.44	50	20	0.01	0.351	0.383	8.87	
Atrazine	1	0		9.11	52.88	50	20	0.01	0.374	0.395	5.77	
Phenanthrene-d10	1	0	I	9.41	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.52	53.62	50	20	0.01	0.119	0.132	7.24	
n-Nitrosodiphenylamine	1	0		8.58	52.91	50	20	0.01	0.645	0.682	5.82	
2,4,6-Tribromophenol	1	0	S	8.71	54.64	50	**		0.109	0.119	9.27	
1,2-Diphenylhydrazine	1	0		8.62	48.91	50	**		0.700	0.684	2.18	
4-Bromophenyl-phenylether	1	0		8.95	54.83	50	20	0.1	0.221	0.242	9.66	
Hexachlorobenzene	1	0		9.01	55.06	50	20	0.1	0.237	0.261	10.12	
N-Octadecane	1	0		9.29	57.77	50	**	0.05	0.396	0.458	15.54	
Pentachlorophenol	1	0		9.21	49.87	50	20	0.05	0.151	0.150	0.26	
Phenanthrene	1	0		9.44	52.93	50	20	0.7	1.115	1.181	5.86	
Anthracene	1	0		9.50	54.35	50	20	0.7	1.112	1.209	8.71	
Carbazole	1	0		9.66	52.24	50	20	0.01	1.065	1.113	4.48	
Di-n-butylphthalate	1	0		10.05	57.87	50	20	0.01	1.118	1.294	15.74	
Fluoranthene	1	0		10.76	54.78	50	20	0.6	1.298	1.422	9.55	
Chrysene-d12	1	0	I	12.45	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.02	53.70	50	20	0.6	1.189	1.277	7.39	
Benzidine	1	0		10.92	49.70	50	**		0.326	0.421	0.61	
Terphenyl-d14	1	0	S	11.21	26.16	25	**		0.658	0.689	4.65	
4,4'-DDE	1	0		11.15	52.78		**		0.262			
4,4'-DDD	1	0		11.54	54.28		**		0.412			
Butylbenzylphthalate	1	0		11.80	54.82	50	20	0.01	0.441	0.522	9.65	
4,4'-DDT	1	0		11.90	55.72		**		0.382			
3,3'-Dichlorobenzidine	1	0		12.41	58.11	50	20	0.01	0.301	0.392	16.23	
Benzo[a]anthracene	1	0		12.43	56.25	50	20	0.8	1.120	1.260	12.50	
Chrysene	1	0		12.48	57.36	50	20	0.7	1.047	1.200	14.71	
bis(2-Ethylhexyl)phthalate	1	0		12.50	55.94	50	20	0.01	0.606	0.715	11.89	
Perylene-d12	1	0	I	14.04	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.25	56.42	50	20	0.01	1.060	1.297	12.84	
Benzo[b]fluoranthene	1	0		13.64	59.22	50	20	0.7	1.126	1.334	18.45	
Benzo[k]fluoranthene	1	0		13.67	58.97	50	20	0.7	1.090	1.286	17.94	
Benzo[a]pyrene	1	0		13.98	57.42	50	20	0.7	1.064	1.222	14.83	
Indeno[1,2,3-cd]pyrene	1	0		15.23	58.36	50	20	0.5	1.170	1.366	16.73	
Dibenzo[a,h]anthracene	1	0		15.26	60.04	50	20	0.4	0.970	1.165	20.07	
Benzo[g,h,i]perylene	1	0		15.57	56.83	50	20	0.5	1.017	1.156	13.66	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.827	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F HAZ. - 224 **625 limits are compared against the %DIFF.**

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 5M88992.D **Instrument:** GCMS 5

Cont Calibration Date/Time 2/12/2015 9:25:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.538	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.FHAZ. - 225 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M69802.D **Instrument:** GCMS 7

Cont Calibration Date/Time 2/17/2015 10:27:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.81	40.00	40	**			0.000	0.00	
Pyridine	1	0		3.04	47.90	50	**		1.325	1.269	4.19	
N-Nitrosodimethylamine	1	0		2.97	46.28	50	**		0.871	0.806	7.44	
2-Fluorophenol	1	0	S	4.60	47.64	50	**		1.295	1.234	4.73	
Benzaldehyde	1	0		5.43	31.46	50	20	0.01	0.433	0.299	37.08	C1
Aniline	1	0		5.52	47.84	50	**		1.975	1.995	4.32	
Pentachloroethane	1	0		5.57	47.59	50	**	0.05	0.479	0.456	4.81	
bis(2-Chloroethyl)ether	1	0		5.58	47.16	50	20	0.7	1.546	1.458	5.67	
Phenol-d5	1	0	S	5.48	48.43	50	**		1.931	1.871	3.13	
Phenol	1	0		5.50	47.90	50	20	0.8	2.061	1.974	4.20	
2-Chlorophenol	1	0		5.62	48.15	50	20	0.8	1.490	1.435	3.70	
N-Decane	1	0		5.67	50.03	50	**	0.05	1.455	1.456	0.06	
1,3-Dichlorobenzene	1	0		5.76	46.82	50	**		1.564	1.464	6.35	
1,4-Dichlorobenzene	1	0		5.82	47.76	50	20		1.626	1.553	4.48	
1,2-Dichlorobenzene	1	0		5.95	46.41	50	**		1.558	1.446	7.19	
Benzyl alcohol	1	0		5.92	47.46	50	**		1.042	0.989	5.08	
bis(2-chloroisopropyl)ether	1	0		6.04	47.38	50	20	0.01	2.367	2.242	5.24	
2-Methylphenol	1	0		6.01	47.96	50	20	0.7	1.377	1.320	4.08	
Acetophenone	1	0		6.13	47.05	50	20	0.01	1.965	1.849	5.89	
Hexachloroethane	1	0		6.22	47.25	50	20	0.3	0.607	0.573	5.51	
N-Nitroso-di-n-propylamine	1	0		6.13	46.99	50	20	0.5	1.093	1.027	6.03	
3&4-Methylphenol	1	0		6.13	48.17	50	20		1.490	1.435	3.66	
Naphthalene-d8	1	0	I	6.82	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.26	24.70	25	**		0.172	0.170	1.21	
Nitrobenzene	1	0		6.27	48.04	50	20	0.2	0.385	0.370	3.93	
Isophorone	1	0		6.46	47.71	50	20	0.4	0.764	0.729	4.58	
2-Nitrophenol	1	0		6.52	51.77	50	20	0.1	0.181	0.192	3.53	
2,4-Dimethylphenol	1	0		6.55	47.44	50	20	0.2	0.350	0.332	5.12	
Benzoic Acid	1	0		6.63	44.85	50	**		0.275	0.254	10.30	
bis(2-Chloroethoxy)methane	1	0		6.63	48.51	50	20	0.3	0.464	0.450	2.99	
2,4-Dichlorophenol	1	0		6.71	49.56	50	20	0.2	0.316	0.313	0.88	
1,2,4-Trichlorobenzene	1	0		6.77	48.27	50	**		0.344	0.332	3.46	
Naphthalene	1	0		6.84	46.20	50	20	0.7	1.210	1.118	7.60	
4-Chloroaniline	1	0		6.87	45.09	50	20	0.01	0.388	0.428	9.83	
Hexachlorobutadiene	1	0		6.93	48.62	50	20	0.01	0.187	0.182	2.76	
Caprolactam	1	0		7.14	41.56	50	20	0.01	0.154	0.138	16.88	
4-Chloro-3-methylphenol	1	0		7.23	47.55	50	20	0.2	0.324	0.308	4.90	
2-Methylnaphthalene	1	0		7.37	48.27	50	**	0.4	0.798	0.771	3.46	
Methylnaphthalenes	1	0		7.37	47.80	50	20			1.479	4.39	
1,1'-Biphenyl	1	0		7.75	46.92	50	20	0.01	1.052	0.987	6.16	
Acenaphthene-d10	1	0	I	8.26	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.51	48.96	50	20	0.01	0.564	0.552	2.08	
Hexachlorocyclopentadiene	1	0		7.50	50.74	50	20	0.05	0.281	0.286	1.48	
2,4,6-Trichlorophenol	1	0		7.60	44.80	50	20	0.2	0.400	0.406	10.40	
2,4,5-Trichlorophenol	1	0		7.62	49.46	50	20	0.2	0.405	0.417	1.07	
2-Fluorobiphenyl	1	0	S	7.67	24.05	25	**		1.379	1.326	3.80	
2-Chloronaphthalene	1	0		7.77	47.70	50	20	0.8	1.331	1.270	4.61	
1,4-Dimethylnaphthalene	1	0		8.06	48.67	50	**		0.954	0.928	2.67	
Dimethylnaphthalenes	1	0		8.06	48.67	50	20			0.928	2.67	
Diphenyl Ether	1	0		7.84	49.20	50	**		0.853	0.839	1.60	
2-Nitroaniline	1	0		7.85	46.86	50	20	0.01	0.410	0.385	6.27	
Coumarin	1	0		8.04	46.88		**		0.615			

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.HAZ. - 226 625 limits are compared against the %DIFF.

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M69802.D **Instrument:** GCMS 7

Cont Calibration Date/Time 2/17/2015 10:27:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim.	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		8.14	47.76	50	20	0.9	2.150	2.053	4.49	
Dimethylphthalate	1	0		8.00	47.46	50	20	0.01	1.578	1.498	5.08	
2,6-Dinitrotoluene	1	0		8.05	49.05	50	20	0.2	0.360	0.354	1.90	
Acenaphthene	1	0		8.29	47.69	50	20	0.9	1.364	1.301	4.63	
3-Nitroaniline	1	0		8.20	49.48	50	20	0.01	0.391	0.387	1.05	
2,4-Dinitrophenol	1	0		8.30	44.20	50	20	0.01	0.193	0.172	11.60	
Dibenzofuran	1	0		8.44	46.47	50	20	0.8	1.920	1.785	7.05	
2,4-Dinitrotoluene	1	0		8.41	47.48	50	20	0.2	0.495	0.470	5.04	
4-Nitrophenol	1	0		8.33	42.93	50	20	0.01	0.254	0.251	14.15	
2,3,4,6-Tetrachlorophenol	1	0		8.55	47.78	50	20	0.01	0.387	0.399	4.45	
Fluorene	1	0		8.77	47.55	50	20	0.9	1.668	1.586	4.90	
4-Chlorophenyl-phenylether	1	0		8.76	48.12	50	20	0.4	0.737	0.710	3.75	
Diethylphthalate	1	0		8.63	47.16	50	20	0.01	1.644	1.550	5.68	
4-Nitroaniline	1	0		8.77	45.99	50	20	0.01	0.484	0.445	8.02	
Atrazine	1	0		9.40	43.71	50	20	0.01	0.405	0.354	12.58	
Phenanthrene-d10	1	0	I	9.72	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.80	49.87	50	20	0.01	0.125	0.126	0.27	
n-Nitrosodiphenylamine	1	0		8.87	49.75	50	20	0.01	0.623	0.620	0.50	
2,4,6-Tribromophenol	1	0	S	9.00	51.91	50	**		0.118	0.122	3.82	
1,2-Diphenylhydrazine	1	0		8.91	49.64	50	**		0.659	0.654	0.71	
4-Bromophenyl-phenylether	1	0		9.25	50.00	50	20	0.1	0.224	0.224	0.01	
Hexachlorobenzene	1	0		9.32	48.88	50	20	0.1	0.277	0.271	2.23	
N-Octadecane	1	0		9.59	53.45	50	**	0.05	0.421	0.450	6.90	
Pentachlorophenol	1	0		9.51	52.90	50	20	0.05	0.157	0.165	5.81	
Phenanthrene	1	0		9.75	46.94	50	20	0.7	1.190	1.117	6.13	
Anthracene	1	0		9.80	47.64	50	20	0.7	1.199	1.143	4.73	
Carbazole	1	0		9.97	47.24	50	20	0.01	1.162	1.098	5.51	
Di-n-butylphthalate	1	0		10.36	47.85	50	20	0.01	1.445	1.383	4.30	
Fluoranthene	1	0		11.09	46.39	50	20	0.6	1.503	1.395	7.22	
Chrysene-d12	1	0	I	12.79	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.35	51.11	50	20	0.6	1.238	1.265	2.23	
Benzidine	1	0		11.24	38.56	50	**		0.408	0.414	22.87	
Terphenyl-d14	1	0	S	11.53	25.75	25	**		0.584	0.602	3.02	
4,4'-DDE	1	0		11.47	52.57		**		0.236			
4,4'-DDD	1	0		11.87	51.54		**		0.414			
Butylbenzylphthalate	1	0		12.13	51.28	50	20	0.01	0.566	0.580	2.55	
4,4'-DDT	1	0		12.23	54.06		**		0.350			
3,3'-Dichlorobenzidine	1	0		12.75	48.06	50	20	0.01	0.376	0.426	3.88	
Benzo[a]anthracene	1	0		12.78	48.35	50	20	0.8	1.231	1.191	3.29	
Chrysene	1	0		12.82	50.08	50	20	0.7	1.067	1.069	0.15	
bis(2-Ethylhexyl)phthalate	1	0		12.83	53.12	50	20	0.01	0.717	0.762	6.23	
Perylene-d12	1	0	I	14.42	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.58	53.67	50	20	0.01	1.446	1.578	7.34	
Benzo[b]fluoranthene	1	0		14.00	50.44	50	20	0.7	1.361	1.373	0.88	
Benzo[k]fluoranthene	1	0		14.03	48.07	50	20	0.7	1.278	1.228	3.86	
Benzo[a]pyrene	1	0		14.36	48.98	50	20	0.7	1.274	1.248	2.04	
Indeno[1,2,3-cd]pyrene	1	0		15.76	44.66	50	20	0.5	1.454	1.299	10.67	
Dibenzo[a,h]anthracene	1	0		15.78	45.04	50	20	0.4	1.190	1.072	9.92	
Benzo[g,h,i]perylene	1	0		16.14	43.49	50	20	0.5	1.172	1.020	13.02	
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. HAZ. - 227 **625 limits are compared against the %DIFF.**

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M69802.D **Instrument:** GCMS 7

Cont Calibration Date/Time 2/17/2015 10:27:00 Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.954	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.547	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.FHAZ. - 228

624 limits are compared against the concentration found.

625 limits are compared against the %DIFF.

524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M69838.D **Instrument:** GCMS 7

Cont Calibration Date/Time 2/18/2015 9:44:00 A **Method:** EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.81	40.00	40	**			0.000	0.00	
Pyridine	1	0		3.05	48.44	50	**		1.325	1.284	3.13	
N-Nitrosodimethylamine	1	0		2.97	45.92	50	**		0.871	0.800	8.15	
2-Fluorophenol	1	0	S	4.62	47.65	50	**		1.295	1.234	4.70	
Benzaldehyde	1	0		5.43	31.68	50	20	0.01	0.433	0.301	36.63	C1
Aniline	1	0		5.52	49.21	50	**		1.975	2.054	1.57	
Pentachloroethane	1	0		5.57	47.48	50	**	0.05	0.479	0.455	5.04	
bis(2-Chloroethyl)ether	1	0		5.58	47.64	50	20	0.7	1.546	1.473	4.71	
Phenol-d5	1	0	S	5.51	48.78	50	**		1.931	1.884	2.43	
Phenol	1	0		5.52	48.83	50	20	0.8	2.061	2.012	2.34	
2-Chlorophenol	1	0		5.63	47.91	50	20	0.8	1.490	1.428	4.18	
N-Decane	1	0		5.67	47.24	50	**	0.05	1.455	1.375	5.53	
1,3-Dichlorobenzene	1	0		5.76	47.25	50	**		1.564	1.478	5.50	
1,4-Dichlorobenzene	1	0		5.82	47.26	50	20		1.626	1.537	5.48	
1,2-Dichlorobenzene	1	0		5.95	46.12	50	**		1.558	1.437	7.76	
Benzyl alcohol	1	0		5.93	48.83	50	**		1.042	1.018	2.35	
bis(2-chloroisopropyl)ether	1	0		6.04	47.15	50	20	0.01	2.367	2.232	5.70	
2-Methylphenol	1	0		6.02	48.62	50	20	0.7	1.377	1.339	2.76	
Acetophenone	1	0		6.13	47.96	50	20	0.01	1.965	1.885	4.09	
Hexachloroethane	1	0		6.22	46.68	50	20	0.3	0.607	0.566	6.64	
N-Nitroso-di-n-propylamine	1	0		6.13	49.02	50	20	0.5	1.093	1.072	1.95	
3&4-Methylphenol	1	0		6.14	48.85	50	20		1.490	1.455	2.31	
Naphthalene-d8	1	0	I	6.82	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.26	25.12	25	**		0.172	0.173	0.47	
Nitrobenzene	1	0		6.27	48.21	50	20	0.2	0.385	0.371	3.58	
Isophorone	1	0		6.46	48.69	50	20	0.4	0.764	0.744	2.61	
2-Nitrophenol	1	0		6.52	53.49	50	20	0.1	0.181	0.199	6.99	
2,4-Dimethylphenol	1	0		6.56	49.07	50	20	0.2	0.350	0.343	1.85	
Benzoic Acid	1	0		6.64	48.32	50	**		0.275	0.285	3.36	
bis(2-Chloroethoxy)methane	1	0		6.63	48.79	50	20	0.3	0.464	0.453	2.41	
2,4-Dichlorophenol	1	0		6.72	50.17	50	20	0.2	0.316	0.317	0.34	
1,2,4-Trichlorobenzene	1	0		6.78	48.24	50	**		0.344	0.331	3.53	
Naphthalene	1	0		6.84	47.30	50	20	0.7	1.210	1.145	5.40	
4-Chloroaniline	1	0		6.88	47.31	50	20	0.01	0.388	0.447	5.38	
Hexachlorobutadiene	1	0		6.93	48.03	50	20	0.01	0.187	0.180	3.93	
Caprolactam	1	0		7.15	46.57	50	20	0.01	0.154	0.155	6.87	
4-Chloro-3-methylphenol	1	0		7.25	48.33	50	20	0.2	0.324	0.313	3.33	
2-Methylnaphthalene	1	0		7.38	49.39	50	**	0.4	0.798	0.789	1.22	
Methylnaphthalenes	1	0		7.38	49.09	50	20			1.519	1.82	
1,1'-Biphenyl	1	0		7.76	48.75	50	20	0.01	1.052	1.026	2.50	
Acenaphthene-d10	1	0	I	8.26	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.51	48.55	50	20	0.01	0.564	0.548	2.90	
Hexachlorocyclopentadiene	1	0		7.51	46.50	50	20	0.05	0.281	0.260	7.01	
2,4,6-Trichlorophenol	1	0		7.60	41.66	50	20	0.2	0.400	0.378	16.67	
2,4,5-Trichlorophenol	1	0		7.64	48.77	50	20	0.2	0.405	0.411	2.46	
2-Fluorobiphenyl	1	0	S	7.67	23.96	25	**		1.379	1.321	4.15	
2-Chloronaphthalene	1	0		7.78	47.08	50	20	0.8	1.331	1.253	5.85	
1,4-Dimethylnaphthalene	1	0		8.06	50.18	50	**		0.954	0.957	0.37	
Dimethylnaphthalenes	1	0		8.06	50.18	50	20			0.957	0.37	
Diphenyl Ether	1	0		7.84	50.00	50	**		0.853	0.853	0.01	
2-Nitroaniline	1	0		7.86	47.82	50	20	0.01	0.410	0.392	4.36	
Coumarin	1	0		8.04	48.22		**		0.615			

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. HAZ. - 229
624 limits are compared against the concentration found.

625 limits are compared against the %DIFF.
524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M69838.D **Instrument:** GCMS 7

Cont Calibration Date/Time 2/18/2015 9:44:00 A **Method:** EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		8.14	48.44	50	20	0.9	2.150	2.083	3.12	
Dimethylphthalate	1	0		8.00	48.84	50	20	0.01	1.578	1.541	2.32	
2,6-Dinitrotoluene	1	0		8.06	51.19	50	20	0.2	0.360	0.369	2.37	
Acenaphthene	1	0		8.29	48.21	50	20	0.9	1.364	1.315	3.58	
3-Nitroaniline	1	0		8.21	52.32	50	20	0.01	0.391	0.409	4.64	
2,4-Dinitrophenol	1	0		8.30	47.49	50	20	0.01	0.193	0.186	5.02	
Dibenzofuran	1	0		8.45	47.88	50	20	0.8	1.920	1.839	4.24	
2,4-Dinitrotoluene	1	0		8.42	50.28	50	20	0.2	0.495	0.497	0.56	
4-Nitrophenol	1	0		8.35	38.06	50	20	0.01	0.254	0.223	23.89	C1
2,3,4,6-Tetrachlorophenol	1	0		8.56	45.68	50	20	0.01	0.387	0.382	8.65	
Fluorene	1	0		8.77	49.16	50	20	0.9	1.668	1.640	1.69	
4-Chlorophenyl-phenylether	1	0		8.76	51.52	50	20	0.4	0.737	0.760	3.03	
Diethylphthalate	1	0		8.64	48.74	50	20	0.01	1.644	1.602	2.51	
4-Nitroaniline	1	0		8.78	48.61	50	20	0.01	0.484	0.471	2.78	
Atrazine	1	0		9.41	46.11	50	20	0.01	0.405	0.374	7.77	
Phenanthrene-d10	1	0	I	9.73	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.80	51.87	50	20	0.01	0.125	0.131	3.74	
n-Nitrosodiphenylamine	1	0		8.87	49.55	50	20	0.01	0.623	0.618	0.91	
2,4,6-Tribromophenol	1	0	S	9.01	50.51	50	**		0.118	0.119	1.01	
1,2-Diphenylhydrazine	1	0		8.92	48.22	50	**		0.659	0.635	3.55	
4-Bromophenyl-phenylether	1	0		9.25	49.95	50	20	0.1	0.224	0.224	0.10	
Hexachlorobenzene	1	0		9.32	49.76	50	20	0.1	0.277	0.276	0.49	
N-Octadecane	1	0		9.59	51.35	50	**	0.05	0.421	0.432	2.69	
Pentachlorophenol	1	0		9.52	47.14	50	20	0.05	0.157	0.146	5.71	
Phenanthrene	1	0		9.76	47.44	50	20	0.7	1.190	1.129	5.12	
Anthracene	1	0		9.81	48.11	50	20	0.7	1.199	1.154	3.78	
Carbazole	1	0		9.98	48.05	50	20	0.01	1.162	1.116	3.89	
Di-n-butylphthalate	1	0		10.36	49.26	50	20	0.01	1.445	1.423	1.48	
Fluoranthene	1	0		11.09	47.87	50	20	0.6	1.503	1.439	4.26	
Chrysene-d12	1	0	I	12.79	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.35	50.17	50	20	0.6	1.238	1.242	0.35	
Benzidine	1	0		11.24	37.67	50	**		0.408	0.405	24.67	
Terphenyl-d14	1	0	S	11.53	25.08	25	**		0.584	0.586	0.34	
4,4'-DDE	1	0		11.48	50.55		**		0.236			
4,4'-DDD	1	0		11.87	49.65		**		0.414			
Butylbenzylphthalate	1	0		12.13	50.68	50	20	0.01	0.566	0.573	1.35	
4,4'-DDT	1	0		12.23	53.71		**		0.350			
3,3'-Dichlorobenzidine	1	0		12.75	49.97	50	20	0.01	0.376	0.441	0.06	
Benzo[a]anthracene	1	0		12.78	49.06	50	20	0.8	1.231	1.208	1.89	
Chrysene	1	0		12.82	50.31	50	20	0.7	1.067	1.074	0.62	
bis(2-Ethylhexyl)phthalate	1	0		12.83	53.82	50	20	0.01	0.717	0.772	7.63	
Perylene-d12	1	0	I	14.44	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.59	51.16	50	20	0.01	1.446	1.500	2.31	
Benzo[b]fluoranthene	1	0		14.01	48.34	50	20	0.7	1.361	1.316	3.31	
Benzo[k]fluoranthene	1	0		14.05	48.03	50	20	0.7	1.278	1.227	3.94	
Benzo[a]pyrene	1	0		14.38	48.11	50	20	0.7	1.274	1.225	3.78	
Indeno[1,2,3-cd]pyrene	1	0		15.78	47.60	50	20	0.5	1.454	1.384	4.80	
Dibenzo[a,h]anthracene	1	0		15.81	48.18	50	20	0.4	1.190	1.147	3.64	
Benzo[g,h,i]perylene	1	0		16.17	48.25	50	20	0.5	1.172	1.131	3.50	
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.E.HAZ. - 230
624 limits are compared against the concentration found.

625 limits are compared against the %DIFF.
524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 7M69838.D **Instrument:** GCMS 7

Cont Calibration Date/Time 2/18/2015 9:44:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.954	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.547	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound
I -Internal Standard Compound
N/O or N/Q - Not applicable for this run
** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F.
624 limits are compared against the concentration found.
625 limits are compared against the %DIFF.
524.2 limits are compared against the %DIFF

FORM8

Internal Standard Areas

Evaluation Std Data File: 5M88685.D Method: EPA 8270D

Analysis Date/Time: 01/21/15 10:09

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	63744	5.58	235656	6.59	146645	7.99	282414	9.42	324891	12.45	303668	14.04
Eval File Area Limit:	31872-127488		117828-471312		73322-293290		141207-564828		162446-649782		151834-607336	
Eval File Rt Limit:	5.08-6.08		6.09-7.09		7.49-8.49		8.92-9.92		11.95-12.95		13.54-14.54	
Data File	Sample											
5M88685.D	CAL BNA@50	63744	5.58	235656	6.59	146645	7.99	282414	9.42	324891	12.45	303668	14.04
5M88686.D	CAL BNA@10	75567	5.58	275172	6.59	177139	7.98	339223	9.42	402301	12.45	380883	14.04
5M88687.D	CAL BNA@20	69103	5.58	252676	6.59	161436	7.98	310417	9.42	356741	12.45	336453	14.04
5M88688.D	CAL BNA@2F	56733	5.58	213185	6.59	135806	7.98	254253	9.42	307413	12.45	282801	14.04
5M88689.D	CAL BNA@.5	54136	5.58	197343	6.59	125071	7.98	235496	9.42	275626	12.45	249786	14.04
5M88690.D	CAL BNA@1S	49821	5.58	184379	6.60	119577	7.99	223020	9.42	232743	12.46	230859	14.04
5M88691.D	CAL BNA@16	48136	5.58	178632	6.60	114747	7.99	218369	9.42	235596	12.46	229496	14.04
5M88692.D	CAL BNA@12	56691	5.58	210218	6.60	133610	7.99	255733	9.42	287950	12.46	279567	14.04
5M88693.D	CAL BNA@80	62930	5.58	229672	6.59	151398	7.99	278111	9.42	313938	12.45	306812	14.04
5M88695.D	ICV BNA@50	64222	5.58	239380	6.59	148586	7.98	279380	9.42	329494	12.45	307970	14.04

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 7M69727.D Method: EPA 8270D

Analysis Date/Time: 02/11/15 13:14

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	78241	5.81	328555	6.82	208927	8.26	465987	9.72	573333	12.80	551194	14.42
Eval File Area Limit:	39120-156482		164278-657110		104464-417854		232994-931974		286666-1146666		275597-1102388	
Eval File Rt Limit:	5.31-6.31		6.32-7.32		7.76-8.76		9.22-10.22		12.3-13.3		13.92-14.92	
Data File Sample												
7M69719.D CAL BNA@1C	126982	5.81	507333	6.84	307149	8.29	632244	9.75	756883	12.80	725164	14.46
7M69721.D CAL BNA@2F	87525	5.81	348837	6.82	212453	8.25	459201	9.72	688287	12.79	707508	14.44
7M69722.D CAL BNA@.5	62226	5.81	245234	6.82	147488	8.25	322197	9.72	472733	12.79	511588	14.43
7M69723.D CAL BNA@1S	94005	5.81	352769	6.83	216980	8.27	463298	9.73	540300	12.81	506533	14.45
7M69724.D CAL BNA@16	108439	5.81	417977	6.83	249557	8.27	525431	9.73	599287	12.81	537774	14.44
7M69725.D CAL BNA@12	68892	5.81	290130	6.82	187680	8.26	422837	9.73	521375	12.80	509437	14.44
7M69726.D CAL BNA@8C	61160	5.81	266710	6.82	166297	8.26	372298	9.72	488746	12.80	492353	14.42
7M69727.D CAL BNA@5C	78241	5.81	328555	6.82	208927	8.26	465987	9.72	573333	12.80	551194	14.42
7M69728.D CAL BNA@2C	74472	5.81	318573	6.82	202698	8.26	443033	9.73	596046	12.80	587596	14.42
7M69729.D ICV BNA@50	73354	5.81	300013	6.82	186463	8.25	428539	9.72	590498	12.80	559537	14.42

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenanhthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 5M88992.D Method: EPA 8270D

Analysis Date/Time: 02/12/15 09:25

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	51845	5.57	187538	6.58	114090	7.98	222215	9.41	257372	12.45	249661	14.04
Eval File Area Limit:	25922-103690		93769-375076		57045-228180		111108-444430		128686-514744		124830-499322	
Eval File Rt Limit:	5.07-6.07		6.08-7.08		7.48-8.48		8.91-9.91		11.95-12.95		13.54-14.54	
Data File Sample												
5M88993.D 10PPM	51274	5.57	183990	6.58	112782	7.98	216230	9.41	265619	12.44	255076	14.04
5M88994.D SMB40422	61243	5.56	229800	6.58	141278	7.97	258349	9.41	271711	12.43	243537	14.03
5M88995.D SMB40422/M	52212	5.56	193412	6.58	121695	7.97	228730	9.41	269036	12.43	247106	14.03
5M88996.D MBS-1	54351	5.56	200171	6.58	120750	7.97	231067	9.41	258660	12.43	239926	14.03
5M88997.D MBS-2	54414	5.56	203985	6.58	121401	7.97	235321	9.41	257525	12.43	227353	14.03
5M88998.D MBS-3	52192	5.56	193782	6.58	116958	7.97	220979	9.41	254660	12.43	224340	14.03
5M88999.D MBS-4	54086	5.56	196496	6.58	120318	7.97	224237	9.41	241142	12.43	216240	14.03
5M89000.D MBS-5	52536	5.56	196282	6.58	118526	7.97	227493	9.41	261066	12.43	239105	14.03
5M89001.D MBS-6	52633	5.56	196754	6.58	122128	7.97	229400	9.41	253477	12.43	233167	14.03
5M89002.D AC83314-001	57711	5.56	212045	6.58	132654	7.97	245957	9.41	272672	12.43	249264	14.03
5M89003.D AC83314-001(	50669	5.56	181748	6.58	113903	7.97	211772	9.41	243896	12.43	225333	14.03
5M89004.D AC83314-001(	60260	5.56	216200	6.58	136041	7.97	245397	9.41	246104	12.43	219460	14.03
5M89005.D SMB40423/M	52563	5.56	196246	6.58	121056	7.97	227086	9.41	244845	12.43	229118	14.03
5M89006.D SMB40423	55907	5.56	204779	6.58	127233	7.97	233514	9.41	242819	12.43	216461	14.03
5M89007.D AC83316-018	54534	5.56	189922	6.58	111095	7.97	212908	9.41	250769	12.43	228700	14.03
5M89008.D AC83316-018(	53872	5.56	191313	6.58	112794	7.97	216753	9.41	247440	12.43	231698	14.03
5M89009.D AC83316-018(	56198	5.56	190380	6.58	114107	7.98	219588	9.41	250791	12.43	231363	14.03

I1 = 1,4-Dichlorobenzene-d4
I2 = Naphthalene-d8
I3 = Acenaphthene-d10
I4 = Phenanthrene-d10
I5 = Chrysene-d12
I6 = Perylene-d12

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 7M69802.D Method: EPA 8270D

Analysis Date/Time: 02/17/15 10:27

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	118280	5.81	470292	6.82	283466	8.26	583218	9.72	650360	12.79	591231	14.42
Eval File Area Limit:	59140-236560		235146-940584		141733-566932		291609-1166436		325180-1300720		295616-1182462	
Eval File Rt Limit:	5.31-6.31		6.32-7.32		7.76-8.76		9.22-10.22		12.29-13.29		13.92-14.92	
Data File Sample												
7M69803.D SMB40439	84942	5.80	358056	6.82	236695	8.26	507248	9.72	671624	12.79	632040	14.42
7M69804.D AC83106-004(	101559	5.81	419614	6.82	254723	8.25	551492	9.72	728356	12.78	761880	14.41
7M69805.D AC83335-001	153967	5.81	606655	6.82	347578	8.25	581820	9.72	394102	12.78	315332	14.41
7M69806.D AC83335-002	135539	5.81	544718	6.82	323231	8.25	556584	9.72	351458	12.78	271049 A	14.42
7M69807.D AC83335-003	142493	5.81	453720	6.83	280823	8.25	391101	9.73	300635 A	12.80	267521 A	14.42
7M69808.D AC83336-004	97511	5.81	415139	6.82	268482	8.25	525517	9.72	510592	12.78	345681	14.41
7M69809.D AC83330-015	127753	5.81	288286	6.82	252014	8.25	356856	9.72	256087 A	12.80	211568 A	14.44
7M69810.D AC83354-001	131761	5.81	552742	6.82	343571	8.25	646232	9.72	338196	12.78	260911 A	14.42
7M69811.D AC83354-002	110421	5.81	480831	6.82	313663	8.25	625665	9.72	538141	12.78	336134	14.42
7M69812.D EF-SPLP V-2	117030	5.81	513595	6.82	331652	8.25	677754	9.72	408413	12.78	353612	14.42
7M69813.D AC83102-006(	98619	5.81	433356	6.82	280352	8.25	601735	9.72	560241	12.78	413502	14.42
7M69814.D AC83325-002	119656	5.81	525263	6.82	337627	8.25	696946	9.72	689724	12.78	474499	14.42
7M69815.D AC83325-003	137761	5.81	583264	6.82	364209	8.25	717128	9.72	565464	12.78	428353	14.42
7M69816.D SMB40451(M	100255	5.81	427436	6.82	276064	8.25	548784	9.72	572888	12.79	408064	14.42
7M69817.D SMB40451	119261	5.81	505060	6.82	330646	8.25	639787	9.72	598597	12.78	462684	14.42
7M69818.D AC83331-001	135140	5.81	531653	6.82	301660	8.25	556897	9.72	610892	12.78	469923	14.42
7M69819.D AC83331-002	148296	5.81	622882	6.82	393067	8.25	790479	9.72	719660	12.78	536924	14.42
7M69820.D AC83331-003	131027	5.81	547624	6.82	340031	8.25	678220	9.72	718750	12.78	541107	14.42
7M69821.D AC83331-004	102763	5.81	440520	6.82	293338	8.25	637424	9.72	755945	12.78	548666	14.42
7M69822.D OMB40450	144354	5.81	592697	6.82	379115	8.25	729557	9.72	617191	12.78	495511	14.42
7M69823.D OMB40450(M	119194	5.81	477129	6.82	296696	8.25	599411	9.72	644553	12.79	466901	14.42
7M69824.D AC83360-002	151760	5.81	622471	6.82	390322	8.25	696222	9.72	464016	12.78	406406	14.41
7M69825.D AC83360-001	169693	5.81	667298	6.82	356077	8.25	561023	9.72	371412	12.79	315390	14.42
7M69826.D AC83358-001	145760	5.81	627857	6.82	380982	8.25	665460	9.72	353963	12.79	295046 A	14.42
7M69827.D AC83375-001	157327	5.81	626859	6.82	358101	8.25	542224	9.72	362878	12.78	319273	14.42
7M69828.D AC83375-002	164786	5.81	666237	6.82	398451	8.25	691781	9.72	474753	12.78	374294	14.42
7M69829.D AC83335-002	140442	5.81	583512	6.82	348572	8.25	640418	9.72	378155	12.79	314621	14.42
7M69830.D AC83335-003(	174712	5.81	716705	6.82	418972	8.25	739396	9.72	518264	12.78	408410	14.42
7M69831.D AC83330-015(	175140	5.81	663824	6.82	377983	8.25	581018	9.72	418531	12.79	360451	14.42
7M69832.D TEST	133172	5.81	548598	6.82	336829	8.26	643472	9.73	466784	12.80	345285	14.42
7M69833.D TEST	146052	5.81	596161	6.82	356963	8.26	674577	9.72	478714	12.80	400003	14.42
7M69834.D TEST	97510	5.81	416596	6.82	272322	8.26	569612	9.72	545222	12.80	410310	14.42
7M69835.D TEST	94209	5.81	404778	6.82	264374	8.26	553969	9.72	572353	12.80	424602	14.42
7M69836.D TEST	151930	5.81	588180	6.82	321882	8.26	538484	9.72	454261	12.80	409903	14.42

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

FORM8

Internal Standard Areas

Evaluation Std Data File: 7M69838.D Method: EPA 8270D

Analysis Date/Time: 02/18/15 09:44

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	102244	5.81	412339	6.82	259708	8.26	559752	9.73	657469	12.79	625615	14.44
Eval File Area Limit:	51122-204488		206170-824678		129854-519416		279876-1119504		328734-1314938		312808-1251230	
Eval File Rt Limit:	5.31-6.31		6.32-7.32		7.76-8.76		9.23-10.23		12.29-13.29		13.94-14.94	

Data File	Sample											
7M69839.D	WMB40445/M	142985	5.81	568170	6.82	335392	8.25	662033	9.72	732766	12.80	622640	14.43
7M69840.D	WMB40445	160592	5.81	644244	6.82	394988	8.25	779908	9.72	861308	12.78	786889	14.44
7M69841.D	OMB40450/M	160024	5.81	626974	6.82	381084	8.26	736514	9.72	850044	12.79	755270	14.42
7M69842.D	SMB40451/M	153552	5.81	584819	6.82	343353	8.25	629679	9.72	698469	12.79	574497	14.43
7M69843.D	AC83363-001	130737	5.81	517166	6.82	326795	8.25	700678	9.72	864474	12.79	836012	14.43
7M69844.D	AC83358-001	167507	5.81	659510	6.82	381447	8.25	671651	9.72	500915	12.79	362588	14.44
7M69845.D	AC83363-001	150514	5.81	600358	6.82	359861	8.25	702377	9.72	690528	12.80	472354	14.44
7M69846.D	AC83363-001	128547	5.81	509775	6.82	309367	8.26	623005	9.72	700258	12.80	534906	14.43
7M69847.D	AC83354-001	149709	5.81	596816	6.82	357761	8.25	726878	9.72	789039	12.79	606412	14.42
7M69848.D	AC83354-002	148556	5.81	590472	6.82	376050	8.25	767709	9.72	855711	12.78	730049	14.43
7M69849.D	AC83363-002	122863	5.81	497874	6.82	331253	8.25	716840	9.72	863180	12.78	733935	14.42
7M69850.D	AC83363-003	142766	5.81	552481	6.82	342096	8.25	730294	9.72	862015	12.78	715518	14.42
7M69851.D	AC83363-004	130856	5.81	510040	6.82	318072	8.25	681992	9.72	794185	12.78	708418	14.42
7M69852.D	AC83363-005	134724	5.81	544091	6.82	343681	8.25	705831	9.72	836396	12.79	763695	14.43
7M69853.D	SMB40457	113933	5.81	474094	6.82	301090	8.25	599428	9.72	712538	12.78	664950	14.42
7M69854.D	AC83221-003	116062	5.81	499543	6.82	319598	8.25	647601	9.72	669386	12.78	607799	14.42
7M69855.D	AC83221-006	120183	5.81	505961	6.82	328212	8.25	661549	9.72	789997	12.78	649248	14.42
7M69856.D	AC83221-007	124117	5.81	519721	6.82	329270	8.25	635914	9.72	632310	12.79	542565	14.42
7M69857.D	AC83221-011	124868	5.81	539270	6.82	340153	8.25	642294	9.72	696368	12.79	570100	14.42
7M69858.D	AC83221-010	124344	5.81	527684	6.82	326621	8.25	605758	9.72	572318	12.79	443712	14.42
7M69859.D	AC83221-014	148345	5.81	612926	6.82	352700	8.25	593866	9.72	454252	12.81	320191	14.44
7M69860.D	AC83221-015	110104	5.81	481710	6.82	291252	8.25	483500	9.73	434142	12.81	299934 A	14.44
7M69861.D	AC83380-005	95409	5.81	420714	6.82	281177	8.25	560011	9.72	508766	12.79	379216	14.42
7M69862.D	AC83380-006	108576	5.81	488684	6.82	326257	8.25	659453	9.72	634883	12.79	411473	14.42
7M69863.D	AC83385-001	88533	5.81	403375	6.82	271733	8.25	554508	9.72	574232	12.79	371248	14.42
7M69864.D	AC83385-002	104743	5.81	458243	6.82	299481	8.25	579672	9.72	632942	12.78	412284	14.42
7M69865.D	AC83385-003	130328	5.81	551593	6.82	327456	8.25	613127	9.72	546054	12.79	340615	14.42
7M69866.D	AC83385-004	141086	5.81	610046	6.82	383437	8.25	731884	9.72	643967	12.79	410282	14.42

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

TCLP Semi-Volatile Data

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: AC83375-003(T)
Client Id: WC01
Data File: 10M48838.D
Analysis Date: 02/19/15 19:39
Date Rec/Extracted: 02/13/15-02/19/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Aqueous
Initial Vol: 250ml
Final Vol: 1ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
95-95-4	2,4,5-Trichlorophenol	0.0080	U	87-68-3	Hexachlorobutadiene	0.0080	U
88-06-2	2,4,6-Trichlorophenol	0.0080	U	67-72-1	Hexachloroethane	0.0080	U
121-14-2	2,4-Dinitrotoluene	0.0080	U	98-95-3	Nitrobenzene	0.0080	U
95-48-7	2-Methylphenol	0.0020	U	87-86-5	Pentachlorophenol	0.040	U
106-44-5	3&4-Methylphenol	0.0020	U	110-86-1	Pyridine	0.040	U
118-74-1	Hexachlorobenzene	0.0080	U				

Worksheet #: 334418

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration usea

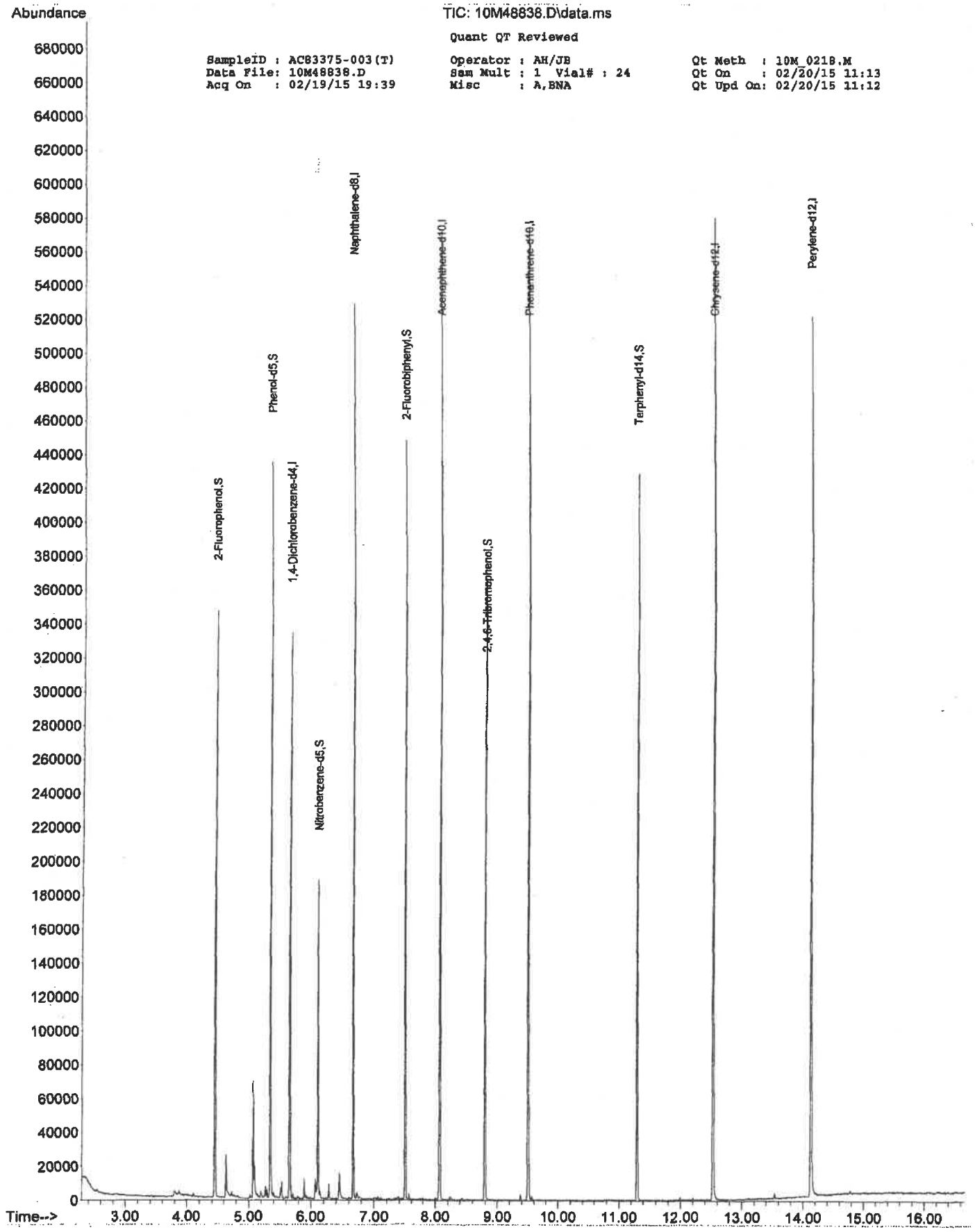
Quantitation Report (QT Reviewed)

SampleID : AC83375-003(T) Operator : AH/JB Qt Meth : 10M_0218.M
Data File: 10M48838.D Sam Mult : 1 Vial# : 24 Qt On : 02/20/15 11:13
Acq On : 02/19/15 19:39 Misc : A,BNA Qt Upd On: 02/20/15 11:12

Data Path : G:\GcMsData\2015\GCMS_10\Data\02-19-15\
Qt Path : G:\GcMsData\2015\GCMS_10\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.662	152	48417	40.00	ng	0.00
29) Naphthalene-d8	6.667	136	188854	40.00	ng	0.00
47) Acenaphthene-d10	8.069	164	113548	40.00	ng	0.00
74) Phenanthrene-d10	9.502	188	215538	40.00	ng	0.00
88) Chrysene-d12	12.529	240	230020	40.00	ng	0.00
100) Perylene-d12	14.123	264	208233	40.00	ng	0.00
System Monitoring Compounds						
10) 2-Fluorophenol	4.442	112	101810	66.08	ng	0.00
Spiked Amount 100.000			Recovery = 66.08%			
15) Phenol-d5	5.341	99	140412	66.29	ng	0.00
Spiked Amount 100.000			Recovery = 66.29%			
30) Nitrobenzene-d5	6.111	128	25777	32.51	ng	0.00
Spiked Amount 50.000			Recovery = 65.02%			
52) 2-Fluorobiphenyl	7.496	172	132142	33.28	ng	0.00
Spiked Amount 50.000			Recovery = 66.56%			
77) 2,4,6-Tribromophenol	8.796	330	39440	70.37	ng	0.00
Spiked Amount 100.000			Recovery = 70.37%			
91) Terphenyl-d14	11.299	244	136019	38.35	ng	0.00
Spiked Amount 50.000			Recovery = 76.70%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
TIC: 10M48838.D\data.ms
Quant QT Reviewed
SampleID : AC83375-003(T)
Data File: 10M48838.D
Acq On : 02/19/15 19:39
Operator : AH/JB
Sam Mult : 1 Vial# : 24
Misc : A,BNA
Qt Meth : 10M_0218.M
Qt On : 02/20/15 11:13
Qt Upd On: 02/20/15 11:12
2-Fluorophenol,S
Phenol-d5,S
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I
Time-->

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: WMB40638
Client Id:
Data File: 10M48837.D
Analysis Date: 02/19/15 19:17
Date Rec/Extracted: NA-02/19/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Aqueous
Initial Vol: 1000ml
Final Vol: 1ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
95-95-4	2,4,5-Trichlorophenol	0.0020	U	87-68-3	Hexachlorobutadiene	0.0020	U
88-06-2	2,4,6-Trichlorophenol	0.0020	U	67-72-1	Hexachloroethane	0.0020	U
121-14-2	2,4-Dinitrotoluene	0.0020	U	98-95-3	Nitrobenzene	0.0020	U
95-48-7	2-Methylphenol	0.00050	U	87-86-5	Pentachlorophenol	0.010	U
106-44-5	3&4-Methylphenol	0.00050	U	110-86-1	Pyridine	0.010	U
118-74-1	Hexachlorobenzene	0.0020	U				

Worksheet #: 334418

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

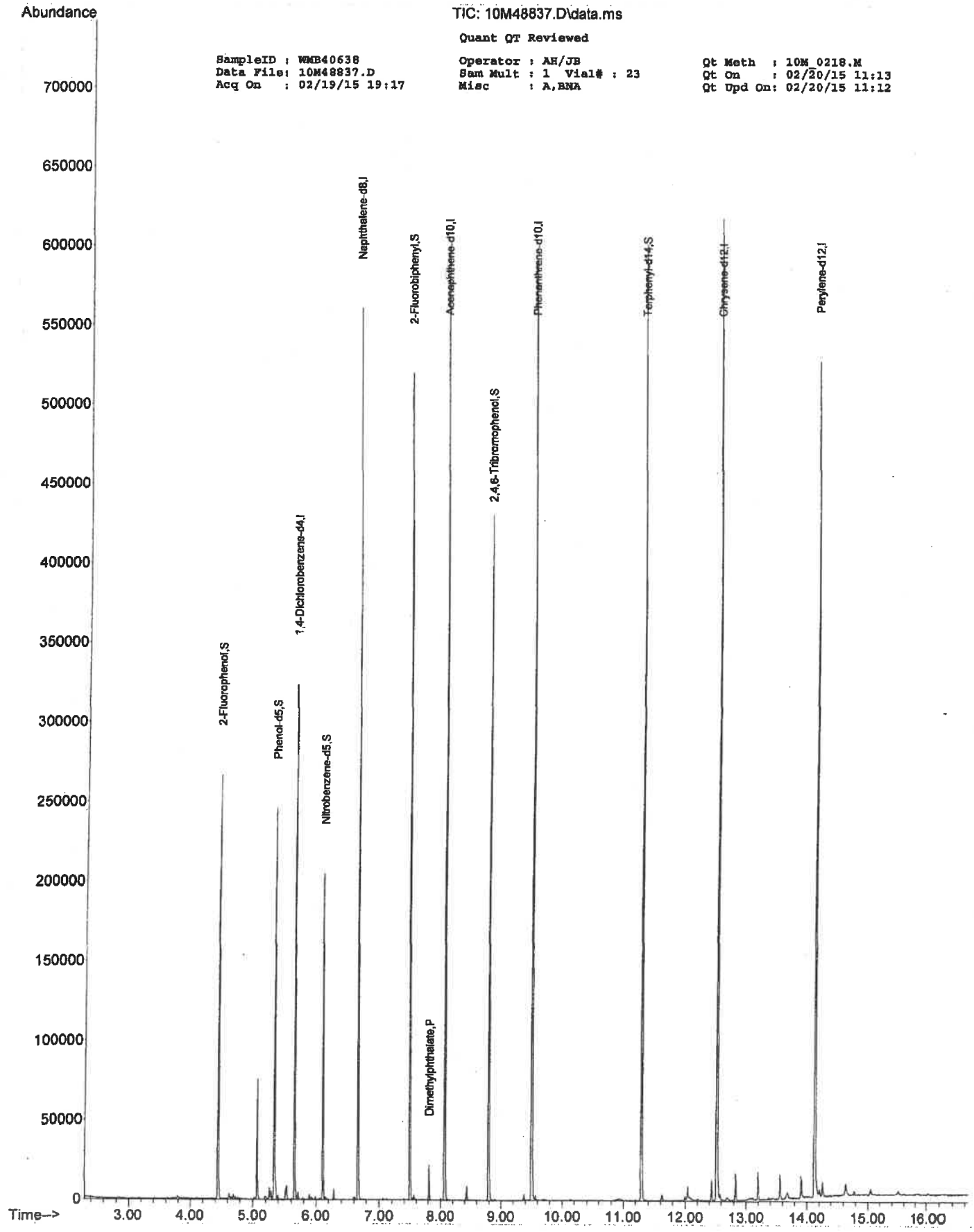
Quantitation Report (QT Reviewed)

SampleID : WMB40638 Operator : AH/JB Qt Meth : 10M_0218.M
Data File: 10M48837.D Sam Mult : 1 Vial# : 23 Qt On : 02/20/15 11:13
Acq On : 02/19/15 19:17 Misc : A,BNA Qt Upd On: 02/20/15 11:12

Data Path : G:\GcMsData\2015\GCMS_10\Data\02-19-15\
Qt Path : G:\GcMsData\2015\GCMS_10\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.657	152	46503	40.00	ng	0.00
29) Naphthalene-d8	6.667	136	192673	40.00	ng	0.00
47) Acenaphthene-d10	8.069	164	117163	40.00	ng	0.00
74) Phenanthrene-d10	9.502	188	224863	40.00	ng	0.00
88) Chrysene-d12	12.530	240	243713	40.00	ng	0.00
100) Perylene-d12	14.123	264	221148	40.00	ng	0.00
System Monitoring Compounds						
10) 2-Fluorophenol	4.442	112	75025	50.70	ng	0.00
Spiked Amount 100.000			Recovery =	50.70%		
15) Phenol-d5	5.341	99	73650	36.20	ng	0.00
Spiked Amount 100.000			Recovery =	36.20%		
30) Nitrobenzene-d5	6.111	128	28374	35.08	ng	0.00
Spiked Amount 50.000			Recovery =	70.16%		
52) 2-Fluorobiphenyl	7.496	172	155816	38.03	ng	0.00
Spiked Amount 50.000			Recovery =	76.06%		
77) 2,4,6-Tribromophenol	8.796	330	49914	84.32	ng	0.00
Spiked Amount 100.000			Recovery =	84.32%		
91) Terphenyl-d14	11.299	244	183450	48.82	ng	0.00
Spiked Amount 50.000			Recovery =	97.64%		
Target Compounds						Qvalue
60) Dimethylphthalate	7.817	163	8419	2.0299	ng	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed


Abundance
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Quant QT Reviewed
SampleID : WMB40638
Data File: 10M48837.D
Acq On : 02/19/15 19:17
Operator : AH/JB
Sam Mult : 1 Vial# : 23
Misc : A,BNA
Qt Meth : 10M_0218.M
Qt On : 02/20/15 11:13
Qt Upd On: 02/20/15 11:12
2-Fluorophenol,S
Phenol-d5,S
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Dimethylphthalate,P
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I
Time-->

Form1

ORGANICS SEMIVOLATILE REPORT

Sample Number: EF-1 V-204478(02/19)
Client Id:
Data File: 10M48853.D
Analysis Date: 02/20/15 13:25
Date Rec/Extracted: NA-02/19/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8270D
Matrix: Aqueous
Initial Vol: 250ml
Final Vol: 1ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
95-95-4	2,4,5-Trichlorophenol	0.0080	U	87-68-3	Hexachlorobutadiene	0.0080	U
88-06-2	2,4,6-Trichlorophenol	0.0080	U	67-72-1	Hexachloroethane	0.0080	U
121-14-2	2,4-Dinitrotoluene	0.0080	U	98-95-3	Nitrobenzene	0.0080	U
95-48-7	2-Methylphenol	0.0020	U	87-86-5	Pentachlorophenol	0.040	U
106-44-5	3&4-Methylphenol	0.0020	U	110-86-1	Pyridine	0.040	U
118-74-1	Hexachlorobenzene	0.0080	U				

Worksheet #: 334487

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

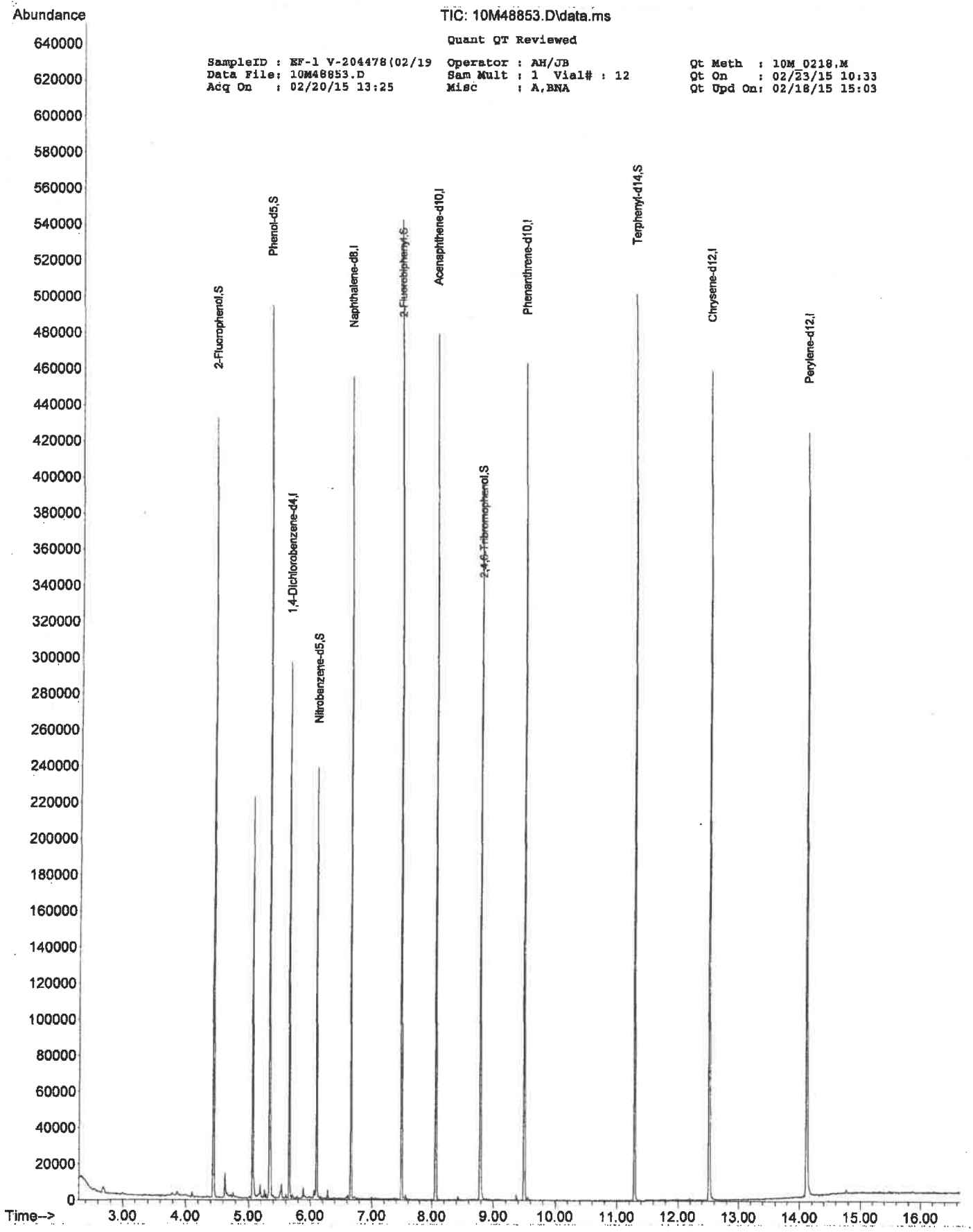
Quantitation Report (QT Reviewed)

SampleID : EF-1 V-204478(02/19 Operator : AH/JB Qt Meth : 10M_0218.M
Data File: 10M48853.D Sam Mult : 1 Vial# : 12 Qt On : 02/23/15 10:33
Acq On : 02/20/15 13:25 Misc : A,BNA Qt Upd On: 02/18/15 15:03

Data Path : G:\GcMsData\2015\GCMS_10\Data\02-20-15\
Qt Path : G:\GcMsData\2015\GCMS_10\MethodQt\
Qt Resp Via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
7) 1,4-Dichlorobenzene-d4	5.657	152	41786	40.00	ng	0.00
29) Naphthalene-d8	6.667	136	162073	40.00	ng	0.00
47) Acenaphthene-d10	8.069	164	93403	40.00	ng	0.00
74) Phenanthrene-d10	9.502	188	172043	40.00	ng	0.00
88) Chrysene-d12	12.530	240	190653	40.00	ng	0.00
100) Perylene-d12	14.123	264	177337	40.00	ng	0.00
System Monitoring Compounds						
10) 2-Fluorophenol	4.442	112	123896	93.18	ng	0.00
Spiked Amount 100.000			Recovery = 93.18%			
15) Phenol-d5	5.341	99	161776	88.50	ng	0.00
Spiked Amount 100.000			Recovery = 88.50%			
30) Nitrobenzene-d5	6.111	128	32901	48.36	ng	0.00
Spiked Amount 50.000			Recovery = 96.72%			
52) 2-Fluorobiphenyl	7.491	172	153972	47.14	ng	0.00
Spiked Amount 50.000			Recovery = 94.28%			
77) 2,4,6-Tribromophenol	8.796	330	44398	96.96	ng	0.00
Spiked Amount 100.000			Recovery = 96.96%			
91) Terphenyl-d14	11.294	244	157126	53.45	ng	0.00
Spiked Amount 50.000			Recovery = 106.90%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed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Quant QT Reviewed
SampleID : EF-1 V-204478(02/19
Data File: 10M48853.D
Acq On : 02/20/15 13:25
Operator : AH/JB
Sam Mult : 1 Vial# : 12
Misc : A,BNA
Qt Meth : 10M_0218.M
Qt On : 02/23/15 10:33
Qt Upd On: 02/18/15 15:03
2-Fluorophenol,S
Phenol-d5,S
1,4-Dichlorobenzene-d4,I
Nitrobenzene-d5,S
Naphthalene-d8,I
2-Fluorobiphenyl,S
Acenaphthene-d10,I
2,4,6-Tribromophenol,S
Phenanthrene-d10,I
Terphenyl-d14,S
Chrysene-d12,I
Perylene-d12,I
Time-->

FORM2

Surrogate Recovery

Method: EPA 8270D

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column1 S3 Recov	Column1 S4 Recov	Column1 S5 Recov	Column1 S6 Recov
10M48837.D	WMB40638	Aqueous	02/19/15 19:17	1		51	36	70	76	84	98
10M48853.D	EF-1 V-20447	Aqueous	02/20/15 13:25	1		93	88	97	94	97	107
10M48838.D	AC83375-003(	Aqueous	02/19/15 19:39	1		66	66	65	67	70	77
10M48836.D	WMB40638(M	Aqueous	02/19/15 18:55	1		60	43	101	91	106	106
10M48839.D	AC83375-003(	Aqueous	02/19/15 20:02	1		91	87	102	93	111*	111
10M48843.D	AC83375-003(	Aqueous	02/20/15 09:35	1		86	82	99	91	105	105

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8270D

Aqueous Limits

Compound	Spike Amt	Limits
S1=2-Fluorophenol	100	15-110
S2=Phenol-d5	100	15-110
S3=Nitrobenzene-d5	50	30-130
S4=2-Fluorobiphenyl	50	30-130
S5=2,4,6-Tribromophenol	100	15-110
S6=Terphenyl-d14	50	30-130

Form3
Recovery Data
QC Batch: WMB40638

Data File	Sample ID:	Analysis Date
Spike or Dup: 10M48836.D	WMB40638(MS)	2/19/2015 6:55:00 PM
Non Spike(If applicable):		
Inst Blank(If applicable):		
Method: 8270D	Matrix: Aqueous	QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	25.8986	0	100	26	20	160
N-Nitrosodimethylamine	1	60.3404	0	100	60	20	160
Benzaldehyde	1	230.7459	0	100	231*	20	160
Aniline	1	59.3243	0	100	59	20	160
Pentachloroethane	1	79.6431	0	100	80	20	160
bis(2-Chloroethyl)ether	1	71.9441	0	100	72	70	130
Phenol	1	41.4981	0	100	41	20	160
2-Chlorophenol	1	80.9775	0	100	81	70	130
N-Decane	1	72.6798	0	100	73	20	160
1,3-Dichlorobenzene	1	74.0378	0	100	74	70	130
1,4-Dichlorobenzene	1	72.1427	0	100	72	70	130
1,2-Dichlorobenzene	1	75.5667	0	100	76	70	130
Benzyl alcohol	1	85.6206	0	100	86	20	160
bis(2-chloroisopropyl)ether	1	69.3698	0	100	69*	70	130
2-Methylphenol	1	78.9027	0	100	79	70	130
Acetophenone	1	90.3168	0	100	90	70	130
Hexachloroethane	1	73.3575	0	100	73	20	160
N-Nitroso-di-n-propylamine	1	78.3882	0	100	78	70	130
3&4-Methylphenol	1	69.8961	0	100	70	20	160
Nitrobenzene	1	83.3063	0	100	83	70	130
Isophorone	1	73.6519	0	100	74	70	130
2-Nitrophenol	1	97.6486	0	100	98	70	130
2,4-Dimethylphenol	1	88.9296	0	100	89	70	130
Benzoic Acid	1	15.5831	0	100	16*	20	160
bis(2-Chloroethoxy)methane	1	81.7115	0	100	82	70	130
2,4-Dichlorophenol	1	92.5552	0	100	93	70	130
1,2,4-Trichlorobenzene	1	78.4976	0	100	78	70	130
Naphthalene	1	74.0131	0	100	74	70	130
4-Chloroaniline	1	108.6473	0	100	109	70	130
Hexachlorobutadiene	1	78.2463	0	100	78	70	130
Caprolactam	1	49.8367	0	100	50	20	160
4-Chloro-3-methylphenol	1	98.4648	0	100	98	70	130
2-Methylnaphthalene	1	88.5984	0	100	89	70	130
1,1'-Biphenyl	1	86.3126	0	100	86	70	130
1,2,4,5-Tetrachlorobenzene	1	86.6054	0	100	87	70	130
Hexachlorocyclopentadiene	1	75.3113	0	100	75	20	160
2,4,6-Trichlorophenol	1	91.0689	0	100	91	70	130
2,4,5-Trichlorophenol	1	99.4349	0	100	99	70	130
2-Chloronaphthalene	1	77.5983	0	100	78	70	130
1,4-Dimethylnaphthalene	1	83.5423	0	100	84	70	130
Diphenyl Ether	1	87.9977	0	100	88	70	130
2-Nitroaniline	1	96.5998	0	100	97	70	130
Coumarin	1	89.4194	0	100	89	70	130
Acenaphthylene	1	77.4957	0	100	77	70	130
Dimethylphthalate	1	77.4489	0	100	77	70	130
2,6-Dinitrotoluene	1	79.2149	0	100	79	70	130
Acenaphthene	1	76.0816	0	100	76	70	130
3-Nitroaniline	1	100.7993	0	100	101	70	130
2,4-Dinitrophenol	1	68.4542	0	100	68	20	160
Dibenzofuran	1	84.4773	0	100	84	70	130
2,4-Dinitrotoluene	1	85.0003	0	100	85	70	130
4-Nitrophenol	1	44.935	0	100	45	20	160
2,3,4,6-Tetrachlorophenol	1	86.9699	0	100	87	70	130
Fluorene	1	77.4039	0	100	77	70	130
4-Chlorophenyl-phenylether	1	80.1381	0	100	80	70	130
Diethylphthalate	1	82.6766	0	100	83	70	130
4-Nitroaniline	1	99.4535	0	100	99	70	130
Atrazine	1	115.2501	0	100	115	70	130
4,6-Dinitro-2-methylphenol	1	86.6401	0	100	87	70	130
n-Nitrosodiphenylamine	1	67.4921	0	100	67*	70	130
1,2-Diphenylhydrazine	1	94.249	0	100	94	70	130
4-Bromophenyl-phenylether	1	81.6105	0	100	82	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: WMB40638

Hexachlorobenzene	1	79.506	0	100	80	70	130
N-Octadecane	1	94.5056	0	100	95	70	130
Pentachlorophenol	1	93.8336	0	100	94	20	160
Phenanthrene	1	80.2028	0	100	80	70	130
Anthracene	1	83.0131	0	100	83	70	130
Carbazole	1	89.2169	0	100	89	70	130
Di-n-butylphthalate	1	85.6875	0	100	86	70	130
Fluoranthene	1	83.7224	0	100	84	70	130
Pyrene	1	80.9576	0	100	81	70	130
Benzidine	1	9.7171	0	100	9.7*	20	160
Butylbenzylphthalate	1	83.3407	0	100	83	70	130
3,3'-Dichlorobenzidine	1	88.0381	0	100	88	70	130
Benzo[a]anthracene	1	78.8399	0	100	79	70	130
Chrysene	1	66.5869	0	100	67*	70	130
bis(2-Ethylhexyl)phthalate	1	81.3222	0	100	81	70	130
Di-n-octylphthalate	1	85.6557	0	100	86	70	130
Benzo[b]fluoranthene	1	85.2319	0	100	85	70	130
Benzo[k]fluoranthene	1	81.1756	0	100	81	70	130
Benzo[a]pyrene	1	79.5024	0	100	80	70	130
Indeno[1,2,3-cd]pyrene	1	78.2743	0	100	78	70	130
Dibenzo[a,h]anthracene	1	67.7786	0	100	68*	70	130
Benzo[g,h,i]perylene	1	78.342	0	100	78	70	130

* - Indicates outside of limits

- Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: WMB40638

	Data File	Sample ID:	Analysis Date
Spike or Dup:	10M48839.D	AC83375-003(T)(MS)	2/19/2015 8:02:00 PM
Non Spike(If applicable):	10M48838.D	AC83375-003(T)	2/19/2015 7:39:00 PM
Inst Blank(If applicable):			

Method: 8270D Matrix: Aqueous QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	35.1089	0	100	35	20	160
N-Nitrosodimethylamine	1	80.9547	0	100	81	20	160
Benzaldehyde	1	153.263	0	100	153	20	160
Aniline	1	73.9195	0	100	74	20	160
Pentachloroethane	1	82.7957	0	100	83	20	160
bis(2-Chloroethyl)ether	1	76.9809	0	100	77	70	130
Phenol	1	82.9874	0	100	83	20	160
2-Chlorophenol	1	91.3735	0	100	91	70	130
N-Decane	1	74.8251	0	100	75	20	160
1,3-Dichlorobenzene	1	76.0694	0	100	76	70	130
1,4-Dichlorobenzene	1	74.6036	0	100	75	70	130
1,2-Dichlorobenzene	1	78.1836	0	100	78	70	130
Benzyl alcohol	1	96.7773	0	100	97	20	160
bis(2-chloroisopropyl)ether	1	73.0653	0	100	73	70	130
2-Methylphenol	1	95.0001	0	100	95	70	130
Acetophenone	1	95.3351	0	100	95	70	130
Hexachloroethane	1	75.7393	0	100	76	20	160
N-Nitroso-di-n-propylamine	1	83.6397	0	100	84	70	130
3&4-Methylphenol	1	89.8374	0	100	90	20	160
Nitrobenzene	1	87.4561	0	100	87	70	130
Isophorone	1	77.1823	0	100	77	70	130
2-Nitrophenol	1	105.0899	0	100	105	70	130
2,4-Dimethylphenol	1	95.8303	0	100	96	70	130
Benzoic Acid	1	64.0671	0	100	64	20	160
bis(2-Chloroethoxy)methane	1	84.7792	0	100	85	70	130
2,4-Dichlorophenol	1	99.0231	0	100	99	70	130
1,2,4-Trichlorobenzene	1	79.887	0	100	80	70	130
Naphthalene	1	75.4613	0	100	75	70	130
4-Chloroaniline	1	77.0649	0	100	77	70	130
Hexachlorobutadiene	1	79.1411	0	100	79	70	130
Caprolactam	1	98.6472	0	100	99	20	160
4-Chloro-3-methylphenol	1	106.0317	0	100	106	70	130
2-Methylnaphthalene	1	91.0016	0	100	91	70	130
1,1'-Biphenyl	1	89.7676	0	100	90	70	130
1,2,4,5-Tetrachlorobenzene	1	89.8793	0	100	90	70	130
Hexachlorocyclopentadiene	1	80.132	0	100	80	20	160
2,4,6-Trichlorophenol	1	97.6599	0	100	98	70	130
2,4,5-Trichlorophenol	1	107.4587	0	100	107	70	130
2-Chloronaphthalene	1	81.6695	0	100	82	70	130
1,4-Dimethylnaphthalene	1	87.3162	0	100	87	70	130
Diphenyl Ether	1	91.108	0	100	91	70	130
2-Nitroaniline	1	100.0745	0	100	100	70	130
Coumarin	1	93.5473	0	100	94	70	130
Acenaphthylene	1	80.2552	0	100	80	70	130
Dimethylphthalate	1	82.0395	0	100	82	70	130
2,6-Dinitrotoluene	1	83.7005	0	100	84	70	130
Acenaphthene	1	79.9027	0	100	80	70	130
3-Nitroaniline	1	88.1099	0	100	88	70	130
2,4-Dinitrophenol	1	77.3798	0	100	77	20	160
Dibenzofuran	1	87.4495	0	100	87	70	130
2,4-Dinitrotoluene	1	90.4734	0	100	90	70	130
4-Nitrophenol	1	87.3581	0	100	87	20	160
2,3,4,6-Tetrachlorophenol	1	94.1156	0	100	94	70	130
Fluorene	1	80.8026	0	100	81	70	130
4-Chlorophenyl-phenylether	1	83.4469	0	100	83	70	130
Diethylphthalate	1	87.121	0	100	87	70	130
4-Nitroaniline	1	94.3635	0	100	94	70	130
Atrazine	1	117.0314	0	100	117	70	130
4,6-Dinitro-2-methylphenol	1	91.5177	0	100	92	70	130
n-Nitrosodiphenylamine	1	72.0805	0	100	72	70	130
1,2-Diphenylhydrazine	1	99.7334	0	100	100	70	130
4-Bromophenyl-phenylether	1	87.1476	0	100	87	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: WMB40638

Hexachlorobenzene	1	85.3038	0	100	85	70	130
N-Octadecane	1	100.7984	0	100	101	70	130
Pentachlorophenol	1	102.7016	0	100	103	20	160
Phenanthrene	1	85.1235	0	100	85	70	130
Anthracene	1	88.5617	0	100	89	70	130
Carbazole	1	93.6929	0	100	94	70	130
Di-n-butylphthalate	1	92.061	0	100	92	70	130
Fluoranthene	1	90.3463	0	100	90	70	130
Pyrene	1	86.9329	0	100	87	70	130
Benzidine	1	2.5655	0	100	2.6*	20	160
Butylbenzylphthalate	1	89.1354	0	100	89	70	130
3,3'-Dichlorobenzidine	1	55.1074	0	100	55*	70	130
Benzo[a]anthracene	1	85.2342	0	100	85	70	130
Chrysene	1	69.1128	0	100	69*	70	130
bis(2-Ethylhexyl)phthalate	1	86.9282	0	100	87	70	130
Di-n-octylphthalate	1	90.5637	0	100	91	70	130
Benzo[b]fluoranthene	1	89.7467	0	100	90	70	130
Benzo[k]fluoranthene	1	86.9248	0	100	87	70	130
Benzo[a]pyrene	1	84.0403	0	100	84	70	130
Indeno[1,2,3-cd]pyrene	1	83.2391	0	100	83	70	130
Dibenzo[a,h]anthracene	1	71.7275	0	100	72	70	130
Benzo[g,h,i]perylene	1	82.9837	0	100	83	70	130

* - Indicates outside of limits

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Form3
Recovery Data
QC Batch: WMB40638

	Data File	Sample ID:	Analysis Date
Spike or Dup:	10M48843.D	AC83375-003(T)(MSD)	2/20/2015 9:35:00 AM
Non Spike(If applicable):	10M48838.D	AC83375-003(T)	2/19/2015 7:39:00 PM
Inst Blank(If applicable):			

Method: 8270D | Matrix: Aqueous | QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Pyridine	1	19.1713	0	100	19*	20	160
N-Nitrosodimethylamine	1	76.1355	0	100	76	20	160
Benzaldehyde	1	114.6361	0	100	115	20	160
Aniline	1	54.9718	0	100	55	20	160
Pentachloroethane	1	80.5192	0	100	81	20	160
bis(2-Chloroethyl)ether	1	74.3818	0	100	74	70	130
Phenol	1	77.849	0	100	78	20	160
2-Chlorophenol	1	86.2574	0	100	86	70	130
N-Decane	1	70.6309	0	100	71	20	160
1,3-Dichlorobenzene	1	73.5214	0	100	74	70	130
1,4-Dichlorobenzene	1	72.2814	0	100	72	70	130
1,2-Dichlorobenzene	1	74.3918	0	100	74	70	130
Benzyl alcohol	1	92.9376	0	100	93	20	160
bis(2-chloroisopropyl)ether	1	69.9529	0	100	70	70	130
2-Methylphenol	1	87.8779	0	100	88	70	130
Acetophenone	1	90.9061	0	100	91	70	130
Hexachloroethane	1	72.5768	0	100	73	20	160
N-Nitroso-di-n-propylamine	1	80.1998	0	100	80	70	130
3&4-Methylphenol	1	85.6448	0	100	86	20	160
Nitrobenzene	1	86.001	0	100	86	70	130
Isophorone	1	76.234	0	100	76	70	130
2-Nitrophenol	1	100.3893	0	100	100	70	130
2,4-Dimethylphenol	1	90.3664	0	100	90	70	130
Benzoic Acid	1	81.5788	0	100	82	20	160
bis(2-Chloroethoxy)methane	1	83.131	0	100	83	70	130
2,4-Dichlorophenol	1	94.7192	0	100	95	70	130
1,2,4-Trichlorobenzene	1	78.7785	0	100	79	70	130
Naphthalene	1	73.8687	0	100	74	70	130
4-Chloroaniline	1	66.2797	0	100	66*	70	130
Hexachlorobutadiene	1	76.8232	0	100	77	70	130
Caprolactam	1	94.7642	0	100	95	20	160
4-Chloro-3-methylphenol	1	99.1302	0	100	99	70	130
2-Methylnaphthalene	1	87.9833	0	100	88	70	130
1,1'-Biphenyl	1	85.787	0	100	86	70	130
1,2,4,5-Tetrachlorobenzene	1	88.9309	0	100	89	70	130
Hexachlorocyclopentadiene	1	83.1913	0	100	83	20	160
2,4,6-Trichlorophenol	1	94.8677	0	100	95	70	130
2,4,5-Trichlorophenol	1	103.2941	0	100	103	70	130
2-Chloronaphthalene	1	81.2608	0	100	81	70	130
1,4-Dimethylnaphthalene	1	85.4621	0	100	85	70	130
Diphenyl Ether	1	90.0551	0	100	90	70	130
2-Nitroaniline	1	98.5459	0	100	99	70	130
Coumarin	1	90.9079	0	100	91	70	130
Acenaphthylene	1	79.7403	0	100	80	70	130
Dimethylphthalate	1	81.6682	0	100	82	70	130
2,6-Dinitrotoluene	1	83.0793	0	100	83	70	130
Acenaphthene	1	79.5758	0	100	80	70	130
3-Nitroaniline	1	78.5347	0	100	79	70	130
2,4-Dinitrophenol	1	99.1105	0	100	99	20	160
Dibenzofuran	1	86.0446	0	100	86	70	130
2,4-Dinitrotoluene	1	90.5938	0	100	91	70	130
4-Nitrophenol	1	88.9342	0	100	89	20	160
2,3,4,6-Tetrachlorophenol	1	90.6533	0	100	91	70	130
Fluorene	1	80.3022	0	100	80	70	130
4-Chlorophenyl-phenylether	1	82.773	0	100	83	70	130
Diethylphthalate	1	86.1799	0	100	86	70	130
4-Nitroaniline	1	86.7804	0	100	87	70	130
Atrazine	1	114.9275	0	100	115	70	130
4,6-Dinitro-2-methylphenol	1	103.806	0	100	104	70	130
n-Nitrosodiphenylamine	1	68.6345	0	100	69*	70	130
1,2-Diphenylhydrazine	1	96.7062	0	100	97	70	130
4-Bromophenyl-phenylether	1	83.1333	0	100	83	70	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: WMB40638

Hexachlorobenzene	1	81.5676	0	100	82	70	130
N-Octadecane	1	97.4366	0	100	97	70	130
Pentachlorophenol	1	102.9224	0	100	103	20	160
Phenanthrene	1	83.2981	0	100	83	70	130
Anthracene	1	85.1129	0	100	85	70	130
Carbazole	1	90.311	0	100	90	70	130
Di-n-butylphthalate	1	89.7761	0	100	90	70	130
Fluoranthene	1	87.2977	0	100	87	70	130
Pyrene	1	83.1748	0	100	83	70	130
Benzidine	1	0	0	100	0*	20	160
Butylbenzylphthalate	1	87.3524	0	100	87	70	130
3,3'-Dichlorobenzidine	1	52.6257	0	100	53*	70	130
Benzo[a]anthracene	1	83.0876	0	100	83	70	130
Chrysene	1	69.2201	0	100	69*	70	130
bis(2-Ethylhexyl)phthalate	1	85.7198	0	100	86	70	130
Di-n-octylphthalate	1	88.2977	0	100	88	70	130
Benzo[b]fluoranthene	1	88.6299	0	100	89	70	130
Benzo[k]fluoranthene	1	83.7153	0	100	84	70	130
Benzo[a]pyrene	1	83.6713	0	100	84	70	130
Indeno[1,2,3-cd]pyrene	1	84.7927	0	100	85	70	130
Dibenzo[a,h]anthracene	1	73.2326	0	100	73	70	130
Benzo[g,h,i]perylene	1	84.5219	0	100	85	70	130

* - Indicates outside of limits

- Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA

QC Batch: WMB40638

	Data File	Sample ID:	Analysis Date
Spike or Dup:	10M48843.D	AC83375-003(T)(MSD)	2/20/2015 9:35:00 AM
Duplicate(If applicable):	10M48839.D	AC83375-003(T)(MS)	2/19/2015 8:02:00 PM
Inst Blank(If applicable):			

Method: 8270D Matrix: Aqueous QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Pyridine	1	19.1713	35.1089	59*	20
N-Nitrosodimethylamine	1	76.1355	80.9547	6.1	20
Benzaldehyde	1	114.6361	153.263	29*	20
Aniline	1	54.9718	73.9195	29*	20
Pentachloroethane	1	80.5192	82.7957	2.8	20
bis(2-Chloroethyl)ether	1	74.3818	76.9809	3.4	20
Phenol	1	77.849	82.9874	6.4	20
2-Chlorophenol	1	86.2574	91.3735	5.8	20
N-Decane	1	70.6309	74.8251	5.8	20
1,3-Dichlorobenzene	1	73.5214	76.0694	3.4	20
1,4-Dichlorobenzene	1	72.2814	74.6036	3.2	20
1,2-Dichlorobenzene	1	74.3918	78.1836	5	20
Benzyl alcohol	1	92.9376	96.7773	4	20
bis(2-chloroisopropyl)ether	1	69.9529	73.0653	4.4	20
2-Methylphenol	1	87.8779	95.0001	7.8	20
Acetophenone	1	90.9061	95.3351	4.8	20
Hexachloroethane	1	72.5768	75.7393	4.3	20
N-Nitroso-di-n-propylamine	1	80.1998	83.6397	4.2	20
3&4-Methylphenol	1	85.6448	89.8374	4.8	20
Nitrobenzene	1	86.001	87.4561	1.7	20
Isophorone	1	76.234	77.1823	1.2	20
2-Nitrophenol	1	100.3893	105.0899	4.6	20
2,4-Dimethylphenol	1	90.3664	95.8303	5.9	20
Benzoic Acid	1	81.5788	64.0671	24*	20
bis(2-Chloroethoxy)methane	1	83.131	84.7792	2	20
2,4-Dichlorophenol	1	94.7192	99.0231	4.4	20
1,2,4-Trichlorobenzene	1	78.7785	79.887	1.4	20
Naphthalene	1	73.8687	75.4613	2.1	20
4-Chloroaniline	1	66.2797	77.0649	15	20
Hexachlorobutadiene	1	76.8232	79.1411	3	20
Caprolactam	1	94.7642	98.6472	4	20
4-Chloro-3-methylphenol	1	99.1302	106.0317	6.7	20
2-Methylnaphthalene	1	87.9833	91.0016	3.4	20
1,1'-Biphenyl	1	85.787	89.7676	4.5	20
1,2,4,5-Tetrachlorobenzene	1	88.9309	89.8793	1.1	20
Hexachlorocyclopentadiene	1	83.1913	80.132	3.7	20
2,4,6-Trichlorophenol	1	94.8677	97.6599	2.9	20
2,4,5-Trichlorophenol	1	103.2941	107.4587	4	20
2-Chloronaphthalene	1	81.2608	81.6695	0.5	20
1,4-Dimethylnaphthalene	1	85.4621	87.3162	2.1	20
Diphenyl Ether	1	90.0551	91.108	1.2	20
2-Nitroaniline	1	98.5459	100.0745	1.5	20
Coumarin	1	90.9079	93.5473	2.9	20
Acenaphthylene	1	79.7403	80.2552	0.64	20
Dimethylphthalate	1	81.6682	82.0395	0.45	20
2,6-Dinitrotoluene	1	83.0793	83.7005	0.74	20
Acenaphthene	1	79.5758	79.9027	0.41	20
3-Nitroaniline	1	78.5347	88.1099	11	20
2,4-Dinitrophenol	1	99.1105	77.3798	25*	20
Dibenzofuran	1	86.0446	87.4495	1.6	20
2,4-Dinitrotoluene	1	90.5938	90.4734	0.13	20
4-Nitrophenol	1	88.9342	87.3581	1.8	20
2,3,4,6-Tetrachlorophenol	1	90.6533	94.1156	3.7	20
Fluorene	1	80.3022	80.8026	0.62	20
4-Chlorophenyl-phenylether	1	82.773	83.4469	0.81	20
Diethylphthalate	1	86.1799	87.121	1.1	20
4-Nitroaniline	1	86.7804	94.3635	8.4	20
Atrazine	1	114.9275	117.0314	1.8	20
4,6-Dinitro-2-methylphenol	1	103.806	91.5177	13	20
n-Nitrosodiphenylamine	1	68.6345	72.0805	4.9	20
1,2-Diphenylhydrazine	1	96.7062	99.7334	3.1	20
4-Bromophenyl-phenylether	1	83.1333	87.1476	4.7	20
Hexachlorobenzene	1	81.5676	85.3038	4.5	20
N-Octadecane	1	97.4366	100.7984	3.4	20

Form3
RPD DATA
QC Batch: WMB40638

Pentachlorophenol	1	102.9224	102.7016	0.21	20
Phenanthrene	1	83.2981	85.1235	2.2	20
Anthracene	1	85.1129	88.5617	4	20
Carbazole	1	90.311	93.6929	3.7	20
Di-n-butylphthalate	1	89.7761	92.061	2.5	20
Fluoranthene	1	87.2977	90.3463	3.4	20
Pyrene	1	83.1748	86.9329	4.4	20
Benzidine	1	0	2.5655	200*	20
Butylbenzylphthalate	1	87.3524	89.1354	2	20
3,3'-Dichlorobenzidine	1	52.6257	55.1074	4.6	20
Benzo[a]anthracene	1	83.0876	85.2342	2.6	20
Chrysene	1	69.2201	69.1128	0.16	20
bis(2-Ethylhexyl)phthalate	1	85.7198	86.9282	1.4	20
Di-n-octylphthalate	1	88.2977	90.5637	2.5	20
Benzo[b]fluoranthene	1	88.6299	89.7467	1.3	20
Benzo[k]fluoranthene	1	83.7153	86.9248	3.8	20
Benzo[a]pyrene	1	83.6713	84.0403	0.44	20
Indeno[1,2,3-cd]pyrene	1	84.7927	83.2391	1.8	20
Dibenzo[a,h]anthracene	1	73.2326	71.7275	2.1	20
Benzo[g,h,i]perylene	1	84.5219	82.9837	1.8	20

* - Indicates outside of limits

NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: WMB40638
Blank Data File: 10M48837.D
Matrix: Aqueous

Blank Analysis Date: 02/19/15 19:17
Blank Extraction Date: 02/19/15
(If Applicable)
Method: EPA 8270D

Sample Number	Data File	Analysis Date
AC83375-003(T)	10M48838.D	02/19/15 19:39
EF-1 V-204478(02/	10M48853.D	02/20/15 13:25
AC83375-003(T)(M	10M48843.D	02/20/15 09:35
AC83375-003(T)(M	10M48839.D	02/19/15 20:02
WMB40638(MS)	10M48836.D	02/19/15 18:55

Form 5

Tune Name: CAL DFTPP
Instrument: GCMS 10
Data File: 10M48773.D
Analysis Date: 02/18/15 09:10
Method: EPA 8270D

Tune Scan/Time Range: Average of 9.805 to 9.805 min

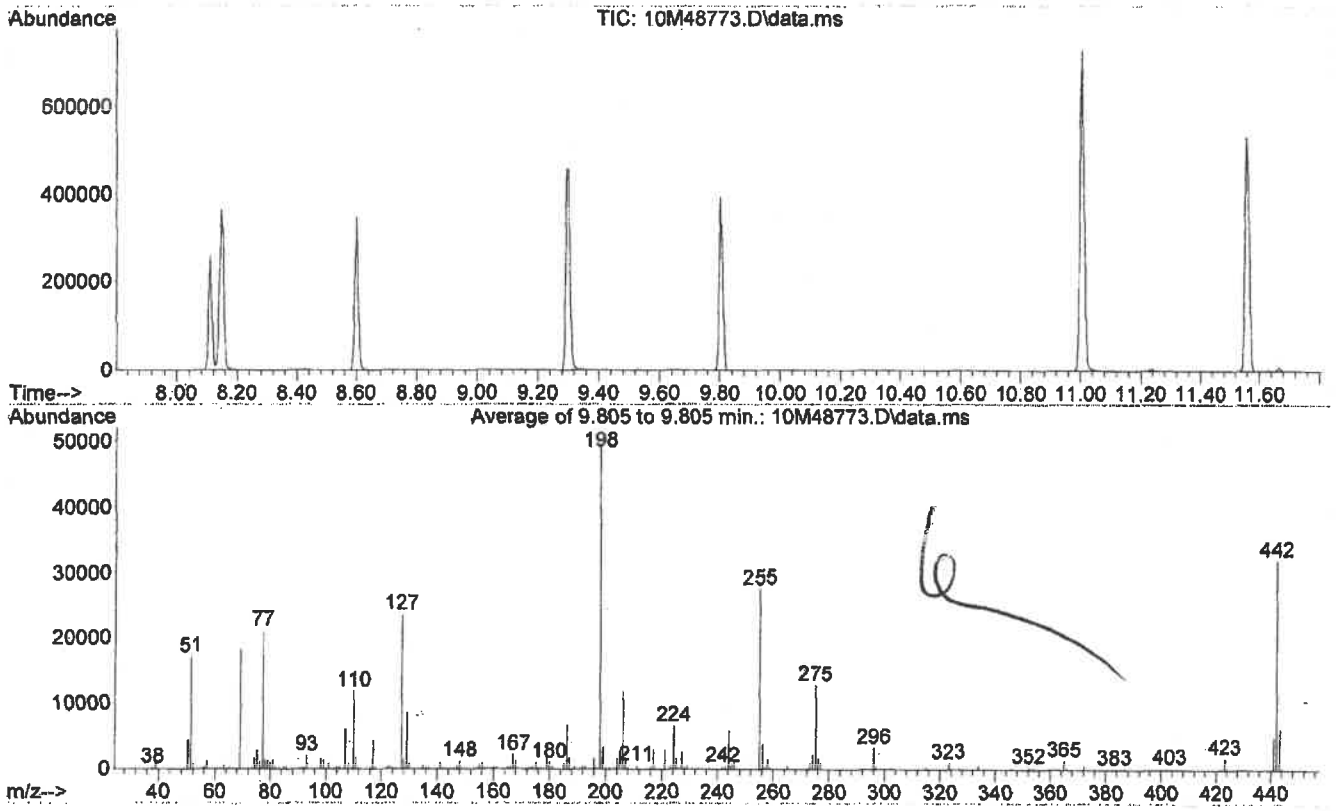
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	34.6	17104	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	37.0	18328	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	47.4	23472	PASS
197	198	0.00	1	0.7	339	PASS
198	198	100	100	100.0	49496	PASS
199	198	5	9	6.7	3292	PASS
275	198	10	30	25.8	12794	PASS
365	198	1	100	2.6	1308	PASS
441	443	0.01	100	82.2	5050	PASS
442	198	40	100	64.6	31968	PASS
443	442	17	23	19.2	6145	PASS

Data File	Sample Number	Analysis Date:
10M48774.D	CAL BNA@50PPM	02/18/15 10:38
10M48775.D	CAL BNA@10PPM	02/18/15 11:00
10M48776.D	CAL BNA@20PPM	02/18/15 11:28
10M48777.D	CAL BNA@2PPM	02/18/15 11:50
10M48778.D	CAL BNA@.5PPM	02/18/15 12:13
10M48779.D	CAL BNA@196PP	02/18/15 12:35
10M48780.D	CAL BNA@160PP	02/18/15 12:58
10M48781.D	CAL BNA@120PP	02/18/15 13:20
10M48782.D	CAL BNA@80PPM	02/18/15 13:43
10M48783.D	CAL BNA@50PPM	02/18/15 14:05
10M48784.D	BNA@50PPM	02/18/15 14:28
10M48785.D	ICV BNA@50PPM	02/18/15 15:06

Data Path : G:\GcMsData\2015\GCMS_10\Data\02-18-15\
Data File : 10M48773.D
Acq On : 18 Feb 2015 9:10
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GcMsData\2015\GCMS_10\MethodQt\10M_0127.M
Title : @GCMS_10,mg,625,8270
Last Update : Tue Jan 27 15:10:40 2015



Spectrum Information: Average of 9.805 to 9.805 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	34.6	17104	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	37.0	18328	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	47.4	23472	PASS
197	198	0.00	1	0.7	339	PASS
198	198	100	100	100.0	49496	PASS
199	198	5	9	6.7	3292	PASS
275	198	10	30	25.8	12794	PASS
365	198	1	100	2.6	1308	PASS
441	443	0.01	100	82.2	5050	PASS
442	198	40	100	64.6	31968	PASS
443	442	17	23	19.2	6145	PASS

Form 5

Tune Name: CAL DFTPP
Instrument: GCMS 10
Data File: 10M48814.D
Analysis Date: 02/19/15 08:19
Method: EPA 8270D

Tune Scan/Time Range: Scan 1405

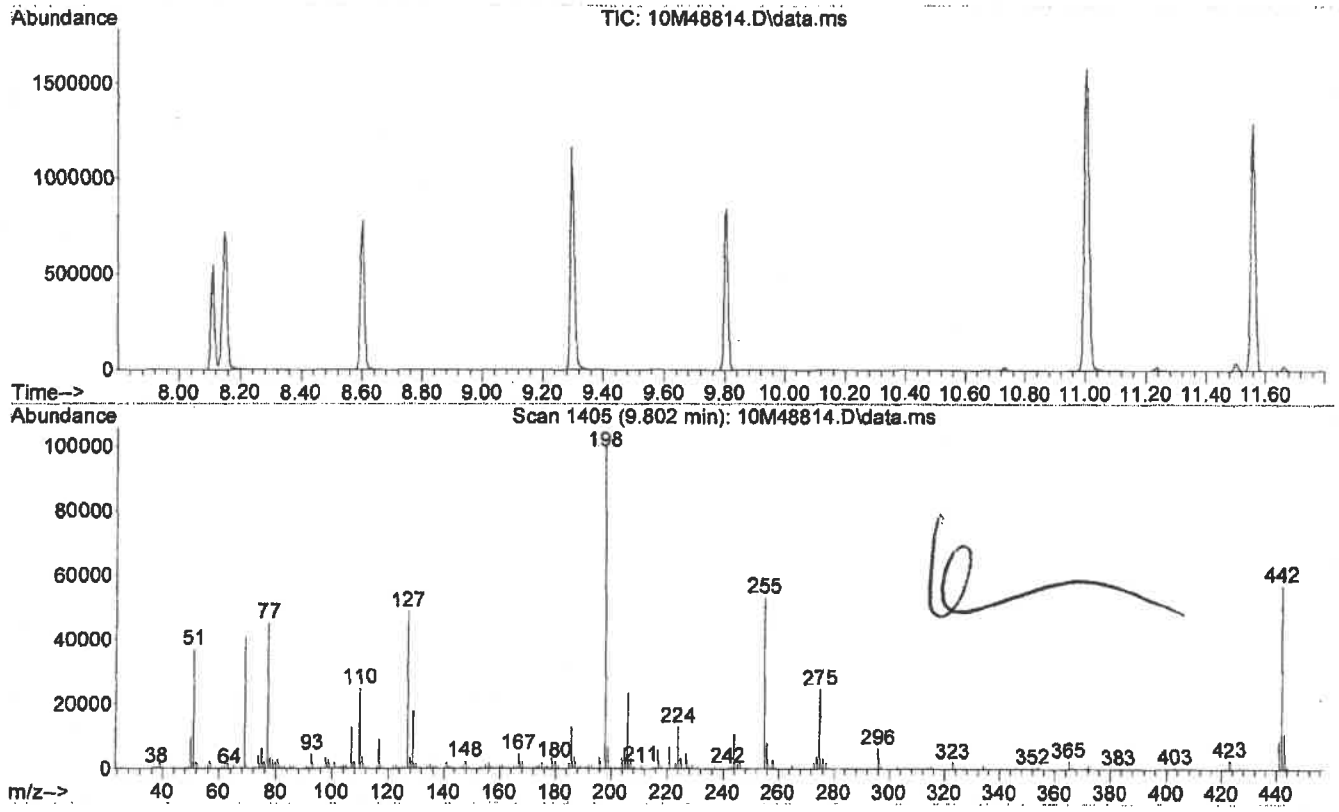
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	36.8	37040	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.5	40776	PASS
70	69	0.00	2	0.5	219	PASS
127	198	40	60	48.4	48800	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	100752	PASS
199	198	5	9	6.8	6859	PASS
275	198	10	30	24.6	24800	PASS
365	198	1	100	2.5	2520	PASS
441	443	0.01	100	79.9	8688	PASS
442	198	40	100	56.6	57056	PASS
443	442	17	23	19.1	10877	PASS

Data File	Sample Number	Analysis Date:
10M48815.D	CAL BNA@50PPM	02/19/15 09:01
10M48816.D	WMB40630(MS)	02/19/15 11:27
10M48817.D	WMB40630	02/19/15 11:49
10M48818.D	AC83399-003	02/19/15 12:11
10M48819.D	AC83386-002	02/19/15 12:33
10M48820.D	AC83386-002(MS)	02/19/15 12:56
10M48821.D	TEST	02/19/15 13:18
10M48822.D	AC83386-002(MSD	02/19/15 13:41
10M48823.D	AC83386-001	02/19/15 14:03
10M48824.D	AC83386-003	02/19/15 14:25
10M48825.D	AC83386-004	02/19/15 14:48
10M48826.D	AC83294-002	02/19/15 15:10
10M48827.D	AC83402-001	02/19/15 15:33
10M48828.D	AC83402-002	02/19/15 15:55
10M48829.D	AC83409-001	02/19/15 16:18
10M48830.D	AC83409-002	02/19/15 16:40
10M48831.D	AC83409-003	02/19/15 17:03
10M48832.D	AC83409-004	02/19/15 17:25
10M48833.D	AC83409-005	02/19/15 17:48
10M48834.D	AC83409-006	02/19/15 18:10
10M48835.D	AC83386-001(3X)	02/19/15 18:32
10M48836.D	WMB40638(MS)	02/19/15 18:55
10M48837.D	WMB40638	02/19/15 19:17
10M48838.D	AC83375-003(T)	02/19/15 19:39
10M48839.D	AC83375-003(T)(M	02/19/15 20:02
10M48840.D	AC83375-003(T)(M	02/19/15 20:24

Data Path : G:\GcMsData\2015\GCMS_10\Data\02-19-15\
Data File : 10M48814.D
Acq On : 19 Feb 2015 8:19
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GcMsData\2015\GCMS_10\MethodQt\10M_0218.M
Title : @GCMS_10,mg,625,8270
Last Update : Wed Feb 18 14:55:05 2015



Spectrum Information: Scan 1405

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	36.8	37040	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.5	40776	PASS
70	69	0.00	2	0.5	219	PASS
127	198	40	60	48.4	48800	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	100752	PASS
199	198	5	9	6.8	6859	PASS
275	198	10	30	24.6	24800	PASS
365	198	1	100	2.5	2520	PASS
441	443	0.01	100	79.9	8688	PASS
442	198	40	100	56.6	57056	PASS
443	442	17	23	19.1	10877	PASS

Form 5

Tune Name: CAL DFTPP **Data File:** 10M48841.D
Instrument: GCMS 10 **Analysis Date:** 02/20/15 08:45
Method: EPA 8270D

Tune Scan/Time Range: Average of 9.802 to 9.812 min

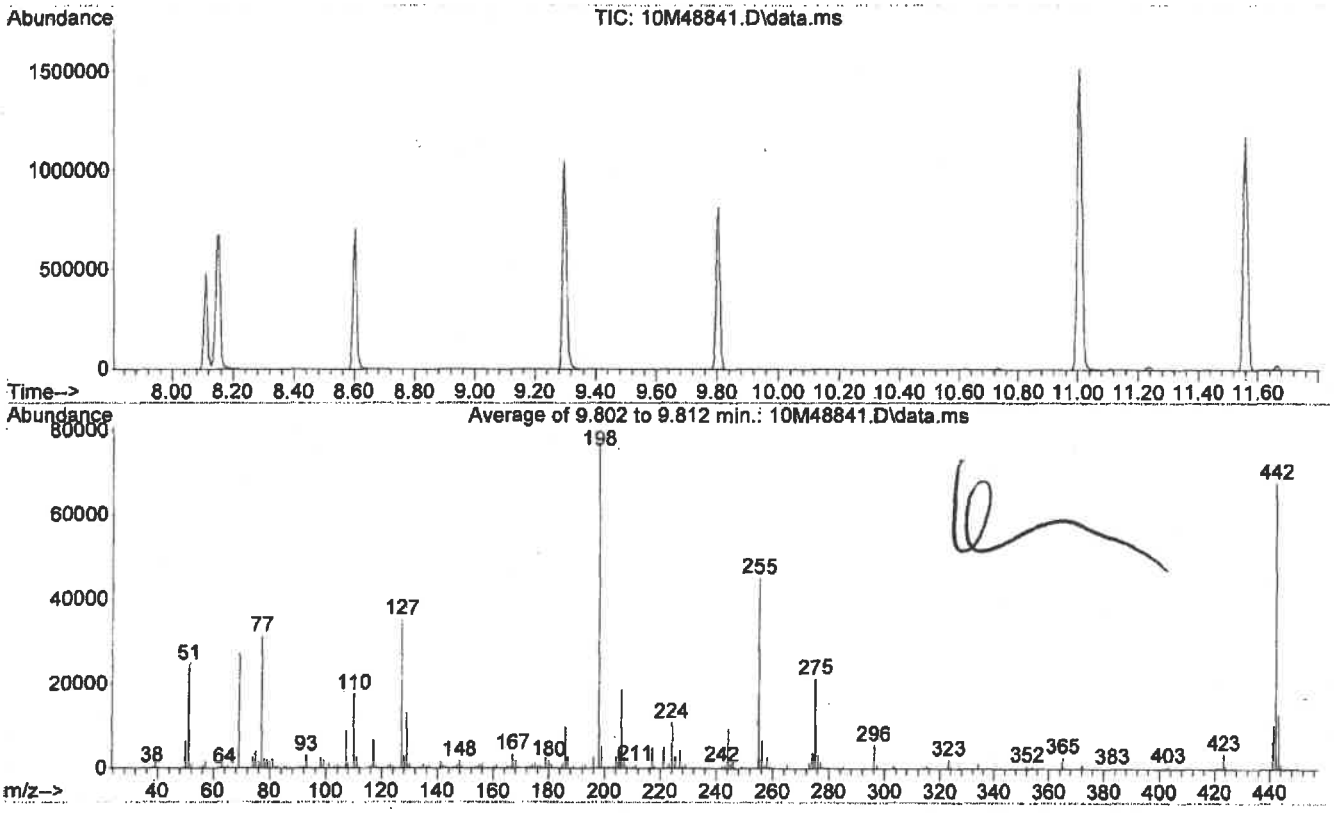
Tgt Mass	Rel Mass	Lo Lim	Hi Lim	Rel Abund	Raw Abund	Pass/ Fail
51	198	30	60	32.0	24568	PASS
68	69	0.00	2	0.3	73	PASS
69	198	0.00	100	35.6	27338	PASS
70	69	0.00	2	0.5	125	PASS
127	198	40	60	45.7	35137	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	76848	PASS
199	198	5	9	6.6	5095	PASS
275	198	10	30	27.6	21232	PASS
365	198	1	100	3.4	2628	PASS
441	443	0.01	100	78.6	10231	PASS
442	198	40	100	88.0	67621	PASS
443	442	17	23	19.2	13009	PASS

Data File	Sample Number	Analysis Date:
10M48842.D	CAL BNA@50PPM	02/20/15 09:07
10M48843.D	AC83375-003(T)(M	02/20/15 09:35
10M48844.D	AC83336-001(T)	02/20/15 10:06
10M48845.D	AC83336-002(T)	02/20/15 10:28
10M48846.D	AC83336-004(T)	02/20/15 10:50
10M48847.D	EF-SPLP V-204046	02/20/15 11:12
10M48848.D	AC83294-001(T)	02/20/15 11:34
10M48849.D	EF-SPLP V-204046	02/20/15 11:56
10M48850.D	AC83289-001(T)	02/20/15 12:18
10M48851.D	AC83323-007(T)	02/20/15 12:40
10M48852.D	EF-1 V-204478(02/	02/20/15 13:03
10M48853.D	EF-1 V-204478(02/	02/20/15 13:25
10M48854.D	WMB40643	02/20/15 13:47
10M48855.D	AC83339-001(R)	02/20/15 14:09
10M48856.D	AC83442-001	02/20/15 14:31
10M48857.D	AC83442-002	02/20/15 14:54
10M48858.D	AC83423-008	02/20/15 15:16
10M48859.D	AC83423-009	02/20/15 15:38
10M48860.D	AC83423-005	02/20/15 16:00
10M48861.D	AC83423-006	02/20/15 16:22
10M48862.D	WMB40649	02/20/15 16:44
10M48863.D	AC83423-007	02/20/15 17:07
10M48864.D	AC83423-010	02/20/15 17:29
10M48865.D	AC83423-011	02/20/15 17:51
10M48866.D	AC83423-012	02/20/15 18:14
10M48867.D	AC83415-011	02/20/15 18:36
10M48868.D	AC83415-023	02/20/15 18:58
10M48869.D	AC83420-001	02/20/15 19:20
10M48870.D	AC83420-002	02/20/15 19:42
10M48871.D	AC83443-003	02/20/15 20:05

Data Path : G:\GcMsData\2015\GCMS_10\Data\02-20-15\
Data File : 10M48841.D
Acq On : 20 Feb 2015 8:45
Operator : AH/JB
Sample : CAL DFTPP
Misc : A,BNA
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : G:\GcMsData\2015\GCMS_10\MethodQt\10M_0218.M
Title : @GCMS_10,mg,625,8270
Last Update : Wed Feb 18 14:55:05 2015



Spectrum Information: Average of 9.802 to 9.812 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	32.0	24568	PASS
68	69	0.00	2	0.3	73	PASS
69	198	0.00	100	35.6	27338	PASS
70	69	0.00	2	0.5	125	PASS
127	198	40	60	45.7	35137	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	76848	PASS
199	198	5	9	6.6	5095	PASS
275	198	10	30	27.6	21232	PASS
365	198	1	100	3.4	2628	PASS
441	443	0.01	100	78.6	10231	PASS
442	198	40	100	88.0	67621	PASS
443	442	17	23	19.2	13009	PASS

5021319 0182

Form 6
Initial Calibration

Method: EPA 8270D

Instrument: GCMS_10

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	10M48783.	CAL BNA@50PPM	02/18/15 14:05	2	10M48777.	CAL BNA@2PPM	02/18/15 11:50
3	10M48775.	CAL BNA@10PPM	02/18/15 11:00	4	10M48776.	CAL BNA@20PPM	02/18/15 11:28
5	10M48782.	CAL BNA@80PPM	02/18/15 13:43	6	10M48781.	CAL BNA@120PPM	02/18/15 13:20
7	10M48780.	CAL BNA@160PPM	02/18/15 12:58	8	10M48779.	CAL BNA@196PPM	02/18/15 12:35
9	10M48778.	CAL BNA@.5PPM	02/18/15 12:13				

Compound	Col	Mr	Fit	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Pyridine	1	0	Avg	1.4775	1.1989	1.4596	1.5580	1.5755	1.5872	1.5469	1.5564	---	1.50	2.82	1.00	1.00	8.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitrosodimethylamin	1	0	Avg	0.8937	0.7540	0.8813	0.9110	0.9298	0.9411	0.9281	0.9233	---	0.895	2.75	1.00	1.00	6.7		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorophenol	1	0	Avg	1.2449	1.1758	1.2666	1.2768	1.3153	1.3248	1.2989	1.2791	---	1.27	4.44	1.00	1.00	3.7		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzaldehyde	1	0	Qua	0.3201	0.4864	0.5107	0.4774	0.1983	0.0577	---	---	---	0.342	5.28	0.570	0.996	54	0.01	50.00	2.00	10.00	20.00	80.00	120.0			
Aniline	1	0	Avg	1.9410	1.7185	2.2432	2.1851	1.8894	1.8839	1.8209	1.7552	1.6959	1.90	5.37	0.997	0.999	10		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Pentachloroethane	1	0	Avg	0.4584	0.4951	0.4776	0.4725	0.4870	0.4820	0.4682	0.4660	---	0.476	5.42	0.999	1.00	2.5	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethyl)ether	1	0	Avg	1.4149	1.5962	1.5854	1.5124	1.4627	1.4496	1.4124	1.3831	1.6637	1.50	5.44	0.999	1.00	6.5	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Phenol-d5	1	0	Avg	1.7097	1.6862	1.7935	1.7819	1.7809	1.7864	1.7382	1.7220	---	1.75	5.35	1.00	1.00	2.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Phenol	1	0	Avg	1.8655	1.9428	2.0169	1.9512	1.9339	1.9076	1.8255	1.7945	---	1.90	5.36	0.999	1.00	3.8	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Chlorophenol	1	0	Avg	1.3956	1.4292	1.4403	1.4082	1.4525	1.4777	1.4250	1.4158	---	1.43	5.47	0.999	1.00	1.8	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Decane	1	0	Avg	1.4807	1.7259	1.5812	1.5571	1.5464	1.4437	1.3602	1.3397	---	1.50	5.53	0.996	0.999	8.4	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,3-Dichlorobenzene	1	0	Avg	1.5554	1.7337	1.6998	1.6356	1.6183	1.5768	1.5262	1.5092	---	1.61	5.61	0.999	1.00	5.0		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,4-Dichlorobenzene	1	0	Avg	1.5962	1.8579	1.7458	1.6767	1.6475	1.6058	1.5469	1.5427	---	1.65	5.67	0.999	1.00	6.5		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,2-Dichlorobenzene	1	0	Avg	1.5074	1.7388	1.6094	1.5783	1.5682	1.5476	1.4853	1.4735	---	1.56	5.80	0.999	1.00	5.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzyl alcohol	1	0	Avg	0.9579	0.7923	0.9394	0.9483	0.9703	0.9805	0.9562	0.9459	---	0.936	5.77	1.00	1.00	6.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-chloroisopropyl)e	1	0	Avg	1.9140	2.2538	2.0760	2.0125	1.9858	1.9695	1.8958	1.8876	---	2.00	5.89	0.999	1.00	6.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylphenol	1	0	Avg	1.3130	1.2916	1.3406	1.3475	1.3333	1.3522	1.3111	1.3019	1.3631	1.33	5.87	1.00	1.00	1.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Acetophenone	1	0	Avg	1.7595	1.8685	1.9150	1.9057	1.8083	1.7305	1.6122	1.5925	---	1.77	5.99	0.997	1.00	7.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachloroethane	1	0	Avg	0.5976	0.6202	0.6179	0.6139	0.6289	0.6170	0.6005	0.5945	---	0.611	6.08	0.999	1.00	2.0	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Nitroso-di-n-propylar	1	0	Avg	0.9786	0.9769	1.0288	1.0363	1.0018	0.9702	0.9066	0.8935	0.9510	0.972	5.99	0.998	1.00	5.0	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
3&4-Methylphenol	1	0	Avg	1.3252	1.3733	1.4249	1.4102	1.3588	1.3099	1.1930	1.1531	1.3178	1.32	5.99	0.995	1.00	7.0		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Nitrobenzene-d5	1	0	Avg	0.1678	0.1372	0.1552	0.1624	0.1766	0.1835	0.1811	0.1792	---	0.168	6.11	1.00	1.00	9.4		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
Nitrobenzene	1	0	Avg	0.3894	0.3737	0.3970	0.3964	0.4085	0.4007	0.3917	0.3870	---	0.393	6.13	0.999	1.00	2.6	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Isophorone	1	0	Avg	0.6953	0.6236	0.7005	0.7092	0.7210	0.7053	0.6962	0.6909	---	0.693	6.31	1.00	1.00	4.3	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitrophenol	1	0	Avg	0.1865	0.1251	0.1701	0.1791	0.1990	0.2019	0.2000	0.1982	---	0.183	6.38	1.00	1.00	14	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4-Dimethylphenol	1	0	Avg	0.3434	0.3245	0.3528	0.3501	0.3567	0.3510	0.3462	0.3410	0.3111	0.342	6.41	1.00	1.00	4.3	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Benzoic Acid	1	0	Qua	0.2649	---	0.0550	0.1200	0.2729	0.4117	0.4314	0.4248	---	0.283	6.49	0.981	0.992	54		50.00		10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Chloroethoxy)met	1	0	Avg	0.4307	0.4311	0.4584	0.4459	0.4425	0.4295	0.4176	0.4129	---	0.434	6.48	0.999	1.00	3.4	0.30	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4-Dichlorophenol	1	0	Avg	0.2899	0.2489	0.2910	0.2890	0.3022	0.3009	0.2960	0.2924	0.2365	0.283	6.56	1.00	1.00	8.3	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
1,2,4-Trichlorobenzene	1	0	Avg	0.3228	0.3695	0.3508	0.3354	0.3434	0.3265	0.3210	0.3170	---	0.336	6.62	0.999	1.00	5.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Naphthalene	1	0	Avg	1.1159	1.3216	1.2474	1.2031	1.1726	1.0917	1.0384	1.0227	1.5229	1.19	6.69	0.997	1.00	13	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
4-Chloroaniline	1	0	Qua	0.4183	0.3304	0.4567	0.4572	0.4091	0.3710	0.3266	0.2976	0.3345	0.378	6.72	0.977	1.00	16	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Hexachlorobutadiene	1	0	Avg	0.1847	0.1928	0.1952	0.1899	0.1969	0.1929	0.1886	0.1872	---	0.191	6.78	0.999	1.00	2.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Caprolactam	1	0	Qua	0.1220	0.0709	0.1046	0.1138	0.1235	0.1411	0.1413	0.1412	---	0.120	6.99	0.997	0.999	20	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chloro-3-methylphen	1	0	Avg	0.3005	0.2442	0.2963	0.3002	0.3091	0.3149	0.3105	0.3048	---	0.298	7.08	1.00	1.00	7.5	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Methylnaphthalene	1	0	Avg	0.7191	0.8018	0.7989	0.7584	0.7423	0.7084	0.6723	0.6593	---	0.733	7.21	0.997	1.00	7.2	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Methylnaphthalenes (T	1	0	Avg	1.3894	1.5673	1.5350	1.4802	1.4337	1.3765	1.3010	1.2824	---	1.42	7.21	0.998	1.00	7.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,1'-Biphenyl	1	0	Avg	0.8982	1.0172	0.9845	0.9488	0.9175	0.8785	0.8439	0.8239	---	0.914	7.58	0.998	1.00	7.3	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1,2,4,5-Tetrachloroben	1	0	Avg	0.5391	0.6098	0.5776	0.5630	0.5659	0.5436	0.5336	0.5301	---	0.558	7.34	0.999	1.00	4.8	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorocyclopentac	1	0	Avg	0.3107	0.2388	0.2868	0.2912	0.3297	0.3147	0.2962	0.2612	---	0.291	7.34	0.992	0.997	10	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2,4,6-Trichlorophenol	1	0	Avg	0.3668	0.2785	0.3452	0.4112	0.4082	0.3787	0.3728	0.4006	---	0.370	7.43	0.998	0.998	12	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

Flags

a - failed the min rf criteria

c - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 8.81

Corr 1 = Correlation Coefficient for linear Eq.

Corr 2 = Correlation Coefficient for quad Eq.

Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

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Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_10

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	10M48783.	CAL BNA@50PPM	02/18/15 14:05	2	10M48777.	CAL BNA@2PPM	02/18/15 11:50
3	10M48775.	CAL BNA@10PPM	02/18/15 11:00	4	10M48776.	CAL BNA@20PPM	02/18/15 11:28
5	10M48782.	CAL BNA@80PPM	02/18/15 13:43	6	10M48781.	CAL BNA@120PPM	02/18/15 13:20
7	10M48780.	CAL BNA@160PPM	02/18/15 12:58	8	10M48779.	CAL BNA@196PPM	02/18/15 12:35
9	10M48778.	CAL BNA@.5PPM	02/18/15 12:13				

Compound	Col	Mr	Fit	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
2.4.5-Trichlorophenol	1	0	Avg	0.3937	0.3110	0.3742	0.3293	0.3816	0.4203	0.4105	0.3828	----	0.375	7.46	0.996	0.997	10	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Fluorobiphenyl	1	0	Avg	1.3520	1.4836	1.4656	1.4122	1.4227	1.3846	1.3382	1.3320	----	1.40	7.50	0.999	1.00	4.1		25.00	1.00	5.00	10.00	40.00	60.00	80.00	98.00	
2-Chloronaphthalene	1	0	Avg	1.2110	1.3529	1.3427	1.3098	1.2768	1.2131	1.1731	1.1526	----	1.25	7.60	0.998	1.00	6.1	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.4-Dimethylnaphthalei	1	0	Avg	0.8876	0.9936	0.9794	0.9577	0.9228	0.8550	0.8049	0.7898	----	0.899	7.88	0.996	1.00	8.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylnaphthalenes	1	0	Avg	0.8876	0.9936	0.9794	0.9577	0.9228	0.8550	0.8049	0.7898	----	0.899	7.88	0.996	1.00	8.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diphenyl Ether	1	0	Avg	0.8343	0.9372	0.9267	0.8879	0.8750	0.8214	0.7841	0.7671	----	0.854	7.66	0.997	1.00	7.4		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2-Nitroaniline	1	0	Avg	0.4130	0.3120	0.3813	0.4059	0.4252	0.4202	0.4074	0.4009	----	0.396	7.67	0.999	1.00	9.2	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Coumarin	1	0	Avg	0.5190	0.5085	0.5438	0.5324	0.5358	0.5160	0.4906	0.4792	----	0.516	7.85	0.997	1.00	4.3		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthylene	1	0	Avg	1.9706	1.9958	2.0992	2.0792	2.0623	1.9103	1.8422	1.8103	----	1.97	7.95	0.997	1.00	5.5	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dimethylphthalate	1	0	Avg	1.3920	1.4747	1.4765	1.4611	1.4449	1.3975	1.3570	1.3239	----	1.42	7.82	0.999	1.00	4.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.6-Dinitrotoluene	1	0	Avg	0.3217	0.2512	0.3256	0.3371	0.3295	0.3145	0.3004	0.2912	----	0.309	7.88	0.997	1.00	9.0	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Acenaphthene	1	0	Avg	1.2559	1.4542	1.3624	1.3403	1.3076	1.2072	1.1459	1.1203	----	1.27	8.10	0.996	0.999	8.9	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3-Nitroaniline	1	0	Qua	0.3716	0.2580	0.3640	0.3834	0.3757	0.3326	0.3065	0.2857	----	0.335	8.02	0.987	1.00	14	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4-Dinitrophenol	1	0	Qua	0.1571	----	0.0795	0.1198	0.1556	0.2011	0.2092	0.2098	----	0.162	8.11	0.991	0.997	31	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzofuran	1	0	Avg	1.6835	1.9673	1.8539	1.8225	1.7597	1.6536	1.5871	1.5529	2.2516	1.79	8.26	0.998	1.00	12	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
2.4-Dinitrotoluene	1	0	Avg	0.4523	0.2769	0.4097	0.4423	0.4605	0.4683	0.4627	0.4547	----	0.428	8.23	1.00	1.00	15	0.20	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitrophenol	1	0	Qua	0.2391	0.1259	0.2115	0.2434	0.2451	0.2544	0.2520	0.2510	----	0.228	8.15	1.00	1.00	19	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.3.4.6-Tetrachlorophe	1	0	Avg	0.3514	0.2192	0.3259	0.3439	0.3566	0.3767	0.3684	0.3643	----	0.338	8.36	1.00	1.00	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Fluorene	1	0	Avg	1.4196	1.5419	1.5364	1.5223	1.4801	1.3656	1.2983	1.2827	----	1.43	8.57	0.997	0.999	7.4	0.90	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Chlorophenyl-phenyle	1	0	Avg	0.6840	0.7436	0.7320	0.7456	0.7104	0.6894	0.6629	0.6566	----	0.703	8.56	0.999	1.00	5.0	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Diethylphthalate	1	0	Avg	1.3804	1.3419	1.4238	1.4253	1.4098	1.3971	1.3551	1.3316	----	1.38	8.44	0.999	1.00	2.7	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Nitroaniline	1	0	Avg	0.3998	0.2684	0.3746	0.3889	0.4076	0.4135	0.4148	0.4101	----	0.385	8.58	1.00	1.00	13	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Atrazine	1	0	Avg	0.3137	0.2554	0.3101	0.3344	0.3080	0.3091	0.3015	0.2858	----	0.302	9.20	0.998	1.00	7.7	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.6-Dinitro-2-methylphe	1	0	Qua	0.1225	----	0.0795	0.1046	0.1228	0.1419	0.1476	0.1468	----	0.124	8.60	0.997	0.999	20	0.01	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
n-Nitrosodiphenylamine	1	0	Avg	0.6298	0.6505	0.6610	0.6661	0.6635	0.6302	0.6101	0.6003	----	0.639	8.67	0.999	1.00	3.9	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
2.4.6-Tribromophenol	1	0	Qua	0.1003	0.0560	0.0891	0.0983	0.1061	0.1110	0.1150	0.1127	----	0.0986	8.80	0.999	1.00	19		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
1.2-Diphenylhydrazine	1	0	Avg	0.7181	0.6841	0.7267	0.7562	0.7696	0.7142	0.7565	0.7417	----	0.733	8.72	0.999	0.999	3.8		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4-Bromophenyl-phenyle	1	0	Avg	0.2138	0.2256	0.2210	0.2198	0.2281	0.2263	0.2247	0.2233	----	0.223	9.04	1.00	1.00	2.0	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Hexachlorobenzene	1	0	Avg	0.2426	0.2792	0.2495	0.2522	0.2573	0.2544	0.2529	0.2510	----	0.255	9.11	1.00	1.00	4.2	0.10	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
N-Octadecane	1	0	Avg	0.4265	0.3647	0.4209	0.4510	0.4582	0.4214	0.3939	0.3793	----	0.415	9.38	0.995	0.999	8.0	0.05	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pentachlorophenol	1	0	Qua	0.1418	----	0.0942	0.1215	0.1500	0.1638	0.1653	0.1656	----	0.143	9.30	0.999	1.00	19	0.05	50.00		10.00	20.00	80.00	120.0	160.0	196.0	
Phenanthrene	1	0	Avg	1.1033	1.4207	1.2345	1.1923	1.1621	1.0871	1.0418	1.0265	----	1.16	9.53	0.998	1.00	11	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Anthracene	1	0	Avg	1.1393	1.1356	1.1718	1.2001	1.2046	1.1268	1.0761	1.0660	----	1.14	9.59	0.998	0.999	4.5	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Carbazole	1	0	Avg	1.0528	1.0474	1.0886	1.0803	1.0921	1.0457	0.9920	0.9831	----	1.05	9.75	0.998	1.00	4.0	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-butylphthalate	1	0	Qua	1.2261	0.8865	1.1022	1.2137	1.3038	1.2497	1.2029	1.1807	0.7950	1.13	10.14	0.999	0.999	15	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	0.50
Fluoranthene	1	0	Avg	1.2167	1.1287	1.2391	1.2635	1.2733	1.2096	1.1727	1.1577	----	1.21	10.85	0.999	1.00	4.3	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Pyrene	1	0	Avg	1.1607	1.1556	1.1914	1.1956	1.2594	1.1792	1.1173	1.1223	----	1.17	11.11	0.997	0.999	3.9	0.60	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzidine	1	0	Qua	0.3866	0.1698	0.3658	0.3933	0.3701	0.3341	0.3055	0.2781	----	0.325	11.01	0.982	1.00	23		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Terphenyl-d14	1	0	Avg	0.5960	0.5820	0.5782	0.5976	0.6383	0.6488	0.6361	0.6570	----	0.617	11.30	0.999	1.00	5.1		25.00	1.00	5.00	10.00	40.00	60.00	80.00	96.00	
4.4'-DDE	1	0	Avg	0.2443	0.2245	0.2369	0.2400	0.2660	0.2685	0.2634	0.2645	----	0.251	11.24	1.00	1.00	6.6		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4.4'-DDD	1	0	Avg	0.4012	0.2910	0.3544	0.3802	0.4354	0.4434	0.4328	0.4345	----	0.397	11.63	0.999	0.999	13		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

HAZ. - 264

Avg Rsd: 8.81

Flags
a - failed the min rf criteria
u failed the minimum correlation coeff criteria (if applicable)

Note:
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

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Method: EPA 8270D

Form 6
Initial Calibration

Instrument: GCMS_10

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	10M48783.	CAL BNA@50PPM	02/18/15 14:05	2	10M48777.	CAL BNA@2PPM	02/18/15 11:50
3	10M48775.	CAL BNA@10PPM	02/18/15 11:00	4	10M48776.	CAL BNA@20PPM	02/18/15 11:28
5	10M48782.	CAL BNA@80PPM	02/18/15 13:43	6	10M48781.	CAL BNA@120PPM	02/18/15 13:20
7	10M48780.	CAL BNA@160PPM	02/18/15 12:58	8	10M48779.	CAL BNA@196PPM	02/18/15 12:35
9	10M48778.	CAL BNA@.5PPM	02/18/15 12:13				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	RF9	AvgRf	RT	Corr1	Corr2	%Rsd		Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8	Lvl9
Butylbenzylphthalate	1	0	Qua	0.5073	0.2814	0.4116	0.4698	0.5442	0.5524	0.5281	0.5278	----	0.478	11.89	0.999	0.999	19	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
4,4'-DDT	1	0	Avg	0.3788	0.2427	0.3411	0.3699	0.4024	0.4114	0.3980	0.3972	----	0.368	11.99	0.999	0.999	15		50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
3,3'-Dichlorobenzidine	1	0	Qua	0.3682	0.2035	0.3408	0.3698	0.3829	0.3746	0.3503	0.3289	----	0.340	12.50	0.993	0.999	17	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]anthracene	1	0	Avg	1.1518	1.1509	1.1617	1.1655	1.2120	1.1948	1.1668	1.1783	----	1.17	12.52	1.00	1.00	1.8	0.80	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Chrysene	1	0	Avg	1.1238	1.2689	1.1898	1.1616	1.1781	1.1528	1.0874	1.1031	----	1.16	12.57	0.999	0.999	4.9	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
bis(2-Ethylhexyl)phthal	1	0	Qua	0.7361	0.4231	0.6341	0.6781	0.7760	0.7842	0.7427	0.7459	----	0.690	12.59	0.999	0.999	17	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Di-n-octylphthalate	1	0	Qua	1.2647	0.6216	1.0052	1.1221	1.3811	1.3474	1.3060	1.2595	----	1.16	13.33	0.998	0.998	22	0.01	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[b]fluoranthene	1	0	Avg	1.1854	1.1606	1.1865	1.2268	1.2688	1.2021	1.1947	1.2557	----	1.21	13.73	0.999	0.999	3.1	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[k]fluoranthene	1	0	Avg	1.2884	1.2580	1.3123	1.2472	1.3696	1.3083	1.2505	1.1416	----	1.27	13.76	0.991	0.999	5.2	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[a]pyrene	1	0	Avg	1.1894	1.1666	1.1708	1.2399	1.2890	1.2393	1.2051	1.1682	----	1.21	14.07	0.998	1.00	3.6	0.70	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Indeno[1,2,3-cd]pyrene	1	0	Avg	1.3446	1.2987	1.3459	1.3424	1.4310	1.3981	1.3346	1.3565	----	1.36	15.35	0.999	0.999	3.0	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Dibenzo[a,h]anthracene	1	0	Avg	1.1539	1.0928	1.1923	1.1556	1.2250	1.1946	1.1351	1.1543	----	1.16	15.37	0.999	0.999	3.5	0.40	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	
Benzo[g,h,i]perylene	1	0	Avg	1.1372	1.1636	1.2180	1.1764	1.1920	1.1781	1.1296	1.1476	----	1.17	15.70	0.999	1.00	2.5	0.50	50.00	2.00	10.00	20.00	80.00	120.0	160.0	196.0	

HAZ. - 265

Flags
a - failed the min rf criteria
f - failed the minimum correlation coeff criteria (if applicable)

Note: Avg Rsd: 8.81
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 10M48815.D **Instrument:** GCMS 10

Cont Calibration Date/Time 2/19/2015 9:01:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.66	40.00	40	**			0.000	0.00	
Pyridine	1	0		2.81	51.38	50	**		1.495	1.536	2.75	
N-Nitrosodimethylamine	1	0		2.74	51.41	50	**		0.895	0.921	2.82	
2-Fluorophenol	1	0	S	4.44	50.38	50	**		1.273	1.282	0.75	
Benzaldehyde	1	0		5.28	43.43	50	20	0.01	0.342	0.297	13.13	
Aniline	1	0		5.37	53.14	50	**		1.904	2.023	6.27	
Pentachloroethane	1	0		5.42	48.06	50	**	0.05	0.476	0.457	3.89	
bis(2-Chloroethyl)ether	1	0		5.44	50.26	50	20	0.7	1.498	1.506	0.53	
Phenol-d5	1	0	S	5.34	51.82	50	**		1.750	1.814	3.65	
Phenol	1	0		5.36	51.99	50	20	0.8	1.905	1.981	3.98	
2-Chlorophenol	1	0		5.47	50.58	50	20	0.8	1.431	1.447	1.16	
N-Decane	1	0		5.53	47.79	50	**	0.05	1.504	1.438	4.43	
1,3-Dichlorobenzene	1	0		5.61	48.22	50	**		1.607	1.550	3.57	
1,4-Dichlorobenzene	1	0		5.67	48.66	50	20		1.653	1.608	2.68	
1,2-Dichlorobenzene	1	0		5.80	49.22	50	**		1.564	1.539	1.55	
Benzyl alcohol	1	0		5.77	53.43	50	**		0.936	1.001	6.86	
bis(2-chloroisopropyl)ether	1	0		5.89	51.29	50	20	0.01	1.999	2.051	2.57	
2-Methylphenol	1	0		5.87	51.66	50	20	0.7	1.328	1.372	3.32	
Acetophenone	1	0		5.99	52.39	50	20	0.01	1.774	1.859	4.79	
Hexachloroethane	1	0		6.07	48.99	50	20	0.3	0.611	0.599	2.01	
N-Nitroso-di-n-propylamine	1	0		5.99	53.64	50	20	0.5	0.972	1.042	7.28	
3&4-Methylphenol	1	0		5.99	53.19	50	20		1.319	1.403	6.39	
Naphthalene-d8	1	0	I	6.67	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.11	25.03	25	**		0.168	0.168	0.10	
Nitrobenzene	1	0		6.13	50.08	50	20	0.2	0.393	0.394	0.15	
Isophorone	1	0		6.31	51.66	50	20	0.4	0.693	0.716	3.32	
2-Nitrophenol	1	0		6.37	51.91	50	20	0.1	0.183	0.189	3.81	
2,4-Dimethylphenol	1	0		6.41	51.90	50	20	0.2	0.342	0.355	3.79	
Benzoic Acid	1	0		6.49	39.55	50	**		0.283	0.195	20.91	
bis(2-Chloroethoxy)methane	1	0		6.48	50.53	50	20	0.3	0.434	0.438	1.05	
2,4-Dichlorophenol	1	0		6.56	52.14	50	20	0.2	0.283	0.295	4.28	
1,2,4-Trichlorobenzene	1	0		6.62	48.63	50	**		0.336	0.327	2.74	
Naphthalene	1	0		6.68	49.11	50	20	0.7	1.193	1.172	1.79	
4-Chloroaniline	1	0		6.72	50.53	50	20	0.01	0.378	0.436	1.06	
Hexachlorobutadiene	1	0		6.78	49.00	50	20	0.01	0.191	0.187	2.00	
Caprolactam	1	0		6.99	52.53	50	20	0.01	0.120	0.129	5.06	
4-Chloro-3-methylphenol	1	0		7.08	52.91	50	20	0.2	0.298	0.315	5.83	
2-Methylnaphthalene	1	0		7.21	50.50	50	**	0.4	0.733	0.740	1.00	
Methylnaphthalenes	1	0		7.21	50.44	50	20			1.433	0.89	
1,1'-Biphenyl	1	0		7.58	50.48	50	20	0.01	0.914	0.923	0.97	
Acenaphthene-d10	1	0	I	8.07	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.34	46.81	50	20	0.01	0.558	0.522	6.38	
Hexachlorocyclopentadiene	1	0		7.34	49.99	50	20	0.05	0.291	0.291	0.01	
2,4,6-Trichlorophenol	1	0		7.43	49.20	50	20	0.2	0.370	0.364	1.60	
2,4,5-Trichlorophenol	1	0		7.46	52.44	50	20	0.2	0.375	0.394	4.88	
2-Fluorobiphenyl	1	0	S	7.50	23.92	25	**		1.399	1.339	4.31	
2-Chloronaphthalene	1	0		7.60	47.65	50	20	0.8	1.254	1.195	4.70	
1,4-Dimethylnaphthalene	1	0		7.88	49.06	50	**		0.899	0.882	1.89	
Dimethylnaphthalenes	1	0		7.88	49.06	50	20			0.882	1.89	
Diphenyl Ether	1	0		7.66	48.45	50	**		0.854	0.828	3.09	
2-Nitroaniline	1	0		7.67	51.55	50	20	0.01	0.396	0.408	3.11	
Coumarin	1	0		7.86	50.84		**		0.516			

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 10M48815.D **Instrument:** GCMS 10

Cont Calibration Date/Time 2/19/2015 9:01:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		7.95	49.52	50	20	0.9	1.971	1.952	0.96	
Dimethylphthalate	1	0		7.82	49.70	50	20	0.01	1.416	1.408	0.59	
2,6-Dinitrotoluene	1	0		7.88	51.86	50	20	0.2	0.309	0.320	3.72	
Acenaphthene	1	0		8.10	48.12	50	20	0.9	1.274	1.226	3.77	
3-Nitroaniline	1	0		8.02	49.64	50	20	0.01	0.335	0.372	0.72	
2,4-Dinitrophenol	1	0		8.11	50.95	50	20	0.01	0.162	0.154	1.90	
Dibenzofuran	1	0		8.25	46.90	50	20	0.8	1.793	1.681	6.20	
2,4-Dinitrotoluene	1	0		8.23	52.47	50	20	0.2	0.428	0.450	4.93	
4-Nitrophenol	1	0		8.15	55.02	50	20	0.01	0.228	0.266	10.05	
2,3,4,6-Tetrachlorophenol	1	0		8.36	51.45	50	20	0.01	0.338	0.348	2.90	
Fluorene	1	0		8.57	48.81	50	20	0.9	1.431	1.397	2.37	
4-Chlorophenyl-phenylether	1	0		8.56	48.70	50	20	0.4	0.703	0.685	2.60	
Diethylphthalate	1	0		8.44	50.72	50	20	0.01	1.383	1.403	1.45	
4-Nitroaniline	1	0		8.58	52.00	50	20	0.01	0.385	0.400	4.01	
Atrazine	1	0		9.20	51.81	50	20	0.01	0.302	0.313	3.63	
Phenanthrene-d10	1	0	I	9.51	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.60	52.17	50	20	0.01	0.124	0.125	4.34	
n-Nitrosodiphenylamine	1	0		8.67	49.43	50	20	0.01	0.639	0.632	1.14	
2,4,6-Tribromophenol	1	0	S	8.80	50.59	50	**		0.099	0.103	1.19	
1,2-Diphenylhydrazine	1	0		8.71	54.35	50	**		0.733	0.797	8.70	
4-Bromophenyl-phenylether	1	0		9.04	49.00	50	20	0.1	0.223	0.218	2.00	
Hexachlorobenzene	1	0		9.11	48.31	50	20	0.1	0.255	0.246	3.38	
N-Octadecane	1	0		9.38	51.86	50	**	0.05	0.415	0.430	3.73	
Pentachlorophenol	1	0		9.30	52.39	50	20	0.05	0.143	0.148	4.78	
Phenanthrene	1	0		9.53	48.03	50	20	0.7	1.159	1.113	3.95	
Anthracene	1	0		9.59	49.67	50	20	0.7	1.140	1.133	0.66	
Carbazole	1	0		9.75	50.27	50	20	0.01	1.048	1.053	0.54	
Di-n-butylphthalate	1	0		10.14	50.74	50	20	0.01	1.129	1.267	1.48	
Fluoranthene	1	0		10.85	50.32	50	20	0.6	1.208	1.216	0.65	
Chrysene-d12	1	0	I	12.53	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.11	50.83	50	20	0.6	1.173	1.192	1.66	
Benzidine	1	0		11.01	53.27	50	**		0.325	0.401	6.54	
Terphenyl-d14	1	0	S	11.30	25.59	25	**		0.617	0.631	2.36	
4,4'-DDE	1	0		11.24	50.85		**		0.251			
4,4'-DDD	1	0		11.63	52.83		**		0.397			
Butylbenzylphthalate	1	0		11.89	51.53	50	20	0.01	0.478	0.530	3.06	
4,4'-DDT	1	0		11.99	53.46		**		0.368			
3,3'-Dichlorobenzidine	1	0		12.50	46.98	50	20	0.01	0.340	0.372	6.03	
Benzo[a]anthracene	1	0		12.52	49.43	50	20	0.8	1.173	1.159	1.14	
Chrysene	1	0		12.57	49.05	50	20	0.7	1.158	1.136	1.90	
bis(2-Ethylhexyl)phthalate	1	0		12.59	50.69	50	20	0.01	0.690	0.751	1.37	
Perylene-d12	1	0	I	14.13	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.33	51.54	50	20	0.01	1.164	1.323	3.09	
Benzo[b]fluoranthene	1	0		13.73	53.28	50	20	0.7	1.210	1.290	6.56	
Benzo[k]fluoranthene	1	0		13.76	51.31	50	20	0.7	1.272	1.305	2.62	
Benzo[a]pyrene	1	0		14.07	49.79	50	20	0.7	1.209	1.204	0.42	
Indeno[1,2,3-cd]pyrene	1	0		15.35	47.98	50	20	0.5	1.357	1.302	4.03	
Dibenzo[a,h]anthracene	1	0		15.38	48.32	50	20	0.4	1.163	1.124	3.36	
Benzo[g,h,i]perylene	1	0		15.70	47.29	50	20	0.5	1.168	1.105	5.42	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.899	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. HAZ. - 267 **625 limits are compared against the %DIFF.**

624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 10M48815.D **Instrument:** GCMS 10

Cont Calibration Date/Time 2/19/2015 9:01:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.421	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 10M48842.D **Instrument:** GCMS 10

Cont Calibration Date/Time 2/20/2015 9:07:00 A **Method:** EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
1,4-Dichlorobenzene-d4	1	0	I	5.66	40.00	40	**			0.000	0.00	
Pyridine	1	0		2.82	52.15	50	**		1.495	1.559	4.30	
N-Nitrosodimethylamine	1	0		2.75	51.18	50	**		0.895	0.916	2.37	
2-Fluorophenol	1	0	S	4.44	49.28	50	**		1.273	1.254	1.45	
Benzaldehyde	1	0		5.28	35.54	50	20	0.01	0.342	0.275	28.91	C1
Aniline	1	0		5.37	51.75	50	**		1.904	1.970	3.49	
Pentachloroethane	1	0		5.42	49.01	50	**	0.05	0.476	0.466	1.99	
bis(2-Chloroethyl)ether	1	0		5.44	48.07	50	20	0.7	1.498	1.440	3.87	
Phenol-d5	1	0	S	5.34	50.15	50	**		1.750	1.755	0.30	
Phenol	1	0		5.35	50.25	50	20	0.8	1.905	1.914	0.51	
2-Chlorophenol	1	0		5.47	49.15	50	20	0.8	1.431	1.406	1.70	
N-Decane	1	0		5.53	49.21	50	**	0.05	1.504	1.481	1.57	
1,3-Dichlorobenzene	1	0		5.61	48.31	50	**		1.607	1.553	3.38	
1,4-Dichlorobenzene	1	0		5.67	48.05	50	20		1.653	1.588	3.90	
1,2-Dichlorobenzene	1	0		5.80	48.69	50	**		1.564	1.523	2.63	
Benzyl alcohol	1	0		5.77	50.96	50	**		0.936	0.954	1.92	
bis(2-chloroisopropyl)ether	1	0		5.89	49.26	50	20	0.01	1.999	1.970	1.47	
2-Methylphenol	1	0		5.87	49.51	50	20	0.7	1.328	1.315	0.98	
Acetophenone	1	0		5.99	50.61	50	20	0.01	1.774	1.796	1.22	
Hexachloroethane	1	0		6.07	49.46	50	20	0.3	0.611	0.605	1.08	
N-Nitroso-di-n-propylamine	1	0		5.99	51.28	50	20	0.5	0.972	0.997	2.57	
3&4-Methylphenol	1	0		5.99	50.56	50	20		1.319	1.333	1.13	
Naphthalene-d8	1	0	I	6.67	40.00	40	**			0.000	0.00	
Nitrobenzene-d5	1	0	S	6.11	25.06	25	**		0.168	0.168	0.23	
Nitrobenzene	1	0		6.13	50.28	50	20	0.2	0.393	0.395	0.57	
Isophorone	1	0		6.31	51.40	50	20	0.4	0.693	0.712	2.81	
2-Nitrophenol	1	0		6.37	51.53	50	20	0.1	0.183	0.188	3.07	
2,4-Dimethylphenol	1	0		6.41	51.85	50	20	0.2	0.342	0.355	3.70	
Benzoic Acid	1	0		6.48	32.45	50	**		0.283	0.145	35.10	
bis(2-Chloroethoxy)methane	1	0		6.48	49.52	50	20	0.3	0.434	0.430	0.95	
2,4-Dichlorophenol	1	0		6.56	51.50	50	20	0.2	0.283	0.292	3.00	
1,2,4-Trichlorobenzene	1	0		6.62	48.25	50	**		0.336	0.324	3.49	
Naphthalene	1	0		6.68	47.51	50	20	0.7	1.193	1.134	4.97	
4-Chloroaniline	1	0		6.72	50.05	50	20	0.01	0.378	0.432	0.10	
Hexachlorobutadiene	1	0		6.77	49.46	50	20	0.01	0.191	0.189	1.07	
Caprolactam	1	0		6.98	50.13	50	20	0.01	0.120	0.123	0.26	
4-Chloro-3-methylphenol	1	0		7.08	50.97	50	20	0.2	0.298	0.303	1.93	
2-Methylnaphthalene	1	0		7.21	49.63	50	**	0.4	0.733	0.727	0.73	
Methylnaphthalenes	1	0		7.29	49.55	50	20			1.408	0.90	
1,1'-Biphenyl	1	0		7.58	49.06	50	20	0.01	0.914	0.897	1.88	
Acenaphthene-d10	1	0	I	8.07	40.00	40	**			0.000	0.00	
1,2,4,5-Tetrachlorobenzene	1	0		7.34	47.98	50	20	0.01	0.558	0.535	4.05	
Hexachlorocyclopentadiene	1	0		7.33	53.48	50	20	0.05	0.291	0.311	6.96	
2,4,6-Trichlorophenol	1	0		7.43	49.07	50	20	0.2	0.370	0.363	1.87	
2,4,5-Trichlorophenol	1	0		7.46	52.04	50	20	0.2	0.375	0.391	4.08	
2-Fluorobiphenyl	1	0	S	7.50	24.29	25	**		1.399	1.359	2.85	
2-Chloronaphthalene	1	0		7.60	48.87	50	20	0.8	1.254	1.226	2.26	
1,4-Dimethylnaphthalene	1	0		7.88	49.45	50	**		0.899	0.889	1.10	
Dimethylnaphthalenes	1	0		7.88	49.45	50	20			0.889	1.10	
Diphenyl Ether	1	0		7.66	48.85	50	**		0.854	0.835	2.31	
2-Nitroaniline	1	0		7.67	52.25	50	20	0.01	0.396	0.414	4.51	
Coumarin	1	0		7.85	50.72		**		0.516			

S -Surrogate Compound
N/O or N/Q - Not applicable for this run

I -Internal Standard Compound

** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/RF.

624 limits are compared against the concentration found.

625 limits are compared against the %DIFF.

524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 10M48842.D **Instrument:** GCMS 10

Cont Calibration Date/Time 2/20/2015 9:07:00 A Method: EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
Acenaphthylene	1	0		7.95	50.87	50	20	0.9	1.971	2.006	1.74	
Dimethylphthalate	1	0		7.82	49.65	50	20	0.01	1.416	1.406	0.70	
2,6-Dinitrotoluene	1	0		7.88	52.09	50	20	0.2	0.309	0.322	4.18	
Acenaphthene	1	0		8.10	49.51	50	20	0.9	1.274	1.262	0.98	
3-Nitroaniline	1	0		8.02	49.51	50	20	0.01	0.335	0.371	0.99	
2,4-Dinitrophenol	1	0		8.11	50.57	50	20	0.01	0.162	0.153	1.13	
Dibenzofuran	1	0		8.25	47.17	50	20	0.8	1.793	1.691	5.65	
2,4-Dinitrotoluene	1	0		8.22	51.96	50	20	0.2	0.428	0.445	3.93	
4-Nitrophenol	1	0		8.14	50.46	50	20	0.01	0.228	0.243	0.92	
2,3,4,6-Tetrachlorophenol	1	0		8.36	50.76	50	20	0.01	0.338	0.343	1.52	
Fluorene	1	0		8.57	49.42	50	20	0.9	1.431	1.414	1.17	
4-Chlorophenyl-phenylether	1	0		8.56	48.76	50	20	0.4	0.703	0.686	2.48	
Diethylphthalate	1	0		8.44	50.28	50	20	0.01	1.383	1.391	0.56	
4-Nitroaniline	1	0		8.57	50.92	50	20	0.01	0.385	0.392	1.84	
Atrazine	1	0		9.19	49.12	50	20	0.01	0.302	0.297	1.77	
Phenanthrene-d10	1	0	I	9.50	40.00	40	**			0.000	0.00	
4,6-Dinitro-2-methylphenol	1	0		8.60	50.89	50	20	0.01	0.124	0.121	1.79	
n-Nitrosodiphenylamine	1	0		8.67	49.43	50	20	0.01	0.639	0.632	1.14	
2,4,6-Tribromophenol	1	0	S	8.80	49.05	50	**		0.099	0.100	1.89	
1,2-Diphenylhydrazine	1	0		8.71	49.94	50	**		0.733	0.733	0.13	
4-Bromophenyl-phenylether	1	0		9.04	48.42	50	20	0.1	0.223	0.216	3.17	
Hexachlorobenzene	1	0		9.11	47.77	50	20	0.1	0.255	0.244	4.47	
N-Octadecane	1	0		9.38	52.69	50	**	0.05	0.415	0.437	5.37	
Pentachlorophenol	1	0		9.30	49.41	50	20	0.05	0.143	0.139	1.18	
Phenanthrene	1	0		9.53	48.15	50	20	0.7	1.159	1.116	3.70	
Anthracene	1	0		9.58	50.73	50	20	0.7	1.140	1.157	1.47	
Carbazole	1	0		9.75	50.45	50	20	0.01	1.048	1.057	0.90	
Di-n-butylphthalate	1	0		10.14	49.46	50	20	0.01	1.129	1.235	1.08	
Fluoranthene	1	0		10.84	50.49	50	20	0.6	1.208	1.219	0.97	
Chrysene-d12	1	0	I	12.53	40.00	40	**			0.000	0.00	
Pyrene	1	0		11.11	49.40	50	20	0.6	1.173	1.159	1.21	
Benzidine	1	0		11.00	47.07	50	**		0.325	0.358	5.86	
Terphenyl-d14	1	0	S	11.29	24.01	25	**		0.617	0.592	3.97	
4,4'-DDE	1	0		11.24	48.40		**		0.251			
4,4'-DDD	1	0		11.63	49.65		**		0.397			
Butylbenzylphthalate	1	0		11.89	48.90	50	20	0.01	0.478	0.503	2.19	
4,4'-DDT	1	0		11.98	52.04		**		0.368			
3,3'-Dichlorobenzidine	1	0		12.50	46.16	50	20	0.01	0.340	0.366	7.69	
Benzo[a]anthracene	1	0		12.52	49.58	50	20	0.8	1.173	1.163	0.84	
Chrysene	1	0		12.56	48.45	50	20	0.7	1.158	1.122	3.09	
bis(2-Ethylhexyl)phthalate	1	0		12.59	48.24	50	20	0.01	0.690	0.715	3.52	
Perylene-d12	1	0	I	14.12	40.00	40	**			0.000	0.00	
Di-n-octylphthalate	1	0		13.33	48.28	50	20	0.01	1.164	1.239	3.43	
Benzo[b]fluoranthene	1	0		13.73	50.90	50	20	0.7	1.210	1.232	1.80	
Benzo[k]fluoranthene	1	0		13.76	47.70	50	20	0.7	1.272	1.214	4.60	
Benzo[a]pyrene	1	0		14.06	50.09	50	20	0.7	1.209	1.211	0.18	
Indeno[1,2,3-cd]pyrene	1	0		15.35	50.13	50	20	0.5	1.357	1.360	0.25	
Dibenzo[a,h]anthracene	1	0		15.37	50.28	50	20	0.4	1.163	1.169	0.56	
Benzo[g,h,i]perylene	1	0		15.70	49.75	50	20	0.5	1.168	1.162	0.50	
4-Methylphenol	1	100		0.00	0.00	50	**	0.6		0.000	100.00	
Dimethylnaphthalenes (Total)	1	100		0.00	0.00	50	**		0.899	0.000	100.00	
Endrin	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

Form7

Continuing Calibration

Calibration Name: CAL BNA@50PPM **Data File:** 10M48842.D **Instrument:** GCMS 10

Cont Calibration Date/Time 2/20/2015 9:07:00 A **Method:** EPA 8270D

TxtCompd:	Col#	Multi Num	Type	RT	Conc	Conc Exp	Lo Lim	MIN RF	Initial RF	RF	%Diff	Flag
gamma-BHC	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor	1	100		0.00	0.00	10	**			0.000	100.00	
Heptachlor epoxide	1	100		0.00	0.00	10	**			0.000	100.00	
Methoxychlor	1	100		0.00	0.00	10	**			0.000	100.00	
Methylnaphthalenes (Total)	1	100		0.00	0.00	50	**		1.421	0.000	100.00	
Toluene Diisocyanate	1	100		0.00	0.00	50	**			0.000	100.00	
2,2'-oxybis-(1-Chloropropane)	1	100		0.00	0.00	50	**			0.000	100.00	
2,4 Diaminotoluene	1	100		0.00	0.00	50	**			0.000	100.00	
Diaminotoluene Dihydrochloride	1	100		0.00	0.00	50	**			0.000	100.00	

S -Surrogate Compound I -Internal Standard Compound

N/O or N/Q - Not applicable for this run ** - No limit specified in method

Note: 8260/8270 limits are compared against the %DIFF/R.F. 625 limits are compared against the %DIFF.
624 limits are compared against the concentration found. 524.2 limits are compared against the %DIFF

FORM8

Internal Standard Areas

Evaluation Std Data File: 10M48783.D Method: EPA 8270D

Analysis Date/Time: 02/18/15 14:05

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	48541	5.66	192627	6.67	110979	8.07	209614	9.51	232612	12.53	218159	14.13
Eval File Area Limit:	24270-97082		96314-385254		55490-221958		104807-419228		116306-465224		109080-436318	
Eval File Rt Limit:	5.16-6.16		6.17-7.17		7.57-8.57		9.01-10.01		12.03-13.03		13.63-14.63	

Data File	Sample												
10M48775.	CAL BNA@1C	40345	5.66	157793	6.67	90096	8.07	172330	9.50	196058	12.53	182864	14.12
10M48776.	CAL BNA@2C	42831	5.66	170176	6.67	97009	8.07	183020	9.51	207762	12.53	194290	14.13
10M48777.	CAL BNA@2F	43339	5.66	172544	6.67	96710	8.07	180845	9.51	201759	12.53	190038	14.12
10M48778.	CAL BNA@.5	42313	5.66	164048	6.67	92129	8.07	174171	9.50	195833	12.53	185951	14.13
10M48779.	CAL BNA@1C	45050	5.66	181476	6.67	106829	8.07	202831	9.51	220046	12.55	215943	14.13
10M48780.	CAL BNA@16	50341	5.66	202454	6.67	119185	8.07	224110	9.51	244643	12.55	230309	14.13
10M48781.	CAL BNA@12	45664	5.66	184309	6.67	107476	8.07	202150	9.51	218708	12.54	209318	14.13
10M48782.	CAL BNA@8C	29357	5.66	114209	6.67	64208	8.07	118360	9.51	127291	12.53	116631	14.12
10M48783.	CAL BNA@5C	48541	5.66	192627	6.67	110979	8.07	209614	9.51	232612	12.53	218159	14.13
10M48784.	BNA@50PP	28710	5.66	109711	6.67	61752	8.07	113875	9.51	122434	12.53	107477A	14.12
10M48785.	ICV BNA@50	49703	5.66	198040	6.67	114386	8.07	213101	9.51	241145	12.53	216063	14.13

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10	625/8270 Internal Standard concentration = 40 mg/L (in final extract)
I2 =	Naphthalene-d8	I5 =	Chrysene-d12	624/8260 Internal Standard concentration = 30ug/L
I3 =	Acenaphthene-d10	I6 =	Perylene-d12	524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 10M48815.D Method: EPA 8270D

Analysis Date/Time: 02/19/15 09:01

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	48722	5.66	201217	6.67	121871	8.07	230398	9.51	248866	12.53	230073	14.13
Eval File Area Limit:	24361-97444		100608-402434		60936-243742		115199-460796		124433-497732		115036-460146	
Eval File Rt Limit:	5.16-6.16		6.17-7.17		7.57-8.57		9.01-10.01		12.03-13.03		13.63-14.63	

Data File	Sample												
10M48816.	WMB40630/M	49816	5.66	199227	6.67	120423	8.07	227458	9.51	266050	12.54	249520	14.13
10M48817.	WMB40630	46017	5.66	185785	6.67	114056	8.07	221376	9.50	256296	12.53	235394	14.12
10M48818.	AC83399-003	53987	5.66	216858	6.67	131298	8.07	252391	9.50	280111	12.53	291229	14.13
10M48819.	AC83386-002	46440	5.66	189856	6.67	114546	8.07	222035	9.50	258048	12.53	251858	14.12
10M48820.	AC83386-002I	47639	5.66	196762	6.67	118602	8.07	222471	9.51	243537	12.54	225264	14.13
10M48821.	TEST	57689	5.66	237558	6.67	146913	8.07	268036	9.51	293233	12.54	272456	14.13
10M48822.	AC83386-002I	52395	5.66	218489	6.67	131458	8.07	236258	9.51	259647	12.53	241350	14.13
10M48823.	AC83386-001	53770	5.66	210972	6.67	128993	8.07	242053	9.50	263108	12.53	238086	14.13
10M48824.	AC83386-003	48247	5.66	190902	6.67	116168	8.07	222942	9.50	242538	12.53	229153	14.12
10M48825.	AC83386-004	51855	5.66	212860	6.67	126989	8.07	233668	9.50	275548	12.53	250109	14.13
10M48826.	AC83294-002	44805	5.66	184031	6.67	113138	8.07	220389	9.50	258364	12.53	235985	14.13
10M48827.	AC83402-001	44666	5.66	180712	6.67	112718	8.07	208106	9.50	222800	12.53	220436	14.13
10M48828.	AC83402-002	48090	5.66	200059	6.67	117082	8.07	234484	9.50	259073	12.53	232209	14.13
10M48829.	AC83409-001	52652	5.66	211773	6.67	127979	8.07	254804	9.50	295268	12.53	257464	14.13
10M48830.	AC83409-002	46496	5.66	191089	6.67	116308	8.07	220885	9.50	243716	12.53	220234	14.13
10M48831.	AC83409-003	46751	5.66	193499	6.67	120352	8.07	227671	9.50	240270	12.53	215354	14.12
10M48832.	AC83409-004	50008	5.66	204537	6.67	125672	8.07	238650	9.50	258289	12.53	233942	14.13
10M48833.	AC83409-005	48387	5.66	194645	6.67	117522	8.07	223334	9.50	243458	12.53	221994	14.12
10M48834.	AC83409-006	47351	5.66	190056	6.67	116117	8.07	222982	9.50	240524	12.53	214707	14.12
10M48835.	AC83386-001I	56294	5.66	224537	6.67	138124	8.07	268386	9.51	300157	12.53	272752	14.13
10M48836.	WMB40638/M	50438	5.66	201304	6.67	123577	8.07	228708	9.51	247929	12.53	225559	14.13
10M48837.	WMB40638	46503	5.66	192673	6.67	117163	8.07	224863	9.50	243713	12.53	221148	14.12
10M48838.	AC83375-003I	48417	5.66	188854	6.67	113548	8.07	215538	9.50	230020	12.53	208233	14.12
10M48839.	AC83375-003I	50355	5.66	204564	6.67	124568	8.07	228142	9.51	247546	12.54	229349	14.13
10M48840.	AC83375-003I	56713	5.66	232923	6.67	144175	8.07	264831	9.51	285631	12.54	250343	14.13

I1 = 1,4-Dichlorobenzene-d4
I2 = Naphthalene-d8
I3 = Acenaphthene-d10
I4 = Phenanthrene-d10
I5 = Chrysene-d12
I6 = Perylene-d12

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

FORM8

Internal Standard Areas

Evaluation Std Data File: 10M48842.D Method: EPA 8270D

Analysis Date/Time: 02/20/15 09:07

Lab File ID: CAL BNA@50PPM

	I1		I2		I3		I4		I5		I6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
Eval File Area/RT:	41830	5.66	165501	6.67	95386	8.07	179411	9.50	202478	12.53	192504	14.12
Eval File Area Limit:	20915-83660		82750-331002		47693-190772		89706-358822		101239-404956		96252-385008	
Eval File Rt Limit:	5.16-6.16		6.17-7.17		7.57-8.57		9-10		12.03-13.03		13.62-14.62	

Data File	Sample											
10M48843.	AC83375-003(	47196	5.66	187605	6.67	110478	8.07	205466	9.51	225792	12.53	217396	14.13
10M48844.	AC83336-001(	41945	5.66	170634	6.67	101702	8.07	184329	9.50	208475	12.53	200373	14.12
10M48845.	AC83336-002(	42305	5.66	168626	6.67	100736	8.07	184349	9.50	205970	12.53	198046	14.12
10M48846.	AC83336-004(	47805	5.66	190960	6.67	112188	8.07	209507	9.50	234553	12.53	223018	14.12
10M48847.	EF-SPLP V-2	79391	5.66	319999	6.67	187133	8.07	349431	9.50	400718	12.53	389824 A	14.13
10M48848.	AC83294-001(	38247	5.66	153942	6.67	90387	8.07	169765	9.50	191175	12.53	187001	14.12
10M48849.	EF-SPLP V-2	47403	5.66	188676	6.67	110926	8.07	202372	9.50	231304	12.53	223488	14.12
10M48850.	AC83289-001(	47977	5.66	192605	6.67	112696	8.07	209876	9.50	235852	12.53	221588	14.12
10M48851.	AC83323-007(	40722	5.66	158381	6.67	91438	8.07	171638	9.50	190128	12.53	181337	14.12
10M48852.	EF-1 V-20447	45107	5.66	174665	6.67	100023	8.07	186412	9.50	204868	12.53	192501	14.12
10M48853.	EF-1 V-20447	41786	5.66	162073	6.67	93403	8.07	172043	9.50	190653	12.53	177337	14.12
10M48854.	WMB40643	41241	5.66	164715	6.67	96525	8.07	177415	9.50	194427	12.53	182708	14.12
10M48855.	AC83339-001(	43045	5.66	171946	6.67	99683	8.07	184371	9.50	206318	12.53	197726	14.12
10M48856.	AC83442-001	39142	5.66	157589	6.67	91977	8.07	172517	9.50	193374	12.53	184783	14.12
10M48857.	AC83442-002	40740	5.66	162866	6.67	95872	8.07	177967	9.50	196654	12.53	185816	14.12
10M48858.	AC83423-008	38450	5.66	153772	6.67	89085	8.07	164115	9.50	183203	12.53	175205	14.12
10M48859.	AC83423-009	39994	5.66	162154	6.67	95599	8.07	176093	9.50	196559	12.53	188846	14.12
10M48860.	AC83423-005	38793	5.66	154710	6.67	89776	8.07	169669	9.50	189943	12.53	185754	14.12
10M48861.	AC83423-006	40197	5.66	161859	6.67	94198	8.07	175509	9.50	197412	12.53	191053	14.12
10M48862.	WMB40649	48434	5.66	193221	6.67	114102	8.07	209754	9.50	240446	12.53	226356	14.12
10M48863.	AC83423-007	45827	5.66	181807	6.67	105128	8.07	195568	9.50	218171	12.53	206270	14.12
10M48864.	AC83423-010	41756	5.66	164429	6.67	97264	8.07	178066	9.50	198141	12.53	187901	14.1
10M48865.	AC83423-011	41580	5.66	163184	6.67	95252	8.07	176878	9.50	197608	12.53	185303	14.1
10M48866.	AC83423-012	40467	5.66	157974	6.67	91186	8.07	170001	9.50	188503	12.53	178302	14.12
10M48867.	AC83415-011	42382	5.66	166240	6.67	96409	8.07	178065	9.50	197530	12.53	185213	14.12
10M48868.	AC83415-023	44250	5.66	178031	6.67	104379	8.07	193179	9.50	212941	12.53	197621	14.12
10M48869.	AC83420-001	39490	5.66	158613	6.67	93953	8.07	172483	9.50	195636	12.53	183634	14.12
10M48870.	AC83420-002	40841	5.66	161904	6.67	93998	8.07	174244	9.50	199658	12.53	196200	14.12
10M48871.	AC83443-003	47920	5.66	190712	6.67	112051	8.07	208811	9.50	231606	12.53	216294	14.12

I1 =	1,4-Dichlorobenzene-d4	I4 =	Phenanthrene-d10
I2 =	Naphthalene-d8	I5 =	Chrysene-d12
I3 =	Acenaphthene-d10	I6 =	Perylene-d12

625/8270 Internal Standard concentration = 40 mg/L (in final extract)
624/8260 Internal Standard concentration = 30ug/L
524 Internal Standard concentration =5ug/L

QC Limits:

Internal Standard Areas

Upper Limit = + 100% of internal standard area from daily cal or mid pt.

Lower Limit = - 50% of internal standard area from daily cal or mid pt.

Retention Times: Limit = within +/- 0.5 min of internal standard retention time from the daily cal or mid pt.

Flags:

A - Indicates the compound failed the internal standard area criteria

R - Indicates the compound failed the internal standard retention time criteria.

PCB Data

Form1

ORGANICS PCB REPORT

Sample Number: AC83375-001
Client Id: SB01
Data File: 3G90385.D
Analysis Date: 02/17/15 22:57
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8082A
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 87

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
12674-11-2	Aroclor-1016	0.029	U	11097-69-1	Aroclor-1254	0.029	U
11104-28-2	Aroclor-1221	0.029	U	11096-82-5	Aroclor-1260	0.029	U
11141-16-5	Aroclor-1232	0.029	U	37324-23-5	Aroclor-1262	0.029	U
53469-21-9	Aroclor-1242	0.029	U	11100-14-4	Aroclor-1268	0.029	U
12672-29-6	Aroclor-1248	0.029	U	1336-36-3	Aroclor (Total)	0.029	U

Worksheet #: 334107

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90385.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 17 Feb 2015 22:57
Operator : MLC/KD/ZM
Sample : AC83375-001
Misc : S,PCB
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:45:08 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

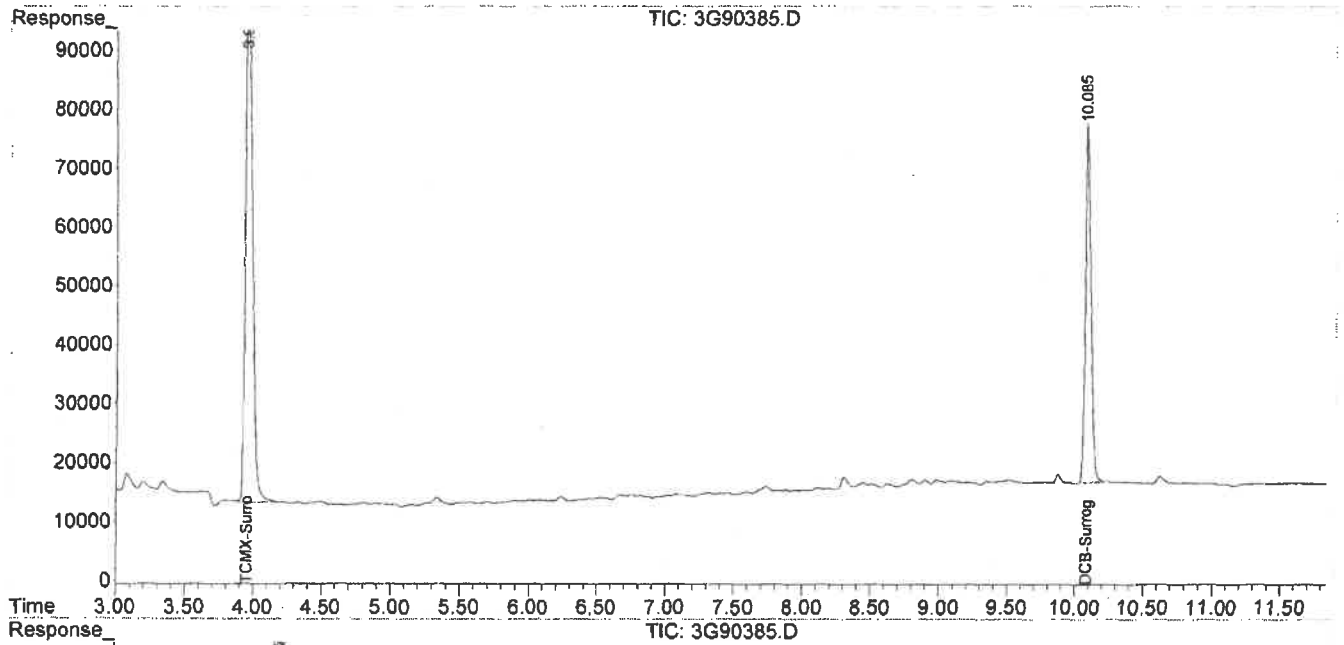
	Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
	Target Compounds						
1)	TCMX-Surrogate	3.955	4.207	3141909	3433342	75.357m	84.429
45)	DCB-Surrogate	10.086	11.133	1763727	2064478	41.420	53.285m#

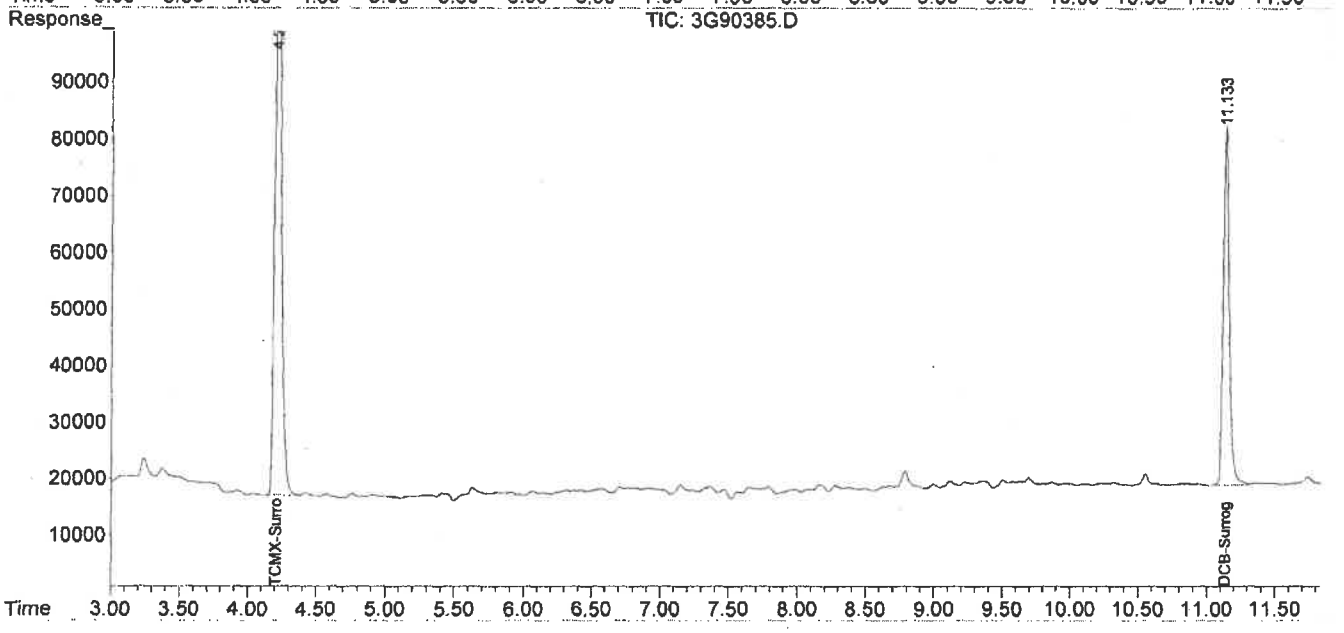
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90385.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 17 Feb 2015 22:57
Operator : MLC/KD/ZM
Sample : AC83375-001
Misc : S,PCB
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:45:08 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Form1

ORGANICS PCB REPORT

Sample Number: AC83375-002
Client Id: SB02
Data File: 3G90390.D
Analysis Date: 02/18/15 00:13
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8082A
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 94

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
12674-11-2	Aroclor-1016	0.027	U	11097-69-1	Aroclor-1254	0.027	U
11104-28-2	Aroclor-1221	0.027	U	11096-82-5	Aroclor-1260	0.027	U
11141-16-5	Aroclor-1232	0.027	U	37324-23-5	Aroclor-1262	0.027	U
53469-21-9	Aroclor-1242	0.027	U	11100-14-4	Aroclor-1268	0.027	U
12672-29-6	Aroclor-1248	0.027	U	1336-36-3	Aroclor (Total)	0.027	U

Worksheet #: 334107 *Total Target Concentration* 0 ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90390.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 00:13
Operator : MLC/KD/ZM
Sample : AC83375-002
Misc : S,PCB
ALS Vial : 29 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:48:39 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

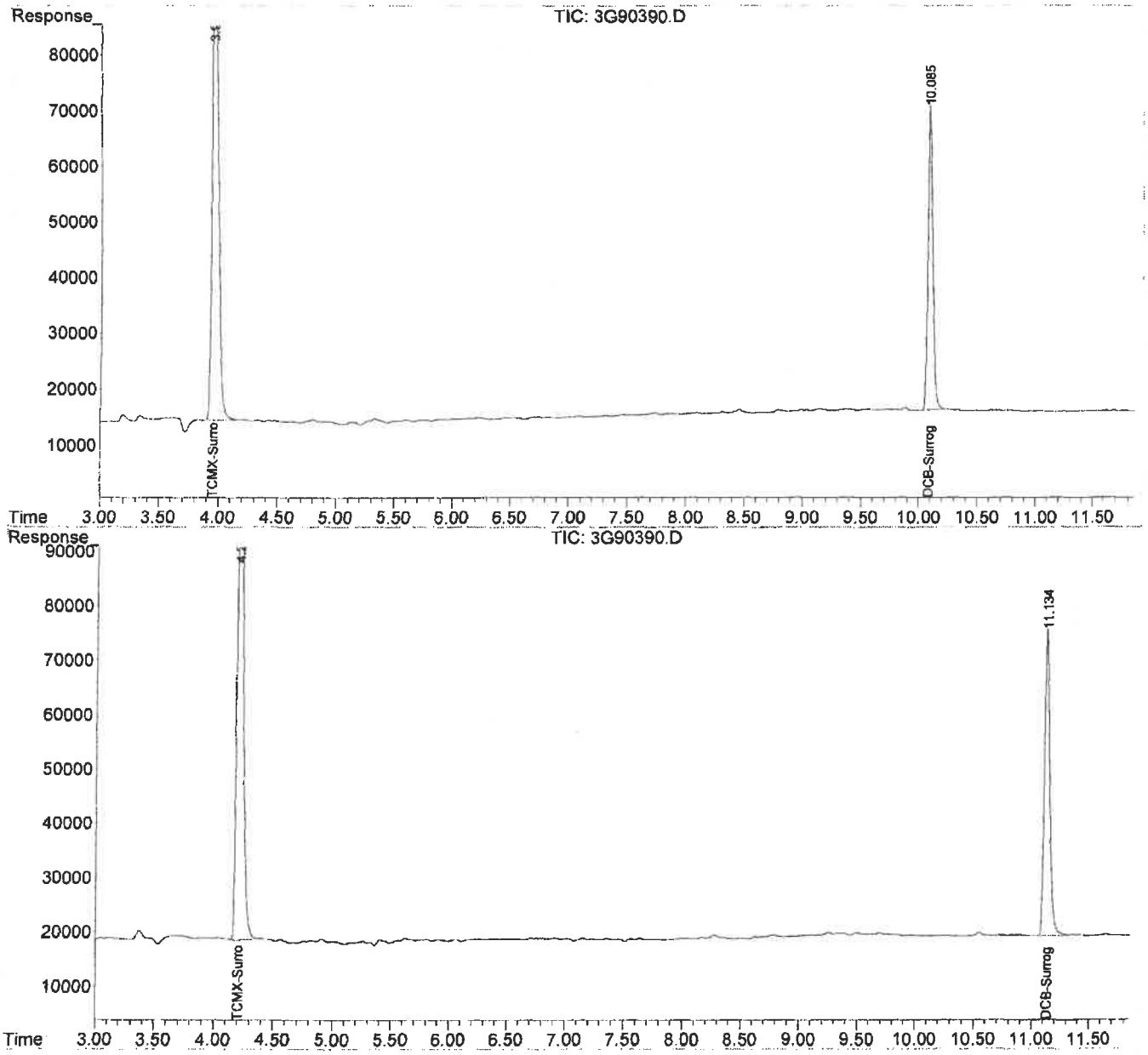
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	3.955	4.207	3299775	3648538	79.143m	89.720
45)DCB-Surrogate	10.086	11.134	1584196	1818558	37.125	46.798m#

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90390.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 00:13
Operator : MLC/KD/ZM
Sample : AC83375-002
Misc : S,PCB
ALS Vial : 29 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:48:39 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Form1

ORGANICS PCB REPORT

Sample Number: AC83375-003
Client Id: WC01
Data File: 3G90384.D
Analysis Date: 02/17/15 22:42
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8082A
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 93

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
12674-11-2	Aroclor-1016	0.027	U	11097-69-1	Aroclor-1254	0.027	U
11104-28-2	Aroclor-1221	0.027	U	11096-82-5	Aroclor-1260	0.027	U
11141-16-5	Aroclor-1232	0.027	U	37324-23-5	Aroclor-1262	0.027	U
53469-21-9	Aroclor-1242	0.027	U	11100-14-4	Aroclor-1268	0.027	U
12672-29-6	Aroclor-1248	0.027	U	1336-36-3	Aroclor (Total)	0.027	U

Worksheet #: 334107

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

5021319 0202

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90384.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 17 Feb 2015 22:42
Operator : MLC/KD/ZM
Sample : AC83375-003
Misc : S,PCB
ALS Vial : 23 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:44:33 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

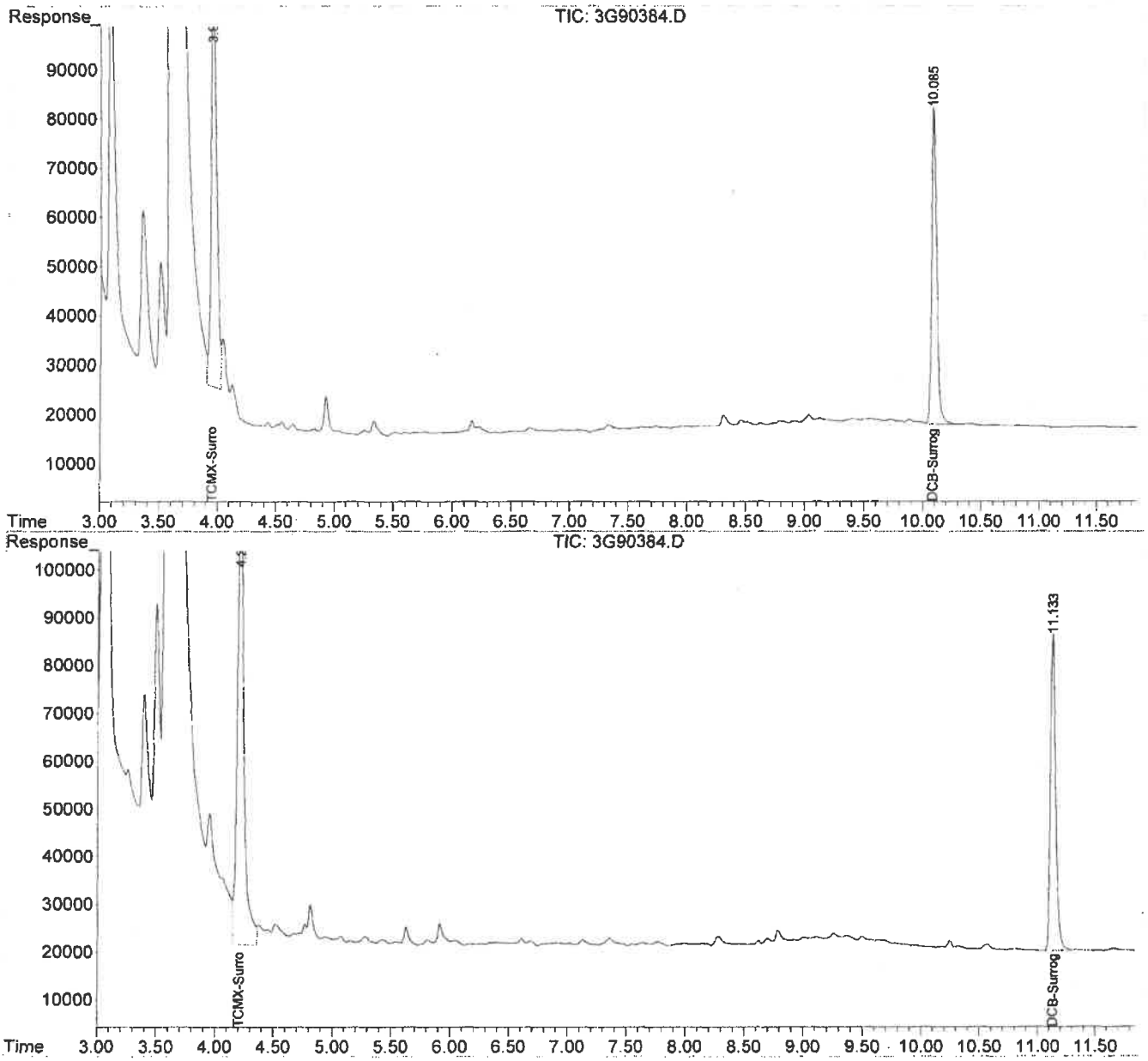
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	3.957	4.208	2774564	3766700	66.546	92.626 #
45)DCB-Surrogate	10.085	11.133	1928166	2150086	45.371m	55.552m

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90384.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 17 Feb 2015 22:42
Operator : MLC/KD/ZM
Sample : AC83375-003
Misc : S,PCB
ALS Vial : 23 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:44:33 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Form1

ORGANICS PCB REPORT

Sample Number: SMB40447
Client Id:
Data File: 3G90380.D
Analysis Date: 02/17/15 21:41
Date Rec/Extracted: NA-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8082A
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
12674-11-2	Aroclor-1016	0.025	U	11097-69-1	Aroclor-1254	0.025	U
11104-28-2	Aroclor-1221	0.025	U	11096-82-5	Aroclor-1260	0.025	U
11141-16-5	Aroclor-1232	0.025	U	37324-23-5	Aroclor-1262	0.025	U
53469-21-9	Aroclor-1242	0.025	U	11100-14-4	Aroclor-1268	0.025	U
12672-29-6	Aroclor-1248	0.025	U				

Worksheet #: 334107

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90380.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 17 Feb 2015 21:41
Operator : MLC/KD/ZM
Sample : SMB40447
Misc : S,PCB
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:42:15 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

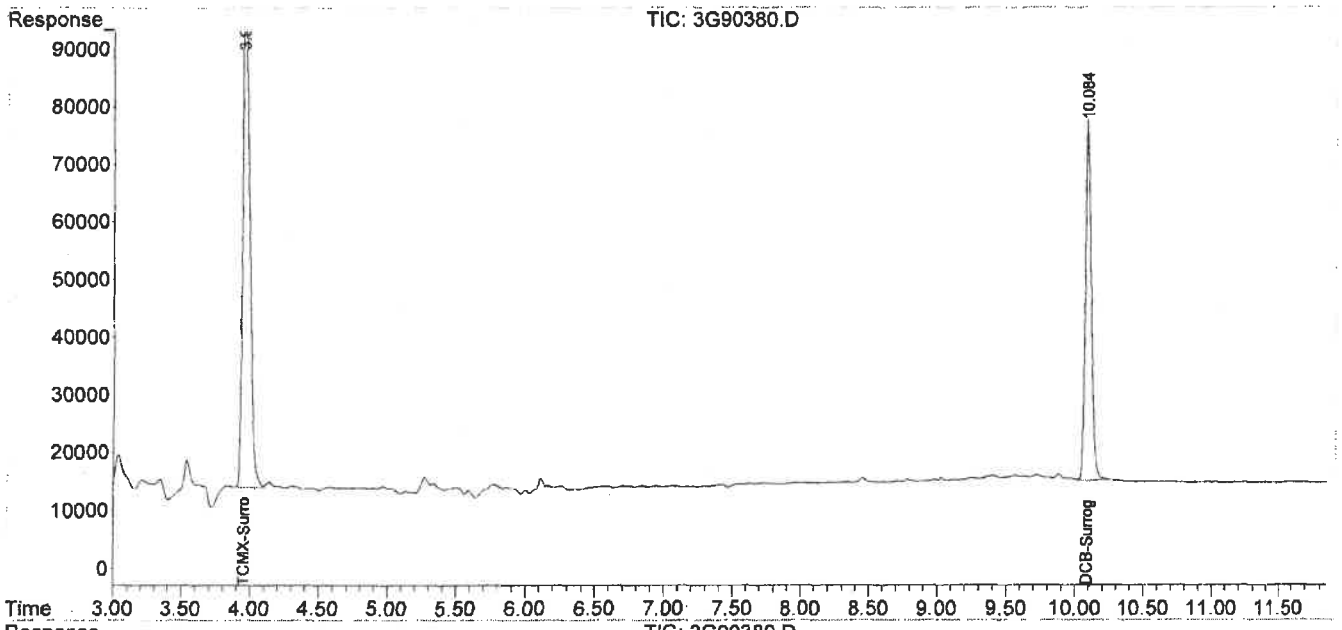
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	3.956	4.208	3089119	3567331	74.091m	87.723m
45)DCB-Surrogate	10.084	11.134	1816051	2082676	42.676m	53.766 #

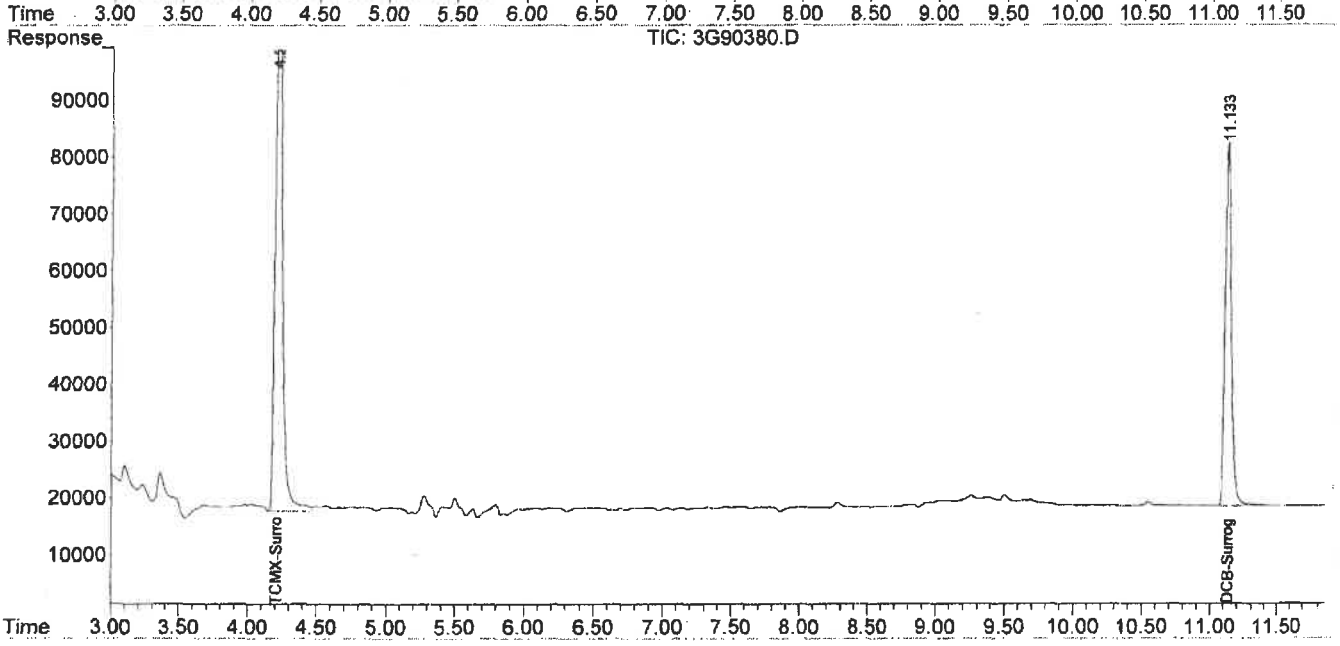
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_3\Data\02-17-15\
Data File : 3G90380.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 17 Feb 2015 21:41
Operator : MLC/KD/ZM
Sample : SMB40447
Misc : S,PCB
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: AUTOINT1.E
Integration File signal 2: AUTOINT2.E
Quant Time: Feb 18 10:42:15 2015
Quant Method : G:\GCDATA\2015\GC_3\METHODQT\3G_C0119.M
Quant Title : @GC_3,ug,608,8082
QLast Update : Tue Jan 20 09:51:37 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





FORM2

Surrogate Recovery

Method: EPA 8082A

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column1 S3 Recov	Column2 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
3G90380.D	SMB40447	Soil	02/17/15 21:41	1		74	88	43	54		
3G90385.D	AC83375-001	Soil	02/17/15 22:57	1		75	84	41	53		
3G90390.D	AC83375-002	Soil	02/18/15 00:13	1		79	90	37	47		
3G90384.D	AC83375-003	Soil	02/17/15 22:42	1		67	93	45	56		
3G90381.D	SMB40447(M	Soil	02/17/15 21:56	1		82	97	43	54		
3G90382.D	AC83375-003(	Soil	02/17/15 22:12	1		80	106	52	67		
3G90383.D	AC83375-003(	Soil	02/17/15 22:27	1		81	86	43	54		

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8082A

Soil Limits

Compound	Spike Amt	Limits
S1=TCMX-Surrogate	100	30-150
S2=TCMX-Surrogate	100	30-150
S3=DCB-Surrogate	100	30-150
S4=DCB-Surrogate	100	30-150

Form3
Recovery Data
QC Batch: SMB40447

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3G90381.D	SMB40447(MS)	2/17/2015 9:56:00 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8082 | Matrix: Soil | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Aroclor-1016 -Total	1	746.204	0	1000	75	40	140
Aroclor-1260 -Total	1	747.12	0	1000	75	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40447

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3G90382.D	AC83375-003(MS)	2/17/2015 10:12:00 PM
Non Spike(If applicable):	3G90384.D	AC83375-003	2/17/2015 10:42:00 PM
Inst Blank(If applicable):			

Method: 8082 Matrix: Soil QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Aroclor-1016 -Total	1	845.314	0	1000	85	40	140
Aroclor-1260 -Total	1	816.416	0	1000	82	40	140

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3G90383.D	AC83375-003(MSD)	2/17/2015 10:27:00 PM
Non Spike(If applicable):	3G90384.D	AC83375-003	2/17/2015 10:42:00 PM
Inst Blank(If applicable):			

Method: 8082 Matrix: Soil QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Aroclor-1016 -Total	1	688.984	0	1000	69	40	140
Aroclor-1260 -Total	1	678.656	0	1000	68	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA

QC Batch: SMB40447

	Data File	Sample ID:	Analysis Date
Spike or Dup:	3G90383.D	AC83375-003(MSD)	2/17/2015 10:27:00 PM
Duplicate(If applicable):	3G90382.D	AC83375-003(MS)	2/17/2015 10:12:00 PM
Inst Blank(If applicable):			

Method: 8082 Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Aroclor-1016 -Total	1	688.984	845.314	20	30
Aroclor-1260 -Total	1	678.656	816.416	18	30

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB40447
Blank Data File: 3G90380.D
Matrix: Soil

Blank Analysis Date: 02/17/15 21:41
Blank Extraction Date: 02/17/15
(If Applicable)
Method: EPA 8082A

Sample Number	Data File	Analysis Date
AC83375-001	3G90385.D	02/17/15 22:57
AC83375-002	3G90390.D	02/18/15 00:13
AC83375-003	3G90384.D	02/17/15 22:42
AC83375-003(MSD	3G90383.D	02/17/15 22:27
AC83375-003(MS)	3G90382.D	02/17/15 22:12
SMB40447(MS)	3G90381.D	02/17/15 21:56

Form 5

Method: EPA 8082A
Instrument: GC_3 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
3G89776.D	CAL 1660@50PPB	01/19/15 18:07	Aqueous	3G89776.	10.0863	0	11.1327	0
3G89777.D	CAL 1660@50PPB	01/19/15 18:22	Aqueous	3G89776.	10.0877	0.0139	11.1326	0.0009
3G89778.D	CAL 1660@200PPB	01/19/15 18:38	Aqueous	3G89776.	10.0890	0.0268	11.1347	0.018
3G89779.D	CAL 1660@500PPB	01/19/15 18:53	Aqueous	3G89776.	10.0884	0.0208	11.1355	0.0251
3G89780.D	CAL 1660@1000PPB	01/19/15 19:08	Aqueous	3G89776.	10.0869	0.0059	11.1344	0.0153
3G89781.D	CAL 1660@2000PPB	01/19/15 19:24	Aqueous	3G89776.	10.0878	0.0149	11.1341	0.0126
3G89782.D	CAL 1660@4000PPB	01/19/15 19:39	Aqueous	3G89776.	10.0875	0.0119	11.1343	0.0144
3G89783.D	CAL 3268@500PPB	01/19/15 19:54	Aqueous	3G89776.	10.0883	0.0198	11.1349	0.0198
3G89784.D	CAL 1242@500PPB	01/19/15 20:10	Aqueous	3G89776.	10.0881	0.0178	11.1341	0.0126
3G89785.D	CAL 1248@500PPB	01/19/15 20:25	Aqueous	3G89776.	10.0883	0.0198	11.1349	0.0198
3G89786.D	CAL 2154@500PPB	01/19/15 20:40	Aqueous	3G89776.	10.0882	0.0188	11.1355	0.0251
3G89787.D	CAL 1262@500PPB	01/19/15 20:56	Aqueous	3G89776.	10.0881	0.0178	11.1336	0.0081
3G89788.D	ICV	01/19/15 21:11	Aqueous	3G89776.	10.0873	0.0099	11.1347	0.018
3G89789.D	PEST WS	01/19/15 21:26	Aqueous	3G89776.	10.0883	0.0198	11.1353	0.0233

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8082A

Instrument: GC_3 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
3G90339.D	CAL 1660@1000PPB	02/17/15 09:47	Soil	3G90339.	10.0897	0	11.1433	0
3G90340.D	OMB40435	02/17/15 10:29	OIL/OTHER	3G90339.	10.1009	0.1109	11.1475	0.0377
3G90341.D	MBS	02/17/15 10:44	OIL/OTHER	3G90339.	10.0939	0.0416	11.1448	0.0135
3G90342.D	SMB40434	02/17/15 11:00	OIL/OTHER	3G90339.	10.0899	0.002	11.1431	0.0018
3G90343.D	SMB40434(MS)	02/17/15 11:15	OIL/OTHER	3G90339.	10.0916	0.0188	11.1443	0.009
3G90344.D	MBS	02/17/15 11:30	OIL/OTHER	3G90339.	10.0909	0.0119	11.1440	0.0063
3G90345.D	SMB40442	02/17/15 11:46	Soil	3G90339.	10.0912	0.0149	11.1438	0.0045
3G90346.D	MBS	02/17/15 12:01	Soil	3G90339.	10.0919	0.0218	11.1431	0.0018
3G90347.D	SMB40444	02/17/15 12:16	Soil	3G90339.	10.0893	0.004	11.1437	0.0036
3G90348.D	MBS	02/17/15 12:32	Soil	3G90339.	10.0910	0.0129	11.1435	0.0018
3G90349.D	MBS	02/17/15 12:47	OIL/OTHER	3G90339.	10.0905	0.0079	11.1427	0.0054
3G90350.D	SMB40433	02/17/15 13:02	Soil	3G90339.	10.0911	0.0139	11.1434	0.0009
3G90351.D	MBS	02/17/15 13:17	Soil	3G90339.	10.0917	0.0198	11.1437	0.0036
3G90352.D	AC83338-032(10X)	02/17/15 13:54	Soil	3G90339.	10.1013	0.1149	11.1461	0.0251
3G90353.D	AC83338-021(10X)	02/17/15 14:10	Soil	3G90339.	10.0936	0.0387	11.1452	0.017
3G90354.D	AC83338-030(10X)	02/17/15 14:25	Soil	3G90339.	10.0950	0.0525	11.1469	0.0323
3G90355.D	AC83338-033	02/17/15 14:40	Soil	3G90339.	10.1017	0.1189	11.1548	0.1032
3G90356.D	AC83338-020	02/17/15 14:56	Soil	3G90339.	10.0970	0.0723	11.1490	0.0511
3G90357.D	AC83338-038	02/17/15 15:11	Soil	3G90339.	10.0965	0.0674	11.1483	0.0449
3G90358.D	AC83338-002	02/17/15 15:26	Soil	3G90339.	10.0958	0.0604	11.1471	0.0341
3G90359.D	AC83329-003	02/17/15 15:42	OIL/OTHER	3G90339.	10.0961	0.0634	11.1481	0.0431
3G90360.D	CAL 1660@1000PPB	02/17/15 15:57	Aqueous	3G90339.	10.0950	0.0525	11.1478	0.0404
3G90361.D	AC83078-001(MS)	02/17/15 16:51	Soil	3G90360.	10.0836	0.113	11.1324	0.1382
3G90362.D	AC83078-001(MSD)	02/17/15 17:07	Soil	3G90360.	10.0841	0.108	11.1329	0.1337
3G90363.D	AC83078-001	02/17/15 17:22	Soil	3G90360.	10.0854	0.0951	11.1338	0.1257
3G90364.D	AC83352-001	02/17/15 17:37	Soil	3G90360.	10.0849	0.1001	11.1340	0.1239
3G90365.D	AC83352-003	02/17/15 17:52	Soil	3G90360.	10.0836	0.113	11.1321	0.1409
3G90366.D	AC83352-005	02/17/15 18:08	Soil	3G90360.	10.0851	0.0981	11.1332	0.1311
3G90367.D	AC83352-011	02/17/15 18:23	Soil	3G90360.	10.0844	0.1051	11.1337	0.1266
3G90368.D	AC83352-014	02/17/15 18:38	Soil	3G90360.	10.0862	0.0872	11.1350	0.1149
3G90369.D	AC83357-001	02/17/15 18:53	Soil	3G90360.	10.0859	0.0902	11.1347	0.1176
3G90370.D	AC83357-002	02/17/15 19:09	Soil	3G90360.	10.0859	0.0902	11.1357	0.1086
3G90371.D	AC83357-003	02/17/15 19:24	Soil	3G90360.	10.0868	0.0813	11.1360	0.1059
3G90372.D	AC83357-004	02/17/15 19:39	Soil	3G90360.	10.0840	0.109	11.1348	0.1167
3G90373.D	AC83357-005	02/17/15 19:54	Soil	3G90360.	10.0861	0.0882	11.1348	0.1167
3G90374.D	AC83358-001	02/17/15 20:09	Soil	3G90360.	10.0852	0.0971	11.1349	0.1158
3G90375.D	AC83360-001	02/17/15 20:25	Soil	3G90360.	10.0850	0.0991	11.1351	0.114
3G90376.D	AC83360-002	02/17/15 20:40	Soil	3G90360.	10.0856	0.0932	11.1343	0.1212
3G90377.D	BLK	02/17/15 20:55	Soil	3G90360.	10.0859	0.0902	11.1346	0.1185
3G90378.D	1000PPB	02/17/15 21:11	Soil	3G90360.	10.0870	0.0793	11.1355	0.1104
3G90379.D	CAL 1660@2000PPB	02/17/15 21:26	Soil	3G90360.	10.0841	0.108	11.1343	0.1212
3G90380.D	SMB40447	02/17/15 21:41	Soil	3G90379.	10.0843	0.002	11.1340	0.0027
3G90381.D	SMB40447(MS)	02/17/15 21:56	Soil	3G90379.	10.0857	0.0159	11.1351	0.0072
3G90382.D	AC83375-003(MS)	02/17/15 22:12	Soil	3G90379.	10.0854	0.0129	11.1342	0.0009
3G90383.D	AC83375-003(MSD)	02/17/15 22:27	Soil	3G90379.	10.0859	0.0179	11.1342	0.0009
3G90384.D	AC83375-003	02/17/15 22:42	Soil	3G90379.	10.0847	0.0059	11.1334	0.0081
3G90385.D	AC83375-001	02/17/15 22:57	Soil	3G90379.	10.0864	0.0228	11.1334	0.0081
3G90386.D	AC83352-022	02/17/15 23:13	Soil	3G90379.	10.0858	0.0169	11.1350	0.0063
3G90387.D	AC83352-019	02/17/15 23:28	Soil	3G90379.	10.0849	0.0079	11.1330	0.0117
3G90388.D	AC83338-008	02/17/15 23:43	Soil	3G90379.	10.0859	0.0179	11.1347	0.0036
3G90389.D	AC83338-006	02/17/15 23:58	Soil	3G90379.	10.0854	0.0129	11.1347	0.0036
3G90390.D	AC83375-002	02/18/15 00:13	Soil	3G90379.	10.0859	0.0179	11.1340	0.0027
3G90391.D	AC83335-002	02/18/15 00:29	Soil	3G90379.	10.0856	0.0149	11.1341	0.0018
3G90392.D	BLK	02/18/15 00:44	Soil	3G90379.	10.0864	0.0228	11.1352	0.0081
3G90393.D	1000PPB	02/18/15 00:59	Soil	3G90379.	10.0863	0.0218	11.1356	0.0117
3G90394.D	CAL 1660@2000PPB	02/18/15 01:14	Soil	3G90379.	10.0850	0.0089	11.1341	0.0018

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5021319 0214

Form 6
Initial Calibration

Method: EPA 8082A

Instrument: GC_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3G89776.	CAL 1660@50PPB	01/19/15 18:07	2	3G89778.	CAL 1660@200PPB	01/19/15 18:38
3	3G89779.	CAL 1660@500PPB	01/19/15 18:53	4	3G89780.	CAL 1660@1000PPB	01/19/15 19:08
5	3G89781.	CAL 1660@2000PPB	01/19/15 19:24	6	3G89782.	CAL 1660@4000PPB	01/19/15 19:39
7	3G89783.	CAL 3268@500PPB	01/19/15 19:54	8	3G89784.	CAL 1242@500PPB	01/19/15 20:10
9	3G89785.	CAL 1248@500PPB	01/19/15 20:25	10	3G89786.	CAL 2154@500PPB	01/19/15 20:40
11	3G89787.	CAL 1262@500PPB	01/19/15 20:56				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Avg	4.5706	4.2860	4.3702	4.2116	3.9841	3.5935	----	----	4.17	3.94	0.996	1.00	8.2	5.00	20.00	50.00	100.0	200.0	400.0		
Aroclor-1016	1	1	Qua	0.0967	0.1066	0.1056	0.0963	0.0894	0.0774	----	----	0.0954	4.44	0.993	1.00	11	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	2	Qua	0.2570	0.2261	0.2064	0.1846	0.1626	0.1372	----	----	0.196	4.79	0.989	1.00	22	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	3	Qua	0.5071	0.4448	0.4087	0.3677	0.3284	0.2822	----	----	0.390	5.24	0.992	1.00	21	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	4	Qua	0.1627	0.1482	0.1407	0.1308	0.1196	0.1052	----	----	0.135	5.48	0.994	1.00	15	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	1	5	Qua	0.3560	0.3129	0.2886	0.2660	0.2395	0.2088	----	----	0.279	5.59	0.993	1.00	19	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	1	Qua	0.3172	0.2880	0.2658	0.2405	0.2162	0.1882	----	----	0.253	7.07	0.993	1.00	19	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	2	Qua	0.3706	0.3371	0.3085	0.2800	0.2534	0.2217	----	----	0.295	7.32	0.994	1.00	19	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	3	Qua	0.1941	0.1817	0.1803	0.1737	0.1647	0.1499	----	----	0.174	7.52	0.997	1.00	8.8	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	4	Qua	0.2771	0.2477	0.2321	0.2134	0.1959	0.1729	----	----	0.223	8.10	0.995	1.00	17	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	1	5	Qua	0.4221	0.3903	0.3793	0.3625	0.3445	0.3165	----	----	0.369	8.82	0.998	1.00	10	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1221	1	1	Avg	----	----	----	----	----	----	----	----	0.0724	4.24	-1	-1	Lvl=10	500.0							
Aroclor-1221	1	2	Avg	----	----	----	----	----	----	----	----	0.0375	4.38	-1	-1	Lvl=10	500.0							
Aroclor-1221	1	3	Avg	----	----	----	----	----	----	----	----	0.174	4.44	-1	-1	Lvl=10	500.0							
Aroclor-1232	1	1	Avg	----	----	----	----	----	----	----	----	0.113	4.44	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	2	Avg	----	----	----	----	----	----	----	----	0.107	4.79	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	3	Avg	----	----	----	----	----	----	----	----	0.201	5.24	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	4	Avg	----	----	----	----	----	----	----	----	0.0965	5.37	-1	-1	Lvl=7	500.0							
Aroclor-1232	1	5	Avg	----	----	----	----	----	----	----	----	0.103	5.83	-1	-1	Lvl=7	500.0							
Aroclor-1242	1	1	Avg	----	----	----	----	----	----	----	----	0.0957	4.44	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	2	Avg	----	----	----	----	----	----	----	----	0.183	4.79	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	3	Avg	----	----	----	----	----	----	----	----	0.364	5.24	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	4	Avg	----	----	----	----	----	----	----	----	0.255	5.59	-1	-1	Lvl=8	500.0							
Aroclor-1242	1	5	Avg	----	----	----	----	----	----	----	----	0.178	5.83	-1	-1	Lvl=8	500.0							
Aroclor-1248	1	1	Avg	----	----	----	----	----	----	----	----	0.0905	4.79	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	2	Avg	----	----	----	----	----	----	----	----	0.247	5.24	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	3	Avg	----	----	----	----	----	----	----	----	0.402	5.58	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	4	Avg	----	----	----	----	----	----	----	----	0.257	5.93	-1	-1	Lvl=9	500.0							
Aroclor-1248	1	5	Avg	----	----	----	----	----	----	----	----	0.289	6.52	-1	-1	Lvl=9	500.0							
Aroclor-1254	1	1	Avg	----	----	----	----	----	----	----	----	0.124	6.71	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	2	Avg	----	----	----	----	----	----	----	----	0.458	6.92	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	3	Avg	----	----	----	----	----	----	----	----	0.239	7.07	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	4	Avg	----	----	----	----	----	----	----	----	0.336	7.19	-1	-1	Lvl=10	500.0							
Aroclor-1254	1	5	Avg	----	----	----	----	----	----	----	----	0.170	7.58	-1	-1	Lvl=10	500.0							
Aroclor-1262	1	1	Avg	----	----	----	----	----	----	----	----	0.535	7.74	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	2	Avg	----	----	----	----	----	----	----	----	0.225	8.74	-1	-1	Lvl=11	500.0							

Avg Rsd Col 1: 15.4 Avg Rsd Col 2: 19.9

HAZ. - 295

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pch/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5021319 0215

orm 6
Initial Calibration

Method: EPA 8082A

Instrument: _3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3G89776.	CAL 1660@50PPB	01/19/15 18:07	2	3G89778.	CAL 1660@200PPB	01/19/15 18:38
3	3G89779.	CAL 1660@500PPB	01/19/15 18:53	4	3G89780.	CAL 1660@1000PPB	01/19/15 19:08
5	3G89781.	CAL 1660@2000PPB	01/19/15 19:24	6	3G89782.	CAL 1660@4000PPB	01/19/15 19:39
7	3G89783.	CAL 3268@500PPB	01/19/15 19:54	8	3G89784.	CAL 1242@500PPB	01/19/15 20:10
9	3G89785.	CAL 1248@500PPB	01/19/15 20:25	10	3G89786.	CAL 2154@500PPB	01/19/15 20:40
11	3G89787.	CAL 1262@500PPB	01/19/15 20:56				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aroclor-1262	1	3	Avg	---	---	---	---	---	---	---	---	0.481	8.81	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	4	Avg	---	---	---	---	---	---	---	---	0.234	9.53	-1	-1	Lvl=11	500.0							
Aroclor-1262	1	5	Avg	---	---	---	---	---	---	---	---	0.0875	9.88	-1	-1	Lvl=11	500.0							
Aroclor-1268	1	1	Avg	---	---	---	---	---	---	---	---	0.0783	8.09	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	2	Avg	---	---	---	---	---	---	---	---	0.0766	8.41	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	3	Avg	---	---	---	---	---	---	---	---	0.523	8.98	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	4	Avg	---	---	---	---	---	---	---	---	0.154	9.08	-1	-1	Lvl=7	500.0							
Aroclor-1268	1	5	Avg	---	---	---	---	---	---	---	---	1.54	9.88	-1	-1	Lvl=7	500.0							
DCB-Surrogate	1	0	Qua	5.4244	4.8061	4.5314	4.1687	3.8679	3.5073	---	---	4.38	10.09	0.997	1.00	16	5.00	20.00	50.00	100.0	200.0	400.0		
TCMX-Surrogate	2	0	Avg	4.5048	4.3031	4.1914	4.0180	3.8402	3.5416	---	---	4.07	4.19	0.998	1.00	8.5	5.00	20.00	50.00	100.0	200.0	400.0		
Aroclor-1016	2	1	Qua	0.1197	0.1258	0.1054	0.0937	0.0855	0.0742	---	---	0.101	4.77	0.993	1.00	20	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	2	Qua	0.2507	0.2406	0.2055	0.1795	0.1586	0.1348	---	---	0.195	5.19	0.990	0.999	23	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	3	Qua	0.5544	0.5901	0.4837	0.4325	0.3483	0.3072	---	---	0.453	5.56	0.990	0.997	25	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	4	Qua	0.2396	0.2106	0.1813	0.1601	0.1433	0.1249	---	---	0.177	5.88	0.994	1.00	24	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1016	2	5	Qua	0.1714	0.1615	0.1372	0.1213	0.1080	0.0937	---	---	0.132	6.25	0.993	1.00	23	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	1	Qua	0.3606	0.2942	0.2564	0.2275	0.2056	0.1797	---	---	0.254	7.55	0.994	1.00	26	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	2	Qua	0.3914	0.3261	0.2900	0.2604	0.2382	0.2124	---	---	0.286	7.63	0.996	1.00	23	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	3	Qua	0.1939	0.1766	0.1377	0.1253	0.1190	0.1093	---	---	0.144	8.26	0.998	1.00	24	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	4	Qua	0.3248	0.2810	0.2644	0.2433	0.2292	0.2081	---	---	0.259	8.62	0.997	1.00	16	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1260	2	5	Qua	0.2751	0.2339	0.2371	0.2245	0.2162	0.2038	---	---	0.232	9.34	0.999	1.00	11	50.00	200.0	500.0	1000.	2000.	4000.		
Aroclor-1221	2	1	Avg	---	---	---	---	---	---	---	---	0.0684	4.56	-1	-1	Lvl=10	500.0							
Aroclor-1221	2	2	Avg	---	---	---	---	---	---	---	---	0.0374	4.71	-1	-1	Lvl=10	500.0							
Aroclor-1221	2	3	Avg	---	---	---	---	---	---	---	---	0.132	4.77	-1	-1	Lvl=10	500.0							
Aroclor-1232	2	1	Avg	---	---	---	---	---	---	---	---	0.107	4.77	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	2	Avg	---	---	---	---	---	---	---	---	0.106	5.18	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	3	Avg	---	---	---	---	---	---	---	---	0.202	5.56	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	4	Avg	---	---	---	---	---	---	---	---	0.0812	6.25	-1	-1	Lvl=7	500.0							
Aroclor-1232	2	5	Avg	---	---	---	---	---	---	---	---	0.0656	6.39	-1	-1	Lvl=7	500.0							
Aroclor-1242	2	1	Avg	---	---	---	---	---	---	---	---	0.0960	4.77	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	2	Avg	---	---	---	---	---	---	---	---	0.175	5.19	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	3	Avg	---	---	---	---	---	---	---	---	0.363	5.56	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	4	Avg	---	---	---	---	---	---	---	---	0.154	5.88	-1	-1	Lvl=8	500.0							
Aroclor-1242	2	5	Avg	---	---	---	---	---	---	---	---	0.134	6.25	-1	-1	Lvl=8	500.0							
Aroclor-1248	2	1	Avg	---	---	---	---	---	---	---	---	0.0976	5.18	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	2	Avg	---	---	---	---	---	---	---	---	0.265	5.56	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	3	Avg	---	---	---	---	---	---	---	---	0.176	5.88	-1	-1	Lvl=9	500.0							

Avg Rsd Col 1: 15.4 Avg Rsd Col 2: 19.9

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

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5021319 0216

Form 6
Initial Calibration

Method: EPA 8082A

Instrument: GC_3

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	3G89776.	CAL 1660@50PPB	01/19/15 18:07	2	3G89778.	CAL 1660@200PPB	01/19/15 18:38
3	3G89779.	CAL 1660@500PPB	01/19/15 18:53	4	3G89780.	CAL 1660@1000PPB	01/19/15 19:08
5	3G89781.	CAL 1660@2000PPB	01/19/15 19:24	6	3G89782.	CAL 1660@4000PPB	01/19/15 19:39
7	3G89783.	CAL 3268@500PPB	01/19/15 19:54	8	3G89784.	CAL 1242@500PPB	01/19/15 20:10
9	3G89785.	CAL 1248@500PPB	01/19/15 20:25	10	3G89786.	CAL 2154@500PPB	01/19/15 20:40
11	3G89787.	CAL 1262@500PPB	01/19/15 20:56				

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aroclor-1248	2	4	Avg	----	----	----	----	----	----	----	----	0.183	6.39	-1	-1	Lvl=9	500.0							
Aroclor-1248	2	5	Avg	----	----	----	----	----	----	----	----	0.222	6.52	-1	-1	Lvl=9	500.0							
Aroclor-1254	2	1	Avg	----	----	----	----	----	----	----	----	0.287	6.74	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	2	Avg	----	----	----	----	----	----	----	----	0.0912	7.09	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	3	Avg	----	----	----	----	----	----	----	----	0.250	7.47	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	4	Avg	----	----	----	----	----	----	----	----	0.131	7.98	-1	-1	Lvl=10	500.0							
Aroclor-1254	2	5	Avg	----	----	----	----	----	----	----	----	0.126	8.68	-1	-1	Lvl=10	500.0							
Aroclor-1262	2	1	Avg	----	----	----	----	----	----	----	----	0.252	8.05	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	2	Avg	----	----	----	----	----	----	----	----	0.208	9.22	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	3	Avg	----	----	----	----	----	----	----	----	0.242	9.33	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	4	Avg	----	----	----	----	----	----	----	----	0.261	9.96	-1	-1	Lvl=11	500.0							
Aroclor-1262	2	5	Avg	----	----	----	----	----	----	----	----	0.0757	10.55	-1	-1	Lvl=11	500.0							
Aroclor-1268	2	1	Avg	----	----	----	----	----	----	----	----	0.0394	8.71	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	2	Avg	----	----	----	----	----	----	----	----	0.0841	8.75	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	3	Avg	----	----	----	----	----	----	----	----	0.444	9.69	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	4	Avg	----	----	----	----	----	----	----	----	0.123	9.86	-1	-1	Lvl=7	500.0							
Aroclor-1268	2	5	Avg	----	----	----	----	----	----	----	----	1.41	10.55	-1	-1	Lvl=7	500.0							
DCB-Surrogate	2	0	Qua	5.1901	4.3618	4.1538	3.8142	3.5657	3.2638	----	----	4.06	11.14	0.998	1.00	17	5.00	20.00	50.00	100.0	200.0	400.0		

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Avg Rsd Col 1: 15.4 Avg Rsd Col 2: 19.9

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8082A

Data File:				3G90379.D				3G90394.D									
Method:				8082				8082									
Calibration Name:				CAL 1660@2000PP				CAL 1660@2000PP									
Calibration Date/Time				02/17/15 21:26				02/18/15 01:14									
					Conc				Conc			Conc			Conc			Conc		
Compound	Limit	Col	Mr	Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff
TCMX-Surrogate	20	1	0	175.2	200	12.4		175.4	200	12.3										
Aroclor-1016	20	1	1	1792	2000	10.4		1698	2000	15.1										
Aroclor-1016	20	1	2	1735	2000	13.2		1752	2000	12.4										
Aroclor-1016	20	1	3	1763	2000	11.8		1782	2000	10.9										
Aroclor-1016	20	1	4	1713	2000	14.4		1743	2000	12.8										
Aroclor-1016	20	1	5	1722	2000	13.9		1749	2000	12.5										
Aroclor-1260	20	1	1	1684	2000	15.8		1727	2000	13.7										
Aroclor-1260	20	1	2	1701	2000	14.9		1747	2000	12.7										
Aroclor-1260	20	1	3	1729	2000	13.6		1785	2000	10.7										
Aroclor-1260	20	1	4	1558	2000	22.1*		1605	2000	19.7										
Aroclor-1260	20	1	5	1343	2000	32.8*		1389	2000	30.6*										
DCB-Surrogate	20	1	0	81.93	200	59.0*		83.01	200	58.5*										
Average Difference	20	1	0			19.5				18.5										
TCMX-Surrogate	20	2	0	214.3	200	7.1		209.7	200	4.9										
Aroclor-1016	20	2	1	2327	2000	16.3		2150	2000	7.5										
Aroclor-1016	20	2	2	2451	2000	22.5*		2143	2000	7.2										
Aroclor-1016	20	2	3	2084	2000	4.2		2431	2000	21.5*										
Aroclor-1016	20	2	4	2182	2000	9.1		2162	2000	8.1										
Aroclor-1016	20	2	5	2165	2000	8.2		2145	2000	7.2										
Aroclor-1260	20	2	1	2083	2000	4.1		2122	2000	6.1										
Aroclor-1260	20	2	2	2194	2000	9.7		2218	2000	10.9										
Aroclor-1260	20	2	3	2126	2000	6.3		2162	2000	8.1										
Aroclor-1260	20	2	4	1943	2000	2.9		1993	2000	0.3										
Aroclor-1260	20	2	5	1742	2000	12.9		1779	2000	11.1										
DCB-Surrogate	20	2	0	104.5	200	47.8*		106.5	200	46.8*										
Average Difference	20	2	0			12.6				11.6										

Flags/Notes: **** - Values outside of limits for this column/run***

Form7
RtWindow Summary

Method: EPA 8082A

Data File:			3G89776.D		3G90379.D						
Calibration Name:			CAL 1660@50PPB		CAL 1660@2000PPB						
Calibration Date/Time			1/19/2015 6:07:00 PM		2/17/2015 9:26:00 PM						
Compound	**Col**	**Mr**	**Cal RT**	**Limit**	**Cal RT**	**Limit**	**Cal RT**	**Limit**	**Cal RT**	**Limit**	**Cal RT**	**Limit**
TCMX-Surrogate	1	0	3.94	(3.88 - 4.00)	3.96	(3.90 - 4.02)						
Aroclor-1016	1	1	4.44	(4.40 - 4.48)	4.45	(4.41 - 4.49)						
Aroclor-1016	1	2	4.79	(4.75 - 4.83)	4.80	(4.76 - 4.84)						
Aroclor-1016	1	3	5.24	(5.20 - 5.28)	5.25	(5.21 - 5.29)						
Aroclor-1016	1	4	5.48	(5.44 - 5.52)	5.49	(5.45 - 5.53)						
Aroclor-1016	1	5	5.59	(5.55 - 5.63)	5.59	(5.55 - 5.63)						
Aroclor-1260	1	1	7.07	(7.03 - 7.11)	7.08	(7.04 - 7.12)						
Aroclor-1260	1	2	7.32	(7.28 - 7.36)	7.32	(7.28 - 7.36)						
Aroclor-1260	1	3	7.52	(7.48 - 7.56)	7.52	(7.48 - 7.56)						
Aroclor-1260	1	4	8.10	(8.06 - 8.14)	8.10	(8.06 - 8.14)						
Aroclor-1260	1	5	8.82	(8.78 - 8.86)	8.82	(8.78 - 8.86)						
Aroclor-1221	1	1	4.24	(4.20 - 4.28)								
Aroclor-1221	1	2	4.38	(4.34 - 4.42)								
Aroclor-1221	1	3	4.44	(4.40 - 4.48)								
Aroclor-1232	1	1	4.44	(4.40 - 4.48)								
Aroclor-1232	1	2	4.79	(4.75 - 4.83)								
Aroclor-1232	1	3	5.24	(5.20 - 5.28)								
Aroclor-1232	1	4	5.37	(5.33 - 5.41)								
Aroclor-1232	1	5	5.83	(5.79 - 5.87)								
Aroclor-1242	1	1	4.44	(4.40 - 4.48)								
Aroclor-1242	1	2	4.79	(4.75 - 4.83)								
Aroclor-1242	1	3	5.24	(5.20 - 5.28)								
Aroclor-1242	1	4	5.59	(5.55 - 5.63)								
Aroclor-1242	1	5	5.83	(5.79 - 5.87)								
Aroclor-1248	1	1	4.79	(4.75 - 4.83)								
Aroclor-1248	1	2	5.24	(5.20 - 5.28)								
Aroclor-1248	1	3	5.58	(5.54 - 5.62)								
Aroclor-1248	1	4	5.93	(5.89 - 5.97)								
Aroclor-1248	1	5	6.52	(6.48 - 6.56)								
Aroclor-1254	1	1	6.71	(6.67 - 6.75)								
Aroclor-1254	1	2	6.92	(6.88 - 6.96)								
Aroclor-1254	1	3	7.07	(7.03 - 7.11)								
Aroclor-1254	1	4	7.19	(7.15 - 7.23)								
Aroclor-1254	1	5	7.58	(7.54 - 7.62)								
Aroclor-1262	1	1	7.74	(7.70 - 7.78)								
Aroclor-1262	1	2	8.74	(8.70 - 8.78)								
Aroclor-1262	1	3	8.81	(8.77 - 8.85)								
Aroclor-1262	1	4	9.53	(9.49 - 9.57)								
Aroclor-1262	1	5	9.88	(9.84 - 9.92)								
Aroclor-1268	1	1	8.09	(8.05 - 8.13)								
Aroclor-1268	1	2	8.41	(8.37 - 8.45)								
Aroclor-1268	1	3	8.98	(8.94 - 9.02)								
Aroclor-1268	1	4	9.08	(9.04 - 9.12)								
Aroclor-1268	1	5	9.88	(9.84 - 9.92)								
DCB-Surrogate	1	0	10.09	(10.03 - 10.15)	10.08	(10.02 - 10.14)						
TCMX-Surrogate	2	0	4.19	(4.13 - 4.25)	4.21	(4.15 - 4.27)						
Aroclor-1016	2	1	4.77	(4.73 - 4.81)	4.78	(4.74 - 4.82)						
Aroclor-1016	2	2	5.19	(5.15 - 5.23)	5.20	(5.16 - 5.24)						
Aroclor-1016	2	3	5.56	(5.52 - 5.60)	5.57	(5.53 - 5.61)						
Aroclor-1016	2	4	5.88	(5.84 - 5.92)	5.89	(5.85 - 5.93)						
Aroclor-1016	2	5	6.25	(6.21 - 6.29)	6.26	(6.22 - 6.30)						
Aroclor-1260	2	1	7.55	(7.51 - 7.59)	7.56	(7.52 - 7.60)						
Aroclor-1260	2	2	7.63	(7.59 - 7.67)	7.64	(7.60 - 7.68)						
Aroclor-1260	2	3	8.26	(8.22 - 8.30)	8.27	(8.23 - 8.31)						
Aroclor-1260	2	4	8.62	(8.58 - 8.66)	8.63	(8.59 - 8.67)						
Aroclor-1260	2	5	9.34	(9.30 - 9.38)	9.34	(9.30 - 9.38)						
Aroclor-1221	2	1	4.56	(4.52 - 4.60)								
Aroclor-1221	2	2	4.71	(4.67 - 4.75)								
Aroclor-1221	2	3	4.77	(4.73 - 4.81)								
Aroclor-1232	2	1	4.77	(4.73 - 4.81)								
Aroclor-1232	2	2	5.18	(5.14 - 5.22)								
Aroclor-1232	2	3	5.56	(5.52 - 5.60)								
Aroclor-1232	2	4	6.25	(6.21 - 6.29)								
Aroclor-1232	2	5	6.39	(6.35 - 6.43)								
Aroclor-1242	2	1	4.77	(4.73 - 4.81)								
Aroclor-1242	2	2	5.19	(5.15 - 5.23)								
Aroclor-1242	2	3	5.56	(5.52 - 5.60)								
Aroclor-1242	2	4	5.88	(5.84 - 5.92)								
Aroclor-1242	2	5	6.25	(6.21 - 6.29)								
Aroclor-1248	2	1	5.18	(5.14 - 5.22)								
Aroclor-1248	2	2	5.56	(5.52 - 5.60)								
Aroclor-1248	2	3	5.88	(5.84 - 5.92)								
Aroclor-1248	2	4	6.39	(6.35 - 6.43)								
Aroclor-1248	2	5	6.52	(6.48 - 6.56)								
Aroclor-1254	2	1	6.74	(6.70 - 6.78)								
Aroclor-1254	2	2	7.09	(7.05 - 7.13)								
Aroclor-1254	2	3	7.47	(7.43 - 7.51)								
Aroclor-1254	2	4	7.98	(7.94 - 8.02)								
Aroclor-1254	2	5	8.68	(8.64 - 8.72)								
Aroclor-1262	2	1	8.05	(8.01 - 8.09)								
Aroclor-1262	2	2	9.22	(9.18 - 9.26)								
Aroclor-1262	2	3	9.33	(9.29 - 9.37)								
Aroclor-1262	2	4	9.96	(9.92 - 10.00)								
Aroclor-1262	2	5	10.55	(10.51 - 10.59)								
Aroclor-1268	2	1	8.71	(8.67 - 8.75)								
Aroclor-1268	2	2	8.75	(8.71 - 8.79)								
Aroclor-1268	2	3	9.69	(9.65 - 9.73)								
Aroclor-1268	2	4	9.86	(9.82 - 9.90)								
Aroclor-1268	2	5	10.55	(10.51 - 10.59)								
DCB-Surrogate	2	0	11.13	(11.07 - 11.19)	11.13	(11.07 - 11.19)						

Pesticide Data

Form1

ORGANICS PESTICIDE REPORT

Sample Number: AC83375-001
Client Id: SB01
Data File: 6G55408.D
Analysis Date: 02/18/15 13:41
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 87

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
5103-71-9	a-chlordane	0.0057	U	53494-70-5	Endrin Ketone	0.0057	U
309-00-2	Aldrin	0.0057	U	58-89-9	gamma-BHC	0.0011	U
319-84-6	alpha-BHC	0.0011	U	76-44-8	Heptachlor	0.0057	U
319-85-7	beta-BHC	0.0011	U	1024-57-3	Heptachlor Epoxide	0.0057	U
319-86-8	delta-BHC	0.0057	U	72-43-5	Methoxychlor	0.0057	U
60-57-1	Dieldrin	0.0011	U	72-54-8	p,p'-DDD	0.0029	U
959-98-8	Endosulfan I	0.0057	U	72-55-9	p,p'-DDE	0.0029	U
33213-65-9	Endosulfan II	0.0057	U	50-29-3	p,p'-DDT	0.0029	U
1031-07-8	Endosulfan Sulfate	0.0057	U	8001-35-2	Toxaphene	0.029	U
72-20-8	Endrin	0.0057	U	5103-74-2	y-chlordane	0.0057	U
7421-93-4	Endrin Aldehyde	0.0057	U				

Worksheet #: 334128

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

J - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_6\Data\02-18-15\
Data File : 6G55408.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 13:41
Operator : MLC/KD/ZM
Sample : AC83375-001
Misc : S,PEST
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 18 15:52:37 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

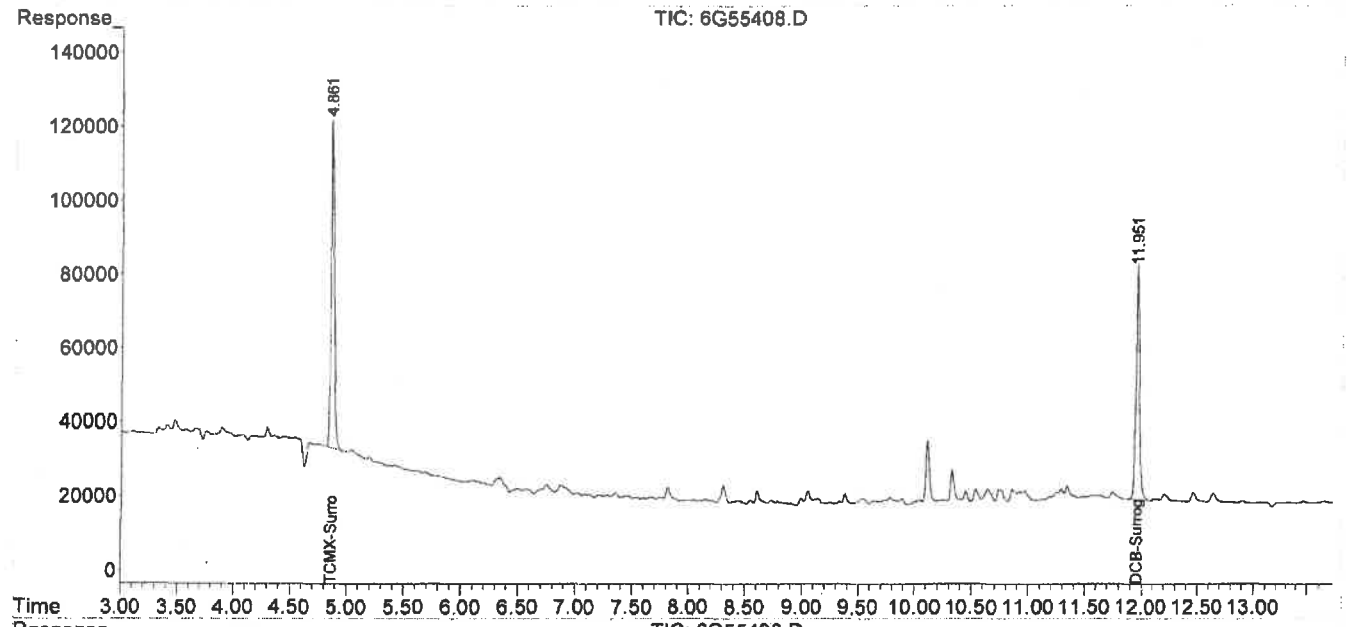
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	4.862	5.106	1808448	2126198	67.158	64.129
22)DCB-Surrogate	11.952	12.904	1455149	1595932	59.065	54.126m

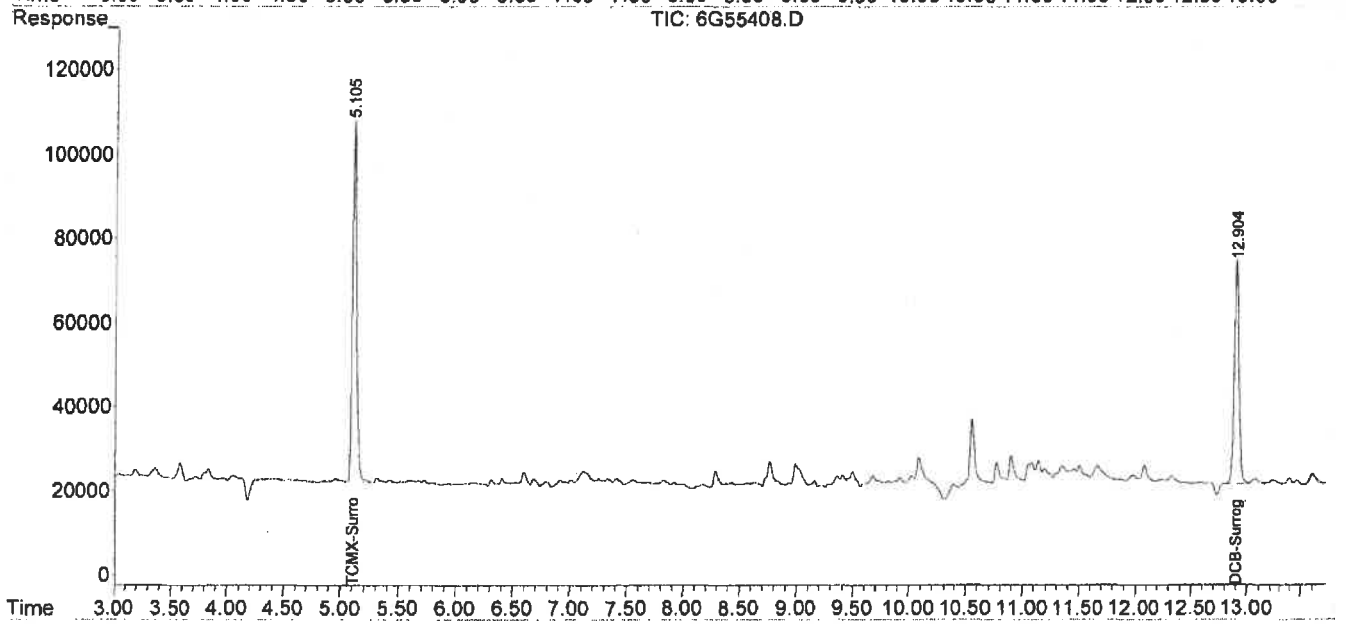
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\02-18-15\
Data File : 6G55408.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 13:41
Operator : MLC/KD/ZM
Sample : AC83375-001
Misc : S,PEST
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 18 15:52:37 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





Form1

ORGANICS PESTICIDE REPORT

Sample Number: AC83375-002
Client Id: SB02
Data File: 6G55409.D
Analysis Date: 02/18/15 13:59
Date Rec/Extracted: 02/13/15-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 94

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
5103-71-9	a-chlordane	0.0053	U	53494-70-5	Endrin Ketone	0.0053	U
309-00-2	Aldrin	0.0053	U	58-89-9	gamma-BHC	0.0011	U
319-84-6	alpha-BHC	0.0011	U	76-44-8	Heptachlor	0.0053	U
319-85-7	beta-BHC	0.0011	U	1024-57-3	Heptachlor Epoxide	0.0053	U
319-86-8	delta-BHC	0.0053	U	72-43-5	Methoxychlor	0.0053	U
60-57-1	Dieldrin	0.0011	U	72-54-8	p,p'-DDD	0.0027	U
959-98-8	Endosulfan I	0.0053	U	72-55-9	p,p'-DDE	0.0027	U
33213-65-9	Endosulfan II	0.0053	U	50-29-3	p,p'-DDT	0.0027	U
1031-07-8	Endosulfan Sulfate	0.0053	U	8001-35-2	Toxaphene	0.027	U
72-20-8	Endrin	0.0053	U	5103-74-2	y-chlordane	0.0053	U
7421-93-4	Endrin Aldehyde	0.0053	U				

Worksheet #: 334128

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_6\Data\02-18-15\
Data File : 6G55409.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 13:59
Operator : MLC/KD/ZM
Sample : AC83375-002
Misc : S,PEST
ALS Vial : 20 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 18 15:53:21 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

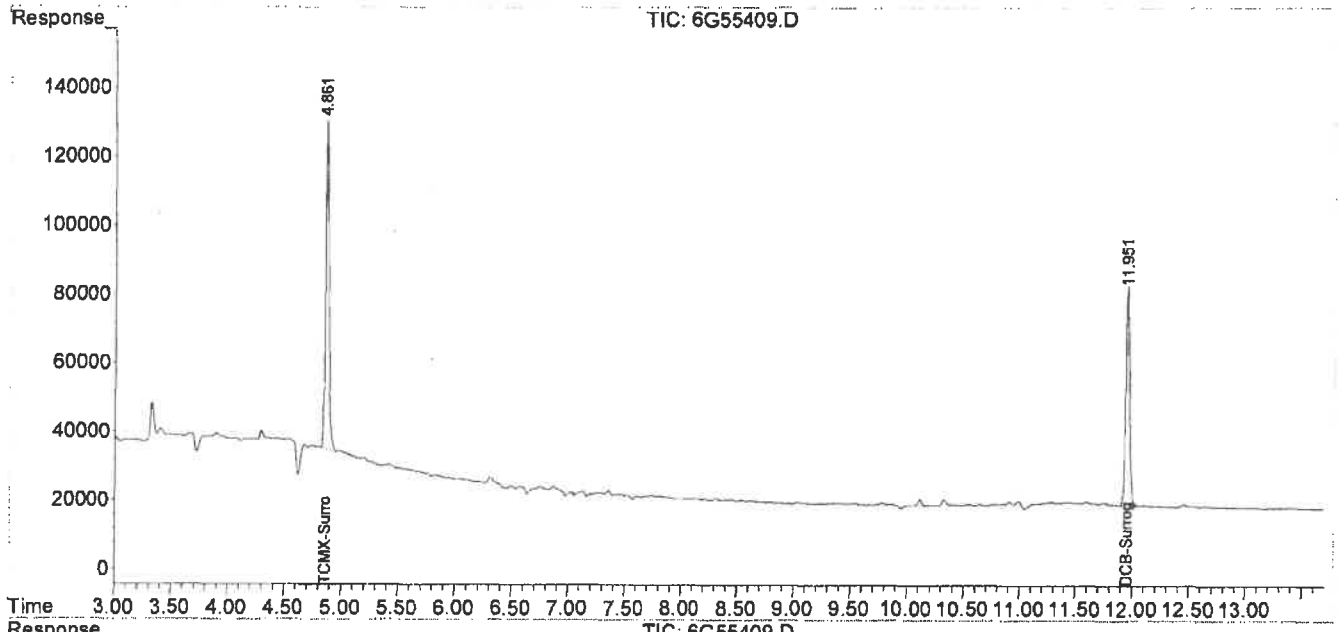
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	4.861	5.105	1968358	2356547	73.438	71.417
22)DCB-Surrogate	11.952	12.903	1481830	1658531	60.204	56.326m

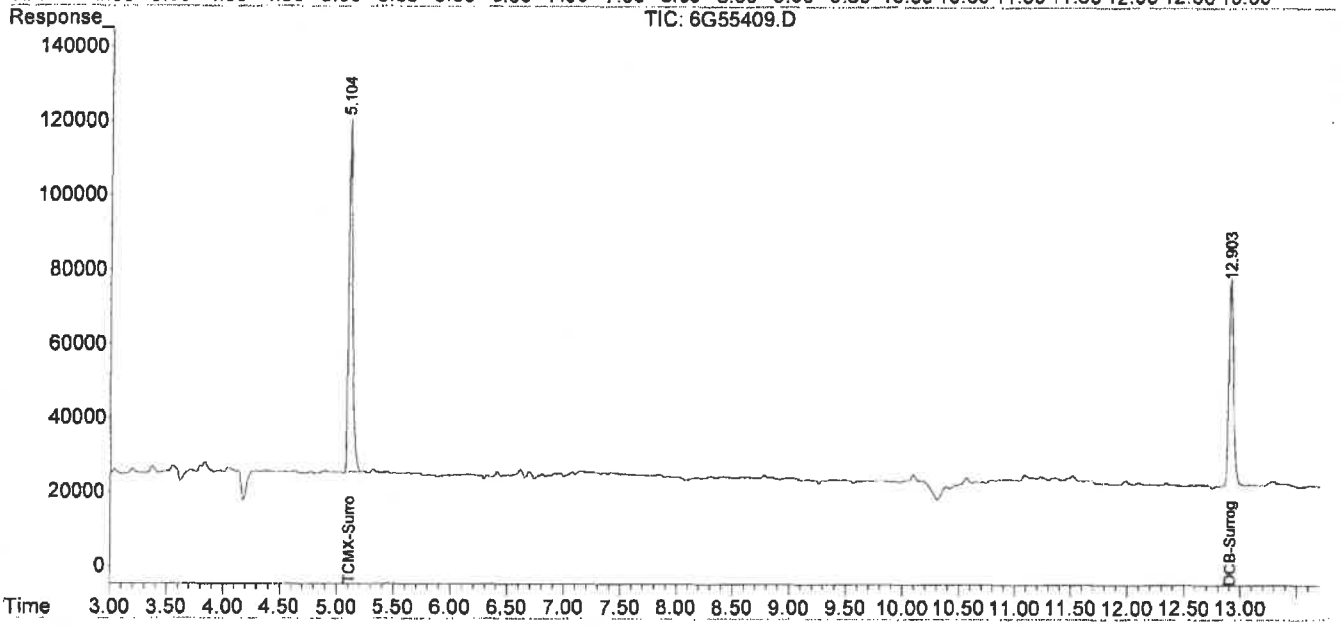
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\02-18-15\
Data File : 6G55409.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 13:59
Operator : MLC/KD/ZM
Sample : AC83375-002
Misc : S,PEST
ALS Vial : 20 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 18 15:53:21 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





Form1

ORGANICS PESTICIDE REPORT

Sample Number: SMB40448
Client Id:
Data File: 6G55404.D
Analysis Date: 02/18/15 12:31
Date Rec/Extracted: NA-02/17/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Soil
Initial Vol: 20g
Final Vol: 10ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
5103-71-9	a-chlordane	0.0050	U	53494-70-5	Endrin Ketone	0.0050	U
309-00-2	Aldrin	0.0050	U	58-89-9	gamma-BHC	0.0010	U
319-84-6	alpha-BHC	0.0010	U	76-44-8	Heptachlor	0.0050	U
319-85-7	beta-BHC	0.0010	U	1024-57-3	Heptachlor Epoxide	0.0050	U
319-86-8	delta-BHC	0.0050	U	72-43-5	Methoxychlor	0.0050	U
60-57-1	Dieldrin	0.0010	U	72-54-8	p,p'-DDD	0.0025	U
959-98-8	Endosulfan I	0.0050	U	72-55-9	p,p'-DDE	0.0025	U
33213-65-9	Endosulfan II	0.0050	U	50-29-3	p,p'-DDT	0.0025	U
1031-07-8	Endosulfan Sulfate	0.0050	U	8001-35-2	Toxaphene	0.025	U
72-20-8	Endrin	0.0050	U	5103-74-2	y-chlordane	0.0050	U
7421-93-4	Endrin Aldehyde	0.0050	U				

Worksheet #: 334128

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

- Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_6\Data\02-18-15\
Data File : 6G55404.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 12:31
Operator : MLC/KD/ZM
Sample : SMB40448
Misc : S,PEST
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 18 15:43:52 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

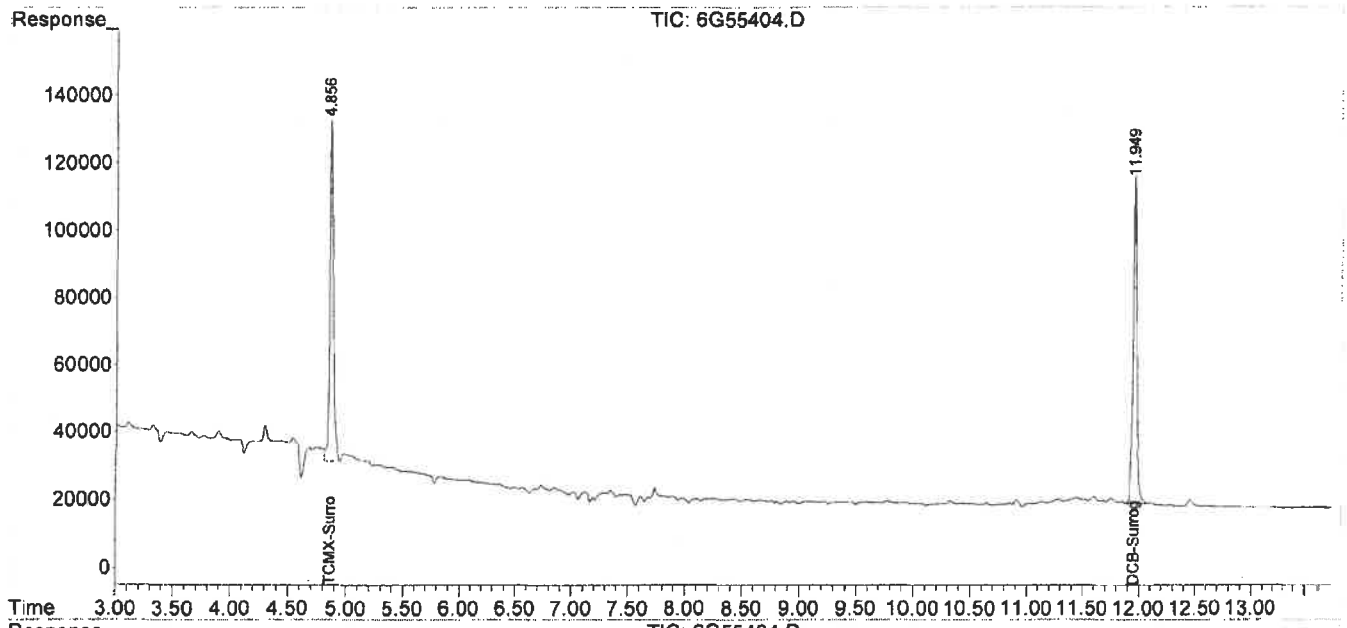
Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
Target Compounds						
1)TCMX-Surrogate	4.856	5.102	2233194	2572004	83.977m	78.302
22)DCB-Surrogate	11.950	12.903	2312785	2872786	96.846	100.322

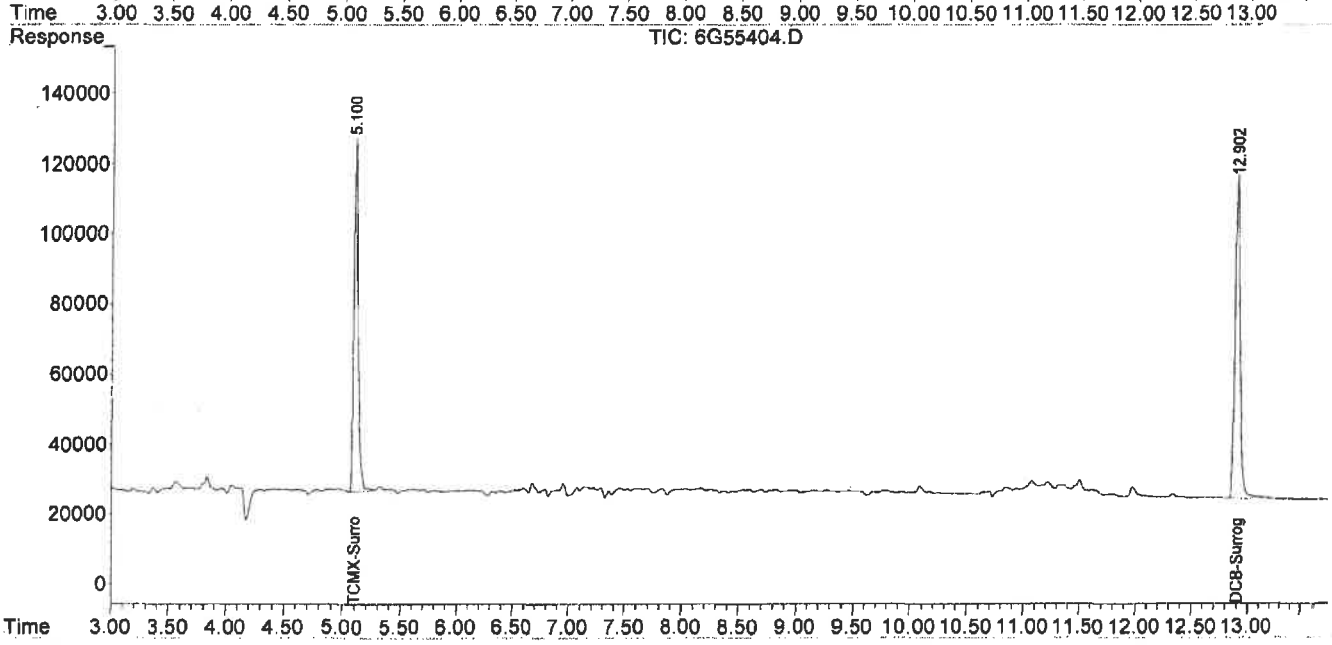
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\02-18-15\
Data File : 6G55404.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18 Feb 2015 12:31
Operator : MLC/KD/ZM
Sample : SMB40448
Misc : S,PEST
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 18 15:43:52 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





FORM2

Surrogate Recovery

Method: EPA 8081B

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column1 S3 Recov	Column2 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
6G55223.D	SMB40615	Soil	02/07/15 04:46	1		99	79	108	114		
6G55404.D	SMB40448	Soil	02/18/15 12:31	1		84	78	97	100		
6G55408.D	AC83375-001	Soil	02/18/15 13:41	1		67	64	59	54		
6G55409.D	AC83375-002	Soil	02/18/15 13:59	1		73	71	60	56		
6G55224.D	SMB40615(M	Soil	02/07/15 05:04	1		98	80	108	114		
6G55263.D	AC83198-001	Soil	02/09/15 16:56	1		93	87	95	115		
6G55264.D	AC83198-001(	Soil	02/09/15 17:44	1		106	101	108	134		
6G55265.D	AC83198-001(	Soil	02/09/15 18:02	1		105	98	112	133		
6G55405.D	SMB40448(M	Soil	02/18/15 12:48	1		71	68	83	84		

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8081B

Soil Limits

Compound	Spike Amt	Limits
S1=TCMX-Surrogate	100	30-150
S2=TCMX-Surrogate	100	30-150
S3=DCB-Surrogate	100	30-150
S4=DCB-Surrogate	100	30-150

Form3
Recovery Data
QC Batch: SMB40448

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55405.D	SMB40448(MS)	2/18/2015 12:48:00 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	88.55	0	100	89	40	140
gamma-BHC	1	86.56	0	100	87	40	140
beta-BHC	1	87.51	0	100	88	40	140
Heptachlor	1	90.29	0	100	90	40	140
delta-BHC	1	90.39	0	100	90	40	140
Aldrin	1	77.55	0	100	78	40	140
Heptachlor Epoxide	1	85.07	0	100	85	40	140
Endosulfan I	1	93.5	0	100	94	40	140
p,p'-DDE	1	87.71	0	100	88	40	140
Dieldrin	1	87.71	0	100	88	40	140
Endrin	1	88.24	0	100	88	40	140
p,p'-DDD	1	94.86	0	100	95	40	140
Endosulfan II	1	97.52	0	100	98	40	140
p,p'-DDT	1	91.24	0	100	91	40	140
Endrin Aldehyde	1	89.58	0	100	90	40	140
Endosulfan Sulfate	1	92.08	0	100	92	40	140
Methoxychlor	1	92.88	0	100	93	40	140
Endrin Ketone	1	101.32	0	100	101	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40615

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55224.D	SMB40615(MS)	2/7/2015 5:04:00 AM
Non Spike(If applicable):			
Inst Blank(If applicable):			
Method: 8081		Matrix: Soil	QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	99.21	0	100	99	40	140
gamma-BHC	1	97.13	0	100	97	40	140
beta-BHC	1	114.67	0	100	115	40	140
Heptachlor	1	111.59	0	100	112	40	140
delta-BHC	1	108.16	0	100	108	40	140
Aldrin	1	99.11	0	100	99	40	140
Heptachlor Epoxide	1	102.09	0	100	102	40	140
Endosulfan I	1	108.3	0	100	108	40	140
p,p'-DDE	1	107.4	0	100	107	40	140
Dieldrin	1	107.32	0	100	107	40	140
Endrin	1	107.81	0	100	108	40	140
p,p'-DDD	1	106.15	0	100	106	40	140
Endosulfan II	1	110.62	0	100	111	40	140
p,p'-DDT	1	117.45	0	100	117	40	140
Endrin Aldehyde	1	89.65	0	100	90	40	140
Endosulfan Sulfate	1	110.73	0	100	111	40	140
Methoxychlor	1	117.14	0	100	117	40	140
Endrin Ketone	1	102.31	0	100	102	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40615

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55264.D	AC83198-001(MS)	2/9/2015 5:44:00 PM
Non Spike(If applicable):	6G55263.D	AC83198-001	2/9/2015 4:56:00 PM
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	112.18	0	100	112	30	150
gamma-BHC	1	106.36	0	100	106	30	150
beta-BHC	1	117.5	0	100	117	30	150
Heptachlor	1	117.08	0	100	117	30	150
delta-BHC	1	117.94	0	100	118	30	150
Aldrin	1	101.7	0	100	102	30	150
Heptachlor Epoxide	1	112.03	0	100	112	30	150
Endosulfan I	1	118.92	0	100	119	30	150
p,p'-DDE	1	109.14	0	100	109	30	150
Dieldrin	1	109	0	100	109	30	150
Endrin	1	115.5	0	100	116	30	150
p,p'-DDD	1	111.64	0	100	112	30	150
Endosulfan II	1	115.29	0	100	115	30	150
p,p'-DDT	1	110.65	0	100	111	30	150
Endrin Aldehyde	1	108.23	0	100	108	30	150
Endosulfan Sulfate	1	111.72	0	100	112	30	150
Methoxychlor	1	115.19	0	100	115	30	150
Endrin Ketone	1	114.05	0	100	114	30	150

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55265.D	AC83198-001(MSD)	2/9/2015 6:02:00 PM
Non Spike(If applicable):	6G55263.D	AC83198-001	2/9/2015 4:56:00 PM
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	111.29	0	100	111	30	150
gamma-BHC	1	100.34	0	100	100	30	150
beta-BHC	1	103.96	0	100	104	30	150
Heptachlor	1	111.77	0	100	112	30	150
delta-BHC	1	110.6	0	100	111	30	150
Aldrin	1	102.55	0	100	103	30	150
Heptachlor Epoxide	1	103.79	0	100	104	30	150
Endosulfan I	1	115.6	0	100	116	30	150
p,p'-DDE	1	107.03	0	100	107	30	150
Dieldrin	1	104.67	0	100	105	30	150
Endrin	1	109.2	0	100	109	30	150
p,p'-DDD	1	106.22	0	100	106	30	150
Endosulfan II	1	108.99	0	100	109	30	150
p,p'-DDT	1	96.41	0	100	96	30	150
Endrin Aldehyde	1	103.51	0	100	104	30	150
Endosulfan Sulfate	1	107.58	0	100	108	30	150
Methoxychlor	1	103.71	0	100	104	30	150
Endrin Ketone	1	111.1	0	100	111	30	150

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA

QC Batch: SMB40615

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55265.D	AC83198-001(MSD)	2/9/2015 6:02:00 PM
Duplicate(If applicable):	6G55264.D	AC83198-001(MS)	2/9/2015 5:44:00 PM
Inst Blank(If applicable):			

Method: 8081 Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
alpha-BHC	1	111.29	112.18	0.8	30
gamma-BHC	1	100.34	106.36	5.8	30
beta-BHC	1	103.96	117.5	12	30
Heptachlor	1	111.77	117.08	4.6	30
delta-BHC	1	110.6	117.94	6.4	30
Aldrin	1	102.55	101.7	0.83	30
Heptachlor Epoxide	1	103.79	112.03	7.6	30
Endosulfan I	1	115.6	118.92	2.8	30
p,p'-DDE	1	107.03	109.14	2	30
Dieldrin	1	104.67	109	4.1	30
Endrin	1	109.2	115.5	5.6	30
p,p'-DDD	1	106.22	111.64	5	30
Endosulfan II	1	108.99	115.29	5.6	30
p,p'-DDT	1	96.41	110.65	14	30
Endrin Aldehyde	1	103.51	108.23	4.5	30
Endosulfan Sulfate	1	107.58	111.72	3.8	30
Methoxychlor	1	103.71	115.19	10	30
Endrin Ketone	1	111.1	114.05	2.6	30

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB40615
Blank Data File: 6G55223.D
Matrix: Soil

Blank Analysis Date: 02/07/15 04:46
Blank Extraction Date: 02/06/15
(If Applicable)
Method: EPA 8081B

Sample Number	Data File	Analysis Date
AC83198-001(MSD	6G55265.D	02/09/15 18:02
AC83198-001(MS)	6G55264.D	02/09/15 17:44
AC83198-001	6G55263.D	02/09/15 16:56
SMB40615(MS)	6G55224.D	02/07/15 05:04

FORM 4
Blank Summary

Blank Number: SMB40448
Blank Data File: 6G55404.D
Matrix: Soil

Blank Analysis Date: 02/18/15 12:31
Blank Extraction Date: 02/17/15
(If Applicable)
Method: EPA 8081B

Sample Number	Data File	Analysis Date
AC83375-001	6G55408.D	02/18/15 13:41
AC83375-002	6G55409.D	02/18/15 13:59
SMB40448(MS)	6G55405.D	02/18/15 12:48

Form 5

Method: EPA 8081B
Instrument: GC_6

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G55128.D	TEST	02/03/15 09:51	Soil					
6G55129.D	TEST	02/03/15 10:09	Soil					
6G55130.D	TEST	02/03/15 10:53	Soil					
6G55131.D	TEST	02/03/15 11:24	Soil					
6G55132.D	CAL EVAL	02/03/15 12:10	Soil					
6G55133.D	CAL PEST@200PPB	02/03/15 12:31	Soil	6G55136.	11.9522	0.0151	12.9036	0.0186
6G55134.D	400PPB	02/03/15 12:48	Soil	6G55136.	11.9502	0.0017	12.9035	0.0178
6G55135.D	CAL PEST@100PPB	02/03/15 13:06	Soil	6G55136.	11.9499	0.0042	12.9033	0.0163
6G55136.D	CAL PEST@2PPB	02/03/15 13:24	Soil	6G55136.	11.9504	0	12.9012	0
6G55137.D	CAL PEST@10PPB	02/03/15 13:41	Soil	6G55136.	11.9511	0.0059	12.9038	0.0201
6G55138.D	CAL PEST@50PPB	02/03/15 13:59	Soil	6G55136.	11.9520	0.0134	12.9036	0.0186
6G55139.D	CAL CHLOR@100PPB	02/03/15 14:16	Soil	6G55136.	11.9507	0.0025	12.9034	0.0171
6G55140.D	CAL TOXPH@500PPB	02/03/15 14:34	Soil	6G55136.	11.9512	0.0067	12.9035	0.0178
6G55141.D	CAL PEST@400PPB	02/03/15 14:51	Soil	6G55136.	11.9498	0.005	12.9031	0.0147
6G55142.D	100PPM	02/03/15 15:09	Soil	6G55136.	11.9500	0.0034	12.9026	0.0109
6G55143.D	ICV	02/03/15 15:29	Soil	6G55136.	11.9528	0.0201	12.9042	0.0232
6G55144.D	AC83024-001	02/03/15 15:51	Soil	6G55136.	11.9555	0.0427	12.9044	0.0248
6G55145.D	CAL PEST@200PPB	02/03/15 16:33	Soil	6G55136.	11.9499	0.0042	12.9029	0.0132

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb/HAZ/Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8081B
Instrument: GC_6

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G55217.D	CAL EVAL	02/07/15 03:01	Soil					
6G55218.D	BLK	02/07/15 03:19	Soil					
6G55219.D	TEST	02/07/15 03:36	Soil					
6G55220.D	50PPB	02/07/15 03:54	Soil					
6G55221.D	CAL PEST@100PPB	02/07/15 04:11	Soil	6G55221.	11.9526	0	12.9052	0
6G55222.D	TEST	02/07/15 04:29	Soil	6G55221.	11.9532	0.005	12.9077	0.0194
6G55223.D	SMB40615	02/07/15 04:46	Soil	6G55221.	11.9548	0.0184	12.9089	0.0287
6G55224.D	SMB40615(MS)	02/07/15 05:04	Soil	6G55221.	11.9533	0.0059	12.9058	0.0046
6G55225.D	SMB40613	02/07/15 05:21	Soil	6G55221.	11.9538	0.01	12.9069	0.0132
6G55226.D	SMB40613(MS)	02/07/15 05:39	Soil	6G55221.	11.9528	0.0017	12.9073	0.0163
6G55227.D	AC83221-005	02/07/15 05:56	Soil	6G55221.	11.9530	0.0034	12.9068	0.0124
6G55228.D	AC83221-013	02/07/15 06:14	Soil	6G55221.	11.9537	0.0092	12.9075	0.0178
6G55229.D	AC83190-010	02/07/15 06:31	Soil	6G55221.	11.9536	0.0084	12.9074	0.017
6G55230.D	AC83190-012	02/07/15 06:49	Soil	6G55221.	11.9535	0.0075	12.9066	0.0108
6G55231.D	AC83222-002	02/07/15 07:06	Soil	6G55221.	11.9534	0.0067	12.9077	0.0194
6G55232.D	AC83222-004	02/07/15 07:24	Soil	6G55221.	11.9540	0.0117	12.9076	0.0186
6G55233.D	AC83222-003	02/07/15 07:41	Soil	6G55221.	11.9544	0.0151	12.9072	0.0155
6G55234.D	AC83198-004	02/07/15 07:59	Soil	6G55221.	11.9539	0.0109	12.9076	0.0186
6G55235.D	AC83198-007	02/07/15 08:16	Soil	6G55221.	11.9548	0.0184	12.9080	0.0217
6G55236.D	AC83198-008	02/07/15 08:34	Soil	6G55221.	11.9535	0.0075	12.9062	0.0078
6G55237.D	AC83198-009	02/07/15 08:51	Soil	6G55221.	11.9541	0.0125	12.9072	0.0155
6G55238.D	AC83198-003	02/07/15 09:09	Soil	6G55221.	11.9538	0.01	12.9073	0.0163
6G55239.D	AC83198-005	02/07/15 09:26	Soil	6G55221.	11.9546	0.0167	12.9081	0.0225
6G55240.D	AC83198-006	02/07/15 09:43	Soil	6G55221.	11.9551	0.0209	12.9074	0.017
6G55241.D	AC83198-002	02/07/15 10:01	Soil	6G55221.	11.9523	0.0025	12.9058	0.0046
6G55242.D	AC83190-011	02/07/15 10:18	Soil	6G55221.	11.9548	0.0184	12.9068	0.0124
6G55243.D	CAL PEST@100PPB	02/07/15 12:23	Soil	6G55221.	11.9576	0.0418	12.9094	0.0325

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 0.25 (Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8081B

Instrument: GC_6 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G55246.D	CAL EVAL	02/09/15 09:37	Soil					
6G55247.D	CAL PEST@100PPB	02/09/15 09:55	Soil	6G55247.	11.9505	0	12.9022	0
6G55248.D	83198-001(MS)	02/09/15 10:18	Soil	6G55247.	11.9533	0.0234	12.9017	0.0039
6G55249.D	83198-001(MSD)	02/09/15 10:35	Soil	6G55247.	11.9532	0.0226	12.9023	0.0008
6G55250.D	AC83221-001(MS)	02/09/15 10:53	Soil	6G55247.	11.9523	0.0151	12.9045	0.0178
6G55251.D	AC83221-001(MSD)	02/09/15 11:11	Soil	6G55247.	11.9514	0.0075	12.9039	0.0132
6G55252.D	AC83221-030	02/09/15 11:28	Soil	6G55247.	11.9513	0.0067	12.9038	0.0124
6G55253.D	AC83205-003	02/09/15 11:46	Aqueous	6G55247.	11.9518	0.0109	12.9028	0.0046
6G55254.D	AC83198-007	02/09/15 12:03	Soil	6G55247.	11.9502	0.0025	12.9027	0.0039
6G55255.D	CAL PEST@100PPB	02/09/15 12:55	Soil	6G55247.	11.9619	0.0953	12.9145	0.0953
6G55256.D	AC83221-009	02/09/15 13:13	Soil	6G55255.	11.9622	0.0025	12.9154	0.007
6G55257.D	AC83221-001	02/09/15 13:31	Soil	6G55255.	11.9616	0.0025	12.9129	0.0124
6G55258.D	AC83226-001	02/09/15 13:48	Soil	6G55255.	11.9607	0.01	12.9131	0.0108
6G55259.D	AC83226-002	02/09/15 14:06	Soil	6G55255.	11.9608	0.0092	12.9144	0.0008
6G55260.D	83198-001	02/09/15 14:23	Soil	6G55255.	11.9628	0.0075	12.9141	0.0031
6G55261.D	AC83222-001	02/09/15 14:41	Soil	6G55255.	11.9601	0.015	12.9135	0.0077
6G55262.D	CAL PEST@100PPB	02/09/15 15:35	Soil	6G55255.	11.9516	0.0861	12.9022	0.0953
6G55263.D	AC83198-001	02/09/15 16:56	Soil	6G55262.	11.9568	0.0435	12.9015	0.0054
6G55264.D	AC83198-001(MS)	02/09/15 17:44	Soil	6G55262.	11.9519	0.0025	12.9017	0.0039
6G55265.D	AC83198-001(MSD)	02/09/15 18:02	Soil	6G55262.	11.9505	0.0092	12.9011	0.0085
6G55266.D	CAL PEST@100PPB	02/09/15 18:43	Soil	6G55262.	11.9526	0.0084	12.9004	0.0139

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5 (Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8081B
Instrument: GC_6

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G55389.D	CAL EVAL	02/18/15 05:01	Soil					
6G55390.D	BLK	02/18/15 05:36	Soil					
6G55391.D	100PPB	02/18/15 05:54	Soil					
6G55392.D	200PPB	02/18/15 06:11	Soil					
6G55393.D	CAL PEST@100PPB	02/18/15 08:55	Soil	6G55398.	11.9557	0.0904	12.9008	0.0163
6G55394.D	CAL PEST@200PPB	02/18/15 09:16	Soil	6G55398.	11.9490	0.0343	12.8983	0.0031
6G55395.D	CAL PEST@400PPB	02/18/15 09:33	Soil	6G55398.	11.9467	0.0151	12.8994	0.0054
6G55396.D	CAL PEST@50PPB	02/18/15 09:51	Soil	6G55398.	11.9479	0.0251	12.9007	0.0155
6G55397.D	CAL PEST@10PPB	02/18/15 10:08	Soil	6G55398.	11.9483	0.0285	12.8990	0.0023
6G55398.D	CAL PEST@2PPB	02/18/15 10:26	Soil	6G55398.	11.9449	0	12.8987	0
6G55399.D	CAL CHLOR@100PPB	02/18/15 10:44	Soil	6G55398.	11.9485	0.0301	12.9010	0.0178
6G55400.D	CAL TOX@500PPB	02/18/15 11:01	Soil	6G55398.	11.9485	0.0301	12.9013	0.0202
6G55401.D	ICV	02/18/15 11:37	Soil	6G55398.	11.9546	0.0812	12.9030	0.0333
6G55402.D	WMB40446	02/18/15 11:55	Aqueous	6G55398.	11.9512	0.0527	12.9028	0.0318
6G55403.D	WMB40446(MS)	02/18/15 12:13	Aqueous	6G55398.	11.9504	0.046	12.9032	0.0349
6G55404.D	SMB40448	02/18/15 12:31	Soil	6G55398.	11.9497	0.0402	12.9028	0.0318
6G55405.D	SMB40448(MS)	02/18/15 12:48	Soil	6G55398.	11.9492	0.036	12.9025	0.0295
6G55406.D	SMB40443(MS)	02/18/15 13:06	Soil	6G55398.	11.9502	0.0444	12.9039	0.0403
6G55407.D	AC83330-015	02/18/15 13:24	Aqueous	6G55398.	11.9545	0.0803	12.9066	0.0612
6G55408.D	AC83375-001	02/18/15 13:41	Soil	6G55398.	11.9522	0.0611	12.9041	0.0419
6G55409.D	AC83375-002	02/18/15 13:59	Soil	6G55398.	11.9517	0.0569	12.9031	0.0341
6G55410.D	CAL PEST@100PPB	02/18/15 15:19	Soil	6G55398.	11.9498	0.041	12.9044	0.0442

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) [illegible] (Hexane Tph) * - Values outside of limits for this column/run

5021319 0240

Form 6
Initial Calibration

Method: EPA 8081B

Instrument: GC_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G55136.	CAL PEST@2PPB	02/03/15 13:24	2	6G55137.	CAL PEST@10PPB	02/03/15 13:41
3	6G55138.	CAL PEST@50PPB	02/03/15 13:59	4	6G55135.	CAL PEST@100PPB	02/03/15 13:06
5	6G55133.	CAL PEST@200PPB	02/03/15 12:31	6	6G55141.	CAL PEST@400PPB	02/03/15 14:51
7	6G55139.	CAL CHLOR@100PP	02/03/15 14:16	8	6G55140.	CAL TOXPH@500PP	02/03/15 14:34

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Qua	2.6789	2.6530	2.3859	2.1628	2.0756	1.8546	----	----	2.30	4.86	0.996	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	1	0	Avg	3.1309	3.1030	3.1622	2.9184	3.0396	2.8287	----	----	3.03	6.00	0.999	1.00	4.3	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	1	0	Avg	3.0951	3.0303	3.0071	2.7468	2.8496	2.5893	----	----	2.89	6.51	0.998	1.00	6.7	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	1	0	Qua	2.0522	1.8950	1.5493	1.3835	1.3967	1.2253	----	----	1.58	7.38	0.995	1.00	20	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	1	0	Qua	2.5452	2.4224	2.3193	2.0993	2.1699	1.8528	----	----	2.23	6.80	0.993	0.999	11	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	1	0	Qua	4.2774	2.6659	2.5966	2.3776	2.4357	2.2711	----	----	2.77	7.72	0.999	1.00	27	2.00	10.00	50.00	100.0	200.0	400.0		
Aldrin	1	0	Qua	2.9770	2.8956	2.7939	2.5323	2.5828	2.2583	----	----	2.67	7.17	0.995	1.00	10	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	1	0	Qua	3.1782	3.0349	2.7069	2.3934	2.3989	2.0606	----	----	2.63	7.99	0.993	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
γ-chlordane	1	0	Qua	4.2579	3.2266	2.9755	2.6797	2.7242	2.3650	----	----	3.04	8.38	0.994	0.999	22	2.00	10.00	50.00	100.0	200.0	400.0		
α-chlordane	1	0	Qua	3.4315	3.0427	2.7752	2.4821	2.5107	2.1999	----	----	2.74	8.45	0.995	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	1	0	Qua	2.5715	2.3462	2.0833	1.8295	1.7726	1.5110	----	----	2.02	8.34	0.992	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	1	0	Qua	2.7129	2.5757	2.4608	2.2414	2.2824	2.0069	----	----	2.38	8.54	0.995	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	1	0	Qua	2.9206	2.4899	2.3889	2.1725	2.2373	1.9724	----	----	2.36	8.78	0.996	0.999	14	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	1	0	Qua	2.1715	2.0141	1.8732	1.8451	1.9347	1.4950	----	----	1.89	9.04	0.980	0.998	12	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	1	0	Qua	2.0609	1.9828	1.8769	1.7015	1.7428	1.5573	----	----	1.82	9.48	0.997	1.00	10	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	1	0	Qua	2.4891	2.1548	2.0196	1.7976	1.8139	1.6474	----	----	1.99	9.60	0.997	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	1	0	Qua	0.6676	1.1971	1.4786	1.4177	1.5688	1.4882	----	----	1.30	9.70	0.999	0.999	26	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	1	0	Avg	1.6719	1.4533	1.6857	1.4977	1.5422	1.4598	----	----	1.55	10.09	0.999	1.00	6.7	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	1	0	Qua	2.1044	1.7988	1.7619	1.5984	1.6333	1.5325	----	----	1.74	10.45	0.998	1.00	12	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	1	0	Qua	0.4858	0.6993	0.8136	0.7487	0.7547	0.6986	----	----	0.700	10.39	0.997	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	1	0	Avg	1.4725	1.5663	1.5903	1.4408	1.4781	1.3888	----	----	1.49	10.96	0.999	1.00	5.1	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	1	0	Qua	2.8210	2.5587	2.1372	1.8715	1.8246	1.6308	----	----	2.14	11.95	0.996	1.00	22	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane	1	1	Avg	----	----	----	----	----	----	----	----	0.144	6.60	-1	-1	Lvl=7	100.0							
Chlordane	1	2	Avg	----	----	----	----	----	----	----	----	0.362	8.38	-1	-1	Lvl=7	100.0							
Chlordane	1	3	Avg	----	----	----	----	----	----	----	----	0.552	8.45	-1	-1	Lvl=7	100.0							
Toxaphene	1	1	Avg	----	----	----	----	----	----	----	----	0.0579	9.20	-1	-1	Lvl=8	500.0							
Toxaphene	1	2	Avg	----	----	----	----	----	----	----	----	0.0528	9.64	-1	-1	Lvl=8	500.0							
Toxaphene	1	3	Avg	----	----	----	----	----	----	----	----	0.0528	9.64	-1	-1	Lvl=8	500.0							
Toxaphene	1	4	Avg	----	----	----	----	----	----	----	----	0.107	9.96	-1	-1	Lvl=8	500.0							
Toxaphene	1	5	Avg	----	----	----	----	----	----	----	----	0.0633	10.42	-1	-1	Lvl=8	500.0							
TCMX-Surrogate	2	0	Qua	3.8923	3.2076	2.9979	2.7810	2.8573	2.5932	----	----	3.05	5.10	0.998	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	2	0	Avg	3.8746	3.6568	3.9949	3.9303	4.4053	4.0895	----	----	3.99	6.02	0.998	0.999	6.2	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	2	0	Avg	3.7779	3.5684	3.7315	3.5884	3.8243	3.5517	----	----	3.67	6.54	0.999	0.999	3.2	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	2	0	Avg	2.3266	2.2362	2.1379	1.9939	2.1414	1.9508	----	----	2.13	6.62	0.998	0.999	6.7	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	2	0	Qua	3.3920	2.5503	2.6044	2.5524	2.8639	2.5298	----	----	2.75	6.99	0.996	0.998	12	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	2	0	Qua	4.2610	3.1113	3.3360	3.2964	3.5831	3.4428	----	----	3.51	7.11	0.999	0.999	11	2.00	10.00	50.00	100.0	200.0	400.0		

Avg Rsd Col 1: 14.4 Avg Rsd Col 2: 12.1

HAZ. - 321

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pch/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5021319 0241

Metho... PA 8081B

m 6

Initial Calibration

Instrument:

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G55136.	CAL PEST@2PPB	02/03/15 13:24	2	6G55137.	CAL PEST@10PPB	02/03/15 13:41
3	6G55138.	CAL PEST@50PPB	02/03/15 13:59	4	6G55135.	CAL PEST@100PPB	02/03/15 13:06
5	6G55133.	CAL PEST@200PPB	02/03/15 12:31	6	6G55141.	CAL PEST@400PPB	02/03/15 14:51
7	6G55139.	CAL CHLOR@100PP	02/03/15 14:16	8	6G55140.	CAL TOXPH@500PP	02/03/15 14:34

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aldrin	2	0	Avg	3.2772	3.0452	3.1160	2.9769	3.2282	2.9763	---	---	3.10	7.43	0.998	0.999	4.1	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	2	0	Qua	3.9539	3.2016	2.9548	2.7177	2.8505	2.5357	---	---	3.04	8.15	0.996	0.999	17	2.00	10.00	50.00	100.0	200.0	400.0		
γ-chlordane	2	0	Qua	4.0321	3.1584	3.0692	2.9007	3.0865	2.9282	---	---	3.20	8.36	0.999	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
a-chlordane	2	0	Qua	3.5468	3.0844	2.8416	2.6049	2.6613	2.4498	---	---	2.86	8.56	0.998	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	2	0	Avg	3.4301	2.9605	2.8890	2.7428	2.9306	2.7075	---	---	2.94	8.61	0.998	0.999	8.8	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	2	0	Qua	2.8538	2.4547	2.5459	2.4785	2.6891	2.6491	---	---	2.61	8.84	1.00	1.00	5.7	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	2	0	Qua	3.2937	2.6787	2.5779	2.4602	2.6204	2.4544	---	---	2.68	9.00	0.999	0.999	12	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	2	0	Qua	2.6441	2.0965	1.9497	1.9939	2.1416	1.7090	---	---	2.09	9.47	0.990	0.996	15	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	2	0	Qua	2.7261	2.1067	2.0974	2.0032	2.1995	2.1248	---	---	2.21	9.54	0.999	0.999	12	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	2	0	Qua	3.0253	2.4013	2.3880	2.1584	2.3002	2.1409	---	---	2.40	9.69	0.999	0.999	14	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	2	0	Qua	2.0357	1.8481	1.9070	1.8441	2.0204	1.9916	---	---	1.94	9.92	1.00	1.00	4.4	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	2	0	Qua	3.1289	2.2080	1.9795	1.7485	1.8125	1.7365	---	---	2.10	10.09	0.999	1.00	25	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	2	0	Qua	2.7490	2.0181	1.9227	1.7860	1.9716	1.8253	---	---	2.05	10.24	0.998	0.999	17	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	2	0	Qua	1.4766	1.0137	1.0167	0.9522	1.0061	0.9178	---	---	1.06	10.97	0.998	0.999	19	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	2	0	Qua	2.7164	2.2387	2.1270	1.9644	2.0585	1.9795	---	---	2.18	11.23	1.00	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	2	0	Qua	2.8156	2.4146	2.1432	1.9314	1.9337	1.8111	---	---	2.17	12.90	0.999	1.00	17	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane	2	1	Avg	---	---	---	---	---	---	---	---	0.168	6.78	-1	-1	Lvl=7	100.0							
Chlordane	2	2	Avg	---	---	---	---	---	---	---	---	0.655	8.36	-1	-1	Lvl=7	100.0							
Chlordane	2	3	Avg	---	---	---	---	---	---	---	---	0.357	8.56	-1	-1	Lvl=7	100.0							
Toxaphene	2	1	Avg	---	---	---	---	---	---	---	---	0.0306	9.23	-1	-1	Lvl=8	500.0							
Toxaphene	2	2	Avg	---	---	---	---	---	---	---	---	0.0423	9.45	-1	-1	Lvl=8	500.0							
Toxaphene	2	3	Avg	---	---	---	---	---	---	---	---	0.0559	9.98	-1	-1	Lvl=8	500.0							
Toxaphene	2	4	Avg	---	---	---	---	---	---	---	---	0.119	10.73	-1	-1	Lvl=8	500.0							
Toxaphene	2	5	Avg	---	---	---	---	---	---	---	---	0.125	10.80	-1	-1	Lvl=8	500.0							

HAZ. - 322

Avg Rsd Col 1: 14.4 Avg Rsd Col 2: 12.1

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 ; Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5021319 0242

Form 6
Initial Calibration

Method: EPA 8081B

Instrument: GC_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G55398.	CAL PEST@2PPB	02/18/15 10:26	2	6G55397.	CAL PEST@10PPB	02/18/15 10:08
3	6G55396.	CAL PEST@50PPB	02/18/15 09:51	4	6G55393.	CAL PEST@100PPB	02/18/15 08:55
5	6G55394.	CAL PEST@200PPB	02/18/15 09:16	6	6G55395.	CAL PEST@400PPB	02/18/15 09:33
7	6G55399.	CAL CHLOR@100PP	02/18/15 10:44	8	6G55400.	CAL TOX@500PPB	02/18/15 11:01

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Qua	3.2280	3.3106	2.8817	2.5767	2.4274	2.0297	----	----	2.74	4.86	0.989	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	1	0	Avg	3.6907	3.5929	3.4705	3.2638	3.2671	2.8684	----	----	3.36	5.99	0.995	1.00	8.8	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	1	0	Qua	3.6323	3.5198	3.3463	3.1348	3.0100	2.6539	----	----	3.22	6.50	0.995	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	1	0	Qua	2.3484	2.1209	1.6719	1.6577	1.5380	1.2779	----	----	1.77	7.37	0.988	1.00	22	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	1	0	Qua	2.9718	2.9522	2.6114	2.7235	2.4421	2.0443	----	----	2.62	6.79	0.988	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	1	0	Qua	5.0860	3.4972	2.9487	2.9279	2.7035	2.3176	----	----	3.25	7.71	0.992	1.00	30	2.00	10.00	50.00	100.0	200.0	400.0		
Aldrin	1	0	Qua	3.5647	3.4872	3.1310	3.1468	2.8764	2.4012	----	----	3.10	7.16	0.988	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	1	0	Qua	3.6933	3.6039	3.1132	3.0067	2.6631	2.1765	----	----	3.04	7.98	0.984	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
y-chlordane	1	0	Qua	5.0771	3.8290	3.4099	3.4071	3.0228	2.4851	----	----	3.54	8.37	0.985	1.00	25	2.00	10.00	50.00	100.0	200.0	400.0		
a-chlordane	1	0	Qua	4.2431	3.6492	3.1354	3.1182	2.7714	2.2796	----	----	3.20	8.44	0.985	1.00	21	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	1	0	Qua	3.1689	2.9042	2.4167	2.2701	2.0256	1.6558	----	----	2.41	8.34	0.985	1.00	23	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	1	0	Qua	3.3079	3.1305	2.8814	2.9246	2.6056	2.1257	----	----	2.83	8.54	0.984	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	1	0	Qua	3.7208	3.0858	2.8369	2.8824	2.5837	2.1198	----	----	2.87	8.78	0.985	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	1	0	Qua	3.1225	2.6946	2.4590	2.5198	2.2372	1.8429	----	----	2.48	9.04	0.985	1.00	17	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	1	0	Qua	2.3251	2.3331	2.1527	2.1717	1.9579	1.6443	----	----	2.10	9.48	0.988	1.00	12	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	1	0	Qua	3.0488	2.7038	2.3849	2.2996	2.0877	1.7438	----	----	2.38	9.59	0.988	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	1	0	Qua	1.2868	1.6628	1.8507	2.1124	1.9366	1.6585	----	----	1.75	9.69	0.990	0.999	16	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	1	0	Qua	1.7405	2.1096	1.9740	1.9069	1.7716	1.5269	----	----	1.84	10.08	0.992	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	1	0	Qua	2.7036	2.4056	2.2111	2.2195	2.0079	1.7017	----	----	2.21	10.44	0.990	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	1	0	Qua	1.1276	1.1079	1.0380	1.0366	0.9256	0.7686	----	----	1.00	10.38	0.986	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	1	0	Qua	2.8178	2.2750	1.9271	1.8269	1.7098	1.4648	----	----	2.00	10.95	0.992	1.00	24	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	1	0	Qua	6.7563	3.5941	2.5940	2.4136	2.1518	1.7851	----	----	3.22	11.95	0.988	1.00	57	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane	1	1	Avg	----	----	----	----	----	----	----	----	0.164	6.59	-1	-1	Lvl=7	100.0							
Chlordane	1	2	Avg	----	----	----	----	----	----	----	----	0.415	8.38	-1	-1	Lvl=7	100.0							
Chlordane	1	3	Avg	----	----	----	----	----	----	----	----	0.625	8.44	-1	-1	Lvl=7	100.0							
Toxaphene	1	1	Avg	----	----	----	----	----	----	----	----	0.0257	9.20	-1	-1	Lvl=8	500.0							
Toxaphene	1	2	Avg	----	----	----	----	----	----	----	----	0.0341	9.29	-1	-1	Lvl=8	500.0							
Toxaphene	1	3	Avg	----	----	----	----	----	----	----	----	0.0393	9.63	-1	-1	Lvl=8	500.0							
Toxaphene	1	4	Avg	----	----	----	----	----	----	----	----	0.103	9.96	-1	-1	Lvl=8	500.0							
Toxaphene	1	5	Avg	----	----	----	----	----	----	----	----	0.0483	10.41	-1	-1	Lvl=8	500.0							
TCMX-Surrogate	2	0	Qua	3.8170	4.0080	3.3580	3.2691	3.0043	2.5871	----	----	3.34	5.10	0.992	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	2	0	Avg	3.4937	3.5701	3.7271	3.5811	3.7601	3.4086	----	----	3.59	6.01	0.997	0.999	3.7	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	2	0	Avg	3.8494	3.6224	3.6154	3.4005	3.4328	3.0650	----	----	3.50	6.54	0.996	1.00	7.6	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	2	0	Qua	2.4014	2.4648	2.1985	2.0456	2.0256	1.7918	----	----	2.15	6.61	0.996	1.00	12	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	2	0	Qua	4.7450	3.4743	3.1623	3.2195	3.0276	2.6718	----	----	3.38	6.98	0.995	1.00	21	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	2	0	Qua	8.1612	3.4629	3.4138	3.1493	3.1843	2.8589	----	----	4.04	7.11	0.997	1.00	50	2.00	10.00	50.00	100.0	200.0	400.0		

Avg Rsd Col 1: 19.3 Avg Rsd Col 2: 17.3

HAZ. - 323

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

5021319 0243

Form 6

Method: EPA 8081B

Initial Calibration

Instrument:

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G55398.	CAL PEST@2PPB	02/18/15 10:26	2	6G55397.	CAL PEST@10PPB	02/18/15 10:08
3	6G55396.	CAL PEST@50PPB	02/18/15 09:51	4	6G55393.	CAL PEST@100PPB	02/18/15 08:55
5	6G55394.	CAL PEST@200PPB	02/18/15 09:16	6	6G55395.	CAL PEST@400PPB	02/18/15 09:33
7	6G55399.	CAL CHLOR@100PP	02/18/15 10:44	8	6G55400.	CAL TOX@500PPB	02/18/15 11:01

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aldrin	2	0	Qua	4.9014	3.5460	3.5224	3.5285	3.4092	3.0000	----	----	3.65	7.43	0.995	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	2	0	Qua	4.7280	3.7365	3.4376	3.3683	3.2109	2.7382	----	----	3.54	8.15	0.992	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
γ-chlordane	2	0	Qua	4.8287	3.7224	3.5734	3.6147	3.4474	2.9951	----	----	3.70	8.35	0.994	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
a-chlordane	2	0	Qua	4.2110	3.5361	3.2679	3.1702	2.9525	2.4603	----	----	3.27	8.56	0.989	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	2	0	Qua	3.8175	3.3849	3.3120	3.1648	3.1363	2.7737	----	----	3.26	8.61	0.996	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	2	0	Avg	3.5620	3.0382	3.0723	3.1218	3.0530	2.6813	----	----	3.09	8.84	0.995	1.00	9.1	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	2	0	Avg	3.4505	3.0948	3.0306	3.1004	3.0030	2.6153	----	----	3.05	9.00	0.994	1.00	8.8	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	2	0	Qua	2.9854	2.5457	2.4126	2.3748	2.2719	1.9325	----	----	2.42	9.47	0.992	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	2	0	Qua	2.8560	2.3469	2.2945	2.1961	2.2065	1.9829	----	----	2.31	9.54	0.997	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	2	0	Qua	3.4104	2.5619	2.5268	2.2976	2.2998	2.0096	----	----	2.52	9.68	0.995	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	2	0	Avg	2.4755	2.1407	2.2800	2.3280	2.3387	2.0793	----	----	2.27	9.92	0.996	1.00	6.3	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	2	0	Qua	4.1260	2.6389	2.1464	1.8495	1.8555	1.6242	----	----	2.37	10.08	0.995	0.999	39	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	2	0	Avg	2.7555	2.5091	2.4486	2.5077	2.4102	2.1100	----	----	2.46	10.23	0.994	1.00	8.5	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	2	0	Qua	1.8444	1.3391	1.1799	1.1360	1.0796	0.9369	----	----	1.25	10.97	0.994	1.00	25	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	2	0	Qua	3.5990	2.4872	2.1822	2.0580	1.9935	1.7501	----	----	2.35	11.22	0.995	1.00	28	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	2	0	Qua	3.7292	3.4452	2.9862	2.8482	2.6807	2.3123	----	----	3.00	12.90	0.993	1.00	17	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane	2	1	Avg	----	----	----	----	----	----	----	----	0.196	6.77	-1	-1	Lvl=7	100.0							
Chlordane	2	2	Avg	----	----	----	----	----	----	----	----	0.774	8.35	-1	-1	Lvl=7	100.0							
Chlordane	2	3	Avg	----	----	----	----	----	----	----	----	0.414	8.56	-1	-1	Lvl=7	100.0							
Toxaphene	2	1	Avg	----	----	----	----	----	----	----	----	0.0385	9.23	-1	-1	Lvl=8	500.0							
Toxaphene	2	2	Avg	----	----	----	----	----	----	----	----	0.0323	9.45	-1	-1	Lvl=8	500.0							
Toxaphene	2	3	Avg	----	----	----	----	----	----	----	----	0.0464	9.97	-1	-1	Lvl=8	500.0							
Toxaphene	2	4	Avg	----	----	----	----	----	----	----	----	0.103	10.72	-1	-1	Lvl=8	500.0							
Toxaphene	2	5	Avg	----	----	----	----	----	----	----	----	0.158	10.80	-1	-1	Lvl=8	500.0							

HAZ. - 324

Avg Rsd Col 1: 19.3 Avg Rsd Col 2: 17.3

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8081B

Data File:				6G55221.D			6G55243.D			6G55262.D			6G55266.D			6G55410.D					
Method:				8081			8081			8081			8081			8081					
Calibration Name:				CAL PEST@100PP			CAL PEST@100PP			CAL PEST@100PP			CAL PEST@100PP			CAL PEST@100PP					
Calibration Date/Time				02/07/15 04:11			02/07/15 12:23			02/09/15 15:35			02/09/15 18:43			02/18/15 15:19					
Compound	Limit	Col	Mr	Conc	Conc Exp	%Diff	Conc	Conc Exp	%Diff	Conc	Conc Exp	%Diff	Conc	Conc Exp	%Diff	Conc	Conc Exp	%Diff			
TCMX-Surrogate	20	1	0	106.7	100	6.7	104.5	100	4.5	109	100	9.0	111.3	100	11.3	88.23	100	11.8			
alpha-BHC	20	1	0	99.32	100	0.7	101.6	100	1.6	112.2	100	12.2	114.0	100	14.0	93.57	100	6.4			
gamma-BHC	20	1	0	98.86	100	1.1	100.7	100	0.7	106.5	100	6.5	108.5	100	8.5	94.71	100	5.3			
beta-BHC	20	1	0	100.5	100	0.5	99.45	100	0.6	97.47	100	2.5	101.6	100	1.6	87.46	100	12.5			
Heptachlor	20	1	0	104.5	100	4.5	109.1	100	9.1	109.0	100	9.0	112.6	100	12.6	86.78	100	13.2			
delta-BHC	20	1	0	99.93	100	0.1	100.7	100	0.7	111.3	100	11.3	114.6	100	14.6	90.4	100	9.6			
Aldrin	20	1	0	101	100	1.0	101.1	100	1.1	102.7	100	2.7	105.6	100	5.6	85.48	100	14.5			
Heptachlor Epoxide	20	1	0	101.3	100	1.3	100.3	100	0.3	99.51	100	0.5	101.8	100	1.8	85.65	100	14.4			
y-chlordane	20	1	0	101.3	100	1.3	100.1	100	0.1	96.22	100	3.8	99.8	100	0.2	84.78	100	15.2			
a-chlordane	20	1	0	101.1	100	1.1	100.1	100	0.1	95.36	100	4.6	98.65	100	1.3	84.62	100	15.4			
Endosulfan I	20	1	0	103.1	100	3.1	103.7	100	3.7	105.1	100	5.1	108.0	100	8.0	89.87	100	10.1			
p,p'-DDE	20	1	0	102.0	100	2.0	102.4	100	2.4	99.26	100	0.7	102.6	100	2.6	84.55	100	15.5			
Dieldrin	20	1	0	101.2	100	1.2	101.0	100	1.0	98.24	100	1.8	100.9	100	0.9	83.32	100	16.7			
Endrin	20	1	0	93.15	100	6.8	106	100	5.9	103.3	100	3.3	106	100	5.9	87.56	100	12.4			
p,p'-DDD	20	1	0	98.62	100	1.4	100.6	100	0.6	95.99	100	4.0	99.36	100	0.6	88.51	100	11.5			
Endosulfan II	20	1	0	100.8	100	0.8	99.98	100	0.0	101.6	100	1.6	105.7	100	5.7	89.43	100	10.6			
p,p'-DDT	20	1	0	104.4	100	4.4	103.5	100	3.5	100.8	100	0.8	106.6	100	6.6	80.97	100	19.0			
Endrin Aldehyde	20	1	0	100.6	100	0.6	100.6	100	0.6	98.86	100	1.1	102.3	100	2.3	87.68	100	12.3			
Endosulfan Sulfate	20	1	0	104.3	100	4.3	102.1	100	2.1	98.16	100	1.8	102.4	100	2.4	79.85	100	20.2			
Methoxychlor	20	1	0	104.7	100	4.7	108.8	100	8.8	106.3	100	6.3	112.3	100	12.3	85.39	100	14.6			
Endrin Ketone	20	1	0	96.28	100	3.7	95.59	100	4.4	106.3	100	6.3	108.7	100	8.7	88.92	100	11.1			
DCB-Surrogate	20	1	0	102.6	100	2.6	102.1	100	2.1	97.79	100	2.2	101.8	100	1.8	82.75	100	17.3			
Average Difference	20	1	0			2.5			2.4			4.4			5.9			13.2			
TCMX-Surrogate	20	2	0	79.66	100	20.3	83.89	100	16.1	103	100	3.0	109.3	100	9.3	91.36	100	8.6			
alpha-BHC	20	2	0	79.28	100	20.7*	85.32	100	14.7	105.7	100	5.7	113.4	100	13.4	110.9	100	10.9			
gamma-BHC	20	2	0	79.06	100	20.9*	84.69	100	15.3	104.6	100	4.6	109.9	100	9.9	105.5	100	5.5			
beta-BHC	20	2	0	79.91	100	20.1	83.56	100	16.4	106.2	100	6.2	112.4	100	12.4	102	100	2.0			
Heptachlor	20	2	0	79.38	100	20.6*	90.72	100	9.3	109.2	100	9.2	114.6	100	14.6	100.2	100	0.2			
delta-BHC	20	2	0	74.63	100	25.4*	81.73	100	18.3	105.3	100	5.3	109.9	100	9.9	108.8	100	8.8			
Aldrin	20	2	0	81.62	100	18.4	86.81	100	13.2	110.3	100	10.3	114.3	100	14.3	91.69	100	8.3			
Heptachlor Epoxide	20	2	0	82.55	100	17.5	83.94	100	16.1	105.8	100	5.8	109.4	100	9.4	90.69	100	9.3			
y-chlordane	20	2	0	84.49	100	15.5	85.7	100	14.3	106	100	6.0	109.4	100	9.4	90.5	100	9.5			
a-chlordane	20	2	0	84.96	100	15.0	86.31	100	13.7	102.6	100	2.6	107.2	100	7.2	90.4	100	9.6			
Endosulfan I	20	2	0	82.49	100	17.5	87.29	100	12.7	106.8	100	6.8	109.5	100	9.5	96.82	100	3.2			
p,p'-DDE	20	2	0	85.62	100	14.4	88.77	100	11.2	108.3	100	8.3	110.1	100	10.1	93.73	100	6.3			
Dieldrin	20	2	0	83.21	100	16.8	87.63	100	12.4	105.2	100	5.2	107.6	100	7.6	93.06	100	6.9			
Endrin	20	2	0	72.62	100	27.4*	88.42	100	11.6	106.2	100	6.2	109.8	100	9.8	98.56	100	1.4			
p,p'-DDD	20	2	0	78.13	100	21.9*	84.78	100	15.2	102.0	100	2.0	104.2	100	4.2	99.13	100	0.9			
Endosulfan II	20	2	0	79.28	100	20.7*	93.35	100	6.7	107.5	100	7.5	108.6	100	8.6	103.5	100	3.5			
p,p'-DDT	20	2	0	81.99	100	18.0	97.89	100	2.1	108.1	100	8.1	110.3	100	10.3	92.72	100	7.3			
Endrin Aldehyde	20	2	0	83.39	100	16.6	91.23	100	8.8	105.9	100	5.9	108.4	100	8.4	94.08	100	5.9			
Endosulfan Sulfate	20	2	0	83.35	100	16.7	73.22	100	26.8*	102.2	100	2.2	108.5	100	8.5	82.94	100	17.1			
Methoxychlor	20	2	0	80.77	100	19.2	108	100	8.0	106.3	100	6.3	111.7	100	11.7	95.42	100	4.6			
Endrin Ketone	20	2	0	73.45	100	26.6*	87.13	100	12.9	99.51	100	0.5	102.5	100	2.5	94.04	100	6.0			
DCB-Surrogate	20	2	0	106.5	100	6.5	108.4	100	8.4	119.3	100	19.3	126.2	100	26.2*	87.14	100	12.9			
Average Difference	20	2	0			18.9			12.9			6.2			10.3			6.8			

Flags/Notes: **** - Values outside of limits for this column/run***

Form7
RtWindow Summary

Method: EPA 8081B

	6G55136.D		6G55398.D		6G55221.D		6G55262.D		6G55398.D	
Data File:										
Calibration Name:	CAL PEST@2PPB		CAL PEST@2PPB		CAL PEST@100PPB		CAL PEST@100PPB		CAL PEST@2PPB	
Calibration Date/Time	2/3/2015 1:24:00 PM		2/18/2015 10:26:00 AM		2/7/2015 4:11:00 AM		2/9/2015 3:35:00 PM		2/18/2015 10:26:00 AM	
Compound	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit
TCMX-Surrogate 1 0	4.86	(4.80 - 4.92)	4.86	(4.80 - 4.92)	4.86	(4.80 - 4.92)	4.86	(4.80 - 4.92)	4.86	(4.80 - 4.92)
alpha-BHC 1 0	6.00	(5.96 - 6.04)	5.99	(5.95 - 6.03)	6.00	(5.96 - 6.04)	6.00	(5.96 - 6.04)	5.99	(5.95 - 6.03)
gamma-BHC 1 0	6.51	(6.47 - 6.55)	6.50	(6.46 - 6.54)	6.51	(6.47 - 6.55)	6.51	(6.47 - 6.55)	6.50	(6.46 - 6.54)
beta-BHC 1 0	7.38	(7.30 - 7.46)	7.37	(7.29 - 7.45)	7.38	(7.30 - 7.46)	7.38	(7.30 - 7.46)	7.37	(7.29 - 7.45)
Heptachlor 1 0	6.80	(6.76 - 6.84)	6.80	(6.76 - 6.84)	6.80	(6.76 - 6.84)	6.80	(6.76 - 6.84)	6.79	(6.75 - 6.83)
delta-BHC 1 0	7.72	(7.64 - 7.80)	7.71	(7.63 - 7.79)	7.72	(7.64 - 7.80)	7.71	(7.63 - 7.79)	7.71	(7.63 - 7.79)
Aldrin 1 0	7.16	(7.08 - 7.24)	7.16	(7.08 - 7.24)	7.17	(7.09 - 7.25)	7.17	(7.09 - 7.25)	7.16	(7.08 - 7.24)
Heptachlor Epoxide 1 0	7.99	(7.95 - 8.03)	7.98	(7.94 - 8.02)	7.99	(7.95 - 8.03)	7.99	(7.95 - 8.03)	7.98	(7.94 - 8.02)
v-chlordane 1 0	8.38	(8.34 - 8.42)	8.38	(8.34 - 8.42)	8.38	(8.34 - 8.42)	8.38	(8.34 - 8.42)	8.38	(8.34 - 8.42)
a-chlordane 1 0	8.45	(8.41 - 8.49)	8.44	(8.40 - 8.48)	8.45	(8.41 - 8.49)	8.45	(8.41 - 8.49)	8.44	(8.40 - 8.48)
Endosulfan I 1 0	8.34	(8.30 - 8.38)	8.34	(8.30 - 8.38)	8.35	(8.31 - 8.39)	8.34	(8.30 - 8.38)	8.34	(8.30 - 8.38)
p,p'-DDE 1 0	8.54	(8.46 - 8.62)	8.54	(8.46 - 8.62)	8.54	(8.46 - 8.62)	8.54	(8.46 - 8.62)	8.54	(8.46 - 8.62)
Dieldrin 1 0	8.78	(8.70 - 8.86)	8.78	(8.70 - 8.86)	8.79	(8.71 - 8.87)	8.78	(8.70 - 8.86)	8.78	(8.70 - 8.86)
Endrin 1 0	9.04	(9.00 - 9.08)	9.04	(9.00 - 9.08)	9.04	(9.00 - 9.08)	9.04	(9.00 - 9.08)	9.04	(9.00 - 9.08)
p,p'-DDD 1 0	9.48	(9.40 - 9.56)	9.48	(9.40 - 9.56)	9.48	(9.40 - 9.56)	9.48	(9.40 - 9.56)	9.48	(9.40 - 9.56)
Endosulfan II 1 0	9.60	(9.52 - 9.68)	9.60	(9.52 - 9.68)	9.60	(9.52 - 9.68)	9.60	(9.52 - 9.68)	9.59	(9.51 - 9.67)
p,p'-DDT 1 0	9.70	(9.62 - 9.78)	9.69	(9.61 - 9.77)	9.70	(9.62 - 9.78)	9.70	(9.62 - 9.78)	9.69	(9.61 - 9.77)
Endrin Aldehyde 1 0	10.09	(10.01 - 10.17)	10.08	(10.00 - 10.16)	10.09	(10.01 - 10.17)	10.08	(10.00 - 10.16)	10.08	(10.00 - 10.16)
Endosulfan Sulfate 1 0	10.45	(10.41 - 10.49)	10.44	(10.40 - 10.48)	10.45	(10.41 - 10.49)	10.45	(10.41 - 10.49)	10.44	(10.40 - 10.48)
Methoxychlor 1 0	10.39	(10.35 - 10.43)	10.39	(10.35 - 10.43)	10.39	(10.35 - 10.43)	10.39	(10.35 - 10.43)	10.38	(10.34 - 10.42)
Endrin Ketone 1 0	10.96	(10.88 - 11.04)	10.95	(10.87 - 11.03)	10.96	(10.88 - 11.04)	10.96	(10.88 - 11.04)	10.95	(10.87 - 11.03)
DCB-Surrogate 1 0	11.95	(11.89 - 12.01)	11.95	(11.89 - 12.01)	11.95	(11.89 - 12.01)	11.95	(11.89 - 12.01)	11.94	(11.88 - 12.00)
Chlordane 1 1	6.60	(6.56 - 6.64)	6.59	(6.55 - 6.63)						
Chlordane 1 2	8.38	(8.34 - 8.42)	8.38	(8.34 - 8.42)						
Chlordane 1 3	8.45	(8.41 - 8.49)	8.44	(8.40 - 8.48)						
Toxaphene 1 1	9.20	(9.16 - 9.24)	9.19	(9.15 - 9.23)						
Toxaphene 1 2	9.64	(9.60 - 9.68)	9.29	(9.25 - 9.33)						
Toxaphene 1 3	9.64	(9.60 - 9.68)	9.63	(9.59 - 9.67)						
Toxaphene 1 4	9.96	(9.92 - 10.00)	9.96	(9.92 - 10.00)						
Toxaphene 1 5	10.42	(10.38 - 10.46)	10.41	(10.37 - 10.45)						
TCMX-Surrogate 2 0	5.10	(5.04 - 5.16)	5.10	(5.04 - 5.16)	5.10	(5.04 - 5.16)	5.10	(5.04 - 5.16)	5.10	(5.04 - 5.16)
alpha-BHC 2 0	6.01	(5.97 - 6.05)	6.01	(5.97 - 6.05)	6.02	(5.98 - 6.06)	6.02	(5.98 - 6.06)	6.01	(5.97 - 6.05)
gamma-BHC 2 0	6.54	(6.50 - 6.58)	6.54	(6.50 - 6.58)	6.54	(6.50 - 6.58)	6.54	(6.50 - 6.58)	6.54	(6.50 - 6.58)
beta-BHC 2 0	6.62	(6.54 - 6.70)	6.61	(6.53 - 6.69)	6.62	(6.54 - 6.70)	6.62	(6.54 - 6.70)	6.61	(6.53 - 6.69)
Heptachlor 2 0	6.99	(6.95 - 7.03)	6.98	(6.94 - 7.02)	6.99	(6.95 - 7.03)	6.99	(6.95 - 7.03)	6.98	(6.94 - 7.02)
delta-BHC 2 0	7.11	(7.03 - 7.19)	7.11	(7.03 - 7.19)	7.11	(7.03 - 7.19)	7.11	(7.03 - 7.19)	7.11	(7.03 - 7.19)
Aldrin 2 0	7.43	(7.35 - 7.51)	7.43	(7.35 - 7.51)	7.44	(7.36 - 7.52)	7.43	(7.35 - 7.51)	7.43	(7.35 - 7.51)
Heptachlor Epoxide 2 0	8.15	(8.11 - 8.19)	8.14	(8.10 - 8.18)	8.15	(8.11 - 8.19)	8.15	(8.11 - 8.19)	8.14	(8.10 - 8.18)
v-chlordane 2 0	8.36	(8.32 - 8.40)	8.35	(8.31 - 8.39)	8.36	(8.32 - 8.40)	8.36	(8.32 - 8.40)	8.35	(8.31 - 8.39)
a-chlordane 2 0	8.56	(8.52 - 8.60)	8.56	(8.52 - 8.60)	8.56	(8.52 - 8.60)	8.56	(8.52 - 8.60)	8.56	(8.52 - 8.60)
Endosulfan I 2 0	8.61	(8.57 - 8.65)	8.61	(8.57 - 8.65)	8.61	(8.57 - 8.65)	8.61	(8.57 - 8.65)	8.61	(8.57 - 8.65)
p,p'-DDE 2 0	8.84	(8.76 - 8.92)	8.84	(8.76 - 8.92)	8.85	(8.77 - 8.93)	8.84	(8.76 - 8.92)	8.84	(8.76 - 8.92)
Dieldrin 2 0	9.00	(8.92 - 9.08)	9.00	(8.92 - 9.08)	9.00	(8.92 - 9.08)	9.00	(8.92 - 9.08)	9.00	(8.92 - 9.08)
Endrin 2 0	9.47	(9.43 - 9.51)	9.47	(9.43 - 9.51)	9.47	(9.43 - 9.51)	9.47	(9.43 - 9.51)	9.47	(9.43 - 9.51)
p,p'-DDD 2 0	9.54	(9.46 - 9.62)	9.54	(9.46 - 9.62)	9.54	(9.46 - 9.62)	9.54	(9.46 - 9.62)	9.54	(9.46 - 9.62)
Endosulfan II 2 0	9.68	(9.60 - 9.76)	9.68	(9.60 - 9.76)	9.69	(9.61 - 9.77)	9.69	(9.61 - 9.77)	9.68	(9.60 - 9.76)
p,p'-DDT 2 0	9.92	(9.84 - 10.00)	9.92	(9.84 - 10.00)	9.92	(9.84 - 10.00)	9.92	(9.84 - 10.00)	9.92	(9.84 - 10.00)
Endrin Aldehyde 2 0	10.09	(10.01 - 10.17)	10.08	(10.00 - 10.16)	10.09	(10.01 - 10.17)	10.09	(10.01 - 10.17)	10.08	(10.00 - 10.16)
Endosulfan Sulfate 2 0	10.24	(10.20 - 10.28)	10.23	(10.19 - 10.27)	10.24	(10.20 - 10.28)	10.24	(10.20 - 10.28)	10.23	(10.19 - 10.27)
Methoxychlor 2 0	10.97	(10.93 - 11.01)	10.97	(10.93 - 11.01)	10.97	(10.93 - 11.01)	10.97	(10.93 - 11.01)	10.97	(10.93 - 11.01)
Endrin Ketone 2 0	11.23	(11.15 - 11.31)	11.22	(11.14 - 11.30)	11.23	(11.15 - 11.31)	11.23	(11.15 - 11.31)	11.22	(11.14 - 11.30)
DCB-Surrogate 2 0	12.90	(12.84 - 12.96)	12.90	(12.84 - 12.96)	12.91	(12.85 - 12.97)	12.90	(12.84 - 12.96)	12.90	(12.84 - 12.96)
Chlordane 2 1	6.78	(6.74 - 6.82)	6.77	(6.73 - 6.81)						
Chlordane 2 2	8.36	(8.32 - 8.40)	8.35	(8.31 - 8.39)						
Chlordane 2 3	8.56	(8.52 - 8.60)	8.56	(8.52 - 8.60)						
Toxaphene 2 1	9.23	(9.19 - 9.27)	9.23	(9.19 - 9.27)						
Toxaphene 2 2	9.45	(9.41 - 9.49)	9.45	(9.41 - 9.49)						
Toxaphene 2 3	9.98	(9.94 - 10.02)	9.97	(9.93 - 10.01)						
Toxaphene 2 4	10.73	(10.69 - 10.77)	10.72	(10.68 - 10.76)						
Toxaphene 2 5	10.81	(10.77 - 10.85)	10.80	(10.76 - 10.84)						

TCLP Pesticide Data

Form1

ORGANICS PESTICIDE REPORT

Sample Number: AC83375-003(T)
Client Id: WC01
Data File: 6G55467.D
Analysis Date: 02/20/15 11:16
Date Rec/Extracted: 02/13/15-02/19/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Aqueous
Initial Vol: 100ml
Final Vol: 5ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
57-74-9	Chlordane	0.0010	U	1024-57-3	Heptachlor Epoxide	0.00010	U
72-20-8	Endrin	0.00010	U	72-43-5	Methoxychlor	0.00010	U
58-89-9	gamma-BHC	0.00010	U	8001-35-2	Toxaphene	0.0025	U
76-44-8	Heptachlor	0.00010	U				

Worksheet #: 334394

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Data Path : G:\Gcdata\2015\GC_6\Data\02-20-15\
Data File : 6G55467.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20 Feb 2015 11:16
Operator : MS
Sample : AC83375-003(T)
Misc : A,PEST
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 20 16:07:26 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

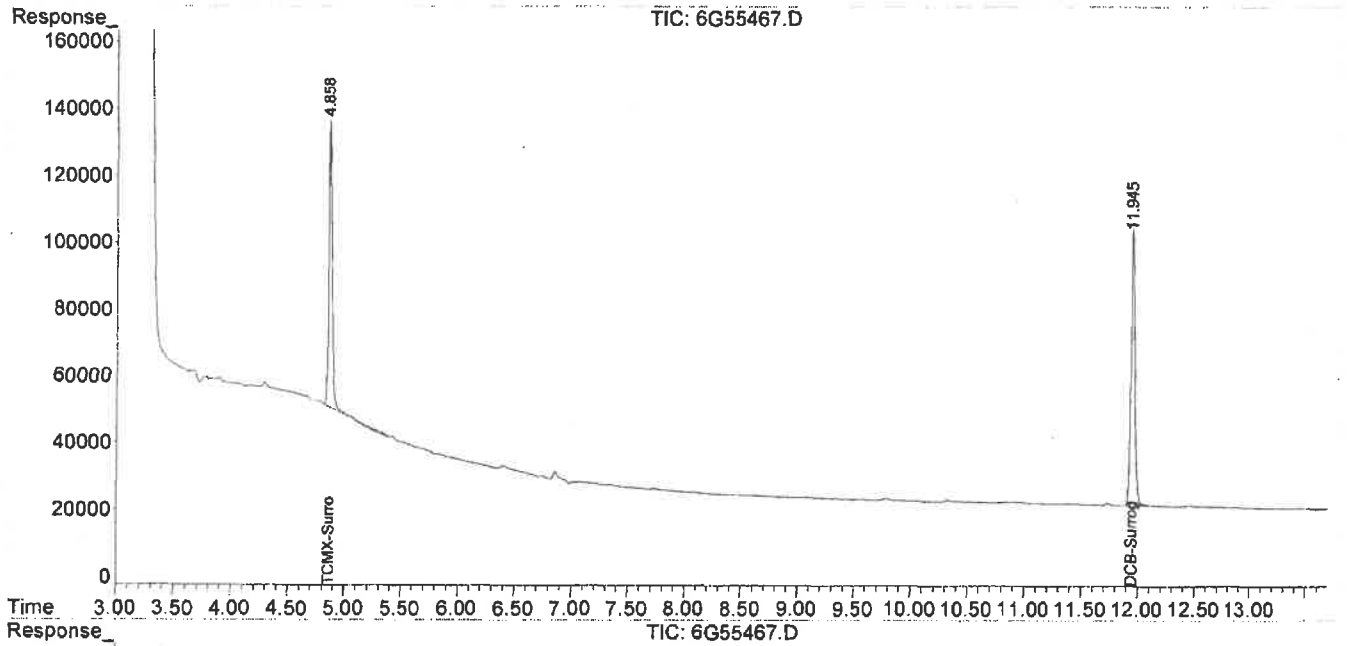
	Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
	Target Compounds						
1)	TCMX-Surrogate	4.859	5.102	1783507	2351370	66.184	71.253
22)	DCB-Surrogate	11.946	12.898	1956150	2360121	80.829	81.430

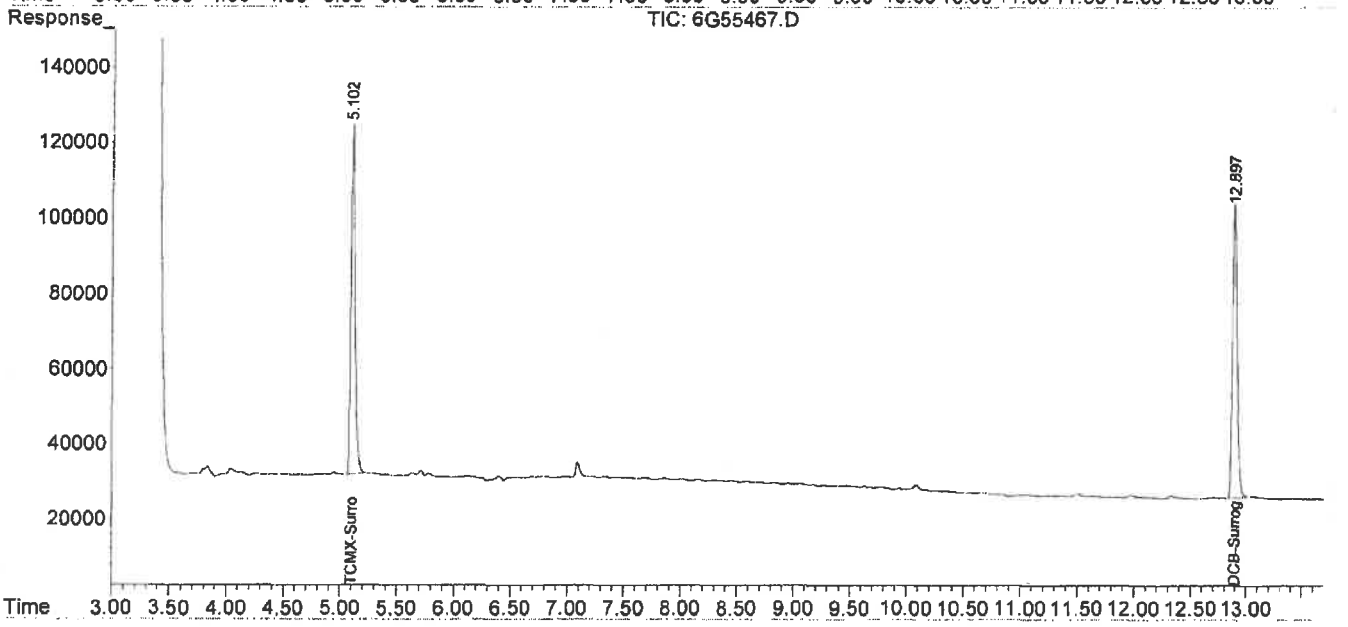
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\02-20-15\
Data File : 6G55467.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20 Feb 2015 11:16
Operator : MS
Sample : AC83375-003(T)
Misc : A,PEST
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 20 16:07:26 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





Form1

ORGANICS PESTICIDE REPORT

Sample Number: WMB40639
Client Id:
Data File: 6G55461.D
Analysis Date: 02/20/15 09:31
Date Rec/Extracted: NA-02/19/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Aqueous
Initial Vol: 1000ml
Final Vol: 1ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
57-74-9	Chlordane	0.000020	U	1024-57-3	Heptachlor Epoxide	0.0000020	U
72-20-8	Endrin	0.0000020	U	72-43-5	Methoxychlor	0.0000020	U
58-89-9	gamma-BHC	0.0000020	U	8001-35-2	Toxaphene	0.000050	U
76-44-8	Heptachlor	0.0000020	U				

Worksheet #: 334396

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_6\Data\02-20-15\
Data File : 6G55461.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20 Feb 2015 9:31
Operator : MS
Sample : WMB40639
Misc : A,PEST
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 20 16:04:48 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

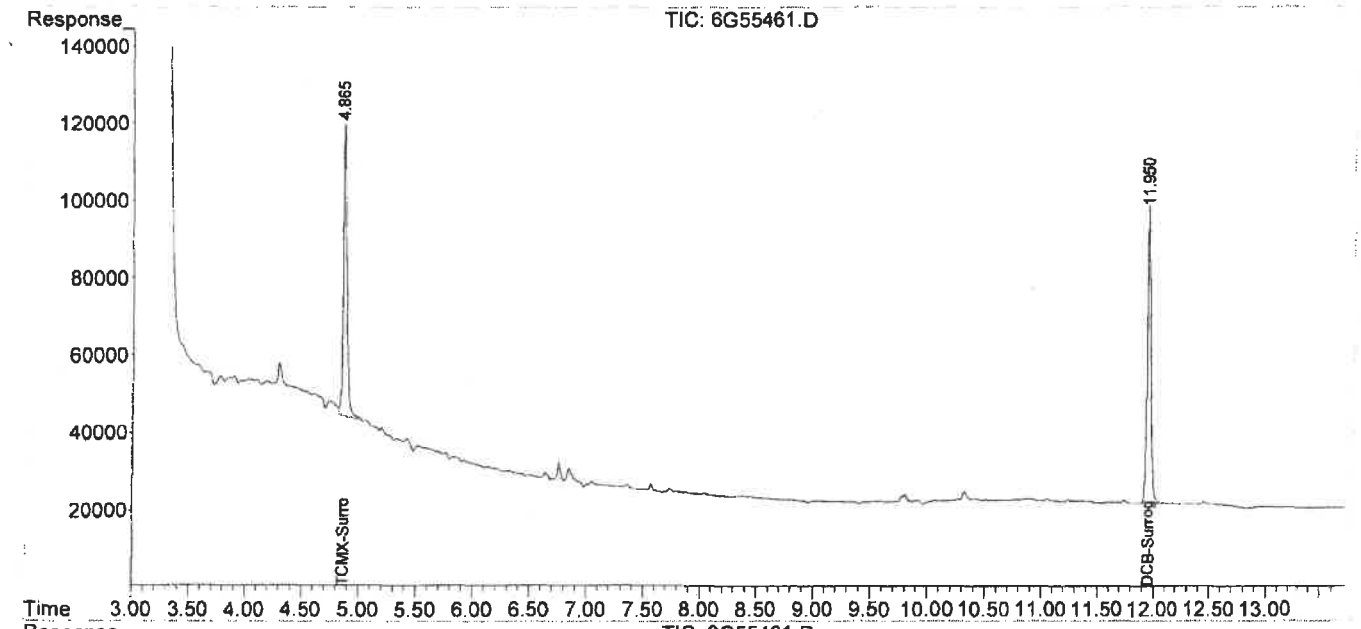
	Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
	Target Compounds						
1)	TCMX-Surrogate	4.865	5.104	1651455	1932157	61.052	58.045
22)	DCB-Surrogate	11.951	12.899	1781832	2101229	73.163	72.070

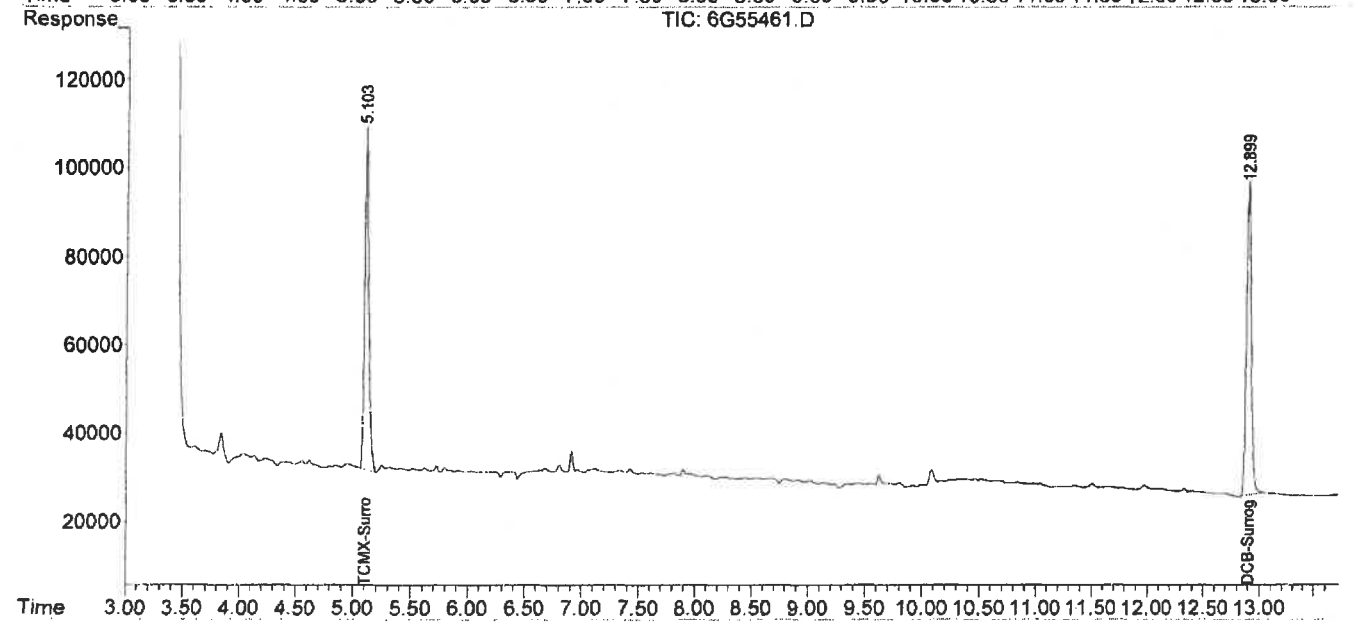
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\02-20-15\
Data File : 6G55461.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20 Feb 2015 9:31
Operator : MS
Sample : WMB40639
Misc : A,PEST
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 20 16:04:48 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





Form1

ORGANICS PESTICIDE REPORT

Sample Number: EF-1-V-204478(2/19/15
Client Id:
Data File: 6G55469.D
Analysis Date: 02/20/15 11:51
Date Rec/Extracted: NA-02/19/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8081B
Matrix: Aqueous
Initial Vol: 100ml
Final Vol: 5ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
57-74-9	Chlordane	0.0010	U	1024-57-3	Heptachlor Epoxide	0.00010	U
72-20-8	Endrin	0.00010	U	72-43-5	Methoxychlor	0.00010	U
58-89-9	gamma-BHC	0.00010	U	8001-35-2	Toxaphene	0.0025	U
76-44-8	Heptachlor	0.00010	U				

Worksheet #: 334394

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Data Path : G:\Gcdata\2015\GC_6\Data\02-20-15\
Data File : 6G55469.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20 Feb 2015 11:51
Operator : MS
Sample : EF-1-V-204478(2/19/15)
Misc : A,PEST
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 20 16:08:23 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32

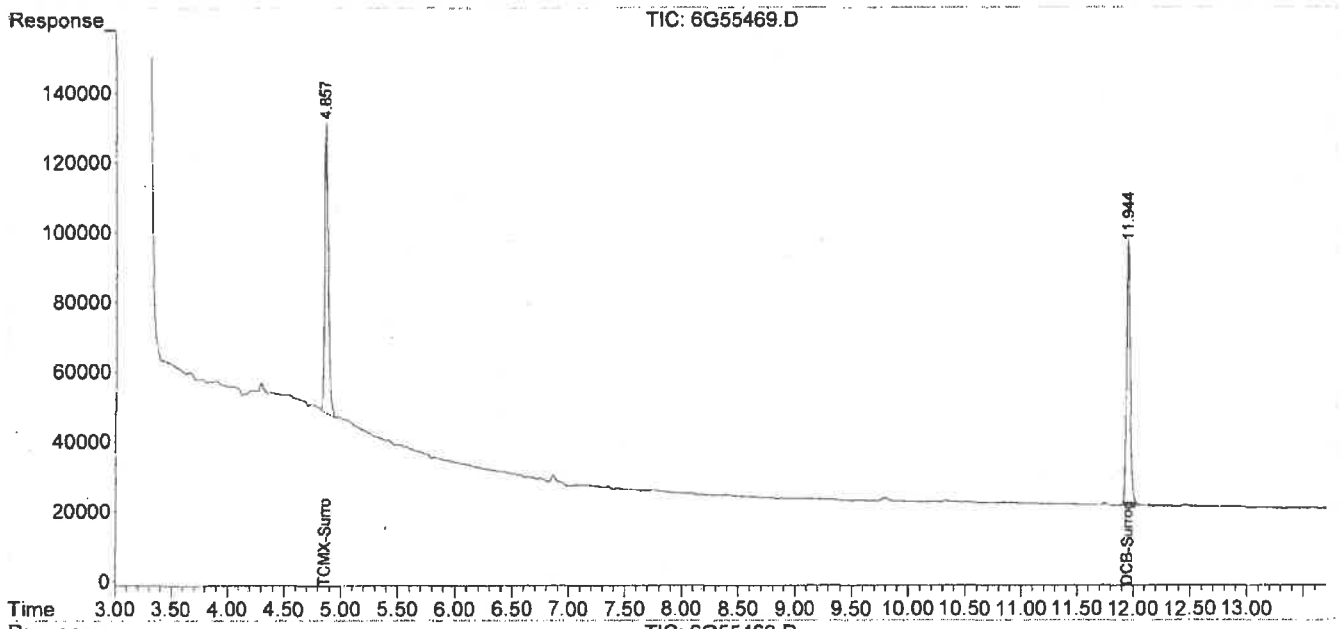
	Compound	RT#1	RT#2	Resp#1	Resp#2	pg#1	pg#2
	Target Compounds						
1)	TCMX-Surrogate	4.858	5.102	1757803	2299307	65.182	69.599
22)	DCB-Surrogate	11.945	12.898	1793762	2174458	73.684	74.705

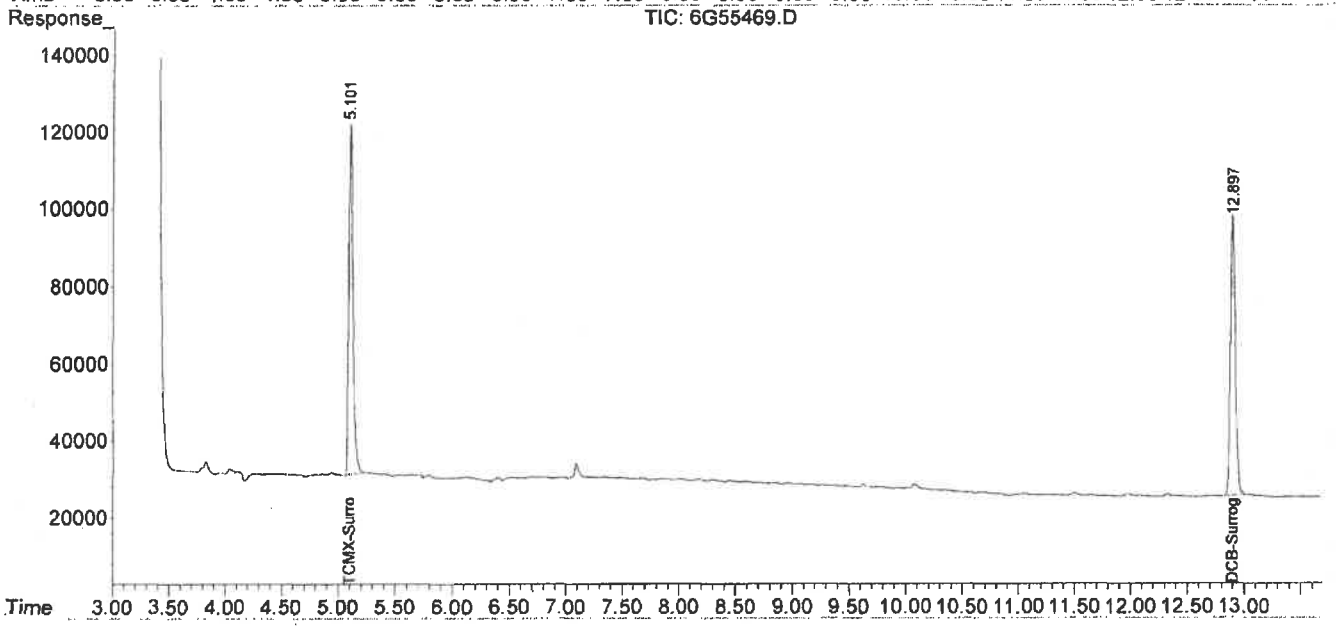
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_6\Data\02-20-15\
Data File : 6G55469.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20 Feb 2015 11:51
Operator : MS
Sample : EF-1-V-204478(2/19/15)
Misc : A,PEST
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: PEST1.E
Integration File signal 2: Pest2.e
Quant Time: Feb 20 16:08:23 2015
Quant Method : G:\GCDATA\2015\GC_6\METHODQT\6G_P0218.M
Quant Title : @GC_6,ug,608,8081
QLast Update : Wed Feb 18 11:37:06 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1ul
Signal #1 Phase : db-1701 Signal #2 Phase: db-608
Signal #1 Info : .32 Signal #2 Info : .32





FORM2

Surrogate Recovery

Method: EPA 8081B

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column1 S3 Recov	Column2 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
6G55461.D	WMB40639	Aqueous	02/20/15 09:31	1		61	58	73	72		
6G55469.D	EF-1-V-20447	Aqueous	02/20/15 11:51	1		65	70	74	75		
6G55467.D	AC83375-003(	Aqueous	02/20/15 11:16	1		66	71	81	81		
6G55462.D	WMB40639(M	Aqueous	02/20/15 09:49	1		63	64	67	65		
6G55463.D	AC83323-007(	Aqueous	02/20/15 10:06	1		77	77	71	70		
6G55464.D	AC83323-007(	Aqueous	02/20/15 10:24	1		76	79	69	67		
6G55466.D	AC83323-007(	Aqueous	02/20/15 10:59	1		64	65	66	65		

Flags: *SD=Surrogate diluted out*
*=Surrogate out

Method: EPA 8081B

Aqueous Limits

Compound	Spike Amt	Limits
S1=TCMX-Surrogate	100	30-150
S2=TCMX-Surrogate	100	30-150
S3=DCB-Surrogate	100	30-150
S4=DCB-Surrogate	100	30-150

Form3
Recovery Data
QC Batch: WMB40639

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55462.D	WMB40639(MS)	2/20/2015 9:49:00 AM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8081 | Matrix: Aqueous | QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	75.99	0	100	76	40	140
gamma-BHC	1	74.62	0	100	75	40	140
beta-BHC	1	75.02	0	100	75	40	140
Heptachlor	1	68.88	0	100	69	40	140
delta-BHC	1	78.81	0	100	79	40	140
Aldrin	1	69.16	0	100	69	40	140
Heptachlor Epoxide	1	73.79	0	100	74	40	140
Endosulfan I	1	80.94	0	100	81	40	140
p,p'-DDE	1	70.56	0	100	71	40	140
Dieldrin	1	74.47	0	100	74	40	140
Endrin	1	75.57	0	100	76	40	140
p,p'-DDD	1	81.48	0	100	81	40	140
Endosulfan II	1	84.16	0	100	84	40	140
p,p'-DDT	1	70.07	0	100	70	40	140
Endrin Aldehyde	1	75.44	0	100	75	40	140
Endosulfan Sulfate	1	73.8	0	100	74	40	140
Methoxychlor	1	71.41	0	100	71	40	140
Endrin Ketone	1	80.56	0	100	81	40	140

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: WMB40639

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55463.D	AC83323-007(T)(MS)	2/20/2015 10:06:00 AM
Non Spike(If applicable):	6G55466.D	AC83323-007(T)	2/20/2015 10:59:00 AM
Inst Blank(If applicable):			

Method: 8081 Matrix: Aqueous QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	84.22	0	100	84	30	150
gamma-BHC	1	81.95	0	100	82	30	150
beta-BHC	1	79.56	0	100	80	30	150
Heptachlor	1	79.96	0	100	80	30	150
delta-BHC	1	84.97	0	100	85	30	150
Aldrin	1	78.73	0	100	79	30	150
Heptachlor Epoxide	1	77.88	0	100	78	30	150
Endosulfan I	1	83.67	0	100	84	30	150
p,p'-DDE	1	75.9	0	100	76	30	150
Dieldrin	1	77.12	0	100	77	30	150
Endrin	1	79.71	0	100	80	30	150
p,p'-DDD	1	82.05	0	100	82	30	150
Endosulfan II	1	84.76	0	100	85	30	150
p,p'-DDT	1	70.95	0	100	71	30	150
Endrin Aldehyde	1	83.89	0	100	84	30	150
Endosulfan Sulfate	1	75.88	0	100	76	30	150
Methoxychlor	1	74.5	0	100	74	30	150
Endrin Ketone	1	83.29	0	100	83	30	150

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55464.D	AC83323-007(T)(MSD)	2/20/2015 10:24:00 AM
Non Spike(If applicable):	6G55466.D	AC83323-007(T)	2/20/2015 10:59:00 AM
Inst Blank(If applicable):			

Method: 8081 Matrix: Aqueous QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
alpha-BHC	1	84.21	0	100	84	30	150
gamma-BHC	1	82.56	0	100	83	30	150
beta-BHC	1	80.44	0	100	80	30	150
Heptachlor	1	82.48	0	100	82	30	150
delta-BHC	1	86.37	0	100	86	30	150
Aldrin	1	80.59	0	100	81	30	150
Heptachlor Epoxide	1	77.81	0	100	78	30	150
Endosulfan I	1	84.33	0	100	84	30	150
p,p'-DDE	1	76.54	0	100	77	30	150
Dieldrin	1	78.12	0	100	78	30	150
Endrin	1	79.89	0	100	80	30	150
p,p'-DDD	1	83.72	0	100	84	30	150
Endosulfan II	1	86.14	0	100	86	30	150
p,p'-DDT	1	72.16	0	100	72	30	150
Endrin Aldehyde	1	85.3	0	100	85	30	150
Endosulfan Sulfate	1	77.56	0	100	78	30	150
Methoxychlor	1	76.75	0	100	77	30	150
Endrin Ketone	1	86.02	0	100	86	30	150

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA
QC Batch: WMB40639

	Data File	Sample ID:	Analysis Date
Spike or Dup:	6G55464.D	AC83323-007(T)(MSD)	2/20/2015 10:24:00 AM
Duplicate(If applicable):	6G55463.D	AC83323-007(T)(MS)	2/20/2015 10:06:00 AM
Inst Blank(If applicable):			

Method: 8081 Matrix: Aqueous QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
alpha-BHC	1	84.21	84.22	0.01	20
gamma-BHC	1	82.56	81.95	0.74	20
beta-BHC	1	80.44	79.56	1.1	20
Heptachlor	1	82.48	79.96	3.1	20
delta-BHC	1	86.37	84.97	1.6	20
Aldrin	1	80.59	78.73	2.3	20
Heptachlor Epoxide	1	77.81	77.88	0.09	20
Endosulfan I	1	84.33	83.67	0.79	20
p,p'-DDE	1	76.54	75.9	0.84	20
Dieldrin	1	78.12	77.12	1.3	20
Endrin	1	79.89	79.71	0.23	20
p,p'-DDD	1	83.72	82.05	2	20
Endosulfan II	1	86.14	84.76	1.6	20
p,p'-DDT	1	72.16	70.95	1.7	20
Endrin Aldehyde	1	85.3	83.89	1.7	20
Endosulfan Sulfate	1	77.56	75.88	2.2	20
Methoxychlor	1	76.75	74.5	3	20
Endrin Ketone	1	86.02	83.29	3.2	20

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: WMB40639
Blank Data File: 6G55461.D
Matrix: Aqueous

Blank Analysis Date: 02/20/15 09:31
Blank Extraction Date: 02/19/15
(If Applicable)
Method: EPA 8081B

Sample Number	Data File	Analysis Date
AC83375-003(T)	6G55467.D	02/20/15 11:16
EF-1-V-204478(2/1	6G55469.D	02/20/15 11:51
AC83323-007(T)(M	6G55464.D	02/20/15 10:24
AC83323-007(T)(M	6G55463.D	02/20/15 10:06
WMB40639(MS)	6G55462.D	02/20/15 09:49
AC83323-007(T)	6G55466.D	02/20/15 10:59

Form 5

Method: EPA 8081B
Instrument: GC_6

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G55389.D	CAL EVAL	02/18/15 05:01	Soil					
6G55390.D	BLK	02/18/15 05:36	Soil					
6G55391.D	100PPB	02/18/15 05:54	Soil					
6G55392.D	200PPB	02/18/15 06:11	Soil					
6G55393.D	CAL PEST@100PPB	02/18/15 08:55	Soil	6G55398.	11.9557	0.0904	12.9008	0.0163
6G55394.D	CAL PEST@200PPB	02/18/15 09:16	Soil	6G55398.	11.9490	0.0343	12.8983	0.0031
6G55395.D	CAL PEST@400PPB	02/18/15 09:33	Soil	6G55398.	11.9467	0.0151	12.8994	0.0054
6G55396.D	CAL PEST@50PPB	02/18/15 09:51	Soil	6G55398.	11.9479	0.0251	12.9007	0.0155
6G55397.D	CAL PEST@10PPB	02/18/15 10:08	Soil	6G55398.	11.9483	0.0285	12.8990	0.0023
6G55398.D	CAL PEST@2PPB	02/18/15 10:26	Soil	6G55398.	11.9449	0	12.8987	0
6G55399.D	CAL CHLOR@100PPB	02/18/15 10:44	Soil	6G55398.	11.9485	0.0301	12.9010	0.0178
6G55400.D	CAL TOX@500PPB	02/18/15 11:01	Soil	6G55398.	11.9485	0.0301	12.9013	0.0202
6G55401.D	ICV	02/18/15 11:37	Soil	6G55398.	11.9546	0.0812	12.9030	0.0333
6G55402.D	WMB40446	02/18/15 11:55	Aqueous	6G55398.	11.9512	0.0527	12.9028	0.0318
6G55403.D	WMB40446(MS)	02/18/15 12:13	Aqueous	6G55398.	11.9504	0.046	12.9032	0.0349
6G55404.D	SMB40448	02/18/15 12:31	Soil	6G55398.	11.9497	0.0402	12.9028	0.0318
6G55405.D	SMB40448(MS)	02/18/15 12:48	Soil	6G55398.	11.9492	0.036	12.9025	0.0295
6G55406.D	SMB40443(MS)	02/18/15 13:06	Soil	6G55398.	11.9502	0.0444	12.9039	0.0403
6G55407.D	AC83330-015	02/18/15 13:24	Aqueous	6G55398.	11.9545	0.0803	12.9066	0.0612
6G55408.D	AC83375-001	02/18/15 13:41	Soil	6G55398.	11.9522	0.0611	12.9041	0.0419
6G55409.D	AC83375-002	02/18/15 13:59	Soil	6G55398.	11.9517	0.0569	12.9031	0.0341
6G55410.D	CAL PEST@100PPB	02/18/15 15:19	Soil	6G55398.	11.9498	0.041	12.9044	0.0442

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8081B
Instrument: GC_6 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
6G55442.D	CAL EVAL	02/20/15 01:01	Soil					
6G55443.D	CAL PEST@100PPB	02/20/15 01:19	Soil	6G55443.	11.9467	0	12.8976	0
6G55444.D	CAL PEST@200PPB	02/20/15 01:36	Soil	6G55443.	11.9453	0.0117	12.8988	0.0093
6G55445.D	SMB40631	02/20/15 01:54	Soil	6G55443.	11.9459	0.0067	12.8969	0.0054
6G55446.D	SMB40631(MS)	02/20/15 02:11	Soil	6G55443.	11.9453	0.0117	12.8968	0.0062
6G55447.D	AC83385-001	02/20/15 02:29	Soil	6G55443.	11.9446	0.0176	12.8953	0.0178
6G55448.D	AC83385-002	02/20/15 02:46	Soil	6G55443.	11.9441	0.0218	12.8964	0.0093
6G55449.D	AC83385-003	02/20/15 03:04	Soil	6G55443.	11.9437	0.0251	12.8955	0.0163
6G55450.D	AC83385-004	02/20/15 03:21	Soil	6G55443.	11.9428	0.0327	12.8950	0.0202
6G55451.D	AC83407-001	02/20/15 03:39	Soil	6G55443.	11.9442	0.0209	12.8966	0.0078
6G55452.D	AC83408-001	02/20/15 03:56	Soil	6G55443.	11.9441	0.0218	12.8968	0.0062
6G55453.D	AC83413-013	02/20/15 04:14	Soil	6G55443.	11.9476	0.0075	12.8992	0.0124
6G55454.D	AC83413-015	02/20/15 04:31	Soil	6G55443.	11.9467	0	12.8986	0.0077
6G55455.D	AC83390-001	02/20/15 04:49	Soil	6G55443.	11.9438	0.0243	12.8966	0.0078
6G55456.D	AC83390-002	02/20/15 05:06	Soil	6G55443.	11.9448	0.0159	12.8968	0.0062
6G55457.D	AC83390-003	02/20/15 05:24	Soil	6G55443.	11.9435	0.0268	12.8960	0.0124
6G55458.D	CAL PEST@100PPB	02/20/15 06:46	Soil	6G55443.	11.9438	0.0243	12.8958	0.014
6G55459.D	200PPB	02/20/15 08:29	Soil	6G55458.	11.9485	0.0393	12.8964	0.0047
6G55460.D	CAL EVAL	02/20/15 09:05	Soil					
6G55461.D	WMB40639	02/20/15 09:31	Aqueous	6G55458.	11.9505	0.0561	12.8994	0.0279
6G55462.D	WMB40639(MS)	02/20/15 09:49	Aqueous	6G55458.	11.9474	0.0301	12.8989	0.024
6G55463.D	AC83323-007(T)(MS)	02/20/15 10:06	Aqueous	6G55458.	11.9458	0.0167	12.8984	0.0202
6G55464.D	AC83323-007(T)(MSD)	02/20/15 10:24	Aqueous	6G55458.	11.9456	0.0151	12.8983	0.0194
6G55465.D	AC83405-001	02/20/15 10:41	Aqueous	6G55458.	11.9457	0.0159	12.8985	0.0209
6G55466.D	AC83323-007(T)	02/20/15 10:59	Aqueous	6G55458.	11.9458	0.0167	12.8992	0.0264
6G55467.D	AC83375-003(T)	02/20/15 11:16	Aqueous	6G55458.	11.9457	0.0159	12.8980	0.0171
6G55468.D	EF-1-V-204478(2/13/15)	02/20/15 11:34	Aqueous	6G55458.	11.9455	0.0142	12.8985	0.0209
6G55469.D	EF-1-V-204478(2/19/15)	02/20/15 11:51	Aqueous	6G55458.	11.9453	0.0126	12.8980	0.0171
6G55470.D	CAL PEST@100PPB	02/20/15 12:25	Aqueous	6G55458.	11.9513	0.0628	12.8997	0.0302

Drift Compound: DCB-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5021319 0263

Method: EPA 8081B

rm 6
Initial Calibration

Instrument: _6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G55398.	CAL PEST@2PPB	02/18/15 10:26	2	6G55397.	CAL PEST@10PPB	02/18/15 10:08
3	6G55396.	CAL PEST@50PPB	02/18/15 09:51	4	6G55393.	CAL PEST@100PPB	02/18/15 08:55
5	6G55394.	CAL PEST@200PPB	02/18/15 09:16	6	6G55395.	CAL PEST@400PPB	02/18/15 09:33
7	6G55399.	CAL CHLOR@100PP	02/18/15 10:44	8	6G55400.	CAL TOX@500PPB	02/18/15 11:01

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
TCMX-Surrogate	1	0	Qua	3.2280	3.3106	2.8817	2.5767	2.4274	2.0297	---	---	2.74	4.86	0.989	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	1	0	Avg	3.6907	3.5929	3.4705	3.2638	3.2671	2.8684	---	---	3.36	5.99	0.995	1.00	8.8	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	1	0	Qua	3.6323	3.5198	3.3463	3.1348	3.0100	2.6539	---	---	3.22	6.50	0.995	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	1	0	Qua	2.3484	2.1209	1.6719	1.6577	1.5380	1.2779	---	---	1.77	7.37	0.988	1.00	22	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	1	0	Qua	2.9718	2.9522	2.6114	2.7235	2.4421	2.0443	---	---	2.62	6.79	0.988	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	1	0	Qua	5.0860	3.4972	2.9487	2.9279	2.7035	2.3176	---	---	3.25	7.71	0.992	1.00	30	2.00	10.00	50.00	100.0	200.0	400.0		
Aldrin	1	0	Qua	3.5647	3.4872	3.1310	3.1468	2.8764	2.4012	---	---	3.10	7.16	0.988	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	1	0	Qua	3.6933	3.6039	3.1132	3.0067	2.6631	2.1765	---	---	3.04	7.98	0.984	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
γ-chlordane	1	0	Qua	5.0771	3.8290	3.4099	3.4071	3.0228	2.4851	---	---	3.54	8.37	0.985	1.00	25	2.00	10.00	50.00	100.0	200.0	400.0		
α-chlordane	1	0	Qua	4.2431	3.6492	3.1354	3.1182	2.7714	2.2796	---	---	3.20	8.44	0.985	1.00	21	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	1	0	Qua	3.1689	2.9042	2.4167	2.2701	2.0256	1.6558	---	---	2.41	8.34	0.985	1.00	23	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	1	0	Qua	3.3079	3.1305	2.8814	2.9246	2.6056	2.1257	---	---	2.83	8.54	0.984	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	1	0	Qua	3.7208	3.0858	2.8369	2.8824	2.5837	2.1198	---	---	2.87	8.78	0.985	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	1	0	Qua	3.1225	2.6946	2.4590	2.5198	2.2372	1.8429	---	---	2.48	9.04	0.985	1.00	17	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	1	0	Qua	2.3251	2.3331	2.1527	2.1717	1.9579	1.6443	---	---	2.10	9.48	0.988	1.00	12	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	1	0	Qua	3.0488	2.7038	2.3849	2.2996	2.0877	1.7438	---	---	2.38	9.59	0.988	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	1	0	Qua	1.2868	1.6628	1.8507	2.1124	1.9366	1.6585	---	---	1.75	9.69	0.990	0.999	16	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	1	0	Qua	1.7405	2.1096	1.9740	1.9069	1.7716	1.5269	---	---	1.84	10.08	0.992	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	1	0	Qua	2.7036	2.4056	2.2111	2.2195	2.0079	1.7017	---	---	2.21	10.44	0.990	1.00	15	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	1	0	Qua	1.1276	1.1079	1.0380	1.0366	0.9256	0.7686	---	---	1.00	10.38	0.986	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	1	0	Qua	2.8178	2.2750	1.9271	1.8269	1.7098	1.4648	---	---	2.00	10.95	0.992	1.00	24	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	1	0	Qua	6.7563	3.5941	2.5940	2.4136	2.1518	1.7851	---	---	3.22	11.95	0.988	1.00	57	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane	1	1	Avg	---	---	---	---	---	---	---	---	0.164	6.59	-1	-1	Lvl=7	100.0							
Chlordane	1	2	Avg	---	---	---	---	---	---	---	---	0.415	8.38	-1	-1	Lvl=7	100.0							
Chlordane	1	3	Avg	---	---	---	---	---	---	---	---	0.625	8.44	-1	-1	Lvl=7	100.0							
Toxaphene	1	1	Avg	---	---	---	---	---	---	---	---	0.0257	9.20	-1	-1	Lvl=8	500.0							
Toxaphene	1	2	Avg	---	---	---	---	---	---	---	---	0.0341	9.29	-1	-1	Lvl=8	500.0							
Toxaphene	1	3	Avg	---	---	---	---	---	---	---	---	0.0393	9.63	-1	-1	Lvl=8	500.0							
Toxaphene	1	4	Avg	---	---	---	---	---	---	---	---	0.103	9.96	-1	-1	Lvl=8	500.0							
Toxaphene	1	5	Avg	---	---	---	---	---	---	---	---	0.0483	10.41	-1	-1	Lvl=8	500.0							
TCMX-Surrogate	2	0	Qua	3.8170	4.0080	3.3580	3.2691	3.0043	2.5871	---	---	3.34	5.10	0.992	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
alpha-BHC	2	0	Avg	3.4937	3.5701	3.7271	3.5811	3.7601	3.4086	---	---	3.59	6.01	0.997	0.999	3.7	2.00	10.00	50.00	100.0	200.0	400.0		
gamma-BHC	2	0	Avg	3.8494	3.6224	3.6154	3.4005	3.4328	3.0650	---	---	3.50	6.54	0.996	1.00	7.6	2.00	10.00	50.00	100.0	200.0	400.0		
beta-BHC	2	0	Qua	2.4014	2.4648	2.1985	2.0456	2.0256	1.7918	---	---	2.15	6.61	0.996	1.00	12	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor	2	0	Qua	4.7450	3.4743	3.1623	3.2195	3.0276	2.6718	---	---	3.38	6.98	0.995	1.00	21	2.00	10.00	50.00	100.0	200.0	400.0		
delta-BHC	2	0	Qua	8.1612	3.4629	3.4138	3.1493	3.1843	2.8589	---	---	4.04	7.11	0.997	1.00	50	2.00	10.00	50.00	100.0	200.0	400.0		

Avg Rsd Col 1: 19.3 Avg Rsd Col 2: 17.3

HAZ. - 344

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

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Form 6
Initial Calibration

Method: EPA 8081B

Instrument: GC_6

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	6G55398.	CAL PEST@2PPB	02/18/15 10:26	2	6G55397.	CAL PEST@10PPB	02/18/15 10:08
3	6G55396.	CAL PEST@50PPB	02/18/15 09:51	4	6G55393.	CAL PEST@100PPB	02/18/15 08:55
5	6G55394.	CAL PEST@200PPB	02/18/15 09:16	6	6G55395.	CAL PEST@400PPB	02/18/15 09:33
7	6G55399.	CAL CHLOR@100PP	02/18/15 10:44	8	6G55400.	CAL TOX@500PPB	02/18/15 11:01

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Aldrin	2	0	Qua	4.9014	3.5460	3.5224	3.5285	3.4092	3.0000	----	----	3.65	7.43	0.995	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
Heptachlor Epoxide	2	0	Qua	4.7280	3.7365	3.4376	3.3683	3.2109	2.7382	----	----	3.54	8.15	0.992	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
γ-chlordane	2	0	Qua	4.8287	3.7224	3.5734	3.6147	3.4474	2.9951	----	----	3.70	8.35	0.994	1.00	16	2.00	10.00	50.00	100.0	200.0	400.0		
a-chlordane	2	0	Qua	4.2110	3.5361	3.2679	3.1702	2.9525	2.4603	----	----	3.27	8.56	0.989	1.00	18	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan I	2	0	Qua	3.8175	3.3849	3.3120	3.1648	3.1363	2.7737	----	----	3.26	8.61	0.996	1.00	11	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDE	2	0	Avg	3.5620	3.0382	3.0723	3.1218	3.0530	2.6813	----	----	3.09	8.84	0.995	1.00	9.1	2.00	10.00	50.00	100.0	200.0	400.0		
Dieldrin	2	0	Avg	3.4505	3.0948	3.0306	3.1004	3.0030	2.6153	----	----	3.05	9.00	0.994	1.00	8.8	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin	2	0	Qua	2.9854	2.5457	2.4126	2.3748	2.2719	1.9325	----	----	2.42	9.47	0.992	1.00	14	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDD	2	0	Qua	2.8560	2.3469	2.2945	2.1961	2.2065	1.9829	----	----	2.31	9.54	0.997	1.00	13	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan II	2	0	Qua	3.4104	2.5619	2.5268	2.2976	2.2998	2.0096	----	----	2.52	9.68	0.995	1.00	19	2.00	10.00	50.00	100.0	200.0	400.0		
p,p'-DDT	2	0	Avg	2.4755	2.1407	2.2800	2.3280	2.3387	2.0793	----	----	2.27	9.92	0.996	1.00	6.3	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Aldehyde	2	0	Qua	4.1260	2.6389	2.1464	1.8495	1.8555	1.6242	----	----	2.37	10.08	0.995	0.999	39	2.00	10.00	50.00	100.0	200.0	400.0		
Endosulfan Sulfate	2	0	Avg	2.7555	2.5091	2.4486	2.5077	2.4102	2.1100	----	----	2.46	10.23	0.994	1.00	8.5	2.00	10.00	50.00	100.0	200.0	400.0		
Methoxychlor	2	0	Qua	1.8444	1.3391	1.1799	1.1360	1.0796	0.9369	----	----	1.25	10.97	0.994	1.00	25	2.00	10.00	50.00	100.0	200.0	400.0		
Endrin Ketone	2	0	Qua	3.5990	2.4872	2.1822	2.0580	1.9935	1.7501	----	----	2.35	11.22	0.995	1.00	28	2.00	10.00	50.00	100.0	200.0	400.0		
DCB-Surrogate	2	0	Qua	3.7292	3.4452	2.9862	2.8482	2.6807	2.3123	----	----	3.00	12.90	0.993	1.00	17	2.00	10.00	50.00	100.0	200.0	400.0		
Chlordane	2	1	Avg	----	----	----	----	----	----	----	----	0.196	6.77	-1	-1	Lvl=7	100.0							
Chlordane	2	2	Avg	----	----	----	----	----	----	----	----	0.774	8.35	-1	-1	Lvl=7	100.0							
Chlordane	2	3	Avg	----	----	----	----	----	----	----	----	0.414	8.56	-1	-1	Lvl=7	100.0							
Toxaphene	2	1	Avg	----	----	----	----	----	----	----	----	0.0385	9.23	-1	-1	Lvl=8	500.0							
Toxaphene	2	2	Avg	----	----	----	----	----	----	----	----	0.0323	9.45	-1	-1	Lvl=8	500.0							
Toxaphene	2	3	Avg	----	----	----	----	----	----	----	----	0.0464	9.97	-1	-1	Lvl=8	500.0							
Toxaphene	2	4	Avg	----	----	----	----	----	----	----	----	0.103	10.72	-1	-1	Lvl=8	500.0							
Toxaphene	2	5	Avg	----	----	----	----	----	----	----	----	0.158	10.80	-1	-1	Lvl=8	500.0							

HAZ. - 345

Avg Rsd Col 1: 19.3 Avg Rsd Col 2: 17.3

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pch/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8081B

Data File:				6G55458.D			6G55470.D										
Method:				8081			8081										
Calibration Name:				CAL PEST@100PP			CAL PEST@100PP										
Calibration Date/Time				02/20/15 06:46			02/20/15 12:25										
					Conc			Conc			Conc			Conc			Conc		
Compound	Limit	Col	Mr	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff
TCMX-Surrogate	20	1	0	99.39	100	0.6	105.7	100	5.7									
alpha-BHC	20	1	0	107.1	100	7.1	110.4	100	10.4									
gamma-BHC	20	1	0	106.3	100	6.3	110.2	100	10.2									
beta-BHC	20	1	0	97.49	100	2.5	103.6	100	3.6									
Heptachlor	20	1	0	102.2	100	2.2	107.9	100	7.9									
delta-BHC	20	1	0	105.7	100	5.7	111.3	100	11.3									
Aldrin	20	1	0	97.55	100	2.4	103.1	100	3.1									
Heptachlor Epoxide	20	1	0	99.26	100	0.7	106.3	100	6.3									
y-chlordane	20	1	0	97.24	100	2.8	103.8	100	3.8									
a-chlordane	20	1	0	96.94	100	3.1	103.5	100	3.5									
Endosulfan I	20	1	0	101.8	100	1.8	109.1	100	9.1									
p,p'-DDE	20	1	0	96.69	100	3.3	104.3	100	4.3									
Dieldrin	20	1	0	95.72	100	4.3	102.8	100	2.8									
Endrin	20	1	0	92.97	100	7.0	97.24	100	2.8									
p,p'-DDD	20	1	0	98.34	100	1.7	105.9	100	5.8									
Endosulfan II	20	1	0	99.69	100	0.3	109.2	100	9.2									
p,p'-DDT	20	1	0	86.73	100	13.3	97.66	100	2.3									
Endrin Aldehyde	20	1	0	98.21	100	1.8	104.5	100	4.5									
Endosulfan Sulfate	20	1	0	90.86	100	9.1	100.5	100	0.5									
Methoxychlor	20	1	0	92	100	8.0	97.12	100	2.9									
Endrin Ketone	20	1	0	96.93	100	3.1	108.8	100	8.8									
DCB-Surrogate	20	1	0	93.78	100	6.2	102.0	100	2.0									
Average Difference	20	1	0			4.2			5.5									
TCMX-Surrogate	20	2	0	96.67	100	3.3	109.5	100	9.5									
alpha-BHC	20	2	0	118.9	100	18.9	135.4	100	35.4*									
gamma-BHC	20	2	0	113.4	100	13.4	128.7	100	28.7*									
beta-BHC	20	2	0	108.2	100	8.2	122.7	100	22.7*									
Heptachlor	20	2	0	110.1	100	10.1	118.6	100	18.6									
delta-BHC	20	2	0	117.1	100	17.1	131.1	100	31.1*									
Aldrin	20	2	0	98.01	100	2.0	110.1	100	10.1									
Heptachlor Epoxide	20	2	0	98.74	100	1.3	110.9	100	10.9									
y-chlordane	20	2	0	96.38	100	3.6	109.2	100	9.2									
a-chlordane	20	2	0	95.92	100	4.1	108.2	100	8.2									
Endosulfan I	20	2	0	104.7	100	4.7	118.3	100	18.3									
p,p'-DDE	20	2	0	99.61	100	0.4	110.7	100	10.7									
Dieldrin	20	2	0	99.84	100	0.2	110.8	100	10.8									
Endrin	20	2	0	98.46	100	1.5	108.0	100	8.0									
p,p'-DDD	20	2	0	103.8	100	3.8	119.1	100	19.1									
Endosulfan II	20	2	0	104.1	100	4.1	122.7	100	22.7*									
p,p'-DDT	20	2	0	97.03	100	3.0	110	100	10.0									
Endrin Aldehyde	20	2	0	109.2	100	9.2	121.5	100	21.5*									
Endosulfan Sulfate	20	2	0	89.07	100	10.9	99.57	100	0.4									
Methoxychlor	20	2	0	100.1	100	0.1	110.7	100	10.7									
Endrin Ketone	20	2	0	100.9	100	0.9	116.8	100	16.8									
DCB-Surrogate	20	2	0	89.27	100	10.7	104.2	100	4.2									
Average Difference	20	2	0			6.0			15.3									

Flags/Notes: ** - Values outside of limits for this column/run*

Form7
RtWindow Summary

Method: EPA 8081B

Data File:			6G55398.D		6G55458.D						
Calibration Name:			CAL PEST@2PPB		CAL PEST@100PPB						
Calibration Date/Time			2/18/2015 10:26:00 AM		2/20/2015 6:46:00 AM						
Compound	Col	Mr	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit
TCMX-Surrogate	1	0	4.86	(4.80 - 4.92)	4.85	(4.79 - 4.91)						
alpha-BHC	1	0	5.99	(5.95 - 6.03)	5.99	(5.95 - 6.03)						
gamma-BHC	1	0	6.50	(6.46 - 6.54)	6.50	(6.46 - 6.54)						
beta-BHC	1	0	7.37	(7.29 - 7.45)	7.37	(7.29 - 7.45)						
Heptachlor	1	0	6.80	(6.76 - 6.84)	6.79	(6.75 - 6.83)						
delta-BHC	1	0	7.71	(7.63 - 7.79)	7.70	(7.62 - 7.78)						
Aldrin	1	0	7.16	(7.08 - 7.24)	7.16	(7.08 - 7.24)						
Heptachlor Epoxide	1	0	7.98	(7.94 - 8.02)	7.98	(7.94 - 8.02)						
y-chlordane	1	0	8.38	(8.34 - 8.42)	8.37	(8.33 - 8.41)						
a-chlordane	1	0	8.44	(8.40 - 8.48)	8.44	(8.40 - 8.48)						
Endosulfan I	1	0	8.34	(8.30 - 8.38)	8.34	(8.30 - 8.38)						
p,p'-DDE	1	0	8.54	(8.46 - 8.62)	8.53	(8.45 - 8.61)						
Dieldrin	1	0	8.78	(8.70 - 8.86)	8.78	(8.70 - 8.86)						
Endrin	1	0	9.04	(9.00 - 9.08)	9.04	(9.00 - 9.08)						
p,p'-DDD	1	0	9.48	(9.40 - 9.56)	9.47	(9.39 - 9.55)						
Endosulfan II	1	0	9.60	(9.52 - 9.68)	9.59	(9.51 - 9.67)						
p,p'-DDT	1	0	9.69	(9.61 - 9.77)	9.69	(9.61 - 9.77)						
Endrin Aldehyde	1	0	10.08	(10.00 - 10.16)	10.07	(9.99 - 10.15)						
Endosulfan Sulfate	1	0	10.44	(10.40 - 10.48)	10.44	(10.40 - 10.48)						
Methoxychlor	1	0	10.39	(10.35 - 10.43)	10.38	(10.34 - 10.42)						
Endrin Ketone	1	0	10.95	(10.87 - 11.03)	10.95	(10.87 - 11.03)						
DCB-Surrogate	1	0	11.95	(11.89 - 12.01)	11.94	(11.88 - 12.00)						
Chlordane	1	1	6.59	(6.55 - 6.63)								
Chlordane	1	2	8.38	(8.34 - 8.42)								
Chlordane	1	3	8.44	(8.40 - 8.48)								
Toxaphene	1	1	9.19	(9.15 - 9.23)								
Toxaphene	1	2	9.29	(9.25 - 9.33)								
Toxaphene	1	3	9.63	(9.59 - 9.67)								
Toxaphene	1	4	9.96	(9.92 - 10.00)								
Toxaphene	1	5	10.41	(10.37 - 10.45)								
TCMX-Surrogate	2	0	5.10	(5.04 - 5.16)	5.10	(5.04 - 5.16)						
alpha-BHC	2	0	6.01	(5.97 - 6.05)	6.01	(5.97 - 6.05)						
gamma-BHC	2	0	6.54	(6.50 - 6.58)	6.54	(6.50 - 6.58)						
beta-BHC	2	0	6.61	(6.53 - 6.69)	6.61	(6.53 - 6.69)						
Heptachlor	2	0	6.98	(6.94 - 7.02)	6.98	(6.94 - 7.02)						
delta-BHC	2	0	7.11	(7.03 - 7.19)	7.11	(7.03 - 7.19)						
Aldrin	2	0	7.43	(7.35 - 7.51)	7.43	(7.35 - 7.51)						
Heptachlor Epoxide	2	0	8.14	(8.10 - 8.18)	8.14	(8.10 - 8.18)						
y-chlordane	2	0	8.35	(8.31 - 8.39)	8.35	(8.31 - 8.39)						
a-chlordane	2	0	8.56	(8.52 - 8.60)	8.55	(8.51 - 8.59)						
Endosulfan I	2	0	8.61	(8.57 - 8.65)	8.61	(8.57 - 8.65)						
p,p'-DDE	2	0	8.84	(8.76 - 8.92)	8.84	(8.76 - 8.92)						
Dieldrin	2	0	9.00	(8.92 - 9.08)	8.99	(8.91 - 9.07)						
Endrin	2	0	9.47	(9.43 - 9.51)	9.46	(9.42 - 9.50)						
p,p'-DDD	2	0	9.54	(9.46 - 9.62)	9.53	(9.45 - 9.61)						
Endosulfan II	2	0	9.68	(9.60 - 9.76)	9.68	(9.60 - 9.76)						
p,p'-DDT	2	0	9.92	(9.84 - 10.00)	9.92	(9.84 - 10.00)						
Endrin Aldehyde	2	0	10.08	(10.00 - 10.16)	10.08	(10.00 - 10.16)						
Endosulfan Sulfate	2	0	10.23	(10.19 - 10.27)	10.23	(10.19 - 10.27)						
Methoxychlor	2	0	10.97	(10.93 - 11.01)	10.97	(10.93 - 11.01)						
Endrin Ketone	2	0	11.22	(11.14 - 11.30)	11.22	(11.14 - 11.30)						
DCB-Surrogate	2	0	12.90	(12.84 - 12.96)	12.90	(12.84 - 12.96)						
Chlordane	2	1	6.77	(6.73 - 6.81)								
Chlordane	2	2	8.35	(8.31 - 8.39)								
Chlordane	2	3	8.56	(8.52 - 8.60)								
Toxaphene	2	1	9.23	(9.19 - 9.27)								
Toxaphene	2	2	9.45	(9.41 - 9.49)								
Toxaphene	2	3	9.97	(9.93 - 10.01)								
Toxaphene	2	4	10.72	(10.68 - 10.76)								
Toxaphene	2	5	10.80	(10.76 - 10.84)								

Herbicide Data

Form1

ORGANICS HERBICIDE REPORT

Sample Number: AC83375-001
Client Id: SB01
Data File: 12G04570.D
Analysis Date: 02/18/15 18:09
Date Rec/Extracted: 02/13/15-02/18/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8151A
Matrix: Soil
Initial Vol: 50g
Final Vol: 10ml
Dilution: 1
Solids: 87

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
93-76-5	2,4,5-T	0.011	U	1918-00-9	Dicamba	0.011	U
94-75-7	2,4-D	0.011	U	93-72-1	Silvex	0.011	U

Worksheet #: 334200

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-1815\
Data File : 12G04570.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18-Feb-15, 18:09:34
Operator : MLC/KD/ZM/AHD
Sample : AC83375-001
Misc : S,HERB
ALS Vial : 8 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 19 11:05:31 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

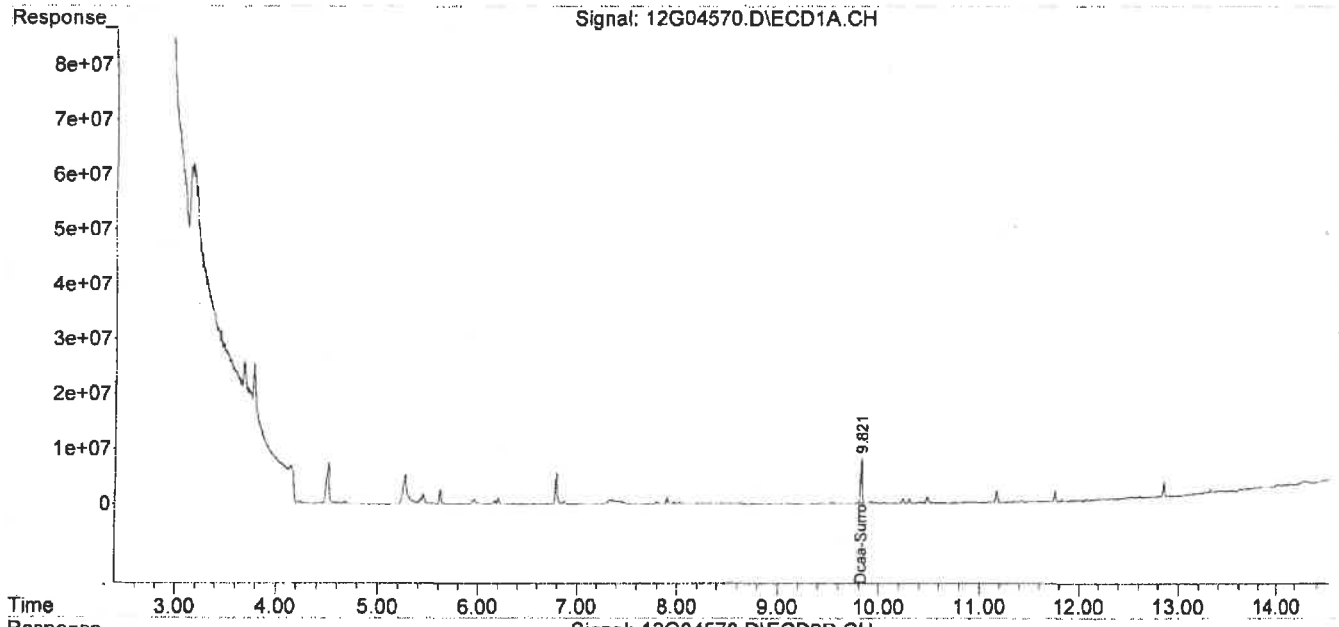
Compound	RT#1	RT#2	Resp#1	Resp#2	ng#1	ng#2
Target Compounds						
2)Dcaa-Surrogate	9.821	9.521	96265895	48901459	687.069m	768.392m

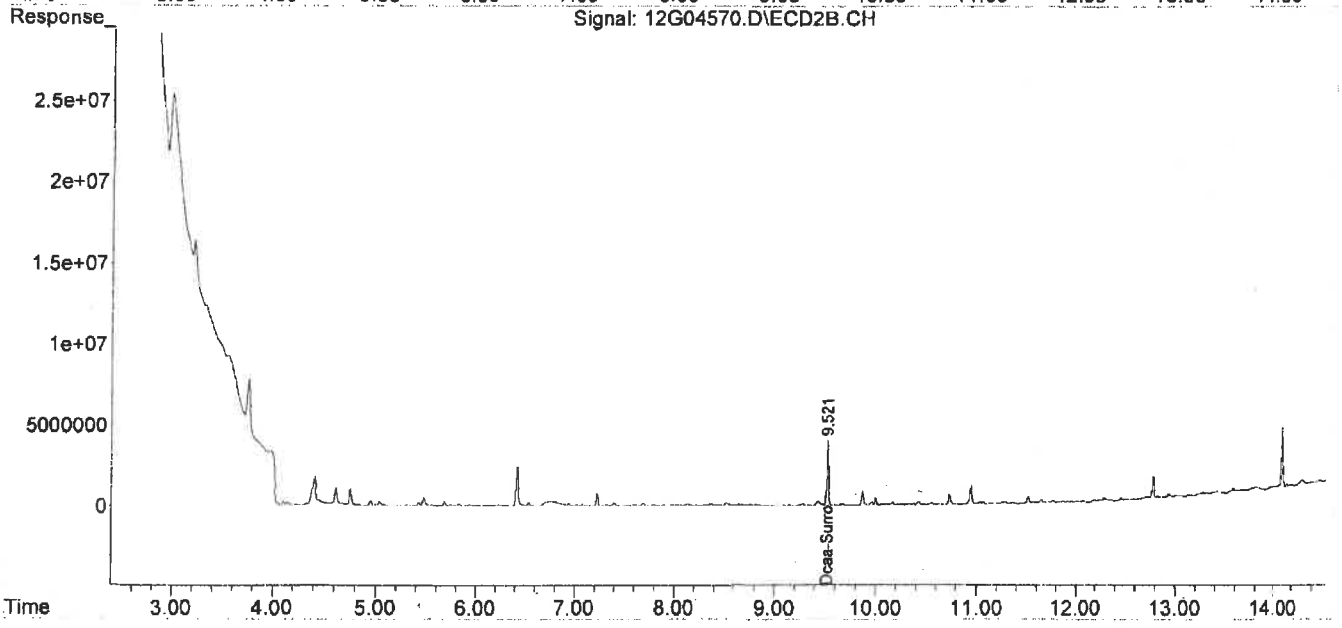
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_12\Data\02-1815\
Data File : 12G04570.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18-Feb-15, 18:09:34
Operator : MLC/KD/ZM/AHD
Sample : AC83375-001
Misc : S,HERB
ALS Vial : 8 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 19 11:05:31 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Form1

ORGANICS HERBICIDE REPORT

Sample Number: AC83375-002
Client Id: SB02
Data File: 12G04571.D
Analysis Date: 02/18/15 18:28
Date Rec/Extracted: 02/13/15-02/18/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8151A
Matrix: Soil
Initial Vol: 50g
Final Vol: 10ml
Dilution: 1
Solids: 94

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
93-76-5	2,4,5-T	0.011	U	1918-00-9	Dicamba	0.011	U
94-75-7	2,4-D	0.011	U	93-72-1	Silvex	0.011	U

Worksheet #: 334200

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-1815\
Data File : 12G04571.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18-Feb-15, 18:28:46
Operator : MLC/KD/ZM/AHD
Sample : AC83375-002
Misc : S,HERB
ALS Vial : 9 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 19 11:07:09 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

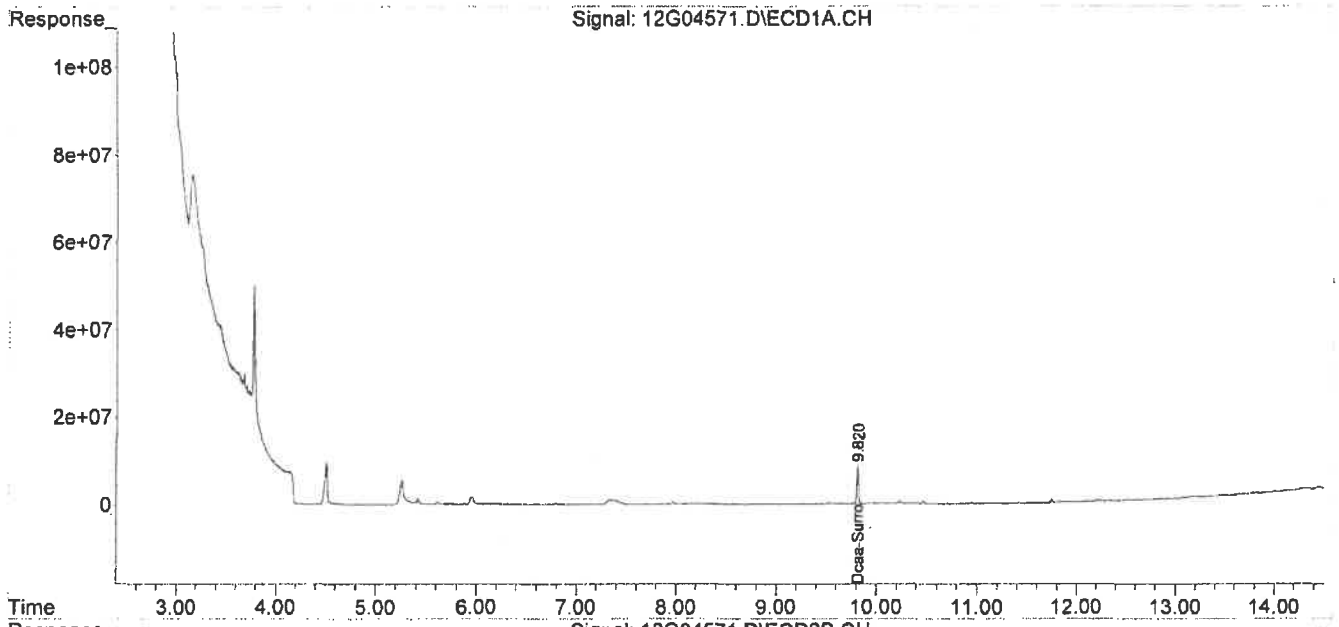
Compound	RT#1	RT#2	Resp#1	Resp#2	ng#1	ng#2
Target Compounds						
2)Dcaa-Surrogate	9.820	9.521	100.6E6	50696602	717.742m	796.599m

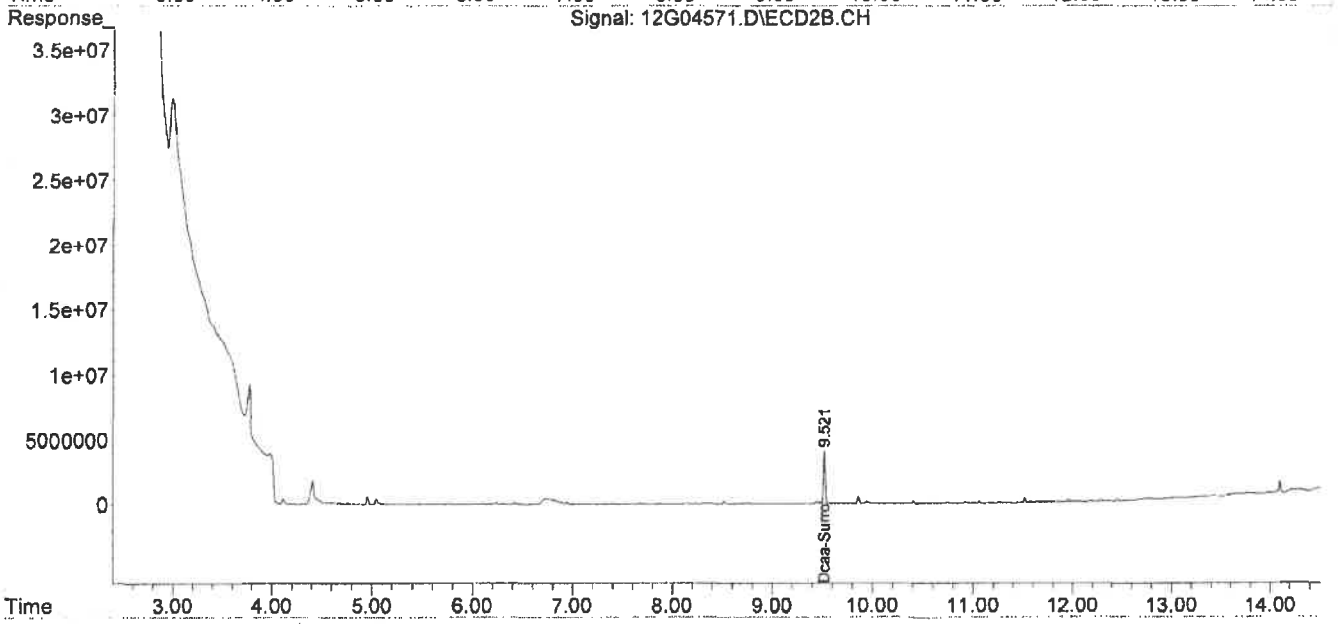
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_12\Data\02-1815\
Data File : 12G04571.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18-Feb-15, 18:28:46
Operator : MLC/KD/ZM/AHD
Sample : AC83375-002
Misc : S,HERB
ALS Vial : 9 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 19 11:07:09 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Form1

ORGANICS HERBICIDE REPORT

Sample Number: SMB40455
Client Id:
Data File: 12G04564.D
Analysis Date: 02/18/15 16:14
Date Rec/Extracted: NA-02/18/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8151A
Matrix: Soil
Initial Vol: 50g
Final Vol: 10ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
93-76-5	2,4,5-T	0.010	U	1918-00-9	Dicamba	0.010	U
94-75-7	2,4-D	0.010	U	93-72-1	Silvex	0.010	U

Worksheet #: 334200 *Total Target Concentration* 0 ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-1815\
Data File : 12G04564.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18-Feb-15, 16:14:15
Operator : MLC/KD/ZM/AHD
Sample : SMB40455
Misc : S,HERB
ALS Vial : 2 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 19 10:03:49 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

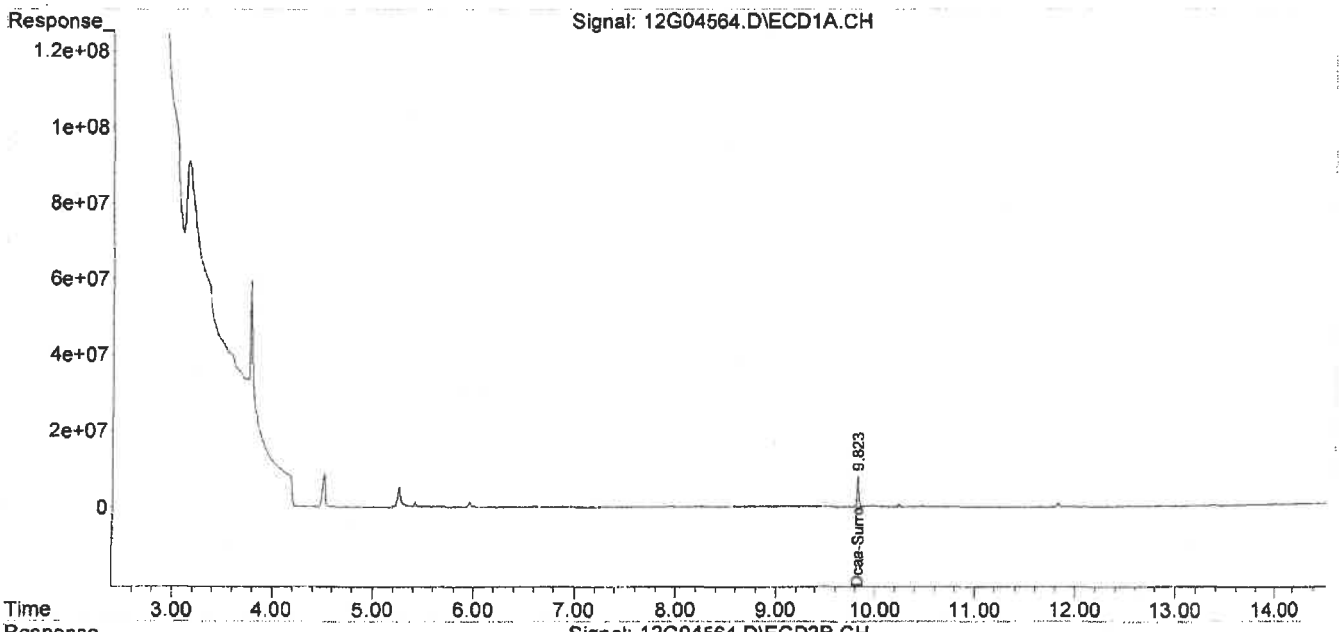
Compound	RT#1	RT#2	Resp#1	Resp#2	ng#1	ng#2
Target Compounds						
2)Dcaa-Surrogate	9.823	9.518	108.3E6	49812615	773.094m	782.709m

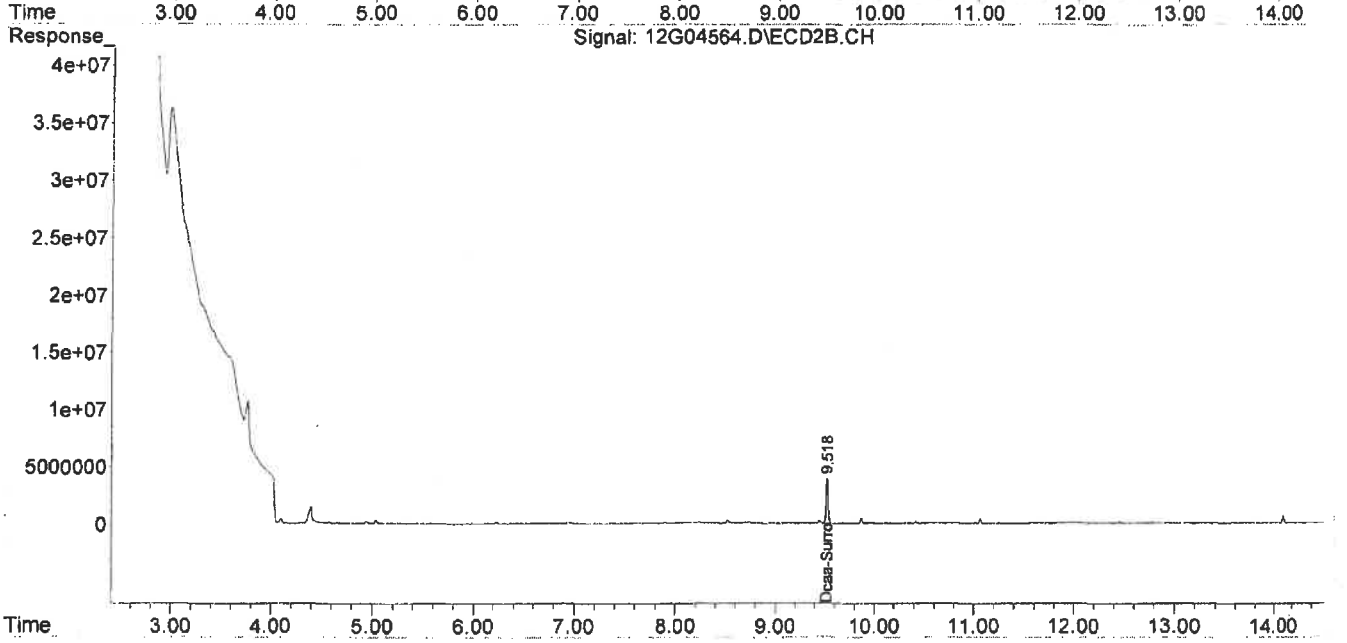
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Data Path : G:\Gcdata\2015\GC_12\Data\02-1815\
Data File : 12G04564.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 18-Feb-15, 16:14:15
Operator : MLC/KD/ZM/AHD
Sample : SMB40455
Misc : S,HERB
ALS Vial : 2 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 19 10:03:49 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





FORM2

Surrogate Recovery

Method: EPA 8151A

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column0 S3 Recov	Column0 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
12G04482.D	SMB40421	Soil	02/13/15 10:39	1		74	76				
12G04564.D	SMB40455	Soil	02/18/15 16:14	1		77	78				
12G04570.D	AC83375-001	Soil	02/18/15 18:09	1		69	77				
12G04571.D	AC83375-002	Soil	02/18/15 18:28	1		72	80				
12G04483.D	SMB40421(M	Soil	02/13/15 10:58	1		66	69				
12G04484.D	AC83307-006(	Soil	02/13/15 11:17	1		84	84				
12G04485.D	AC83307-006(	Soil	02/13/15 11:36	1		97	97				
12G04486.D	AC83307-006	Soil	02/13/15 11:56	1		85	84				
12G04565.D	SMB40455(M	Soil	02/18/15 16:33	1		72	83				

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8151A

Soil Limits

Compound	Spike Amt	Limits
S1=Dcaa-Surrogate	1000	25-138
S2=Dcaa-Surrogate	1000	25-138

Form3
Recovery Data
QC Batch: SMB40421

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04483.D	SMB40421(MS)	2/13/2015 10:58:45 AM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8151 Matrix: Soil QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	279.99	0	400	70	25	130
2,4-D	1	288.15	0	400	72	10	130
Silvex	1	275.74	0	400	69	25	130
2,4,5-T	1	249.98	0	400	62	25	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40455

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04565.D	SMB40455(MS)	2/18/2015 4:33:22 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8151 Matrix: Soil QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	300.9	0	400	75	25	130
2,4-D	1	326.1	0	400	82	10	130
Silvex	1	336.73	0	400	84	25	130
2,4,5-T	1	328.37	0	400	82	25	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: SMB40421

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04484.D	AC83307-006(MS)	2/13/2015 11:17:53 AM
Non Spike(If applicable):	12G04486.D	AC83307-006	2/13/2015 11:56:04 AM
Inst Blank(If applicable):			

Method: 8151 Matrix: Soil QC Type: MS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	323.42	0	400	81	25	130
2,4-D	1	338.15	0	400	85	10	130
Silvex	1	405.72	0	400	101	25	130
2,4,5-T	1	348.28	0	400	87	25	130

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04485.D	AC83307-006(MSD)	2/13/2015 11:36:56 AM
Non Spike(If applicable):	12G04486.D	AC83307-006	2/13/2015 11:56:04 AM
Inst Blank(If applicable):			

Method: 8151 Matrix: Soil QC Type: MSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	347.04	0	400	87	25	130
2,4-D	1	418.54	0	400	105	10	130
Silvex	1	475.11	0	400	119	25	130
2,4,5-T	1	447.77	0	400	112	25	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA
QC Batch: SMB40421

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04485.D	AC83307-006(MSD)	2/13/2015 11:36:56 AM
Duplicate(If applicable):	12G04484.D	AC83307-006(MS)	2/13/2015 11:17:53 AM
Inst Blank(If applicable):			

Method: 8151 Matrix: Soil QC Type: MSD

Analyte:	Column	Dup/MSD/MBSD Conc	Sample/MS/MBS Conc	RPD	Limit
Dicamba	1	347.04	323.42	7	40
2,4-D	1	418.54	338.15	21	40
Silvex	1	475.11	405.72	16	40
2,4,5-T	1	447.77	348.28	25	40

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: SMB40421
Blank Data File: 12G04482.D
Matrix: Soil

Blank Analysis Date: 02/13/15 10:39
Blank Extraction Date: 02/12/15
(If Applicable)
Method: EPA 8151A

Sample Number	Data File	Analysis Date
AC83307-006	12G04486.D	02/13/15 11:56
AC83307-006(MSD	12G04485.D	02/13/15 11:36
AC83307-006(MS)	12G04484.D	02/13/15 11:17
SMB40421(MS)	12G04483.D	02/13/15 10:58

FORM 4
Blank Summary

Blank Number: SMB40455
Blank Data File: 12G04564.D
Matrix: Soil

Blank Analysis Date: 02/18/15 16:14
Blank Extraction Date: 02/18/15
(If Applicable)
Method: EPA 8151A

Sample Number	Data File	Analysis Date
AC83375-001	12G04570.D	02/18/15 18:09
AC83375-002	12G04571.D	02/18/15 18:26
SMB40455(MS)	12G04565.D	02/18/15 16:33

Form 5

Method: EPA 8151A
Instrument: GC_12

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
12G04180.D	BLK	01/25/15 15:26	Soil					
12G04181.D	CAL HERB@600PPB	01/25/15 15:46	Soil		9.8560	0	9.5243	0
12G04183.D	CAL HERB@50PPB	01/25/15 16:24	Soil		9.8555	0	9.5250	0
12G04184.D	CAL HERB@100PPB	01/25/15 16:43	Soil	12G0418	9.8551	0.0041	9.5245	0.0052
12G04185.D	CAL HERB@200PPB	01/25/15 17:03	Soil	12G0418	9.8557	0.002	9.5241	0.0094
12G04186.D	CAL HERB@400PPB	01/25/15 17:22	Soil	12G0418	9.8550	0.0051	9.5241	0.0094
12G04187.D	CAL HERB@500PPB	01/25/15 17:41	Soil	12G0418	9.8549	0.0061	9.5245	0.0052
12G04188.D	CAL HERB@600PPB	01/25/15 18:00	Soil	12G0418	9.8548	0.0071	9.5238	0.0126
12G04189.D	ICV	01/25/15 18:20	Soil	12G0418	9.8543	0.0122	9.5239	0.0115
12G04190.D	AC82958-086(T)	01/25/15 18:39	Aqueous	12G0418	9.8524	0.0315	9.5230	0.021
12G04191.D	AC82958-089(T)	01/25/15 18:58	Aqueous	12G0418	9.8530	0.0254	9.5233	0.0178
12G04192.D	AC82958-026(T)	01/25/15 19:17	Aqueous	12G0418	9.8516	0.0396	9.5224	0.0273
12G04193.D	AC82958-029(T)	01/25/15 19:36	Aqueous	12G0418	9.8520	0.0355	9.5222	0.0294
12G04194.D	AC82958-032(T)	01/25/15 19:56	Aqueous	12G0418	9.8515	0.0406	9.5230	0.021
12G04195.D	AC82958-020(T)	01/25/15 20:15	Aqueous	12G0418	9.8512	0.0436	9.5225	0.0262
12G04196.D	AC82958-023(T)	01/25/15 20:34	Aqueous	12G0418	9.8511	0.0447	9.5221	0.0304
12G04197.D	AC82958-041(T)	01/25/15 20:53	Aqueous	12G0418	9.8511	0.0447	9.5219	0.0325
12G04198.D	AC82958-044(T)	01/25/15 21:12	Aqueous	12G0418	9.8509	0.0467	9.5216	0.0357
12G04199.D	AC82958-047(T)	01/25/15 21:32	Aqueous	12G0418	9.8510	0.0457	9.5218	0.0336
12G04200.D	AC82958-071(T)	01/25/15 21:51	Aqueous	12G0418	9.8510	0.0457	9.5222	0.0294
12G04201.D	AC82958-068(T)	01/25/15 22:10	Aqueous	12G0418	9.8501	0.0548	9.5219	0.0325
12G04202.D	AC82958-050(T)	01/25/15 22:29	Aqueous	12G0418	9.8503	0.0528	9.5219	0.0325
12G04203.D	AC82958-065(T)	01/25/15 22:49	Aqueous	12G0418	9.8499	0.0568	9.5217	0.0346
12G04204.D	AC82958-062(T)	01/25/15 23:08	Aqueous	12G0418	9.8494	0.0619	9.5210	0.042
12G04205.D	AC82958-059(T)	01/25/15 23:27	Aqueous	12G0418	9.8505	0.0507	9.5222	0.0294
12G04206.D	AC82958-056(T)	01/25/15 23:46	Aqueous	12G0418	9.8502	0.0538	9.5215	0.0368
12G04207.D	AC82958-017(T)(MS)	01/26/15 00:05	Aqueous	12G0418	9.8508	0.0477	9.5226	0.0252
12G04208.D	AC82958-017(T)(MSD)	01/26/15 00:25	Aqueous	12G0418	9.8503	0.0528	9.5221	0.0304
12G04209.D	AC82958-017(T)	01/26/15 00:44	Aqueous	12G0418	9.8494	0.0619	9.5214	0.0378
12G04210.D	CAL HERB@400PPB	01/26/15 01:03	Aqueous	12G0418	9.8511	0.0447	9.5229	0.022

Drift Compound: Dcaa-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 0.75 (Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8151A

Instrument: GC_12 Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
12G04480.D	400PPB	02/13/15 09:40	Soil					
12G04481.D	CAL HERB@400PPB	02/13/15 10:17	Aqueous	12G0448	9.8240	0	9.5178	0
12G04482.D	SMB40421	02/13/15 10:39	Soil	12G0448	9.8222	0.0183	9.5173	0.0053
12G04483.D	SMB40421(MS)	02/13/15 10:58	Soil	12G0448	9.8206	0.0346	9.5183	0.0053
12G04484.D	AC83307-006(MS)	02/13/15 11:17	Soil	12G0448	9.8202	0.0387	9.5183	0.0053
12G04485.D	AC83307-006(MSD)	02/13/15 11:36	Soil	12G0448	9.8202	0.0387	9.5188	0.0105
12G04486.D	AC83307-006	02/13/15 11:56	Soil	12G0448	9.8211	0.0295	9.5186	0.0084
12G04487.D	AC83258-001	02/13/15 12:15	Soil	12G0448	9.8212	0.0285	9.5190	0.0126
12G04488.D	400PPB	02/13/15 12:34	Soil	12G0448	9.8221	0.0193	9.5198	0.021
12G04489.D	CAL HERB@400PPB	02/13/15 12:55	Soil	12G0448	9.8224	0.0163	9.5194	0.0168

Drift Compound: Dcaa-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5 (Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8151A
Instrument: GC_12

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
12G04562.D	400PPB	02/18/15 14:43	Aqueous					
12G04563.D	CAL HERB@400PPB	02/18/15 15:02	Aqueous	12G0456	9.8220	0	9.5216	0
12G04564.D	SMB40455	02/18/15 16:14	Soil	12G0456	9.8234	0.0143	9.5183	0.0347
12G04565.D	SMB40455(MS)	02/18/15 16:33	Soil	12G0456	9.8207	0.0132	9.5206	0.0105
12G04566.D	AC83385-003	02/18/15 16:52	Soil	12G0456	9.8205	0.0153	9.5202	0.0147
12G04567.D	AC83385-004	02/18/15 17:11	Soil	12G0456	9.8196	0.0244	9.5203	0.0137
12G04568.D	AC83385-001	02/18/15 17:31	Soil	12G0456	9.8202	0.0183	9.5206	0.0105
12G04569.D	AC83385-002	02/18/15 17:50	Soil	12G0456	9.8201	0.0193	9.5210	0.0063
12G04570.D	AC83375-001	02/18/15 18:09	Soil	12G0456	9.8206	0.0143	9.5213	0.0031
12G04571.D	AC83375-002	02/18/15 18:28	Soil	12G0456	9.8200	0.0204	9.5210	0.0063
12G04572.D	200PPB	02/18/15 18:48	Soil	12G0456	9.8217	0.003	9.5223	0.0074
12G04573.D	CAL HERB@400PPB	02/18/15 19:07	Soil	12G0456	9.8222	0.002	9.5222	0.0063

Drift Compound: Dcaa-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5021319 0287

Method: EPA 8151A

Form 6
Initial Calibration

Instrument: [illegible]_12

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	12G04183.	CAL HERB@50PPB	01/25/15 16:24	2	12G04184.	CAL HERB@100PPB	01/25/15 16:43
3	12G04185.	CAL HERB@200PPB	01/25/15 17:03	4	12G04186.	CAL HERB@400PPB	01/25/15 17:22
5	12G04187.	CAL HERB@500PPB	01/25/15 17:41	6	12G04188.	CAL HERB@600PPB	01/25/15 18:00

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Dalapon	1	0	Avg	13.340	13.426	12.620	13.421	12.363	12.232	----	----	12.9	3.70	0.996	0.998	4.3	50.00	100.0	200.0	400.0	500.0	600.0		
Dcaa-Surrogate	1	0	Avg	13.613	13.788	13.387	14.747	13.810	14.718	----	----	14.0	9.86	0.997	0.997	4.1	250.0	500.0	1000.	2000.	2500.	3000.		
Dicamba	1	0	Avg	62.386	57.288	53.080	54.255	50.617	53.102	----	----	55.1	10.04	0.998	0.998	7.6	50.00	100.0	200.0	400.0	500.0	600.0		
Dichloroprop	1	0	Avg	12.040	13.218	11.872	12.692	11.560	12.152	----	----	12.3	10.76	0.996	0.996	4.9	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-D	1	0	Avg	15.095	15.545	15.050	15.580	14.467	15.312	----	----	15.2	11.10	0.997	0.997	2.7	50.00	100.0	200.0	400.0	500.0	600.0		
Silvex	1	0	Avg	62.482	68.084	68.319	74.569	70.479	75.477	----	----	69.9	11.69	0.997	0.998	6.8	50.00	100.0	200.0	400.0	500.0	600.0		
2,4,5-T	1	0	Avg	58.816	64.276	64.339	70.178	65.463	70.858	----	----	65.7	12.04	0.996	0.997	6.7	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-DB	1	0	Avg	8.9998	8.9326	8.6655	9.2772	8.7117	9.2271	----	----	8.97	12.38	0.998	0.998	2.8	50.00	100.0	200.0	400.0	500.0	600.0		
Dinoseb	1	0	Avg	37.419	41.841	41.459	46.014	44.960	47.757	----	----	43.2	12.74	0.998	0.999	8.7	50.00	100.0	200.0	400.0	500.0	600.0		
Picloram	1	0	Qua	76.821	77.127	87.613	95.755	93.408	99.991	----	----	88.5	13.43	0.998	0.999	11	25.00	50.00	100.0	200.0	250.0	300.0		
Dalapon	2	0	Avg	5.3676	6.0278	5.8468	5.9654	5.7719	5.5999	----	----	5.76	3.29	0.998	1.00	4.3	50.00	100.0	200.0	400.0	500.0	600.0		
Dcaa-Surrogate	2	0	Avg	6.4212	6.5619	6.2243	6.5905	6.0766	6.3101	----	----	6.36	9.62	0.997	0.997	3.1	250.0	500.0	1000.	2000.	2500.	3000.		
Dicamba	2	0	Avg	24.647	25.274	23.424	23.779	22.060	22.616	----	----	23.6	9.75	0.998	0.998	5.1	50.00	100.0	200.0	400.0	500.0	600.0		
Dichloroprop	2	0	Avg	7.0709	6.9770	6.4170	6.3734	5.8795	6.0426	----	----	6.46	10.27	0.998	0.998	7.5	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-D	2	0	Qua	10.132	8.9052	8.2622	8.2163	7.6165	7.8418	----	----	8.50	10.65	0.998	0.998	11	50.00	100.0	200.0	400.0	500.0	600.0		
Silvex	2	0	Avg	35.931	37.041	34.556	34.818	32.181	33.472	----	----	34.7	11.20	0.998	0.998	5.0	50.00	100.0	200.0	400.0	500.0	600.0		
2,4,5-T	2	0	Avg	33.401	34.487	32.359	32.874	30.232	31.800	----	----	32.5	11.61	0.998	0.998	4.5	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-DB	2	0	Avg	5.0889	5.2881	4.9016	5.0011	4.7196	4.8065	----	----	4.97	11.93	0.999	0.999	4.1	50.00	100.0	200.0	400.0	500.0	600.0		
Dinoseb	2	0	Avg	23.037	24.218	22.299	23.023	21.958	22.799	----	----	22.9	11.68	0.999	0.999	3.4	50.00	100.0	200.0	400.0	500.0	600.0		
Picloram	2	0	Avg	44.632	43.319	46.228	46.659	44.575	46.259	----	----	45.3	13.12	0.999	0.999	2.9	25.00	50.00	100.0	200.0	250.0	300.0		

HAZ. - 368

Avg Rsd Col 1: 5.97 Avg Rsd Col 2: 5.06

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whehter Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8151A

Data File:				12G04481.D			12G04489.D			12G04563.D			12G04573.D						
Method:				8151			8151			8151			8151						
Calibration Name:				CAL HERB@400P			CAL HERB@400P			CAL HERB@400P			CAL HERB@400P						
Calibration Date/Time				02/13/15 10:17			02/13/15 12:55			02/18/15 15:02			02/18/15 19:07						
				Conc			Conc			Conc			Conc			Conc			
Compound	Limit	Col	Mr	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	
Dalapon	15	1	0	434.2	400	8.6	458.1	400	14.5	520.8	400	30.2*	531.7	400	32.9*				
Dcaa-Surrogate	15	1	0	1910	2000	4.5	2054	2000	2.7	1942	2000	2.9	1940	2000	3.0				
Dicamba	15	1	0	408.6	400	2.1	390.5	400	2.4	368.0	400	8.0	368.9	400	7.8				
Dichloroprop	15	1	0	401.5	400	0.4	428.6	400	7.2	409.6	400	2.4	404.5	400	1.1				
2,4-D	15	1	0	415.1	400	3.8	424.5	400	6.1	413.0	400	3.3	409.3	400	2.3				
Silvex	15	1	0	421.6	400	5.4	431.9	400	8.0	429.9	400	7.5	420.1	400	5.0				
2,4,5-T	15	1	0	435.8	400	8.9	451.0	400	12.8	439	400	9.7	425.5	400	6.4				
2,4-DB	15	1	0	437.2	400	9.3	429.8	400	7.4	442.1	400	10.5	416.8	400	4.2				
Dinoseb	15	1	0	470.1	400	17.5*	507.7	400	26.9*	468	400	17.0*	451.7	400	12.9				
Picloram	15	1	0	221.2	200	10.6	229.2	200	14.6	221.3	200	10.7	215.6	200	7.8				
Average Difference	15	1	0			7.1			10.3			10.2			8.4				
Dalapon	15	2	0	425.3	400	6.3	453.4	400	13.3	435.3	400	8.8	591.2	400	47.8*				
Dcaa-Surrogate	15	2	0	1839	2000	8.1	1991	2000	0.5	1958	2000	2.1	1970	2000	1.5				
Dicamba	15	2	0	370.7	400	7.3	398.2	400	0.5	394.9	400	1.3	396.5	400	0.9				
Dichloroprop	15	2	0	355.6	400	11.1	366.0	400	8.5	380.6	400	4.9	377.7	400	5.6				
2,4-D	15	2	0	383.0	400	4.2	380.7	400	4.8	403.1	400	0.8	409	400	2.2				
Silvex	15	2	0	379	400	5.3	393	400	1.8	402.2	400	0.6	401.7	400	0.4				
2,4,5-T	15	2	0	378.8	400	5.3	389.9	400	2.5	399.9	400	0.0	400.5	400	0.1				
2,4-DB	15	2	0	374.6	400	6.4	375.4	400	6.1	409.2	400	2.3	417.0	400	4.3				
Dinoseb	15	2	0	413.1	400	3.3	425.2	400	6.3	430.2	400	7.6	428.9	400	7.2				
Picloram	15	2	0	209.0	200	4.5	200.5	200	0.3	220.7	200	10.3	215.7	200	7.8				
Average Difference	15	2	0			6.2			4.5			3.9			7.8				

Flags/Notes: **** - Values outside of limits for this column/run***

Form7
RtWindow Summary

Method: EPA 8151A

Data File:			12G04183.D		12G04481.D		12G04563.D				
Calibration Name:			CAL HERB@50PPB		CAL HERB@400PPB		CAL HERB@400PPB				
Calibration Date/Time			1/25/2015 4:24:39 PM		2/13/2015 10:17:18 AM		2/18/2015 3:02:36 PM				
Compound	Col	Mr	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit
Dalapon	1	0	3.70	(3.66 - 3.74)	3.67	(3.63 - 3.71)	3.67	(3.63 - 3.71)				
Dcaa-Surrogate	1	0										
Dicamba	1	0	10.04	(10.00 - 10.08)	10.00	(9.96 - 10.04)	10.00	(9.96 - 10.04)				
Dichloroprop	1	0	10.76	(10.72 - 10.80)	10.72	(10.68 - 10.76)	10.72	(10.68 - 10.76)				
2,4-D	1	0	11.10	(11.06 - 11.14)	11.06	(11.02 - 11.10)	11.06	(11.02 - 11.10)				
Silvex	1	0	11.69	(11.65 - 11.73)	11.65	(11.61 - 11.69)	11.65	(11.61 - 11.69)				
2,4,5-T	1	0	12.04	(12.00 - 12.08)	12.00	(11.96 - 12.04)	12.00	(11.96 - 12.04)				
2,4-DB	1	0	12.38	(12.34 - 12.42)	12.34	(12.30 - 12.38)	12.34	(12.30 - 12.38)				
Dinoseb	1	0	12.74	(12.70 - 12.78)	12.71	(12.67 - 12.75)	12.71	(12.67 - 12.75)				
Picloram	1	0	13.43	(13.39 - 13.47)	13.40	(13.36 - 13.44)	13.41	(13.37 - 13.45)				
Dalapon	2	0	3.29	(3.25 - 3.33)	3.26	(3.22 - 3.30)	3.28	(3.24 - 3.32)				
Dcaa-Surrogate	2	0										
Dicamba	2	0	9.75	(9.71 - 9.79)	9.75	(9.71 - 9.79)	9.75	(9.71 - 9.79)				
Dichloroprop	2	0	10.27	(10.23 - 10.31)	10.27	(10.23 - 10.31)	10.27	(10.23 - 10.31)				
2,4-D	2	0	10.66	(10.62 - 10.70)	10.65	(10.61 - 10.69)	10.65	(10.61 - 10.69)				
Silvex	2	0	11.20	(11.16 - 11.24)	11.19	(11.15 - 11.23)	11.19	(11.15 - 11.23)				
2,4,5-T	2	0	11.61	(11.57 - 11.65)	11.60	(11.56 - 11.64)	11.60	(11.56 - 11.64)				
2,4-DB	2	0	11.93	(11.89 - 11.97)	11.92	(11.88 - 11.96)	11.92	(11.88 - 11.96)				
Dinoseb	2	0	11.68	(11.64 - 11.72)	11.68	(11.64 - 11.72)	11.68	(11.64 - 11.72)				
Picloram	2	0	13.12	(13.08 - 13.16)	13.11	(13.07 - 13.15)	13.12	(13.08 - 13.16)				

TCLP Herbicide Data

Form1

ORGANICS HERBICIDE REPORT

Sample Number: AC83375-003(T)
Client Id: WC01
Data File: 12G04618.D
Analysis Date: 02/20/15 13:20
Date Rec/Extracted: 02/13/15-02/19/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8151A
Matrix: Aqueous
Initial Vol: 100ml
Final Vol: 10ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
94-75-7	2,4-D	0.0050	U	93-72-1	Silvex	0.0050	U

Worksheet #: 334466

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-20-15\
Data File : 12G04618.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20-Feb-15, 13:20:05
Operator : MLC/KD/ZM/AHD
Sample : AC83375-003(T)
Misc : A,HERB
ALS Vial : 6 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 23 09:37:26 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	ng#1	ng#2
Target Compounds						
2)Dcaa-Surrogate	9.818	9.520	122.0E6	59046572	871.064	927.803m

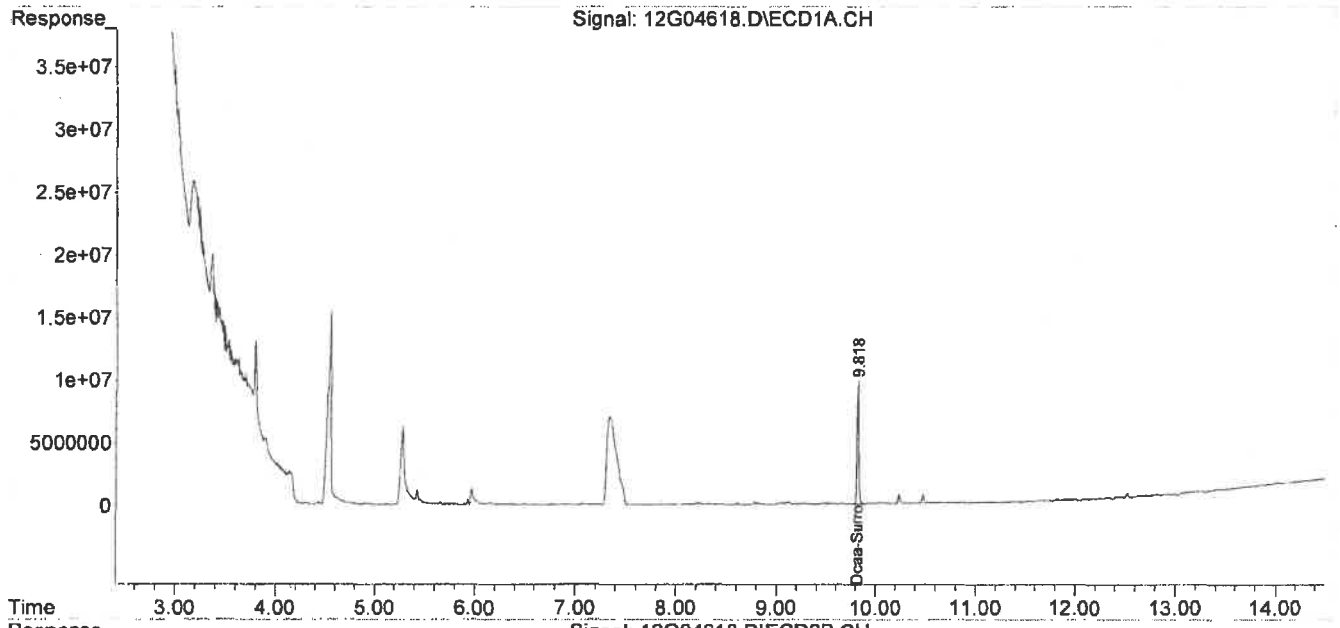
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

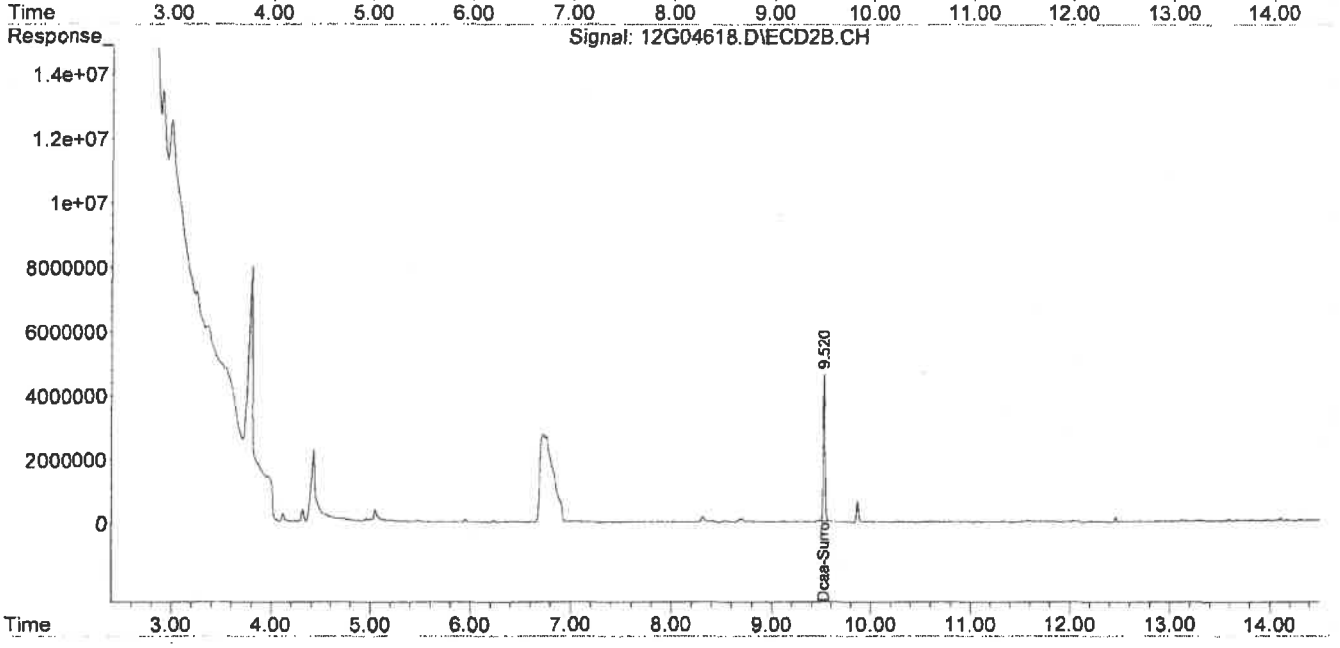
Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-20-15\
Data File : 12G04618.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20-Feb-15, 13:20:05
Operator : MLC/KD/ZM/AHD
Sample : AC83375-003(T)
Misc : A,HERB
ALS Vial : 6 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 23 09:37:26 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Form1

ORGANICS HERBICIDE REPORT

Sample Number: WMB40636
Client Id:
Data File: 12G04613.D
Analysis Date: 02/20/15 11:44
Date Rec/Extracted: NA-02/19/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8151A
Matrix: Aqueous
Initial Vol: 1000ml
Final Vol: 10ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
94-75-7	2,4-D	0.00050	U	93-72-1	Silvex	0.00050	U

Worksheet #: 334466

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

J - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-20-15\
Data File : 12G04613.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20-Feb-15, 11:44:35
Operator : MLC/KD/ZM/AHD
Sample : WMB40636
Misc : A,HERB
ALS Vial : 1 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 23 09:31:45 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	ng#1	ng#2
Target Compounds						
2)Dcaa-Surrogate	9.821	9.518	118.3E6	57661567	844.023	906.040m

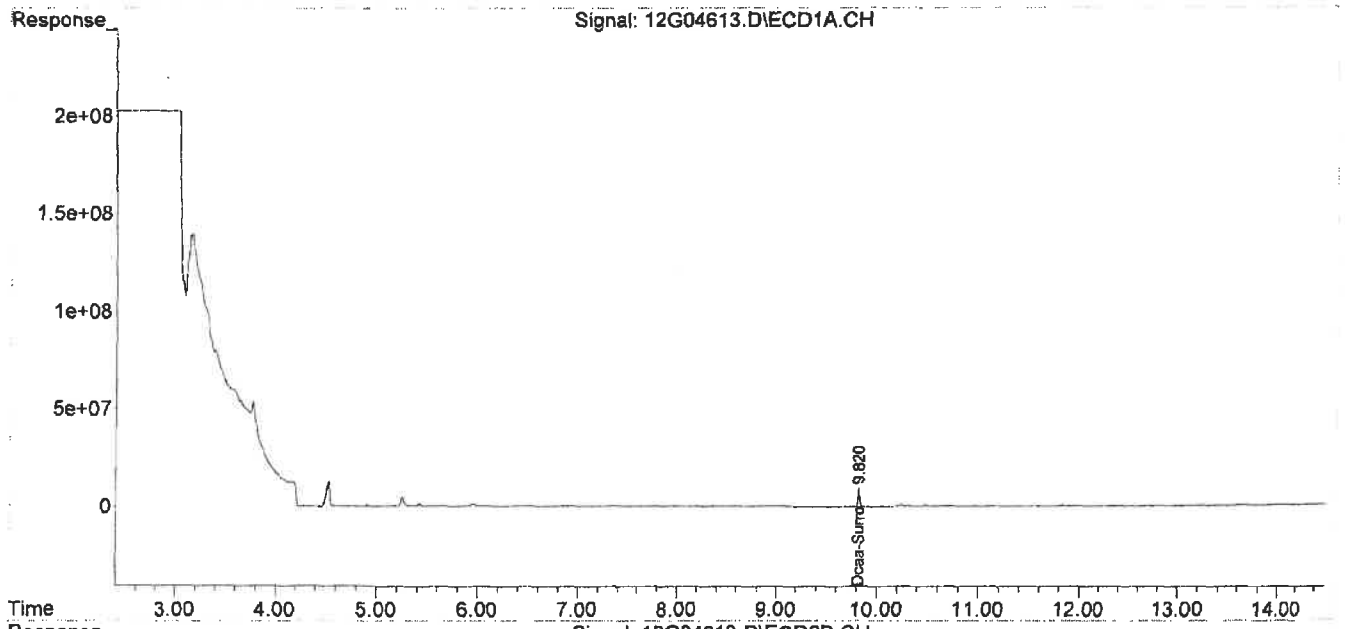
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

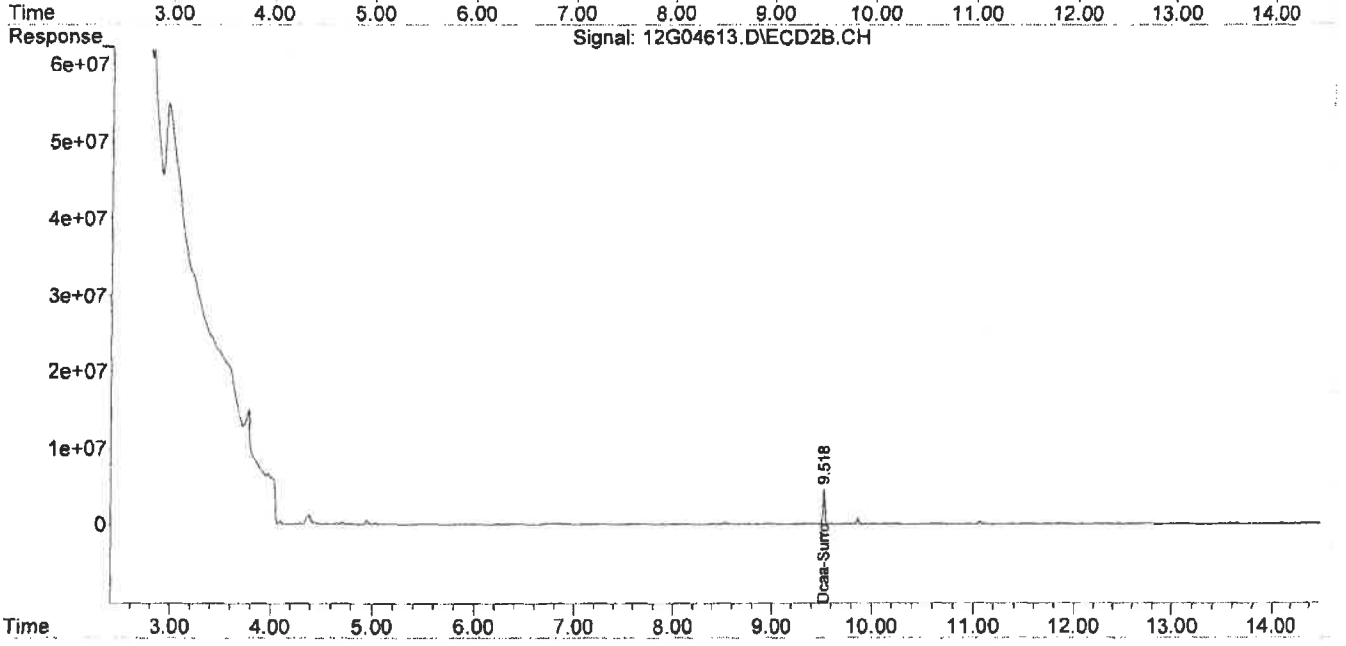
Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-20-15\
Data File : 12G04613.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20-Feb-15, 11:44:35
Operator : MLC/KD/ZM/AHD
Sample : WMB40636
Misc : A,HERB
ALS Vial : 1 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 23 09:31:45 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Form1

ORGANICS HERBICIDE REPORT

Sample Number: EF-1-V-204478(2/19/15
Client Id:
Data File: 12G04620.D
Analysis Date: 02/20/15 13:58
Date Rec/Extracted: NA-02/19/15
Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Method: EPA 8151A
Matrix: Aqueous
Initial Vol: 100ml
Final Vol: 10ml
Dilution: 1
Solids: 0

Units: mg/L

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
94-75-7	2,4-D	0.0050	U	93-72-1	Silvex	0.0050	U

Worksheet #: 334466

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

5021319 0298

Data Path : G:\Gcdata\2015\GC_12\Data\02-20-15\
Data File : 12G04620.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20-Feb-15, 13:58:20
Operator : MLC/KD/ZM/AHD
Sample : EF-1-V-204478(2/19/15)
Misc : A,HERB
ALS Vial : 8 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 23 09:35:41 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	ng#1	ng#2
Target Compounds						
2)Dcaa-Surrogate	9.818	9.520	111.2E6	55274556	793.334	868.533m

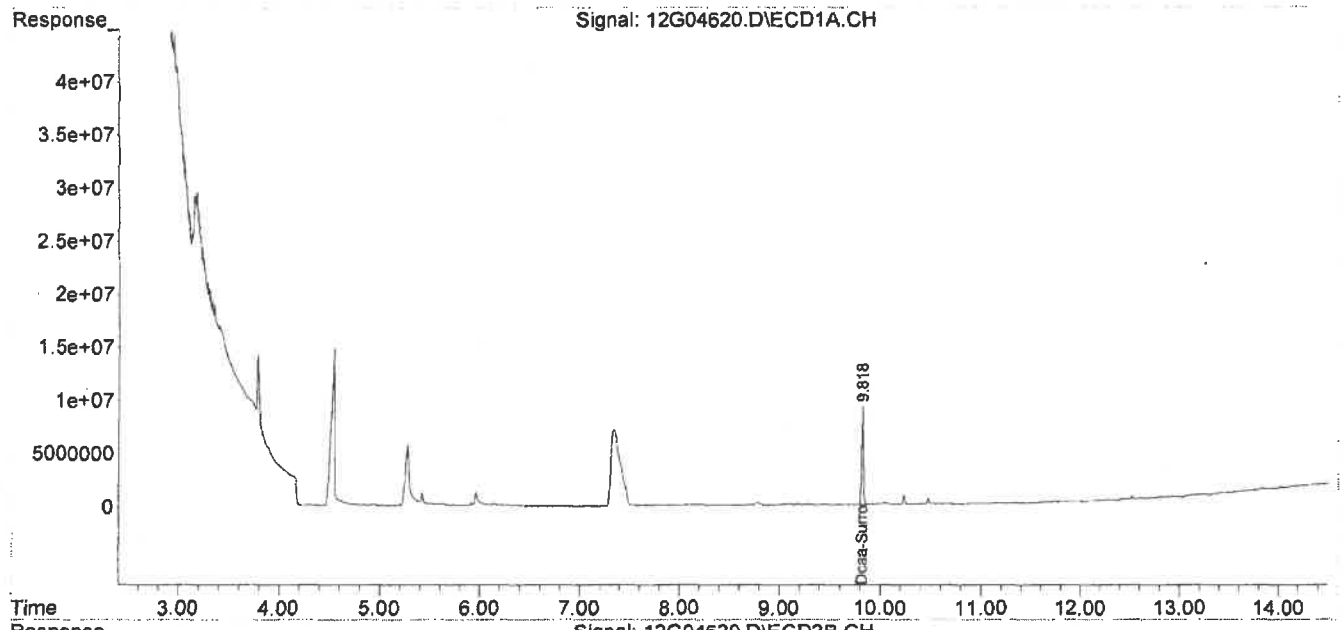
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

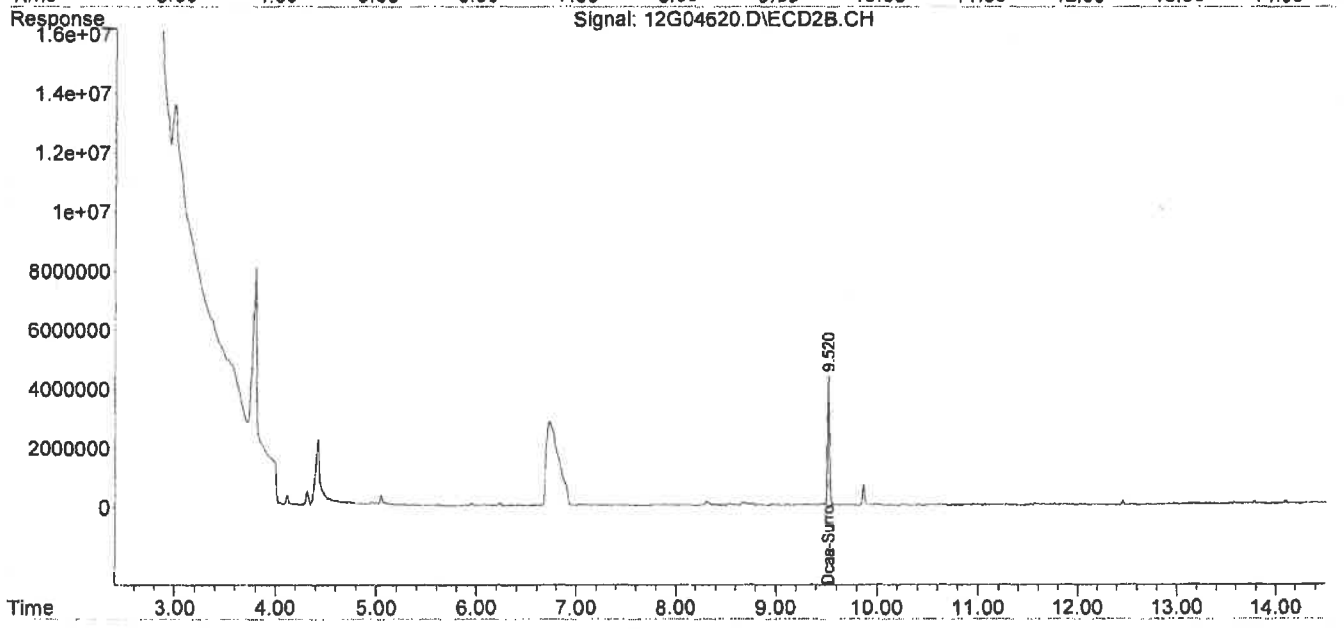
Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_12\Data\02-20-15\
Data File : 12G04620.D
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 20-Feb-15, 13:58:20
Operator : MLC/KD/ZM/AHD
Sample : EF-1-V-204478(2/19/15)
Misc : A;HERB
ALS Vial : 8 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 23 09:35:41 2015
Quant Method : G:\GCDATA\2015\GC_12\MethodQt\12G_HERB0125.M
Quant Title : @GC_12,ug,8151
QLast Update : Fri Feb 13 10:37:31 2015
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





FORM2

Surrogate Recovery

Method: EPA 8151A

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column2 S2 Recov	Column0 S3 Recov	Column0 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
12G04613.D	WMB40636	Aqueous	02/20/15 11:44	1		84	91				
12G04620.D	EF-1-V-20447	Aqueous	02/20/15 13:58	1		79	87				
12G04618.D	AC83375-003(	Aqueous	02/20/15 13:20	1		87	93				
12G04614.D	WMB40636(M	Aqueous	02/20/15 12:03	1		86	92				
12G04615.D	AC83323-007(	Aqueous	02/20/15 12:22	1		76	83				
12G04616.D	AC83323-007(	Aqueous	02/20/15 12:41	1		77	82				
12G04617.D	AC83323-007(	Aqueous	02/20/15 13:00	1		71	76				

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8151A

Aqueous Limits

Compound	Spike Amt	Limits
S1=Dcaa-Surrogate	1000	31-151
S2=Dcaa-Surrogate	1000	31-151

Form3
Recovery Data
QC Batch: WMB40636

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04614.D	WMB40636(MS)	2/20/2015 12:03:38 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8151 Matrix: Aqueous QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	341.81	0	400	85	25	130
2,4-D	1	374.59	0	400	94	10	130
Silvex	1	361.23	0	400	90	25	130
2,4,5-T	1	335.81	0	400	84	25	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
Recovery Data
QC Batch: WMB40636

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04615.D	AC83323-007(T)(MS)	2/20/2015 12:22:41 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8151 Matrix: Aqueous QC Type: MBS

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	304.76	0	400	76	25	130
2,4-D	1	293.25	0	400	73	10	130
Silvex	1	175.74	0	400	44	25	130
2,4,5-T	1	237.03	0	400	59	25	130

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04616.D	AC83323-007(T)(MSD)	2/20/2015 12:41:47 PM
Non Spike(If applicable):			
Inst Blank(If applicable):			

Method: 8151 Matrix: Aqueous QC Type: MBSD

Analyte:	Col	Spike Conc	Sample Conc	Expected Conc	Recovery	Lower Limit	Upper Limit
Dicamba	1	313.68	0	400	78	25	130
2,4-D	1	299.52	0	400	75	10	130
Silvex	1	166.9	0	400	42	25	130
2,4,5-T	1	236.72	0	400	59	25	130

* - Indicates outside of limits # - Indicates outside of standard limits but within method exceedance limits

Form3
RPD DATA

QC Batch: WMB40636

	Data File	Sample ID:	Analysis Date
Spike or Dup:	12G04616.D	AC83323-007(T)(MSD)	2/20/2015 12:41:47 PM
Duplicate(If applicable):	12G04615.D	AC83323-007(T)(MS)	2/20/2015 12:22:41 PM
Inst Blank(If applicable):			

Method: 8151 Matrix: Aqueous QC Type: MBSD

Analyte:	Column	*Dup/MSD/MBSD* Conc	*Sample/MS/MBS* Conc	RPD	Limit
Dicamba	1	313.88	304.76	2.9	40
2,4-D	1	299.52	293.25	2.1	40
Silvex	1	166.9	175.74	5.2	40
2,4,5-T	1	236.72	237.03	0.13	40

* - Indicates outside of limits NA - Both concentrations=0... no result can be calculated

FORM 4
Blank Summary

Blank Number: WMB40636
Blank Data File: 12G04613.D
Matrix: Aqueous

Blank Analysis Date: 02/20/15 11:44
Blank Extraction Date: 02/19/15
(If Applicable)
Method: EPA 8151A

Sample Number	Data File	Analysis Date
AC83375-003(T)	12G04618.D	02/20/15 13:20
EF-1-V-204478(2/1	12G04620.D	02/20/15 13:58
AC83323-007(T)	12G04617.D	02/20/15 13:00
AC83323-007(T)(M	12G04616.D	02/20/15 12:41
AC83323-007(T)(M	12G04615.D	02/20/15 12:22
WMB40636(MS)	12G04614.D	02/20/15 12:03

Form 5

Method: EPA 8151A
Instrument: GC_12

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
12G04180.D	BLK	01/25/15 15:26	Soil					
12G04181.D	CAL HERB@600PPB	01/25/15 15:46	Soil		9.8560	0	9.5243	0
12G04183.D	CAL HERB@50PPB	01/25/15 16:24	Soil		9.8555	0	9.5250	0
12G04184.D	CAL HERB@100PPB	01/25/15 16:43	Soil	12G0418	9.8551	0.0041	9.5245	0.0052
12G04185.D	CAL HERB@200PPB	01/25/15 17:03	Soil	12G0418	9.8557	0.002	9.5241	0.0094
12G04186.D	CAL HERB@400PPB	01/25/15 17:22	Soil	12G0418	9.8550	0.0051	9.5241	0.0094
12G04187.D	CAL HERB@500PPB	01/25/15 17:41	Soil	12G0418	9.8549	0.0061	9.5245	0.0052
12G04188.D	CAL HERB@600PPB	01/25/15 18:00	Soil	12G0418	9.8548	0.0071	9.5238	0.0126
12G04189.D	ICV	01/25/15 18:20	Soil	12G0418	9.8543	0.0122	9.5239	0.0115
12G04190.D	AC82958-086(T)	01/25/15 18:39	Aqueous	12G0418	9.8524	0.0315	9.5230	0.021
12G04191.D	AC82958-089(T)	01/25/15 18:58	Aqueous	12G0418	9.8530	0.0254	9.5233	0.0178
12G04192.D	AC82958-026(T)	01/25/15 19:17	Aqueous	12G0418	9.8516	0.0396	9.5224	0.0273
12G04193.D	AC82958-029(T)	01/25/15 19:36	Aqueous	12G0418	9.8520	0.0355	9.5222	0.0294
12G04194.D	AC82958-032(T)	01/25/15 19:56	Aqueous	12G0418	9.8515	0.0406	9.5230	0.021
12G04195.D	AC82958-020(T)	01/25/15 20:15	Aqueous	12G0418	9.8512	0.0436	9.5225	0.0262
12G04196.D	AC82958-023(T)	01/25/15 20:34	Aqueous	12G0418	9.8511	0.0447	9.5221	0.0304
12G04197.D	AC82958-041(T)	01/25/15 20:53	Aqueous	12G0418	9.8511	0.0447	9.5219	0.0325
12G04198.D	AC82958-044(T)	01/25/15 21:12	Aqueous	12G0418	9.8509	0.0467	9.5216	0.0357
12G04199.D	AC82958-047(T)	01/25/15 21:32	Aqueous	12G0418	9.8510	0.0457	9.5218	0.0336
12G04200.D	AC82958-071(T)	01/25/15 21:51	Aqueous	12G0418	9.8510	0.0457	9.5222	0.0294
12G04201.D	AC82958-068(T)	01/25/15 22:10	Aqueous	12G0418	9.8501	0.0548	9.5219	0.0325
12G04202.D	AC82958-050(T)	01/25/15 22:29	Aqueous	12G0418	9.8503	0.0528	9.5219	0.0325
12G04203.D	AC82958-065(T)	01/25/15 22:49	Aqueous	12G0418	9.8499	0.0568	9.5217	0.0346
12G04204.D	AC82958-062(T)	01/25/15 23:08	Aqueous	12G0418	9.8494	0.0619	9.5210	0.042
12G04205.D	AC82958-059(T)	01/25/15 23:27	Aqueous	12G0418	9.8505	0.0507	9.5222	0.0294
12G04206.D	AC82958-056(T)	01/25/15 23:46	Aqueous	12G0418	9.8502	0.0538	9.5215	0.0368
12G04207.D	AC82958-017(T)(MS)	01/26/15 00:05	Aqueous	12G0418	9.8508	0.0477	9.5226	0.0252
12G04208.D	AC82958-017(T)(MSD)	01/26/15 00:25	Aqueous	12G0418	9.8503	0.0528	9.5221	0.0304
12G04209.D	AC82958-017(T)	01/26/15 00:44	Aqueous	12G0418	9.8494	0.0619	9.5214	0.0378
12G04210.D	CAL HERB@400PPB	01/26/15 01:03	Aqueous	12G0418	9.8511	0.0447	9.5229	0.022

Drift Compound: Dcaa-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8151A
Instrument: GC_12

Column: DB-17/1701P 30M 0.32mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
12G04612.D	CAL HERB@400PPB	02/20/15 06:52	Aqueous	12G0461	9.8179	0	9.5221	0
12G04613.D	WMB40636	02/20/15 11:44	Aqueous	12G0461	9.8208	0.0295	9.5181	0.042
12G04614.D	WMB40636(MS)	02/20/15 12:03	Aqueous	12G0461	9.8197	0.0183	9.5206	0.0158
12G04615.D	AC83323-007(T)(MS)	02/20/15 12:22	Aqueous	12G0461	9.8187	0.0081	9.5204	0.0179
12G04616.D	AC83323-007(T)(MSD)	02/20/15 12:41	Aqueous	12G0461	9.8184	0.0051	9.5201	0.021
12G04617.D	AC83323-007(T)	02/20/15 13:00	Aqueous	12G0461	9.8183	0.0041	9.5194	0.0284
12G04618.D	AC83375-003(T)	02/20/15 13:20	Aqueous	12G0461	9.8184	0.0051	9.5201	0.021
12G04619.D	EF-1-V-204478(2/13/15)	02/20/15 13:39	Aqueous	12G0461	9.8183	0.0041	9.5201	0.021
12G04620.D	EF-1-V-204478(2/19/15)	02/20/15 13:58	Aqueous	12G0461	9.8185	0.0061	9.5200	0.0221
12G04621.D	CAL HERB@400PPB	02/20/15 14:17	Aqueous	12G0461	9.8192	0.0132	9.5209	0.0126

Drift Compound: Dcaa-Surrogate Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5021319 0307

Method: EPA 8151A

orm 6
Initial Calibration

Instrument: GC_12

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	12G04183.	CAL HERB@50PPB	01/25/15 16:24	2	12G04184.	CAL HERB@100PPB	01/25/15 16:43
3	12G04185.	CAL HERB@200PPB	01/25/15 17:03	4	12G04186.	CAL HERB@400PPB	01/25/15 17:22
5	12G04187.	CAL HERB@500PPB	01/25/15 17:41	6	12G04188.	CAL HERB@600PPB	01/25/15 18:00

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
Dalapon	1	0	Avg	13.340	13.426	12.620	13.421	12.363	12.232	----	---	12.9	3.70	0.996	0.998	4.3	50.00	100.0	200.0	400.0	500.0	600.0		
Dcaa-Surrogate	1	0	Avg	13.613	13.788	13.387	14.747	13.810	14.718	----	---	14.0	9.86	0.997	0.997	4.1	250.0	500.0	1000.	2000.	2500.	3000.		
Dicamba	1	0	Avg	62.386	57.288	53.080	54.255	50.617	53.102	----	---	55.1	10.04	0.998	0.998	7.6	50.00	100.0	200.0	400.0	500.0	600.0		
Dichloroprop	1	0	Avg	12.040	13.218	11.872	12.692	11.560	12.152	----	---	12.3	10.76	0.996	0.996	4.9	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-D	1	0	Avg	15.095	15.545	15.050	15.580	14.467	15.312	----	---	15.2	11.10	0.997	0.997	2.7	50.00	100.0	200.0	400.0	500.0	600.0		
Silvex	1	0	Avg	62.482	68.084	68.319	74.569	70.479	75.477	----	---	69.9	11.69	0.997	0.998	6.8	50.00	100.0	200.0	400.0	500.0	600.0		
2,4,5-T	1	0	Avg	58.816	64.276	64.339	70.178	65.463	70.858	----	---	65.7	12.04	0.996	0.997	6.7	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-DB	1	0	Avg	8.9998	8.9326	8.6655	9.2772	8.7117	9.2271	----	---	8.97	12.38	0.998	0.998	2.8	50.00	100.0	200.0	400.0	500.0	600.0		
Dinoseb	1	0	Avg	37.419	41.841	41.459	46.014	44.960	47.757	----	---	43.2	12.74	0.998	0.999	8.7	50.00	100.0	200.0	400.0	500.0	600.0		
Picloram	1	0	Qua	76.821	77.127	87.613	95.755	93.408	99.991	----	---	88.5	13.43	0.998	0.999	11	25.00	50.00	100.0	200.0	250.0	300.0		
Dalapon	2	0	Avg	5.3676	6.0278	5.8468	5.9654	5.7719	5.5999	----	---	5.76	3.29	0.998	1.00	4.3	50.00	100.0	200.0	400.0	500.0	600.0		
Dcaa-Surrogate	2	0	Avg	6.4212	6.5619	6.2243	6.5905	6.0766	6.3101	----	---	6.36	9.52	0.997	0.997	3.1	250.0	500.0	1000.	2000.	2500.	3000.		
Dicamba	2	0	Avg	24.647	25.274	23.424	23.779	22.060	22.616	----	---	23.6	9.75	0.998	0.998	5.1	50.00	100.0	200.0	400.0	500.0	600.0		
Dichloroprop	2	0	Avg	7.0709	6.9770	6.4170	6.3734	5.8795	6.0426	----	---	6.46	10.27	0.998	0.998	7.5	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-D	2	0	Qua	10.132	8.9052	8.2622	8.2163	7.6165	7.8418	----	---	8.50	10.65	0.998	0.998	11	50.00	100.0	200.0	400.0	500.0	600.0		
Silvex	2	0	Avg	35.931	37.041	34.556	34.818	32.181	33.472	----	---	34.7	11.20	0.998	0.998	5.0	50.00	100.0	200.0	400.0	500.0	600.0		
2,4,5-T	2	0	Avg	33.401	34.487	32.359	32.874	30.232	31.800	----	---	32.5	11.61	0.998	0.998	4.5	50.00	100.0	200.0	400.0	500.0	600.0		
2,4-DB	2	0	Avg	5.0889	5.2881	4.9016	5.0011	4.7196	4.8065	----	---	4.97	11.93	0.999	0.999	4.1	50.00	100.0	200.0	400.0	500.0	600.0		
Dinoseb	2	0	Avg	23.037	24.218	22.299	23.023	21.958	22.799	----	---	22.9	11.68	0.999	0.999	3.4	50.00	100.0	200.0	400.0	500.0	600.0		
Picloram	2	0	Avg	44.632	43.319	46.228	46.659	44.575	46.259	----	---	45.3	13.12	0.999	0.999	2.9	25.00	50.00	100.0	200.0	250.0	300.0		

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Avg Rsd Col 1: 5.97 Avg Rsd Col 2: 5.06

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8151A

Data File:				12G04612.D			12G04621.D										
Method:				8151			8151										
Calibration Name:				CAL HERB@400P			CAL HERB@400P										
Calibration Date/Time				02/20/15 06:52			02/20/15 14:17										
					Conc			Conc			Conc			Conc			Conc	
Compound	Limit	Col	Mr	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff	Conc	Exp	%Diff
Dalapon	15	1	0	396.7	400	0.8	534.4	400	33.6*									
Dcaa-Surrogate	15	1	0	1625	2000	18.8*	1985	2000	0.7									
Dicamba	15	1	0	299.9	400	25.0*	371.1	400	7.2									
Dichloroprop	15	1	0	353.8	400	11.5	408.8	400	2.2									
2,4-D	15	1	0	377.2	400	5.7	417	400	4.3									
Silvex	15	1	0	379.8	400	5.0	425.6	400	6.4									
2,4,5-T	15	1	0	394.7	400	1.3	420.4	400	5.1									
2,4-DB	15	1	0	401.3	400	0.3	395.8	400	1.0									
Dinoseb	15	1	0	412	400	3.0	453.7	400	13.4									
Picloram	15	1	0	192.8	200	3.6	180	200	10.0									
Average Difference	15	1	0			7.5			8.4									
Dalapon	15	2	0	425.8	400	6.4	27.27	400	93.2*									
Dcaa-Surrogate	15	2	0	1641	2000	17.9*	2216	2000	10.8									
Dicamba	15	2	0	327.5	400	18.1*	419.3	400	4.8									
Dichloroprop	15	2	0	326.6	400	18.3*	393.2	400	1.7									
2,4-D	15	2	0	345.6	400	13.6	412.4	400	3.1									
Silvex	15	2	0	352.4	400	11.9	410.2	400	2.5									
2,4,5-T	15	2	0	353.5	400	11.6	402.2	400	0.5									
2,4-DB	15	2	0	378.9	400	5.3	408.8	400	2.2									
Dinoseb	15	2	0	399.9	400	0.0	436.6	400	9.1									
Picloram	15	2	0	190.4	200	4.8	186.6	200	6.7									
Average Difference	15	2	0			10.8			13.5									

Flags/Notes: **** - Values outside of limits for this column/run*** HAZ. - 389

Form7
RtWindow Summary

Method: EPA 8151A

Data File:			12G04183.D		12G04612.D						
Calibration Name:			CAL HERB@50PPB		CAL HERB@400PPB						
Calibration Date/Time			1/25/2015 4:24:39 PM		2/20/2015 6:52:04 AM						
Compound	Col	Mr	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit
Dalapon	1	0	3.70	(3.66 - 3.74)	3.66	(3.62 - 3.70)						
Dcaa-Surrogate	1	0										
Dicamba	1	0	10.04	(10.00 - 10.08)	10.00	(9.96 - 10.04)						
Dichloroprop	1	0	10.76	(10.72 - 10.80)	10.72	(10.68 - 10.76)						
2,4-D	1	0	11.10	(11.06 - 11.14)	11.06	(11.02 - 11.10)						
Silvex	1	0	11.69	(11.65 - 11.73)	11.65	(11.61 - 11.69)						
2,4,5-T	1	0	12.04	(12.00 - 12.08)	12.00	(11.96 - 12.04)						
2,4-DB	1	0	12.38	(12.34 - 12.42)	12.35	(12.31 - 12.39)						
Dinoseb	1	0	12.74	(12.70 - 12.78)	12.71	(12.67 - 12.75)						
Picloram	1	0	13.43	(13.39 - 13.47)	13.41	(13.37 - 13.45)						
Dalapon	2	0	3.29	(3.25 - 3.33)	3.26	(3.22 - 3.30)						
Dcaa-Surrogate	2	0										
Dicamba	2	0	9.75	(9.71 - 9.79)	9.75	(9.71 - 9.79)						
Dichloroprop	2	0	10.27	(10.23 - 10.31)	10.27	(10.23 - 10.31)						
2,4-D	2	0	10.66	(10.62 - 10.70)	10.66	(10.62 - 10.70)						
Silvex	2	0	11.20	(11.16 - 11.24)	11.20	(11.16 - 11.24)						
2,4,5-T	2	0	11.61	(11.57 - 11.65)	11.61	(11.57 - 11.65)						
2,4-DB	2	0	11.93	(11.89 - 11.97)	11.93	(11.89 - 11.97)						
Dinoseb	2	0	11.68	(11.64 - 11.72)	11.68	(11.64 - 11.72)						
Picloram	2	0	13.12	(13.08 - 13.16)	13.12	(13.08 - 13.16)						

TPH Data

Form1

ORGANICS PETROLEUM HYDROCARBON REPORT

Sample Number: AC83375-003
Client Id: WC01
Data File: 4G50701.D
Analysis Date: 02/19/15 15:40
Date Rec/Extracted: 02/13/15-02/19/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8015D
Matrix: Soil
Initial Vol: 5g
Final Vol: 1ml
Dilution: 1
Solids: 93

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
	Total Petroleum Hydrocarbo	65	U				

Worksheet #: 334478 *Total Target Concentration* 0 ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration used

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_4\Data\02-19-15\
Data File : 4G50701.D
Signal(s) : FID1A.CH
Acq On : 19 Feb 2015 15:40
Operator : RA/KD/AH
Sample : AC83375-003
Misc : S.TPH
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 20 06:57:58 2015
Quant Method : G:\GCDATA\2015\GC_4\MethodQt\4G_T0112.M
Quant Title : @GC_4,mg,8015
QLast Update : Thu Feb 19 16:27:11 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

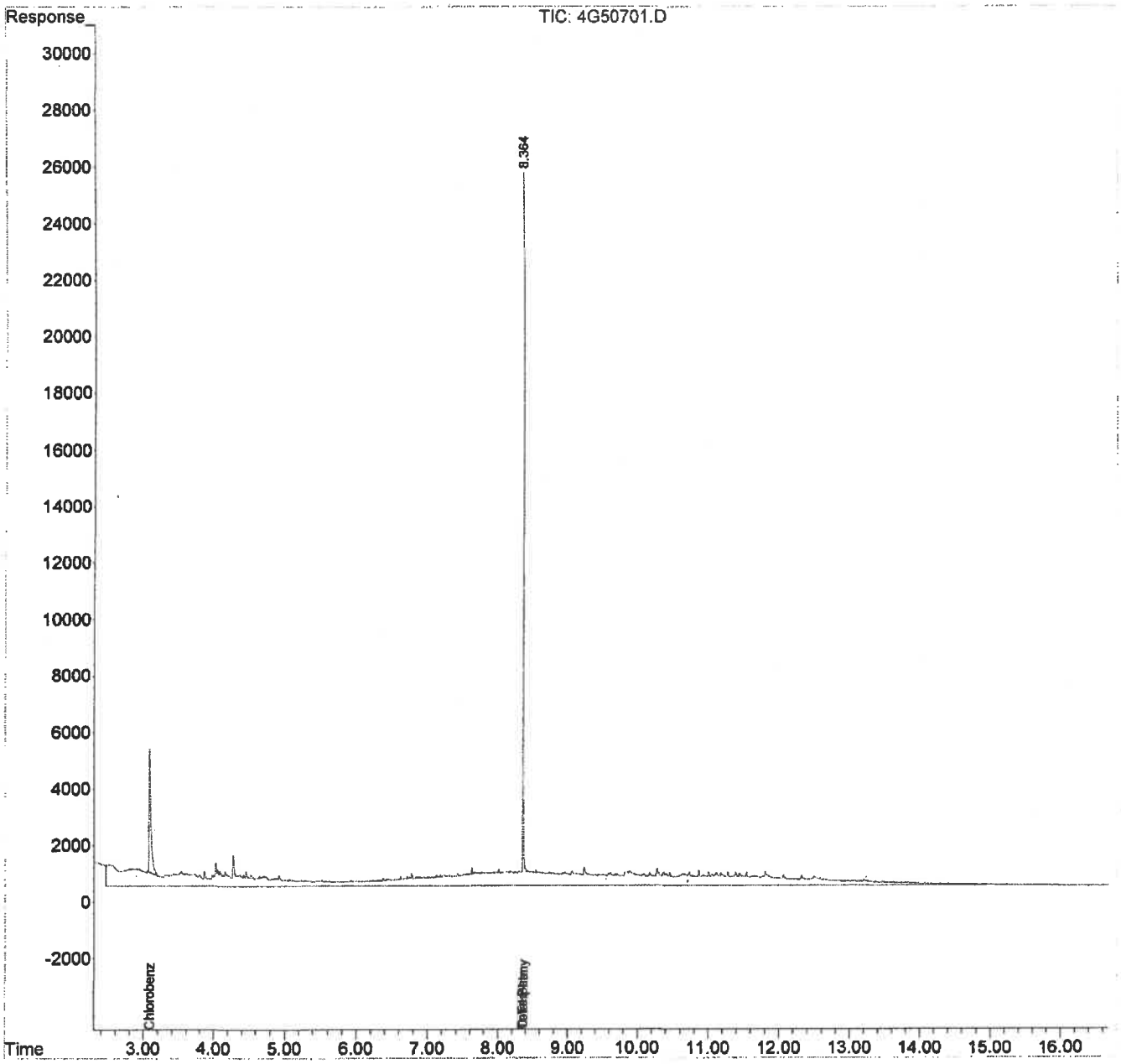
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)mt	C8	0.000	0	N.D.	d
2)mte	C9	0.000	0	N.D.	d
3)mdte	C10	0.000	0	N.D.	d
4)mdte	C12	0.000	0	N.D.	d
5)mdte	C14	0.000	0	N.D.	d
6)dte	C16	0.000	0	N.D.	d
7)dte	C17	0.000	0	N.D.	d
8)dte	Pristane	0.000	0	N.D.	d
9)dte	C18	0.000	0	N.D.	d
10)dte	Phytane	0.000	0	N.D.	d
11)dte	C20	0.000	0	N.D.	d
12)dte	C22	0.000	0	N.D.	d
13)dte	C24	0.000	0	N.D.	d
14)dte	C26	0.000	0	N.D.	d
15)dte	C28	0.000	0	N.D.	d
16)te	C30	0.000	0	N.D.	d
17)te	C32	0.000	0	N.D.	d
18)te	C34	0.000	0	N.D.	d
19)te	C36	0.000	0	N.D.	d
20)t	C40	0.000	0	N.D.	d
21)	Chlorobenzene	3.091	72437	10.323	
22)	O-Terphenyl	8.364	157849	10.913	
23)d	Diesel Range Organics(T	0.000	0	N.D.	d
24)t	Total Petroleum Hydroca	8.364f	2483134	200.054	m
25)e	Ext. Petroleum Hydrocar	0.000	0	N.D.	d
26)m	Mineral Spirits(TOTAL)	0.000	0	N.D.	d
27)m	Stoddard Solvent(TOTAL)	0.000	0	N.D.	d

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : G:\Gcdata\2015\GC_4\Data\02-19-15\
Data File : 4G50701.D
Signal(s) : FID1A.CH
Acq On : 19 Feb 2015 15:40
Operator : RA/KD/AH
Sample : AC83375-003
Misc : S.TPH
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 20 06:57:58 2015
Quant Method : G:\GCDATA\2015\GC_4\MethodQt\4G_T0112.M
Quant Title : @GC_4,mg,8015
QLast Update : Thu Feb 19 16:27:11 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Form1

ORGANICS PETROLEUM HYDROCARBON REPORT

Sample Number: SMB40637
Client Id:
Data File: 4G50700.D
Analysis Date: 02/19/15 15:16
Date Rec/Extracted: NA-02/19/15
Column: DB-5MS 30M 0.250mm ID 0.25um film

Method: EPA 8015D
Matrix: Soil
Initial Vol: 5g
Final Vol: 1ml
Dilution: 1
Solids: 100

Units: mg/Kg

Cas #	Compound	RL	Conc	Cas #	Compound	RL	Conc
	Total Petroleum Hydrocarbo	60	U				

Worksheet #: 334478

Total Target Concentration 0

ColumnID: (^) Indicates results from 2nd column

U - Indicates the compound was analyzed but not detected.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the instrument.
R - Retention Time Out
J - Indicates an estimated value when a compound is detected at less than the specified detection limit.
d - Pesticide %Diff>40% between columns due to coelution. Lower concentration usea

Quantitation Report (QT Reviewed)

Data Path : G:\Gcdata\2015\GC_4\Data\02-19-15\
Data File : 4G50700.D
Signal(s) : FID1A.CH
Acq On : 19 Feb 2015 15:16
Operator : RA/KD/AH
Sample : SMB40637
Misc : S.TPH
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 20 06:56:43 2015
Quant Method : G:\GCDATA\2015\GC_4\MethodQt\4G_T0112.M
Quant Title : @GC_4,mg,8015
QLast Update : Thu Feb 19 16:27:11 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

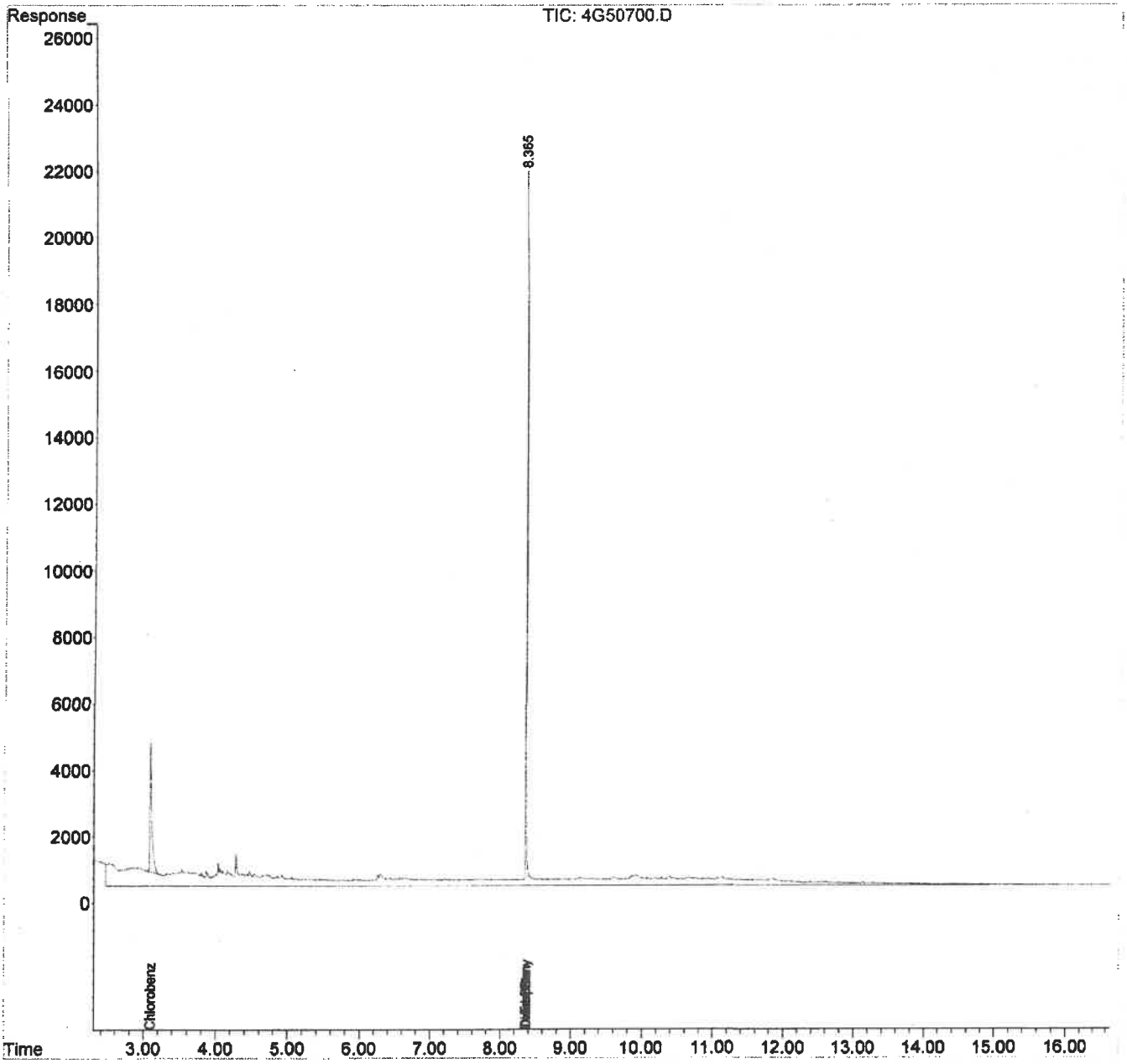
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)mt	C8	0.000	0	N.D.	d
2)mte	C9	0.000	0	N.D.	d
3)mdte	C10	0.000	0	N.D.	d
4)mdte	C12	0.000	0	N.D.	d
5)mdte	C14	0.000	0	N.D.	d
6)dte	C16	0.000	0	N.D.	d
7)dte	C17	0.000	0	N.D.	d
8)dte	Pristane	0.000	0	N.D.	d
9)dte	C18	0.000	0	N.D.	d
10)dte	Phytane	0.000	0	N.D.	d
11)dte	C20	0.000	0	N.D.	d
12)dte	C22	0.000	0	N.D.	d
13)dte	C24	0.000	0	N.D.	d
14)dte	C26	0.000	0	N.D.	d
15)dte	C28	0.000	0	N.D.	d
16)te	C30	0.000	0	N.D.	d
17)te	C32	0.000	0	N.D.	d
18)te	C34	0.000	0	N.D.	d
19)te	C36	0.000	0	N.D.	d
20)t	C40	0.000	0	N.D.	d
21)	Chlorobenzene	3.094	68092	9.704	
22)	O-Terphenyl	8.365	142328	9.840	
23)d	Diesel Range Organics(T	8.365f	1026000	83.307	m
24)t	Total Petroleum Hydroca	8.365f	1695579	136.605	m
25)e	Ext. Petroleum Hydrocar	0.000	0	N.D.	d
26)m	Mineral Spirits(TOTAL)	0.000	0	N.D.	d
27)m	Stoddard Solvent(TOTAL)	0.000	0	N.D.	d

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : G:\Gcdata\2015\GC_4\Data\02-19-15\
Data File : 4G50700.D
Signal(s) : FID1A.CH
Acq On : 19 Feb 2015 15:16
Operator : RA/KD/AH
Sample : SMB40637
Misc : S.TPH
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 20 06:56:43 2015
Quant Method : G:\GCDATA\2015\GC_4\MethodQt\4G_T0112.M
Quant Title : @GC_4,mg,8015
QLast Update : Thu Feb 19 16:27:11 2015
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



FORM2

Surrogate Recovery

Method: EPA 8015D

Dfile	Sample#	Matrix	Date/Time	Surr Dil	Dilute Out Flag	Column1 S1 Recov	Column1 S2 Recov	Column0 S3 Recov	Column0 S4 Recov	Column0 S5 Recov	Column0 S6 Recov
4G50601.D	SMB40587	Soil	02/04/15 11:30	1		66	99				
4G50700.D	SMB40637	Soil	02/19/15 15:16	1		48	49				
4G50701.D	AC83375-003	Soil	02/19/15 15:40	1		52	55				
4G50600.D	SMB40587(M	Soil	02/04/15 11:05	1		54	91				
4G50604.D	AC83124-001(	Soil	02/04/15 12:44	10	SD	0*	0*				
4G50605.D	AC83124-001(	Soil	02/04/15 13:09	10	SD	0*	0*				
4G50606.D	AC83124-001(	Soil	02/04/15 13:33	10	SD	0*	0*				
4G50699.D	SMB40637(M	Soil	02/19/15 14:51	1		51	67				

Flags: SD=Surrogate diluted out
*=Surrogate out

Method: EPA 8015D

Soil Limits

Compound	Spike Amt	Limits
S1=Chlorobenzene	20	20-117
S2=O-Terphenyl	20	30-146

Form3

MBS Data

Method: 8015

Data File:==>				4G50699.D															
Data/Batch/Sample ID:==>				SMB40637(MS)-So															
Date/Time:==>				02/19/15 14:51															
Compound	Limit(s) Soil	Aq	Col	Mr	Conc	Conc Exp	% Rec	Conc	Conc Exp	% Rec	Conc	Conc Exp	% Rec	Conc	Conc Exp	% Rec	Conc	Conc Exp	% Rec
Diesel Range Organ	26-153		1	0	1702	3000	57												

Flags/Notes: **** - Values outside of limits for this column/run (8015 Special Note: n-Nonane may be >low limit but has a secondary limit of 40-140).***

FORM 3
Spike Recovery

Batch Number: SMB40587
Mbs Name: SMB40587(MS)
Ns Name: AC83124-001(10X)
Ms Name: AC83124-001(10X)
Msd Name: AC83124-001(10X)

Mbs File: 4G50600.D
Non Spk'd File: 4G50606.D
Spike File: 4G50604.D
Spike Dup File: 4G50605.D
Matrix: Soil
Method: EPA 8015D

Mbs Date: 02/04/15 11:05
Non Spk'd Date: 02/04/15 13:33
Spike Date : 02/04/15 12:44
Spike Dup Date: 02/04/15 13:09

Compound	C#	Co	Mr	Conc Exp	Lo Lim	Hi Lim	Rpd Lim	Mbs Conc	Sample Conc	Spike Conc	Spike Dup Conc	Mbs Rec	MS Rec	Msd Rec	Rpd
Diesel Range Organic	23	1	0	3000	26	153	42	2177.50	13442.30	12719.20	12443.90	73	-24 Mo	-33 Mo	2.2

Note:
Rp = Failed Rpd Criteria **Mo = Failed Recovery Criteria**
^ - Both Ms and Msd Recoveries = 0 , no valid information can be calculated

FORM 4
Blank Summary

Blank Number: SMB40587
Blank Data File: 4G50601.D
Matrix: Soil

Blank Analysis Date: 02/04/15 11:30
Blank Extraction Date: 02/03/15
(If Applicable)
Method: EPA 8015D

Sample Number	Data File	Analysis Date
AC83124-001(10X)	4G50606.D	02/04/15 13:33
AC83124-001(10X)	4G50605.D	02/04/15 13:09
AC83124-001(10X)	4G50604.D	02/04/15 12:44
SMB40587(MS)	4G50600.D	02/04/15 11:05

FORM 4
Blank Summary

Blank Number: SMB40637
Blank Data File: 4G50700.D
Matrix: Soil

Blank Analysis Date: 02/19/15 15:16
Blank Extraction Date: 02/19/15
(If Applicable)
Method: EPA 8015D

Sample Number	Data File	Analysis Date
AC83375-003	4G50701.D	02/19/15 15:40
SMB40637(MS)	4G50699.D	02/19/15 14:51

Form 5

Method: EPA 8015D

Instrument: GC_4

Column: DB-5MS 30M 0.250mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
4G50404.	INST BLK	01/12/15 10:25	Aqueous					
4G50405.	CAL TPH@20PPM	01/12/15 10:49	Soil	4G50411.	8.3773	0.0896		
4G50406.	CAL TPH@500PPM	01/12/15 11:14	Soil	4G50411.	8.4215	0.6158		
4G50407.	CAL TPH@100PPM	01/12/15 11:38	Soil	4G50411.	8.3862	0.1958		
4G50408.	CAL TPH@40PPM	01/12/15 12:03	Soil	4G50411.	8.3761	0.0752		
4G50409.	CAL TPH@20PPM	01/12/15 12:27	Soil	4G50411.	8.3741	0.0514		
4G50410.	CAL TPH@10PPM	01/12/15 12:52	Soil	4G50411.	8.3718	0.0239		
4G50411.	CAL TPH@5PPM	01/12/15 13:16	Soil	4G50411.	8.3698	0		
4G50412.	ICV TPH@20PPM	01/12/15 13:41	Soil	4G50411.	8.3703	0.006		
4G50413.	INST BLK	01/12/15 14:06	Soil	4G50411.	0.0000	200		
4G50414.	WMB39775(MS)	01/12/15 14:31	Aqueous	4G50411.	8.3731	0.0394		
4G50415.	WMB39775	01/12/15 14:55	Aqueous	4G50411.	8.3699	0.0012		
4G50416.	WMB39787	01/12/15 15:19	Aqueous	4G50411.	8.3701	0.0036		
4G50417.	CAL TPH@20PPM	01/12/15 15:44	Aqueous	4G50411.	8.3694	0.0048		
4G50418.	INST BLK	01/12/15 16:14	Aqueous	4G50417.	0.0000	200		
4G50419.	AC82759-005	01/12/15 16:38	Aqueous	4G50417.	8.3697	0.0036		
4G50420.	AC82759-006	01/12/15 17:03	Aqueous	4G50417.	8.3688	0.0072		
4G50421.	AC82759-004	01/12/15 17:27	Aqueous	4G50417.	8.3690	0.0048		
4G50422.	TEST	01/12/15 17:51	Aqueous	4G50417.	0.0000	200		
4G50423.	TEST	01/12/15 18:16	Aqueous	4G50417.	0.0000	200		
4G50424.	CAL TPH@20PPM	01/12/15 18:41	Aqueous	4G50417.	8.3700	0.0072		
4G50425.	20PPM	01/12/15 19:30	Aqueous	4G50424.	8.3654	0.055		

Drift Compound: O-Terphenyl

Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph)

* - Values outside of limits for this column/run

Form 5

Method: EPA 8015D
Instrument: GC_4

Column: DB-5MS 30M 0.250mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
4G50597.	INST BLK	02/04/15 09:52	Soil					
4G50598.	CAL TPH@20PPM	02/04/15 10:16	Soil	4G50598.	8.3697	0		
4G50599.	INST BLK	02/04/15 10:41	Soil	4G50598.	0.0000	200		
4G50600.	SMB40587(MS)	02/04/15 11:05	Soil	4G50598.	8.3703	0.0072		
4G50601.	SMB40587	02/04/15 11:30	Soil	4G50598.	8.3656	0.049		
4G50602.	AC83141-004	02/04/15 11:55	Soil	4G50598.	8.3593	0.1243		
4G50603.	AC83141-005	02/04/15 12:20	Soil	4G50598.	8.3623	0.0885		
4G50604.	AC83124-001(10X)(MS)	02/04/15 12:44	Soil	4G50598.	0.0000	200		
4G50605.	AC83124-001(10X)(MSD	02/04/15 13:09	Soil	4G50598.	0.0000	200		
4G50606.	AC83124-001(10X)	02/04/15 13:33	Soil	4G50598.	0.0000	200		
4G50607.	AC83124-002(10X)	02/04/15 13:58	Soil	4G50598.	0.0000	200		
4G50608.	AC83124-003(10X)	02/04/15 14:23	Soil	4G50598.	0.0000	200		
4G50609.	AC83108-001(10X)	02/04/15 14:48	Soil	4G50598.	0.0000	200		
4G50610.	TEST	02/04/15 15:12	Soil	4G50598.	0.0000	200		
4G50611.	CAL TPH@20PPM	02/04/15 15:37	Soil	4G50598.	8.3615	0.098		

Drift Compound: O-Terphenyl Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

Form 5

Method: EPA 8015D

Instrument: GC_4

Column: DB-5MS 30M 0.250mm ID 0.25um film

Data File	Sample#	Analysis Date/Time	Matrix	Reference File	Column 1 RT	Column 1 % Drift	Column 2 RT	Column 2 % Drift
4G50696.	INST BLK	02/19/15 09:19	Aqueous					
4G50697.	CAL TPH@20PPM	02/19/15 09:44	Aqueous	4G50697.	8.3714	0		
4G50698.	INST BLK	02/19/15 12:59	Aqueous	4G50697.	0.0000	200		
4G50699.	SMB40637(MS)	02/19/15 14:51	Soil	4G50697.	8.3761	0.0561		
4G50700.	SMB40637	02/19/15 15:16	Soil	4G50697.	8.3652	0.0741		
4G50701.	AC83375-003	02/19/15 15:40	Soil	4G50697.	8.3640	0.0884		
4G50702.	CAL TPH@20PPM	02/19/15 16:09	Soil	4G50697.	8.3644	0.0837		
4G50703.	INST BLK	02/19/15 16:34	Aqueous	4G50702.	0.0000	200		
4G50704.	WMB40641	02/19/15 16:58	Aqueous	4G50702.	8.3608	0.0431		
4G50705.	MBS-1	02/19/15 17:23	Aqueous	4G50702.	8.3640	0.0048		
4G50706.	MBS-2	02/19/15 17:47	Aqueous	4G50702.	8.3636	0.0096		
4G50707.	MBS-3	02/19/15 18:12	Aqueous	4G50702.	8.3626	0.0215		
4G50708.	MBS-4	02/19/15 18:37	Aqueous	4G50702.	8.3650	0.0072		
4G50709.	MBS-5	02/19/15 19:01	Aqueous	4G50702.	8.3682	0.0454		
4G50710.	TEST	02/19/15 19:26	Aqueous	4G50702.	0.0000	200		
4G50711.	TEST	02/19/15 19:50	Aqueous	4G50702.	0.0000	200		
4G50712.	CAL TPH@20PPM	02/19/15 20:15	Aqueous	4G50702.	8.3643	0.0012		
4G50713.	20PPM	02/19/15 21:04	Aqueous	4G50712.	8.3590	0.0634		

Drift Compound: O-Terphenyl Drift Limit(s): 0.5 (Pest/Pcb) 1.5(Herb/Tph) * - Values outside of limits for this column/run

5021319 0325

Me .PA 8015D

orm 6
Initial Calibration

Instrumen _4

Level #:	Data File:	Cal Identifier:	Analysis Date/Time	Level #:	Data File:	Cal Identifier:	Analysis Date/Time
1	4G50411.D	CAL TPH@5PPM	01/12/15 13:16	2	4G50410.D	CAL TPH@10PPM	01/12/15 12:52
3	4G50405.D	CAL TPH@20PPM	01/12/15 10:49	4	4G50408.D	CAL TPH@40PPM	01/12/15 12:03
5	4G50407.D	CAL TPH@100PPM	01/12/15 11:38	6	4G50406.D	CAL TPH@500PPM	01/12/15 11:14

Compound	Col	Mr	Fit:	RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8	AvgRf	RT	Corr1	Corr2	%Rsd	Calibration Level Concentrations Lvl1	Lvl2	Lvl3	Lvl4	Lvl5	Lvl6	Lvl7	Lvl8
C8	1	0	Avg	0.7913	0.8703	0.8757	0.9144	0.8831	0.8750	---	---	0.868	2.65	1.00	1.00	4.7	5.00	10.00	20.00	40.00	100.0	500.0		
C9	1	0	Avg	1.0660	1.0364	0.9656	0.9990	0.9578	1.0076	---	---	1.01	3.53	1.00	1.00	4.1	5.00	10.00	20.00	40.00	100.0	500.0		
C10	1	0	Avg	1.0150	1.0511	1.0076	1.0742	1.0300	1.0934	---	---	1.05	4.29	1.00	1.00	3.2	5.00	10.00	20.00	40.00	100.0	500.0		
C12	1	0	Avg	1.0712	1.0792	1.0390	1.1066	1.0771	1.1295	---	---	1.08	5.47	1.00	1.00	2.9	5.00	10.00	20.00	40.00	100.0	500.0		
C14	1	0	Avg	1.1671	1.1824	1.1173	1.1933	1.1643	1.1981	---	---	1.17	6.42	1.00	1.00	2.5	5.00	10.00	20.00	40.00	100.0	500.0		
C16	1	0	Avg	1.2040	1.1917	1.1451	1.2100	1.2204	1.2125	---	---	1.20	7.25	1.00	1.00	2.3	5.00	10.00	20.00	40.00	100.0	500.0		
C17	1	0	Qua	1.1818	1.1165	1.0900	1.1373	1.3444	1.8040	---	---	1.28	7.63	0.998	1.00	21	5.00	10.00	20.00	40.00	100.0	500.0		
Pristane	1	0	Qua	1.3285	1.2638	1.1802	1.1951	0.9916	0.5989	---	---	1.09	7.64	0.984	1.00	24	5.00	10.00	20.00	40.00	100.0	500.0		
C18	1	0	Avg	1.2261	1.2069	1.1782	1.2430	1.2437	1.4978	---	---	1.27	7.99	0.999	1.00	9.2	5.00	10.00	20.00	40.00	100.0	500.0		
Phytane	1	0	Avg	1.3093	1.2445	1.2118	1.2724	1.2536	0.9940	---	---	1.21	8.02	0.990	1.00	9.3	5.00	10.00	20.00	40.00	100.0	500.0		
C20	1	0	Avg	1.3436	1.2875	1.2582	1.3154	1.3222	1.3492	---	---	1.31	8.67	1.00	1.00	2.6	5.00	10.00	20.00	40.00	100.0	500.0		
C22	1	0	Avg	1.3325	1.2750	1.2564	1.3025	1.3081	1.3150	---	---	1.30	9.30	1.00	1.00	2.1	5.00	10.00	20.00	40.00	100.0	500.0		
C24	1	0	Avg	1.3747	1.3074	1.2916	1.3337	1.3413	1.3367	---	---	1.33	9.89	1.00	1.00	2.2	5.00	10.00	20.00	40.00	100.0	500.0		
C26	1	0	Avg	1.3856	1.3323	1.3221	1.3644	1.3762	1.3759	---	---	1.36	10.47	1.00	1.00	1.9	5.00	10.00	20.00	40.00	100.0	500.0		
C28	1	0	Avg	1.3866	1.3357	1.3232	1.3710	1.3864	1.3569	---	---	1.36	11.03	1.00	1.00	1.9	5.00	10.00	20.00	40.00	100.0	500.0		
C30	1	0	Avg	1.3994	1.3434	1.3311	1.3815	1.3985	1.4080	---	---	1.38	11.57	1.00	1.00	2.3	5.00	10.00	20.00	40.00	100.0	500.0		
C32	1	0	Avg	1.4579	1.3794	1.3641	1.4122	1.4338	1.4002	---	---	1.41	12.11	1.00	1.00	2.5	5.00	10.00	20.00	40.00	100.0	500.0		
C34	1	0	Avg	1.3989	1.3410	1.3260	1.3779	1.3936	1.3590	---	---	1.37	12.63	1.00	1.00	2.1	5.00	10.00	20.00	40.00	100.0	500.0		
C36	1	0	Avg	1.4421	1.3865	1.3693	1.4247	1.4410	1.3960	---	---	1.41	13.19	1.00	1.00	2.2	5.00	10.00	20.00	40.00	100.0	500.0		
C40	1	0	Avg	1.3517	1.3406	1.3473	1.4103	1.4327	1.3915	---	---	1.38	14.82	1.00	1.00	2.8	5.00	10.00	20.00	40.00	100.0	500.0		
Chlorobenzene	1	0	Avg	0.6944	0.7124	0.6845	0.7182	0.6889	0.7116	---	---	0.702	3.10	1.00	1.00	2.0	5.00	10.00	20.00	40.00	100.0	500.0		
O-Terphenyl	1	0	Avg	1.4776	1.4508	1.3934	1.4630	1.4405	1.4532	---	---	1.45	8.37	1.00	1.00	2.0	5.00	10.00	20.00	40.00	100.0	500.0		
Diesel Range Organics(TO	1	0	Avg	1.2559	1.2211	1.1862	1.2399	1.2353	1.2509	---	---	1.23	4.29	1.00	1.00	2.1	65.00	130.0	260.0	520.0	1300.	6500.		
Total Petroleum Hydrocarb	1	0	Avg	1.2617	1.2286	1.2000	1.2519	1.2500	1.2550	---	---	1.24	2.65	1.00	1.00	1.9	100.0	200.0	400.0	800.0	2000.	10000		
Ext. Petroleum Hydrocarbo	1	0	Avg	1.2828	1.2423	1.2098	1.2619	1.2602	1.2685	---	---	1.25	3.54	1.00	1.00	2.0	90.00	180.0	360.0	720.0	1800.	9000.		
Mineral Spirits(TOTAL)	1	0	Avg	1.0221	1.0439	1.0010	1.0575	1.0225	1.0607	---	---	1.03	2.67	1.00	1.00	2.3	25.00	50.00	100.0	200.0	500.0	2500.		
Stoddard Solvent(TOTAL)	1	0	Avg	1.0221	1.0439	1.0010	1.0575	1.0225	1.0607	---	---	1.03	2.67	1.00	1.00	2.3	25.00	50.00	100.0	200.0	500.0	2500.		

HAZ. - 406

Avg Rsd Col 1: 5.027 Avg Rsd Col 2: -1

Flags

c - failed the initial calibration criteria(if applicable)

Note:

Col = Column Number
Mr = MultiPeak Analyte 0=single peak analyte..>0=multi peak analyte (i.e. pcb/chlordane etc..)
Fit = Indicates whether Avg RF, Linear, or Quadratic Curve was used for compound.
Corr 1 = Correlation Coefficient for linear Eq.
Corr 2 = Correlation Coefficient for quad Eq.

All Response Factors = Response Factors / 10000
Initial Calibration Criteria: either %RSD <=20 or Corr >= .995
Columns: Signal #1 db-1701 : Signal #2 db-608

^Lvl: These compounds use a single pt calibration as specified by the method. The file used to update this calibration point is listed in the header under level #

Form7
Continuing Calibration

Method: EPA 8015D

Data File:				4G50598.D				4G50611.D				4G50697.D				4G50702.D						
Method:				8015				8015				8015				8015						
Calibration Name:				CAL TPH@20PPM				CAL TPH@20PPM				CAL TPH@20PPM				CAL TPH@20PPM						
Calibration Date/Time				02/04/15 10:16				02/04/15 15:37				02/19/15 09:44				02/19/15 16:09						
				Conc				Conc				Conc				Conc				Conc		
Compound	Limit	Col	Mr	Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff		Conc	Exp	%Diff
C8	20	1	0	21.77	20	8.9		19.96	20	0.2		18.96	20	5.2		17.12	20	14.4				
C9	20	1	0	20.46	20	2.3		22.76	20	13.8		18.2	20	9.0		17.45	20	12.8				
C10	20	1	0	20.51	20	2.6		20.53	20	2.7		18.19	20	9.0		18.06	20	9.7				
C12	20	1	0	19.85	20	0.7		19.95	20	0.2		17.82	20	10.9		17.25	20	13.8				
C14	20	1	0	19.09	20	4.5		18.99	20	5.1		17.67	20	11.7		17.15	20	14.3				
C16	20	1	0	18.88	20	5.6		19.02	20	4.9		18.08	20	9.6		17.62	20	11.9				
C17	20	1	0	18.23	20	8.9		17.83	20	10.9		15.96	20	20.2		18.04	20	9.8				
Pristane	20	1	0	21.34	20	6.7		20.71	20	3.5		19.73	20	1.4		18.58	20	7.1				
C18	20	1	0	18.21	20	9.0		18.26	20	8.7		17.72	20	11.4		17.19	20	14.1				
Phytane	20	1	0	19.58	20	2.1		19.34	20	3.3		18.59	20	7.0		18.07	20	9.7				
C20	20	1	0	18.49	20	7.6		18.49	20	7.6		18.22	20	8.9		17.65	20	11.8				
C22	20	1	0	18.45	20	7.7		18.29	20	8.5		18.46	20	7.7		17.8	20	11.0				
C24	20	1	0	18.42	20	7.9		18.19	20	9.0		18.31	20	8.5		17.74	20	11.3				
C26	20	1	0	18.37	20	8.1		18.18	20	9.1		18.32	20	8.4		17.63	20	11.9				
C28	20	1	0	18.43	20	7.8		18.14	20	9.3		18.43	20	7.8		17.6	20	12.0				
C30	20	1	0	18.27	20	8.6		17.98	20	10.1		18.13	20	9.4		17.38	20	13.1				
C32	20	1	0	18.22	20	8.9		17.95	20	10.3		18.03	20	9.8		17.3	20	13.5				
C34	20	1	0	18.42	20	7.9		18.02	20	9.9		17.96	20	10.2		17.25	20	13.8				
C36	20	1	0	18.53	20	7.3		18.09	20	9.5		17.89	20	10.6		17.14	20	14.3				
C40	20	1	0	18.6	20	7.0		18.42	20	7.9		17.34	20	13.3		16.66	20	16.7				
Chlorobenzene	20	1	0	17.58	20	12.1		20.09	20	0.5		18.4	20	8.0		17.11	20	14.5				
O-Terphenyl	20	1	0	18.93	20	5.3		18.76	20	6.2		17.77	20	11.2		17.18	20	14.1				
Average Difference	20	1	0			6.7				6.9				9.5				12.5				

Flags/Notes: **** - Values outside of limits for this column/run*** HAZ. - 407

Form7

RtWindow Summary

Method: EPA 8015D

Data File:															
Calibration Name:															
Calibration Date/Time															
Compound	Col	Mr	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit	Cal RT	Limit
C8	1	0										
C9	1	0										
C10	1	0										
C12	1	0										
C14	1	0										
C16	1	0										
C17	1	0										
Pristane	1	0										
C18	1	0										
Phytane	1	0										
C20	1	0										
C22	1	0										
C24	1	0										
C26	1	0										
C28	1	0										
C30	1	0										
C32	1	0										
C34	1	0										
C36	1	0										
C40	1	0										
Chlorobenzene	1	0										
O-Terphenyl	1	0										
Diesel Range Organic	1	0										
Total Petroleum Hydr	1	0										
Ext. Petroleum Hydro	1	0										
Mineral Spirits	1	0										
Stoddard Solvent	1	0										

Metal Data

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC83375-001	% Solid:	87	Lab Name:	Veritech	Nras No:	
Client Id:	SB01	Units:	MG/KG	Lab Code:		Sdg No:	
Matrix:	SOIL	Date Rec:	2/13/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7429-90-5	Aluminum	230	12000	1	0.5	50	02/18/15	41951	S17474B3	23	P	PEICPRAD3A
7440-39-3	Barium	11	110	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7440-70-2	Calcium	1100	4700	1	0.5	50	02/18/15	41951	S17474B3	23	P	PEICPRAD3A
7440-47-3	Chromium	5.7	26	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7440-48-4	Cobalt	2.9	9.8	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7440-50-8	Copper	5.7	42	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7439-89-6	Iron	230	22000	1	0.5	50	02/18/15	41951	S17474B3	23	P	PEICPRAD3A
7439-92-1	Lead	5.7	36	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7439-95-4	Magnesium	570	3800	1	0.5	50	02/18/15	41951	S17474B3	23	P	PEICPRAD3A
7439-96-5	Manganese	11	710	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7439-97-6	Mercury	0.096	0.19	1	0.15	25	02/18/15	41951	H17474S	20	CV	HGCV2A
7440-02-0	Nickel	5.7	26	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7440-09-7	Potassium	570	3000	1	0.5	50	02/18/15	41951	S17474B3	23	P	PEICPRAD3A
7440-23-5	Sodium	290	290	1	0.5	50	02/18/15	41951	S17474B3	23	P	PEICPRAD3A
7440-62-2	Vanadium	11	35	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A
7440-66-6	Zinc	11	62	1	0.5	50	02/18/15	41951	S17474A3	24	P	PEICP3A

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC83375-001	% Solid:	87	Lab Name:	Veritech	Nras No:	
Client Id:	SB01	Units:	MG/KG	Lab Code:		Sdg No:	
Matrix:	SOIL	Date Rec:	2/13/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7440-36-0	Antimony	0.92	ND	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA
7440-38-2	Arsenic	0.23	1.6	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA
7440-41-7	Beryllium	0.23	0.28	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA
7440-43-9	Cadmium	0.46	ND	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA
7782-49-2	Selenium	2.3	ND	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA
7440-22-4	Silver	0.23	ND	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA
7440-28-0	Thallium	0.46	ND	1	0.5	100	02/18/15	41952	S021815B	29	MS	MS2_7500SWA

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC83375-002	% Solid:	94	Lab Name:	Veritech	Nras No:	
Client Id:	SB02	Units:	MG/KG	Lab Code:		Sdg No:	
Matrix:	SOIL	Date Rec:	2/13/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7429-90-5	Aluminum	210	6100	1	0.5	50	02/18/15	41951	S17474B3	24	P	PEICPRAD3A
7440-39-3	Barium	11	38	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7440-70-2	Calcium	1100	1900	1	0.5	50	02/18/15	41951	S17474B3	24	P	PEICPRAD3A
7440-47-3	Chromium	5.3	12	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7440-48-4	Cobalt	2.7	22	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7440-50-8	Copper	5.3	19	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7439-89-6	Iron	210	15000	1	0.5	50	02/18/15	41951	S17474B3	24	P	PEICPRAD3A
7439-92-1	Lead	5.3	9.6	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7439-95-4	Magnesium	530	3700	1	0.5	50	02/18/15	41951	S17474B3	24	P	PEICPRAD3A
7439-96-5	Manganese	11	180	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7439-97-6	Mercury	0.089	ND	1	0.15	25	02/18/15	41951	H17474S	23	CV	HGCV2A
7440-02-0	Nickel	5.3	30	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7440-09-7	Potassium	530	3400	1	0.5	50	02/18/15	41951	S17474B3	24	P	PEICPRAD3A
7440-23-5	Sodium	270	ND	1	0.5	50	02/18/15	41951	S17474B3	24	P	PEICPRAD3A
7440-62-2	Vanadium	11	16	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A
7440-66-6	Zinc	11	100	1	0.5	50	02/18/15	41951	S17474A3	25	P	PEICP3A

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC83375-002	% Solid:	94	Lab Name:	Veritech	Nras No:	
Client Id:	SB02	Units:	MG/KG	Lab Code:		Sdg No:	
Matrix:	SOIL	Date Rec:	2/13/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7440-36-0	Antimony	0.85	ND	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA
7440-38-2	Arsenic	0.21	0.51	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA
7440-41-7	Beryllium	0.21	0.28	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA
7440-43-9	Cadmium	0.43	ND	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA
7782-49-2	Selenium	2.1	ND	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA
7440-22-4	Silver	0.21	ND	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA
7440-28-0	Thallium	0.43	ND	1	0.5	100	02/18/15	41952	S021815B	30	MS	MS2_7500SWA

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 41951 (100) % Solid: 0 Lab Name: Veritech
Client Id: MB 41951 (100) Units: MG/KG Lab Code:
Matrix: SOIL
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7429-90-5	Aluminum	200	ND	1	0.5	50	02/18/15	41951	S17474B3	11	P	PEICPRAD3A
7440-36-0	Antimony	4.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-38-2	Arsenic	4.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-39-3	Barium	10	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-41-7	Beryllium	1.2	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-43-9	Cadmium	1.2	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-70-2	Calcium	1000	ND	1	0.5	50	02/18/15	41951	S17474B3	11	P	PEICPRAD3A
7440-47-3	Chromium	5.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-48-4	Cobalt	2.5	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-50-8	Copper	5.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7439-89-6	Iron	200	ND	1	0.5	50	02/18/15	41951	S17474B3	11	P	PEICPRAD3A
7439-92-1	Lead	5.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7439-95-4	Magnesium	500	ND	1	0.5	50	02/18/15	41951	S17474B3	11	P	PEICPRAD3A
7439-96-5	Manganese	10	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7439-98-7	Molybdenum	2.5	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-02-0	Nickel	5.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-09-7	Potassium	500	ND	1	0.5	50	02/18/15	41951	S17474B3	11	P	PEICPRAD3A
7782-49-2	Selenium	3.0	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-22-4	Silver	1.5	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-23-5	Sodium	250	ND	1	0.5	50	02/18/15	41951	S17474B3	11	P	PEICPRAD3A
7440-28-0	Thallium	1.5	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-31-5	Tin	20	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-32-6	Titanium	10	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-62-2	Vanadium	10	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A
7440-66-6	Zinc	10	ND	1	0.5	50	02/18/15	41951	S17474A3	12	P	PEICP3A

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 41952 % Solid: 0 Lab Name: Veritech
Client Id: MB 41952 Units: MG/KG Lab Code:
Matrix: SOIL
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7440-36-0	Antimony	0.80	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA
7440-38-2	Arsenic	0.20	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA
7440-41-7	Beryllium	0.20	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA
7440-43-9	Cadmium	0.40	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA
7782-49-2	Selenium	2.0	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA
7440-22-4	Silver	0.20	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA
7440-28-0	Thallium	0.40	ND	1	0.5	100	02/18/15	41952	S021815B	16	MS	MS2_7500SWA

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 41951 (167) % Solid: 0 Lab Name: Veritech
Client Id: MB 41951 (167) Units: MG/KG Lab Code:
Matrix: SOIL
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7439-97-6	Mercury	0.083	ND	1	0.15	25	02/18/15	41951	H17474S	11	CV	HGCV2A

Comments: _____

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Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

FORM 2
(ICV/CCV Summary)

Date Analyzed: 02/18/15
Data File: S17474A3
Prep Batch: 41951
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV (1) V-202964-7	Rec	CCV V-202964-20	Rec	CCV V-202964-31	Rec	CCV V-202964-43	Rec	CCV V-202964-55	Rec		Rec		Rec		Rec
Barium	1/.5	0.51154	102	0.51065	102	0.51232	102	0.51143	102	0.53594	107						
Chromium	1/.5	0.51714	103	0.51718	103	0.51795	104	0.52028	104	0.54424	109						
Cobalt	1/.5	0.52478	105	0.52246	104	0.52244	104	0.52313	105	0.54687	109						
Copper	1/.5	0.51020	102	0.50929	102	0.50800	102	0.51151	102	0.52747	105						
Lead	1/.5	0.52259	105	0.52273	105	0.52268	105	0.52359	105	0.54621	109						
Manganese	1/.5	0.50694	101	0.50564	101	0.50766	102	0.50798	102	0.53091	106						
Nickel	1/.5	0.52928	106	0.52919	106	0.53026	106	0.52828	106	0.55679	111 c						
Vanadium	1/.5	0.52845	106	0.52686	105	0.53559	107	0.52949	106	0.56072	112 c						
Zinc	1/.5	0.52932	106	0.52226	104	0.53312	107	0.52256	105	0.54617	109						

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 02/18/15
Data File: S17474A3
Prep Batch: 41951
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV V-203922-8	Rec	LLCCV V-203922-21	Rec	LLCCV V-203922-32	Rec	LLCCV V-203922-44	Rec	LLCCV V-203922-56	Rec		Rec		Rec		Rec
Barium	0.1/0.1	0.106218	106	0.103745	104	0.105259	105	0.108466	108	0.109985	110						
Chromium	0.05/0.05	0.0541264	108	0.0532008	106	0.0537399	107	0.0561259	112	0.0566803	113						
Cobalt	0.025/0.025	0.0265080	106	0.0241540	97	0.0249854	100	0.0263397	105	0.0262630	105						
Copper	0.05/0.05	0.0468262	94	0.0453545	91	0.0466956	93	0.0455793	91	0.0446420	89						
Lead	0.05/0.05	0.0539302	108	0.0542084	108	0.0510399	102	0.0531991	106	0.0587570	118						
Manganese	0.1/0.1	0.0997843	100	0.0970508	97	0.100007	100	0.102207	102	0.103201	103						
Nickel	0.05/0.05	0.0528314	106	0.0508334	102	0.0506562	101	0.0545667	109	0.0556721	111						
Vanadium	0.1/0.1	0.0991520	99	0.0942797	94	0.0985861	99	0.102732	103	0.105389	105						
Zinc	0.1/0.1	0.0981869	98	0.0943114	94	0.0974187	97	0.100624	101	0.101549	102						

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(ICV/CCV Summary)

Date Analyzed: 02/18/15
Data File: S17474B3
Prep Batch: 41951
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV (1) V-202964-6	Rec	CCV V-202964-19	Rec	CCV V-202964-29	Rec	CCV V-202964-41	Rec	CCV V-202964-52	Rec	Rec	Rec	Rec
Aluminum	10/5	5.26978	105	5.23424	105	5.20851	104	5.20029	104	5.15245	103			
Calcium	100/50	51.40960	103	51.46070	103	51.96370	104	52.37000	105	51.36340	103			
Iron	10/5	5.23334	105	5.13997	103	5.19299	104	5.16385	103	5.18448	104			
Magnesium	100/50	51.63610	103	51.52690	103	51.49960	103	50.90560	102	50.62070	101			
Potassium	100/50	51.69840	103	51.83560	104	51.34620	103	51.38830	103	49.84890	100			
Sodium	100/50	52.09470	104	51.94150	104	51.45170	103	51.64760	103	50.01400	100			

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110
CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 02/18/15
Data File: S17474B3
Prep Batch: 41951
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD3A
Units: All units in ppm except Hg and Icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV V-203922-7	Rec	LLCCV V-203922-20	Rec	LLCCV V-203922-30	Rec	LLCCV V-203922-42	Rec	LLCCV V-203922-53	Rec		Rec		Rec
Aluminum	2.00/2	2.03434	102	1.97437	99	1.97326	99	2.08952	104	2.01150	101				
Calcium	10.00/10	10.2252	102	10.1173	101	10.3442	103	10.2301	102	10.2204	102				
Iron	2.00/2	1.97823	99	1.99465	100	2.01243	101	1.95553	98	1.90409	95				
Magnesium	5.00/5	4.91904	98	4.92408	98	4.77708	96	4.77774	96	4.81580	96				
Potassium	5.00/5	5.41464	108	5.45106	109	5.19493	104	5.18929	104	5.01096	100				
Sodium	2.50/2.5	3.01690	121	2.79817	112	2.66953	107	2.52863	101	2.29370	92				

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(ICV/CCV Summary)

Date Analyzed: 02/18/15
Data File: S021815B
Prep Batch: 41952
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV V-204579-8	Rec	CCV V-204583-13	Rec	CCV V-204583-26	Rec	CCV V-204583-39	Rec	CCV V-204583-52	Rec	CCV V-204583-57	Rec		Rec		Rec
Antimony	50/30	50.47000	101	50.61000	101	49.68000	99	50.38000	101	50.12000	100	50.23000	100				
Arsenic	50/30	50.47000	101	49.87000	100	50.75000	102	48.09000	96	48.25000	96	48.21000	96				
Beryllium	50/30	50.96000	102	50.28000	101	50.83000	102	49.67000	99	49.41000	99	49.30000	99				
Cadmium	50/30	51.41000	103	51.33000	103	50.58000	101	50.50000	101	50.29000	101	50.44000	101				
Selenium	50/30	51.04000	102	248.80000	100	252.00000	101	245.50000	98	241.40000	97	244.40000	98				
Silver	10/6	10.19000	102	50.64000	101	50.28000	101	49.60000	99	49.16000	98	49.10000	98				
Thallium	50/30	49.67000	99	50.33000	101	49.61000	99	50.23000	100	48.49000	97	47.93000	96				

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-Indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 02/18/15
Data File: S021815B
Prep Batch: 41952
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV V-204584-9	Rec	LLCCV V-204584-14	Rec	LLCCV V-204584-27	Rec	LLCCV V-204584-40	Rec	LLCCV V-204584-53	Rec	LLCCV V-204584-58	Rec		Rec		Rec
Antimony	4/4	4.083	102	4.051	101	4.094	102	4.051	101	4.092	102	4.125	103				
Arsenic	1/1	1.017	102	9.804E-01	98	1.035	104	1.003	100	1.002	100	9.593E-01	96				
Beryllium	1/1	1.014	101	1.019	102	1.027	103	1.015	102	1.030	103	1.007	101				
Cadmium	2/2	2.040	102	1.996	100	2.073	104	2.052	103	2.039	102	2.082	104				
Selenium	10/10	10.34	103	10.02	100	10.26	103	10.13	101	10.57	106	10.50	105				
Silver	1/1	1.063	106	1.049	105	1.052	105	1.055	106	1.051	105	1.035	104				
Thallium	2/2	1.930	96	1.883	94	1.892	95	1.871	94	1.920	96	1.875	94				

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(ICV/CCV Summary)

Date Analyzed: 02/18/15
Data File: H17474S
Prep Batch: 41951
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: HGCV2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

		ICV (2)-9		CCV-21		CCV-33		CCV-43									
Analyte	ICV/CCV Amt		Rec		Rec		Rec		Rec		Rec		Rec		Rec		Rec
Mercury	20/10	18.02000	90	9.32700	93	9.19700	92	9.29100	93								

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 02/18/15
Data File: S17474A3
Prep Batch: 41951
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-200561-9	CCB V-200561-22	CCB V-200561-33	CCB V-200561-45	CCB V-200561-57	MB 41951 (100)-12
Barium	.1 U	.1 U	.1 U	.1 U	.1 U	10 U
Chromium	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Cobalt	.025 U	.025 U	.025 U	.025 U	.025 U	2.5 U
Copper	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Lead	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Manganese	.1 U	.1 U	.1 U	.1 U	.1 U	10 U
Nickel	.05 U	.05 U	.05 U	.05 U	.05 U	5 U
Vanadium	.1 U	.1 U	.1 U	.1 U	.1 U	10 U
Zinc	.1 U	.1 U	.1 U	.1 U	.1 U	10 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 02/18/15
Data File: S17474B3
Prep Batch: 41951
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-200561-8	CCB V-200561-21	CCB V-200561-31	CCB V-200561-43	CCB V-200561-54	MB 41951 (100)-11
Aluminum	2 U	2 U	2 U	2 U	2 U	200 U
Calcium	10 U	10 U	10 U	10 U	10 U	1000 U
Iron	2 U	2 U	2 U	2 U	2 U	200 U
Magnesium	5 U	5 U	5 U	5 U	5 U	500 U
Potassium	5 U	5 U	5 U	5 U	5 U	500 U
Sodium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	250 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 02/18/15
Data File: S021815B
Prep Batch: 41952
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-204580-10	CCB V-204580-15	CCB V-204580-28	CCB V-204580-41	CCB V-204580-54	CCB V-204580-59	MB 41952-16
Antimony	4 U	4 U	4 U	4 U	4 U	4 U	800 U
Arsenic	1 U	1 U	1 U	1 U	1 U	1 U	200 U
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U	200 U
Cadmium	2 U	2 U	2 U	2 U	2 U	2 U	400 U
Selenium	10 U	10 U	10 U	10 U	10 U	10 U	2000 U
Silver	1 U	1 U	1 U	1 U	1 U	1 U	200 U
Thallium	2 U	2 U	2 U	2 U	2 U	2 U	400 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 02/18/15
Data File: H17474S
Prep Batch: 41951
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: HGCV2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB-10	CCB-22	CCB-34	CCB-44	MB 41951 (167)-11
Mercury	.5 U	.5 U	.5 U	.5 U	83 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 02/18/15
Data File: S17474A3
Prep Batch: 41951
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-203071-10	Rec	ICSAB V-202076-11	Rec	ICSA V-203071-29	Rec	ICSAB V-202076-30	Rec	ICSA V-203071-41	Rec	ICSAB V-202076-42	Rec	ICSA V-203071-53	Rec	ICSAB V-202076-54	Rec
Aluminum	500	541.403	108	542.56600	109	550.207	110	541.36700	108	542.523	109	542.64400	109	539.989	108	546.32100	109
Barium	.5	U		0.54505	109	U		0.54119	108	U		0.56816	114	U		0.57866	116
Calcium	500	500.117	100	503.63400	101	512.225	102	499.91400	100	494.349	99	499.63200	100	492.601	99	509.08600	102
Chromium	.5	U		0.52922	106	U		0.52634	105	U		0.52390	105	U		0.53133	106
Cobalt	.5	U		0.51194	102	U		0.51611	103	U		0.50845	102	U		0.51580	103
Copper	.5	U		0.53652	107	U		0.53372	107	U		0.53834	108	U		0.53792	108
Iron	200	208.606	104	211.32500	106	213.826	107	209.68400	105	208.191	104	208.39700	104	207.654	104	211.12100	106
Lead	1	U		1.08703	109	U		1.09727	110	U		1.07542	108	U		1.08883	109
Magnesium	500	549.339	110	540.04700	108	546.099	109	556.83900	111	546.336	109	548.26100	110	527.854	106	561.29600	112
Manganese	.5	U		0.52349	105	U		0.51980	104	U		0.51627	103	U		0.52248	104
Nickel	1	U		1.05135	105	U		1.05867	106	U		1.03456	103	U		1.05347	105
Vanadium	.5	U		0.47808	96	U		0.47988	96	U		0.46189	92	U		0.47477	95
Zinc	1	U		1.06497	106	U		1.06459	106	U		1.02607	103	U		1.03498	1

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits In the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 02/18/15
Data File: S17474B3
Prep Batch: 41951
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICPRAD3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-203071-9	Rec	ICSAB V-202076-10	Rec	ICSA V-203071-27	Rec	ICSAB V-202076-28	Rec	ICSA V-203071-39	Rec	ICSAB V-202076-40	Rec	ICSA V-203071-50	Rec	ICSAB V-202076-51	Rec
Aluminum	500	529.393	106	534.20800	107	533.779	107	538.09800	108	518.339	104	534.50800	107	518.099	104	529.43100	106
Calcium	500	516.866	103	530.36200	106	518.656	104	526.70400	105	521.709	104	533.26500	107	518.542	104	532.01100	106
Iron	200	209.78	105	209.68900	105	209.682	105	207.87300	104	201.523	101	209.47700	105	200.485	100	209.88300	105
Magnesium	500	517.391	103	523.99200	105	520.509	104	525.34000	105	507.566	102	522.76400	105	506.596	101	518.61800	104

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits in the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 02/18/15
Data File: S021815B
Prep Batch: 41952
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: MS2_7500SWA
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-204581-11	Rec	ICSAB V-204582-12	Rec	Rec	Rec	Rec	Rec	Rec	Rec
Aluminum	50000	46080	92	45970.00000	92						
Arsenic	100	U		101.00000	101						
Cadmium	100	U		98.11000	98						
Calcium	150000	150400	100	51600.00000	101						
Iron	125000	119400	96	21200.00000	97						
Magnesium	50000	46850	94	47270.00000	95						
Selenium	100	U		94.67000	95						
Silver	50	U		47.44000	95						

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits in the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM5/FORM7

5021319 0350

SPIKE RECOVERY DATA

PREP BATCH: 41951

strument Type: ICP/HG

Analytical Method(s):6010/200.7/7470A/7471A/245.1 ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 41951

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	41951	1	S17474B3	13	53.2687	74.6	71		47	153
Barium	41951	1	S17474A3	14	1.7866	2.03	88		83	118
Calcium	41951	1	S17474B3	13	55.3419	60.4	92		81	119
Chromium	41951	1	S17474A3	14	1.2524	1.36	92		79	121
Cobalt	41951	1	S17474A3	14	1.3900	1.48	94		83	117
Copper	41951	1	S17474A3	14	1.5717	1.68	94		82	118
Iron	41951	1	S17474B3	13	130.0340	141	92		43	157
Lead	41951	1	S17474A3	14	1.2336	1.33	93		82	119
Magnesium	41951	1	S17474B3	13	23.7483	28.0	85		75	125
Manganese	41951	1	S17474A3	14	2.6448	2.97	89		80	119
Mercury	41951	5	H17474S	15	15.8000	77.25	102		72.9	127
Nickel	41951	1	S17474A3	14	1.1693	1.23	95		82	119
Potassium	41951	1	S17474B3	13	21.8813	25.4	86		69	131
Sodium	41951	1	S17474B3	13	7.0368	7.61	92		70	130
Vanadium	41951	1	S17474A3	14	0.9752	1.07	91		77	123
Zinc	41951	1	S17474A3	14	1.7188	1.89	91		81	119

TxtQcType: LCS Matrix: SOIL SampleID: LCS 41951

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	41951	1	S17474B3	12	55.6667	74.6	75		47	153
Barium	41951	1	S17474A3	13	1.8792	2.03	93		83	118
Calcium	41951	1	S17474B3	12	60.3140	60.4	100		81	119
Chromium	41951	1	S17474A3	13	1.3006	1.36	96		79	121
Cobalt	41951	1	S17474A3	13	1.4440	1.48	98		83	117
Copper	41951	1	S17474A3	13	1.6577	1.68	99		82	118
Iron	41951	1	S17474B3	12	141.3380	141	100		43	157
Lead	41951	1	S17474A3	13	1.3077	1.33	98		82	119
Magnesium	41951	1	S17474B3	12	24.5594	28.0	88		75	125
Manganese	41951	1	S17474A3	13	2.9494	2.97	99		80	119
Mercury	41951	5	H17474S	14	18.8200	77.25	122		72.9	127
Nickel	41951	1	S17474A3	13	1.2109	1.23	98		82	119
Potassium	41951	1	S17474B3	12	22.6944	25.4	89		69	131
Sodium	41951	1	S17474B3	12	7.3866	7.61	97		70	130
Vanadium	41951	1	S17474A3	13	1.0275	1.07	96		77	123
Zinc	41951	1	S17474A3	13	1.7977	1.89	95		81	119

TxtQcType: MSD Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	41951	1	S17474B3	17	S17474B3	14	47.8144	38.4084	5.0	188	b	75	125
Barium	41951	1	S17474A3	18	S17474A3	15	0.5507	0.1654	0.5	77		75	125
Calcium	41951	1	S17474B3	17	S17474B3	14	46.1753	10U	50	92		75	125
Chromium	41951	1	S17474A3	18	S17474A3	15	0.4475	0.05U	0.5	89		75	125
Cobalt	41951	1	S17474A3	18	S17474A3	15	0.4148	0.025U	0.5	83		75	125
Copper	41951	1	S17474A3	18	S17474A3	15	0.4437	0.05U	0.5	89		75	125
Iron	41951	1	S17474B3	17	S17474B3	14	63.5062	57.0513	5.0	129	b	75	125
Lead	41951	1	S17474A3	18	S17474A3	15	0.4293	0.05U	0.5	86		75	125
Magnesium	41951	1	S17474B3	17	S17474B3	14	46.1697	5.1585	50	82		75	125
Manganese	41951	1	S17474A3	18	S17474A3	15	0.7032	0.2977	0.5	81		75	125
Mercury	41951	1	H17474S	19	H17474S	16	9.2360	.5U	10	92		75	125
Nickel	41951	1	S17474A3	18	S17474A3	15	0.4418	0.05U	0.5	88		75	125
Potassium	41951	1	S17474B3	17	S17474B3	14	42.4987	5U	50	85		75	125
Sodium	41951	1	S17474B3	17	S17474B3	14	41.6157	2.5U	50	83		75	125
Vanadium	41951	1	S17474A3	18	S17474A3	15	0.4683	0.1U	0.5	94		75	125
Zinc	41951	1	S17474A3	18	S17474A3	15	0.5586	0.1547	0.5	81		75	125

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM5/FORM7

5021319 0351

SPIKE RECOVERY DATA

PREP BATCH: 41951

Instrument Type: ICP/HG

Analytical Method(s):6010/200.7/7470A/7471A/245.1

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: MS Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Aluminum	41951	1	S17474B3	16	S17474B3	14	50.6424	38.4084	5.0	245	b	75	125
Barium	41951	1	S17474A3	17	S17474A3	15	0.5611	0.1654	0.5	79		75	125
Calcium	41951	1	S17474B3	16	S17474B3	14	45.4723	10U	50	91		75	125
Chromium	41951	1	S17474A3	17	S17474A3	15	0.4401	0.05U	0.5	88		75	125
Cobalt	41951	1	S17474A3	17	S17474A3	15	0.4162	0.025U	0.5	83		75	125
Copper	41951	1	S17474A3	17	S17474A3	15	0.4360	0.05U	0.5	87		75	125
Iron	41951	1	S17474B3	16	S17474B3	14	63.2662	57.0513	5.0	124		75	125
Lead	41951	1	S17474A3	17	S17474A3	15	0.4299	0.05U	0.5	86		75	125
Magnesium	41951	1	S17474B3	16	S17474B3	14	45.8764	5.1585	50	81		75	125
Manganese	41951	1	S17474A3	17	S17474A3	15	0.7169	0.2977	0.5	84		75	125
Mercury	41951	1	H17474S	18	H17474S	16	9.0010	.5U	10	90		75	125
Nickel	41951	1	S17474A3	17	S17474A3	15	0.4443	0.05U	0.5	89		75	125
Potassium	41951	1	S17474B3	16	S17474B3	14	41.7488	5U	50	83		75	125
Sodium	41951	1	S17474B3	16	S17474B3	14	40.8395	2.5U	50	82		75	125
Vanadium	41951	1	S17474A3	17	S17474A3	15	0.4670	0.1U	0.5	93		75	125
Zinc	41951	1	S17474A3	17	S17474A3	15	0.5601	0.1547	0.5	81		75	125

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM5/FORM7

5021319 0352

SPIKE RECOVERY DATA

PREP BATCH: 41952

strument Type: ICPMS

Analytical Method(s):6020/200.8

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 41952

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	41952	1	S021815B	18	9.5590	88.8	11		0.023	209
Arsenic	41952	1	S021815B	18	135.5000	139	97		78	122
Beryllium	41952	1	S021815B	18	91.7000	96.1	95		83	118
Cadmium	41952	1	S021815B	18	93.6800	96	98		82	118
Selenium	41952	1	S021815B	18	172.1000	177	97		77	123
Silver	41952	1	S021815B	18	40.3900	40.2	100		75	125
Thallium	41952	1	S021815B	18	134.3000	138	97		78	122

TxtQcType: LCS Matrix: SOIL SampleID: LCS 41952

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	41952	1	S021815B	17	9.6490	88.8	11		0.023	209
Arsenic	41952	1	S021815B	17	150.9000	139	109		78	122
Beryllium	41952	1	S021815B	17	102.0000	96.1	106		83	118
Cadmium	41952	1	S021815B	17	100.2000	96	104		82	118
Selenium	41952	1	S021815B	17	184.5000	177	104		77	123
Silver	41952	1	S021815B	17	45.4000	40.2	113		75	125
Thallium	41952	1	S021815B	17	143.6000	138	104		78	122

TxtQcType: MSD Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	41952	1	S021815B	23	S021815B	19	56.1300	4U	250	22	a	75	125
Arsenic	41952	1	S021815B	23	S021815B	19	199.6000	4.1170	250	78		75	125
Beryllium	41952	1	S021815B	23	S021815B	19	192.4000	1U	250	77		75	125
Cadmium	41952	1	S021815B	23	S021815B	19	205.3000	2U	250	82		75	125
Selenium	41952	1	S021815B	23	S021815B	19	193.3000	10U	250	77		75	125
Silver	41952	1	S021815B	23	S021815B	19	30.6400	1U	50	61	a	75	125
Thallium	41952	1	S021815B	23	S021815B	19	190.1000	2U	250	76		75	125

TxtQcType: MS Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	41952	1	S021815B	22	S021815B	19	49.5400	4U	250	20	a	75	125
Arsenic	41952	1	S021815B	22	S021815B	19	197.0000	4.1170	250	77		75	125
Beryllium	41952	1	S021815B	22	S021815B	19	192.1000	1U	250	77		75	125
Cadmium	41952	1	S021815B	22	S021815B	19	205.7000	2U	250	82		75	125
Selenium	41952	1	S021815B	22	S021815B	19	190.4000	10U	250	76		75	125
Silver	41952	1	S021815B	22	S021815B	19	30.6600	1U	50	61	a	75	125
Thallium	41952	1	S021815B	22	S021815B	19	189.3000	2U	250	76		75	125

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM5/FORM7

SPIKE RECOVERY DATA

PREP BATCH: 41952

Instrument Type: ICPMS

Analytical Method(s):6020/200.8

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: PS Matrix: SOIL SampleID: AC83221-002

Analyte	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Antimony	1	S021815B	24	S021815B	19	48.6400	4U	50	97		80	120
Arsenic	1	S021815B	24	S021815B	19	51.7800	4.1170	50	95		80	120
Beryllium	1	S021815B	24	S021815B	19	45.0200	1U	50	90		80	120
Cadmium	1	S021815B	24	S021815B	19	48.4700	2U	50	97		80	120
Selenium	1	S021815B	24	S021815B	19	233.3000	10U	250	93		80	120
Silver	1	S021815B	24	S021815B	19	48.6300	1U	50	97		80	120
Thallium	1	S021815B	24	S021815B	19	48.6800	2U	50	97		80	120

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 41951

trument Type: ICP/HG

Analytical Method(s):6010/200.7/7470A/7471A/245.1 ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 41951

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Aluminum	41951	S17474B3	13	S17474B3	12	53.2687	55.6667	4.4	20
Barium	41951	S17474A3	14	S17474A3	13	1.7866	1.8792	5	20
Calcium	41951	S17474B3	13	S17474B3	12	55.3419	60.3140	8.6	20
Chromium	41951	S17474A3	14	S17474A3	13	1.2524	1.3006	3.8	20
Cobalt	41951	S17474A3	14	S17474A3	13	1.3900	1.4440	3.8	20
Copper	41951	S17474A3	14	S17474A3	13	1.5717	1.6577	5.3	20
Iron	41951	S17474B3	13	S17474B3	12	130.0340	141.3380	8.3	20
Lead	41951	S17474A3	14	S17474A3	13	1.2336	1.3077	5.8	20
Magnesium	41951	S17474B3	13	S17474B3	12	23.7483	24.5594	3.4	20
Manganese	41951	S17474A3	14	S17474A3	13	2.6448	2.9494	11	20
Mercury	41951	H17474S	15	H17474S	14	15.8000	18.8200	17	20
Nickel	41951	S17474A3	14	S17474A3	13	1.1693	1.2109	3.5	20
Potassium	41951	S17474B3	13	S17474B3	12	21.8813	22.6944	3.6	20
Sodium	41951	S17474B3	13	S17474B3	12	7.0368	7.3866	4.9	20
Vanadium	41951	S17474A3	14	S17474A3	13	0.9752	1.0275	5.2	20
Zinc	41951	S17474A3	14	S17474A3	13	1.7188	1.7977	4.5	20

TxtQcType: MR Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Aluminum	41951	S17474B3	15	S17474B3	14	44.4467	38.4084	15	20
Barium	41951	S17474A3	16	S17474A3	15	0.1985	0.1654	18	20
Calcium	41951	S17474B3	15	S17474B3	14	10U	10U	---	20
Chromium	41951	S17474A3	16	S17474A3	15	0.0518	0.05U	---	20
Cobalt	41951	S17474A3	16	S17474A3	15	0.025U	0.025U	---	20
Copper	41951	S17474A3	16	S17474A3	15	0.05U	0.05U	---	20
Iron	41951	S17474B3	15	S17474B3	14	64.7896	57.0513	13	20
Lead	41951	S17474A3	16	S17474A3	15	0.05U	0.05U	---	20
Magnesium	41951	S17474B3	15	S17474B3	14	5.7436	5.1585	11	20
Manganese	41951	S17474A3	16	S17474A3	15	0.3537	0.2977	17	20
Mercury	41951	H17474S	17	H17474S	16	.5U	.5U	---	20
Nickel	41951	S17474A3	16	S17474A3	15	0.05U	0.05U	---	20
Potassium	41951	S17474B3	15	S17474B3	14	5U	5U	---	20
Sodium	41951	S17474B3	15	S17474B3	14	2.5U	2.5U	---	20
Vanadium	41951	S17474A3	16	S17474A3	15	0.1U	0.1U	---	20
Zinc	41951	S17474A3	16	S17474A3	15	0.1424	0.1547	8.3	20

a-Indicates Rpd Failed the criteria
b-Method Rep Out but concentrations < 5*RL
c-Serial dilution Out but conc < 10 * IDL

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 41951

Instrument Type: ICP/HG

Analytical Method(s):6010/200.7/7470A/7471A/245.1

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: MSD Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	Data Fil	Seq#:	MS File	Seq#	Result 1	Result 2	RPD	Limit
Aluminum	41951	S17474B3	17	S17474B3	16	47.8144	50.6424	5.7	20
Barium	41951	S17474A3	18	S17474A3	17	0.5507	0.5611	1.9	20
Calcium	41951	S17474B3	17	S17474B3	16	46.1753	45.4723	1.5	20
Chromium	41951	S17474A3	18	S17474A3	17	0.4475	0.4401	1.7	20
Cobalt	41951	S17474A3	18	S17474A3	17	0.4148	0.4162	.32	20
Copper	41951	S17474A3	18	S17474A3	17	0.4437	0.4360	1.8	20
Iron	41951	S17474B3	17	S17474B3	16	63.5062	63.2662	.38	20
Lead	41951	S17474A3	18	S17474A3	17	0.4293	0.4299	.13	20
Magnesium	41951	S17474B3	17	S17474B3	16	46.1697	45.8764	.64	20
Manganese	41951	S17474A3	18	S17474A3	17	0.7032	0.7169	1.9	20
Mercury	41951	H17474S	19	H17474S	18	9.2360	9.0010	2.6	20
Nickel	41951	S17474A3	18	S17474A3	17	0.4418	0.4443	.56	20
Potassium	41951	S17474B3	17	S17474B3	16	42.4987	41.7488	1.8	20
Sodium	41951	S17474B3	17	S17474B3	16	41.6157	40.8395	1.9	20
Vanadium	41951	S17474A3	18	S17474A3	17	0.4683	0.4670	.29	20
Zinc	41951	S17474A3	18	S17474A3	17	0.5586	0.5601	.26	20

TxtQcType: SD Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	DF	Result 1	Result 2	%Diff		Limit
Aluminum	41951	S17474B3	22	S17474B3	14	5	7.6838	38.4084	0.028		10
Barium	41951	S17474A3	23	S17474A3	15	5	0.0347	0.1654	4.7		10
Calcium	41951	S17474B3	22	S17474B3	14	5	0.5797	3.6974	22	c	10
Chromium	41951	S17474A3	23	S17474A3	15	5	0.0098	0.0481	1.6		10
Cobalt	41951	S17474A3	23	S17474A3	15	5	0.0020	0.0099	0.78		10
Copper	41951	S17474A3	23	S17474A3	15	5	0.0070	0.0464	24	c	10
Iron	41951	S17474B3	22	S17474B3	14	5	11.4597	57.0513	0.43		10
Lead	41951	S17474A3	23	S17474A3	15	5	0.0079	0.0368	7		10
Magnesium	41951	S17474B3	22	S17474B3	14	5	0.8933	5.1585	13	a	10
Manganese	41951	S17474A3	23	S17474A3	15	5	0.0609	0.2977	2.3		10
Nickel	41951	S17474A3	23	S17474A3	15	5	0.0066	0.0332	0.069		10
Potassium	41951	S17474B3	22	S17474B3	14	5	0.6088	1.7433	75	c	10
Sodium	41951	S17474B3	22	S17474B3	14	5	0.2089	0.8859	18	c	10
Vanadium	41951	S17474A3	23	S17474A3	15	5	0.0159	0.0603	32	a	10
Zinc	41951	S17474A3	23	S17474A3	15	5	0.0301	0.1547	2.8		10

a-Indicates Rpd Failed the criteria

b-Method Rep Out but concentrations < 5*RL

c-Serial dilution Out but conc < 10 * IDL

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 41952

Instrument Type: ICPMS
Analytical Method(s):6020/200.8

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: SOIL SampleID: LCS MR 41952

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Antimony	41952	S021815B	18	S021815B	17	9.5590	9.6490	.94	20
Arsenic	41952	S021815B	18	S021815B	17	135.5000	150.9000	11	20
Beryllium	41952	S021815B	18	S021815B	17	91.7000	102.0000	11	20
Cadmium	41952	S021815B	18	S021815B	17	93.6800	100.2000	6.7	20
Selenium	41952	S021815B	18	S021815B	17	172.1000	184.5000	7	20
Silver	41952	S021815B	18	S021815B	17	40.3900	45.4000	12	20
Thallium	41952	S021815B	18	S021815B	17	134.3000	143.6000	6.7	20

TxtQcType: MR Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Antimony	41952	S021815B	20	S021815B	19	4U	4U	---	20
Arsenic	41952	S021815B	20	S021815B	19	3.5690	4.1170	14	20
Beryllium	41952	S021815B	20	S021815B	19	1U	1U	---	20
Cadmium	41952	S021815B	20	S021815B	19	2U	2U	---	20
Selenium	41952	S021815B	20	S021815B	19	10U	10U	---	20
Silver	41952	S021815B	20	S021815B	19	1U	1U	---	20
Thallium	41952	S021815B	20	S021815B	19	2U	2U	---	20

TxtQcType: MSD Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	Data Fil	Seq#:	MS File	Seq#	Result 1	Result 2	RPD	Limit
Antimony	41952	S021815B	23	S021815B	22	56.1300	49.5400	12	20
Arsenic	41952	S021815B	23	S021815B	22	199.6000	197.0000	1.3	20
Beryllium	41952	S021815B	23	S021815B	22	192.4000	192.1000	.16	20
Cadmium	41952	S021815B	23	S021815B	22	205.3000	205.7000	.19	20
Selenium	41952	S021815B	23	S021815B	22	193.3000	190.4000	1.5	20
Silver	41952	S021815B	23	S021815B	22	30.6400	30.6600	.065	20
Thallium	41952	S021815B	23	S021815B	22	190.1000	189.3000	.42	20

TxtQcType: SD Matrix: SOIL SampleID: AC83221-002

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	DF	Result 1	Result 2	%Diff	Limit
Antimony	41952	S021815B	21	S021815B	19	5	-0.0039	0.0322	---	10
Arsenic	41952	S021815B	21	S021815B	19	5	0.8046	4.1170	2.3	10
Beryllium	41952	S021815B	21	S021815B	19	5	0.1383	0.7149	3.3	10
Cadmium	41952	S021815B	21	S021815B	19	5	0.0149	0.1025	---	10
Selenium	41952	S021815B	21	S021815B	19	5	0.2757	1.7800	---	10
Silver	41952	S021815B	21	S021815B	19	5	0.0172	0.0924	6.7	10
Thallium	41952	S021815B	21	S021815B	19	5	0.0337	0.1813	---	10

a-Indicates Rpd Failed the criteria
b-Method Rep Out but concentrations < 5*RL
c-Serial dilution Out but conc < 10 * IDL

Hampton-Clarke/Veritech

ICP SAMPLE PREPARATION LOG

ANALYTICAL METHOD: 3010A 3005A 3050B (6020) 200.7/200.8 OTHER_____

Batch No.: 17474 Analyst: Zane

QC Number: 41951 Prep Date: 02.18.2015

Matrix: SOL Reviewed By: [signature]

LAB ID#	ICP		ICP-MS (Secondary dil)		TCLP		COMMENTS
	Initial	Final	Aliquot	Final	Eff	TCLP	
Method blank	50 ml	50 ml				--	
LCS	0.5g	↓				--	
LCSD	↓	↓				--	
1. AC 83221 - 002	1.0 g	100 ml					
MR 002	0.5g	50 ml					
MS 002	↓	↓					
MSD 002							
2. 83375 - 001							
3. ↓ 002							
4. 83389 - 001							
5. 83221 - 003							
6. 006							
7. 007							
8. 010							
9. 011							
10. 014							
11. 015							
12. 83385 - 001							
13. 002							
14. 003							
15. 004							
16. 83390 - 001							
17. 002							
18. 003	↓	↓					
19. 83380 - 005							
20. ↓ 006	↓	↓					

Hot Plate Temperature: 93.1 C (90-95° C)

	Volume mL	Lot #
LCS, LCSD	0.5g	V- 9137
LLLCS, LLLCSD		V-
MS, MSD	0.5 ml	V- 9032, 9033
LLMS, LLMSD		V-

Acid	Vol mL	Lot#
HNO_3	2.5 ml	V- 9066
HCl	5 ml	V- 9055
H_2O_2	1.5 ml	V- 8967

Acid	Vol mL	Lot#
1:1 HNO_3	5 ml	V- 202630
1:1 HCl		V-

Relinquished By Zane Date 02.18.15

Received By [signature] Date 02/19/2015

0181

T:\QC\FORMS\LOGBOOK FORMS\METALS\ICP sample prep log 2012.DOC

Hampton-Clarke/Veritech

ICP SAMPLE PREPARATION LOG

ANALYTICAL METHOD: 3010A 3005A 3050B (6020) 200.7/200.8 OTHER_____

Batch No.: 17475 Analyst: Zane

QC Number: 41952 Prep Date: 02.18.2015

Matrix: 6020-soil Reviewed By: [signature]

LAB ID#	ICP		ICP-MS (Secondary dil)		TCLP		COMMENTS
	Initial	Final	Aliquot	Final	Eff	TCLP	
Method blank	50 ml	50 ml	2.5 ml	50 ml		--	
LCS	0.1 g					--	
LCSD	↓					--	
1. HC83221 - 002	0.5 g						
MR 002	↓						
MS 002							
MSD 002							
2. 83375 - 001							
3. 002							
4. 83389 - 001							
5. 83221 - 003							
6. 006							
7. 007							
8. 010							
9. 011							
10. 014							
11. 015							
12. 83385 - 001							
13. 002							
14. 003							
15. 004							
16. 83390 - 001							
17. 002							
18. 003	↓	↓	↓	↓			
19. 83380 - 005							
20. 83380 - 006	↓	↓	↓	↓			

Hot Plate Temperature: 93 C (90-95° C)

	Volume mL	Lot #
LCS, LCSD	0.1 g	V- 9137
LLLCS, LLLCSD		V-
MS, MSD	0.5 ml	V- 9032, 9033
LLMS, LLMSD		V-

Acid	Vol mL	Lot#
HNO_3	2.5 ml	V- 9066
HCl		V-
H_2O_2	1.5 ml	V- 8967

Acid	Vol mL	Lot#
1:1 HNO_3	5 ml	V- 202630
1:1 HCl		V-

Relinquished By Zane Date 02.18.15

Received By [signature] Date 2/18/15

B102

T:\QC\FORMS\LOGBOOK FORMS\METALS\ICP sample prep log 2012.DOC

HG SAMPLE PREPARATION LOG

Hampton-Clarke/Veritech
5021319 0359

ANALYTICAL METHOD: 245.1 7470A (7471B) OTHER _____

Batch No.:* 17474 — Analyst: Zane

QC Number: 41951 — Prep Date: 02.18.2015

Matrix: Soil — Review By: [signature]

LAB ID#	MERCURY INITIAL	MERCURY FINAL	COMMENTS
Method blank	25 ml	25 ml	
LCS	0.15g		
LCSD			
1 AC83221 - 002			
MR 002			
MS 002			
MSD 002			
2 83375 - 001			
3 002			
4 83389 - 001			
5 83221 - 003			
6 006			
7 007			
8 010			
9 011			
10 014			
11 015			
12 83385 - 001			
13 002			
14 003			
15 004			
16 83390 - 001			
17 002			
18 003			
19 83380 - 005			
20 006			

Lot Numbers	Acid	Volume (mL)	Lot #
$KMnO_4$: V- 203662	HNO_3		V-
$K_2S_2O_8$: V-	HCl		V-
NH_2OH: V- 201080	H_2SO_4		V-
	Aqua Regia	1.25 ml	V- 204710

**Block Temp.: 90° C

Time In Block: 8:00

Time Out of Block: 8:30

Spike Volume & Lot #

☐ LCS V- 9137 (0.15g / 0.25 ml)

☐ MS V- 204709 0.250 ml

☐ Standards/Control Batch B- 18838

**Temperature ranges:
245.1 / 7470A: 90-95C
7471B: 92-98C

Relinquished By: Zane

*25 mLs of each standard was digested with this batch using the same reagents and at the same time as the above samples. The preparation of each standard may be referenced in Veriprog using the standard batch number and the corresponding V #s.

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\PEICP3A\S17474A3.txt

Analysis Date: 02/18/15 **Instrument:** PEICP3A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
CALBLK V-200561	1	CAL	17:17	1							V-200561(ICB/CCB)
CALST1 V-202549	1	CAL	17:21	2							V-202549(ICS1 Lowest std)
CALST2 V-202401	1	CAL	17:24	3							V-202401(ICS2- Low Std)
CALST3 V-202402	1	CAL	17:27	4							V-202402(ICS3 - Middle Std)
CALST4 V-203077	1	CAL	17:31	5							V-203077(ICS4 High std)
ICS3 V-202402	1	ICS	17:35	6							V-202402(ICS3 - Middle Std)
ICV (1) V-202964	1	ICV	17:40	7							V-202964(CCV)
LLICV V-203922	1	LLICV	17:44	8		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
ICB V-200561	1	ICB	17:47	9							V-200561(ICB/CCB)
ICSA V-203071	1	ICSA	17:51	10							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	17:55	11							V-202076(ICSAB)
MB 41951 (100)	1	MB	17:59	12		SOIL	SOIL	SW846	41951		0
LCS 41951	1	LCS	18:02	13		SOIL	SOIL	SW846	41951		0
LCS MS 41951	1	LCS	18:06	14		SOIL	SOIL	SW846	41951		0
AC83221-002	1	SMP	18:10	15	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MR	18:13	16	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MS	18:16	17	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MSD	18:20	18	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	PS	18:24	19	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
CCV V-202964	1	CCV	18:28	20							V-202964(CCV)
LLCCV V-203922	1	LLCCV	18:32	21		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	18:36	22							V-200561(ICB/CCB)
AC83221-002	5	SD	18:39	23	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83375-001	1	SMP	18:42	24	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83375-002	1	SMP	18:47	25	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83380-005	1	SMP	18:50	26	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83380-006	1	SMP	18:54	27	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83389-001	1	SMP	18:58	28	MET-PP6010S	SOIL	SOIL	SW846	41951		0
ICSA V-203071	1	ICSA	19:02	29							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	19:06	30							V-202076(ICSAB)
CCV V-202964	1	CCV	19:10	31							V-202964(CCV)
LLCCV V-203922	1	LLCCV	19:14	32		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	19:17	33							V-200561(ICB/CCB)
AC83221-003	1	SMP	19:21	34	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-006	1	SMP	19:25	35	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-007	1	SMP	19:28	36	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-010	1	SMP	19:32	37	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-011	1	SMP	19:35	38	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-014	1	SMP	19:39	39	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-015	1	SMP	19:42	40	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
ICSA V-203071	1	ICSA	19:46	41							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	19:50	42							V-202076(ICSAB)
CCV V-202964	1	CCV	19:54	43							V-202964(CCV)
LLCCV V-203922	1	LLCCV	19:58	44		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	20:01	45							V-200561(ICB/CCB)
AC83385-001	1	SMP	20:05	46	MET-TAL6010S	SOIL	SOIL	SW846	41951	Ni, V NOT reported	0
AC83385-002	1	SMP	20:09	47	MET-TAL6010S	SOIL	SOIL	SW846	41951	Ni, V NOT reported	0
AC83385-003	1	SMP	20:13	48	MET-TAL6010S	SOIL	SOIL	SW846	41951	Ni, V NOT reported	0
AC83385-004	1	SMP	20:17	49	MET-TAL6010S	SOIL	SOIL	SW846	41951	Ni, V NOT reported	0
AC83390-001	1	SMP	20:21	50	MET-3-SOIL	SOIL	SOIL	SW846	41951		0
AC83390-002	1	SMP	20:25	51	MET-3-SOIL	SOIL	SOIL	SW846	41951		0
AC83390-003	1	SMP	20:28	52	MET-3-SOIL	SOIL	SOIL	SW846	41951		0
ICSA V-203071	1	ICSA	20:32	53							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	20:36	54							V-202076(ICSAB)
CCV V-202964	1	CCV	20:40	55						Ni, V failed	V-202964(CCV)
LLCCV V-203922	1	LLCCV	20:44	56		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	20:47	57							V-200561(ICB/CCB)

Comments/Reviewedby:

alufemi
192.168.1.85 2/19/2015 11:21:41 AM

RUN IS OK
All elements reported except earth elements.

2/19/15

Standard/Batch/SnCl2 Lot #:

5021319 0361

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\PEICPRAD3A\S17474B3.txt

Analysis Date: 02/18/15 **Instrument:** PEICPRAD3A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
CALBLK V-200561	1	CAL	20:53	1							V-200561(ICB/CCB)
CALST2 V-202401	1	CAL	20:56	2							V-202401(ICS2- Low Std)
CALST3 V-202402	1	CAL	21:00	3							V-202402(ICS3 - Middle Std)
CALST4 V-203077	1	CAL	21:03	4							V-203077(ICS4 High std)
ICS3 V-202402	1	ICS	21:07	5							V-202402(ICS3 - Middle Std)
ICV (1) V-202964	1	ICV	21:10	6							V-202964(CCV)
LLICV V-203922	1	LLICV	21:13	7		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
ICB V-200561	1	ICB	21:17	8							V-200561(ICB/CCB)
ICSA V-203071	1	ICSA	21:21	9							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	21:24	10							V-202076(ICSAB)
MB 41951 (100)	1	MB	21:28	11		SOIL	SOIL	SW846	41951		0
LCS 41951	1	LCS	21:32	12		SOIL	SOIL	SW846	41951		0
LCS MR 41951	1	LCS	21:35	13		SOIL	SOIL	SW846	41951		0
AC83221-002	1	SMP	21:39	14	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MR	21:42	15	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MS	21:46	16	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MSD	21:49	17	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-002	1	PS	21:53	18	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
CCV V-202964	1	CCV	21:56	19							V-202964(CCV)
LLCCV V-203922	1	LLCCV	21:59	20		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	22:03	21							V-200561(ICB/CCB)
AC83221-002	5	SD	22:07	22	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83375-001	1	SMP	22:10	23	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83375-002	1	SMP	22:13	24	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83380-005	1	SMP	22:16	25	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83380-006	1	SMP	22:19	26	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
ICSA V-203071	1	ICSA	22:22	27							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	22:26	28							V-202076(ICSAB)
CCV V-202964	1	CCV	22:30	29							V-202964(CCV)
LLCCV V-203922	1	LLCCV	22:33	30		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	22:37	31							V-200561(ICB/CCB)
AC83221-003	1	SMP	22:40	32	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-006	1	SMP	22:43	33	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-007	1	SMP	22:46	34	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-010	1	SMP	22:50	35	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-011	1	SMP	22:53	36	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-014	1	SMP	22:57	37	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83221-015	1	SMP	23:01	38	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
ICSA V-203071	1	ICSA	23:04	39							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	23:08	40							V-202076(ICSAB)
CCV V-202964	1	CCV	23:12	41							V-202964(CCV)
LLCCV V-203922	1	LLCCV	23:15	42		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	23:19	43							V-200561(ICB/CCB)
AC83385-001	1	SMP	23:22	44	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83385-002	1	SMP	23:26	45	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83385-003	1	SMP	23:29	46	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83385-004	1	SMP	23:31	47	MET-TAL6010S	SOIL	SOIL	SW846	41951		0
AC83390-001	1	NA	23:35	48	MET-3-SOIL	SOIL	SOIL	SW846	41951	NOT required	0
AC83390-002	1	NA	23:39	49	MET-3-SOIL	SOIL	SOIL	SW846	41951	NOT required	0
ICSA V-203071	1	ICSA	23:43	50							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	23:47	51							V-202076(ICSAB)
CCV V-202964	1	CCV	23:50	52							V-202964(CCV)
LLCCV V-203922	1	LLCCV	23:54	53		SOIL	SOIL	SW846	41951		V-203922(LLICV/CCV SOIL)
CCB V-200561	1	CCB	23:57	54							V-200561(ICB/CCB)

Comments/Reviewedby:

olufemi
192.168.1.85 2/19/2015 11:28:52 AM

RUN IS OK
Earth elements reported

2/19/15

Standard/Batch/SnCl2 Lot #:

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\HGCV2A\H17474S.txt

Analysis Date: 02/18/15 **Instrument:** HGCV2A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
Calibration Blank	1	CAL	17:07	1							0
.2 PPB	1	CAL	17:09	2							0
.5 PPB	1	CAL	17:10	3							0
1 PPB	1	CAL	17:11	4							0
2 PPB	1	CAL	17:13	5							0
5 PPB	1	CAL	17:14	6							0
10 PPB	1	CAL	17:15	7							0
25 PPB	1	CAL	17:16	8							0
ICV (2)	1	ICV	17:18	9							0
ICB	1	ICB	17:19	10							0
MB 41951 (167)	1	MB	17:20	11	HG-SOIL	SOIL	SOIL	SW846	41951		0
LCS 41951	1	NA	17:22	12	HG-SOIL	SOIL	SOIL	SW846	41951	CONCENTRATION HIGH	0
LCS MR 41951	1	NA	17:24	13	HG-SOIL	SOIL	SOIL	SW846	41951	CONCENTRATION HIGH	0
LCS 5D	5	LCS	17:25	14	HG-SOIL	SOIL	SOIL	SW846	41951		0
LCS MR 5D	5	LCS	17:27	15	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-002	1	SMP	17:28	16	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MR	17:29	17	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MS	17:31	18	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-002	1	MSD	17:32	19	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83375-001	1	SMP	17:33	20	HG-SOIL	SOIL	SOIL	SW846	41951		0
CCV	1	CCV	17:35	21							0
CCB	1	CCB	17:36	22							0
AC83375-002	1	SMP	17:37	23	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83380-005	1	SMP	17:39	24	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83380-006	1	SMP	17:40	25	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83389-001	1	SMP	17:41	26	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-003	1	SMP	17:42	27	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-006	1	SMP	17:44	28	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-007	1	SMP	17:45	29	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-010	1	SMP	17:46	30	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-011	1	SMP	17:48	31	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83221-014	1	SMP	17:49	32	HG-SOIL	SOIL	SOIL	SW846	41951		0
CCV	1	CCV	17:50	33							0
CCB	1	CCB	17:52	34							0
AC83221-015	1	SMP	17:53	35	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83385-001	1	SMP	17:54	36	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83385-002	1	SMP	17:56	37	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83385-003	1	SMP	17:57	38	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83385-004	1	SMP	17:58	39	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83390-001	1	SMP	18:00	40	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83390-002	1	SMP	18:01	41	HG-SOIL	SOIL	SOIL	SW846	41951		0
AC83390-003	1	SMP	18:02	42	HG-SOIL	SOIL	SOIL	SW846	41951		0
CCV	1	CCV	18:04	43							0
CCB	1	CCB	18:05	44							0

Comments/Reviewedby:

carmela
192.168.1.89 2/18/2015 6:09:54 PM

OK

2/23/15

Standard/Batch/SnCl2 Lot #:

V-204791

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\MS2_7500SWA\S021815B.b\S021815B.TXT

Analysis Date: 02/18/15 **Instrument:** MS2_7500SWA

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
Rinse	1	NA	15:04	1		SOIL	SOIL	SW846	41952		0
CalBlk V-204573	1	ISBLK	15:10	2		SOIL	SOIL				V-204573(Cal Blk)
CalStd1 V-204574	1	CAL	15:16	3							V-204574(Cal Std-1)
CalStd2 V-204575	1	CAL	15:22	4							V-204575(Cal Std-2)
CalStd3 V-204576	1	CAL	15:28	5							V-204576(Cal Std-3)
CalStd4 V-204577	1	CAL	15:34	6							V-204577(Cal Std-4)
CalStd5 V-204578	1	CAL	15:39	7							V-204578(Cal Std-5)
ICV V-204579	1	ICV	15:45	8							V-204579(ICV)
LLICV V-204584	1	LLICV	15:51	9		SOIL	SOIL	SW846	41952		V-204584(LL-ICV/CCV SOIL)
ICB V-204580	1	ICB	15:57	10							V-204580(ICB/CCB)
ICSA V-204581	1	ICSA	16:03	11							V-204581(ICSA)
ICSAB V-204582	1	ICSAB	16:09	12							V-204582(ICSAB)
CCV V-204583	1	CCV	16:14	13							V-204583(CCV)
LLCCV V-204584	1	LLCCV	16:20	14		SOIL	SOIL	SW846	41952		V-204584(LL-ICV/CCV SOIL)
CCB V-204580	1	CCB	16:26	15							V-204580(ICB/CCB)
MB 41952	1	MB	16:32	16		SOIL	SOIL	SW846	41952		0
LCS 41952	1	LCS	16:38	17		SOIL	SOIL	SW846	41952		0
LCS MR 41952	1	LCS	16:44	18		SOIL	SOIL	SW846	41952		0
AC83221-002	1	SMP	16:49	19	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-002	1	MR	16:55	20	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-002	5	SD	17:01	21	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-002	1	MS	17:07	22	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-002	1	MSD	17:13	23	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-002	1	PS	17:19	24	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
RINSE	1	NA	17:25	25		SOIL	SOIL	SW846	41952		0
CCV V-204583	1	CCV	17:30	26							V-204583(CCV)
LLCCV V-204584	1	LLCCV	17:36	27		SOIL	SOIL	SW846	41952		V-204584(LL-ICV/CCV SOIL)
CCB V-204580	1	CCB	17:42	28							V-204580(ICB/CCB)
AC83375-001	1	SMP	17:48	29	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83375-002	1	SMP	17:54	30	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83380-005	1	SMP	17:59	31	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83380-006	1	SMP	18:05	32	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83389-001	1	SMP	18:11	33	MET-PP6020S	SOIL	SOIL	SW846	41952		0
AC83221-003	1	SMP	18:17	34	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-006	1	SMP	18:23	35	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-007	1	SMP	18:29	36	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-010	1	SMP	18:34	37	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
RINSE	1	NA	18:40	38		SOIL	SOIL	SW846	41952		0
CCV V-204583	1	CCV	18:46	39							V-204583(CCV)
LLCCV V-204584	1	LLCCV	18:52	40		SOIL	SOIL	SW846	41952		V-204584(LL-ICV/CCV SOIL)
CCB V-204580	1	CCB	18:58	41							V-204580(ICB/CCB)
AC83221-011	1	SMP	19:04	42	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-014	1	SMP	19:10	43	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83221-015	1	SMP	19:15	44	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83385-001	1	SMP	19:21	45	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83385-002	1	SMP	19:27	46	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83385-003	1	SMP	19:33	47	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83385-004	1	SMP	19:39	48	MET-TAL6020S	SOIL	SOIL	SW846	41952		0
AC83390-001	1	SMP	19:45	49	MET-4-6020	SOIL	SOIL	SW846	41952		0
AC83390-002	1	SMP	19:50	50	MET-4-6020	SOIL	SOIL	SW846	41952		0
RINSE	1	NA	19:56	51		SOIL	SOIL	SW846	41952		0
CCV V-204583	1	CCV	20:02	52							V-204583(CCV)
LLCCV V-204584	1	LLCCV	20:08	53		SOIL	SOIL	SW846	41952		V-204584(LL-ICV/CCV SOIL)
CCB V-204580	1	CCB	20:14	54							V-204580(ICB/CCB)
AC83390-003	1	SMP	20:20	55	MET-4-6020	SOIL	SOIL	SW846	41952		0
RINSE	1	NA	20:26	56		SOIL	SOIL	SW846	41952		0
CCV V-204583	1	CCV	20:32	57							V-204583(CCV)
LLCCV V-204584	1	LLCCV	20:37	58		SOIL	SOIL	SW846	41952		V-204584(LL-ICV/CCV SOIL)
CCB V-204580	1	CCB	20:43	59							V-204580(ICB/CCB)

Comments/Reviewedby:

pcousineau
192.168.1.123 2/19/2015 10:52:09 AM

Run ok. Report Ag, As, Be, Cd, Sb, Se, Tl PC.

2/20/15

Standard/Batch/SnCl2 Lot #:

ICPMS Internal Standard Summary Report

TuneID: 1

Batch/FileID: S021815B Sample ID: CalBlk V-204573 Sample Date 02/18/15 Sample Time: 15:10

IS ID:	Area	Area Limit		
Ho-1	550959.3	385671.51	-	826989.9093
In-1	201796.9	141257.83	-	302897.1469
Sc-1	51184.87	35829.409	-	76828.48987
Tb-1	551309.3	385916.51	-	827515.2593

QcType	txtSamId:	Pos	Ho-1 Area	In-1 Area	Sc-1 Area	Tb-1 Area	Area	Area	Area	Area
ISBLK	CalBlk V-204573	2	550959.3	201796.9	51184.87	551309.3				
SMP	Rinse	1	510224.8	178467.6	47038.89	515918.3				
CAL	CalStd1 V-20457	3	550426.1	201713.0	51088.25	547097.3				
CAL	CalStd2 V-20457	4	545345.3	198757.5	49990.83	547179.8				
CAL	CalStd3 V-20457	5	550641.6	203071.3	51134.41	557427.2				
CAL	CalStd4 V-20457	6	552350.6	202327.1	51880.92	560150.9				
CAL	CalStd5 V-20457	7	542915.8	198152.9	50864.95	546811.3				
ICV	ICV V-204579	8	547540.9	199690.7	50640.46	549668.8				
LLICV	LLICV V-204584	9	548490.9	201202.8	50647.57	552540.1				
ICB	ICB V-204580	10	545948.6	203028.4	50948.34	553200.8				
ICSA	ICSA V-204581	11	526981.0	182916.5	48423.00	529582.8				
ICSAB	ICSAB V-204582	12	528641.2	181365.3	47707.54	528809.9				
CCV	CCV V-204583	13	550500.4	202304.2	50630.79	555534.2				
LLCCV	LLCCV V-204584	14	553756.9	203802.0	50890.28	558115.0				
CCB	CCB V-204580	15	543869.5	199398.0	50052.94	552341.4				
MB	MB 41952	16	545339.1	198927.1	49133.78	548342.8				
LCS	LCS 41952	17	537503.4	194837.3	50503.63	542760.6				
MR	LCS MR 41952	18	547548.4	198428.1	51706.42	552412.9				
SMP	AC83221-002	19	545978.1	198182.8	54723.80	548491.6				
MR	AC83221-002	20	541121.6	196388.8	53066.23	548331.0				
SD	AC83221-002	21	557938.0	205309.5	52507.22	565159.0				
MS	AC83221-002	22	543628.1	195361.5	53650.69	548271.4				
MSD	AC83221-002	23	542785.4	195845.4	53404.07	549429.1				
PS	AC83221-002	24	549680.4	200389.2	55619.58	554209.1				
SMP	RINSE	25	570480.9	210422.6	53594.92	576117.8				
CCV	CCV V-204583	26	552892.9	203238.7	52091.69	559705.8				
LLCCV	LLCCV V-204584	27	549531.7	205563.7	51456.98	558086.4				
CCB	CCB V-204580	28	540300.0	203305.2	51058.09	554731.3				
SMP	AC83375-001	29	561575.3	200827.3	65392.67	568090.1				
SMP	AC83375-002	30	540036.8	197027.0	56309.54	546828.9				
SMP	AC83380-005	31	556655.1	194878.1	66365.21	569763.1				
SMP	AC83380-006	32	562982.9	196942.3	69785.30	572347.8				
SMP	AC83389-001	33	565388.0	199081.2	62753.31	568730.9				
SMP	AC83221-003	34	539106.8	193035.9	59491.08	539149.5				
SMP	AC83221-006	35	504742.3	181637.6	47940.56	509021.7				
SMP	AC83221-007	36	513956.4	184422.8	51816.94	519116.5				
SMP	AC83221-010	37	499076.4	180950.9	46317.51	503536.4				
SMP	RINSE	38	506000.9	182062.1	45385.14	509100.1				
CCV	CCV V-204583	39	511653.3	188033.1	46752.30	517680.2				
LLCCV	LLCCV V-204584	40	523380.8	192703.9	48028.63	524679.1				
CCB	CCB V-204580	41	515742.4	191468.2	48157.90	522892.4				
SMP	AC83221-011	42	500764.9	177341.4	51914.44	502885.1				
SMP	AC83221-014	43	508190.6	181259.5	48585.38	509848.3				
SMP	AC83221-015	44	499194.8	177387.9	53273.26	504710.1				
SMP	AC83385-001	45	500285.6	176366.1	60312.92	501993.4				
SMP	AC83385-002	46	515289.8	174887.3	65813.12	517745.2				
SMP	AC83385-003	47	486635.4	172318.1	55404.81	487941.5				
SMP	AC83385-004	48	494607.1	168117.5	67850.20	490207.7				

* Indicates Internal Standard Area outside of limits

ICPMS Internal Standard Summary Report

TuneID: 1

SMP	AC83390-001	49	536862.5	171496.2	63120.51	529264.0
SMP	AC83390-002	50	532734.7	173703.6	60952.78	529170.8
SMP	RINSE	51	485892.0	176625.8	43683.01	493567.9
CCV	CCV V-204583	52	486599.1	176497.1	43582.23	493205.9
LLCCV	LLCCV V-204584	53	487339.2	177701.3	44035.98	491212.6
CCB	CCB V-204580	54	492134.0	179873.0	44080.54	497591.2
SMP	AC83390-003	55	513785.8	173399.9	58392.11	514994.9
SMP	RINSE	56	491573.9	176078.3	43575.76	495100.1
CCV	CCV V-204583	57	495528.3	179248.7	44344.61	494885.1
LLCCV	LLCCV V-204584	58	496724.6	182878.1	45217.13	504290.2
CCB	CCB V-204580	59	486298.9	178384.6	43501.30	490673.0

* Indicates Internal Standard Area outside of limits

ICPMS Internal Standard Summary Report

TuneID: 2

Batch/FileID: S021815B Sample ID: CalBlk V-204573 Sample Date 02/18/15 Sample Time: 15:10

IS ID:	Area	Area Limit		
Ho-2	1650203	1155142.1	-	2476954.703
In-2	1130571	791399.7	-	1696987.071
Sc-2	929050.9	650335.63	-	1394505.4009
Tb-2	1678999	1175299.3	-	2520177.499

QcType	txtSamId:	Pos	Ho-2 Area	In-2 Area	Sc-2 Area	Tb-2 Area	Area	Area	Area	Area
ISBLK	CalBlk V-204573	2	1650203	1130571	929050.9	1678999				
SMP	Rinse	1	1626899	1124593	924098.1	1651972				
CAL	CalStd1 V-20457	3	1631692	1118361	924517.8	1640716				
CAL	CalStd2 V-20457	4	1637061	1123892	919609.4	1641609				
CAL	CalStd3 V-20457	5	1645112	1139654	940015.7	1662705				
CAL	CalStd4 V-20457	6	1628137	1104717	919000.0	1644850				
CAL	CalStd5 V-20457	7	1595203	1084791	902838.6	1631662				
ICV	ICV V-204579	8	1619085	1094366	905086.9	1649103				
LLICV	LLICV V-204584	9	1624738	1117241	921802.1	1653616				
ICB	ICB V-204580	10	1627622	1119911	907139.4	1646935				
ICSA	ICSA V-204581	11	1597345	1045621	924092.3	1620358				
ICSAB	ICSAB V-204582	12	1589744	1019811	905632.4	1600324				
CCV	CCV V-204583	13	1638803	1105383	931697.4	1652370				
LLCCV	LLCCV V-204584	14	1612665	1113630	924406.3	1641227				
CCB	CCB V-204580	15	1609907	1108645	905613.0	1641041				
MB	MB 41952	16	1604838	1098043	915179.1	1622780				
LCS	LCS 41952	17	1573534	1066562	918649.1	1595394				
MR	LCS MR 41952	18	1615364	1077536	935244.4	1622537				
SMP	AC83221-002	19	1604562	1080008	986401.9	1620454				
MR	AC83221-002	20	1611676	1066226	969931.0	1629376				
SD	AC83221-002	21	1655863	1131802	947628.5	1679144				
MS	AC83221-002	22	1615115	1063659	955351.4	1630690				
MSD	AC83221-002	23	1623613	1081157	962835.1	1642905				
PS	AC83221-002	24	1629557	1093960	990585.1	1649646				
SMP	RINSE	25	1670385	1160510	1003811	1696087				
CCV	CCV V-204583	26	1657655	1129423	944772.9	1674633				
LLCCV	LLCCV V-204584	27	1650189	1115360	936460.7	1677345				
CCB	CCB V-204580	28	1621692	1127804	926121.9	1647516				
SMP	AC83375-001	29	1680115	1083481	1145207	1680182				
SMP	AC83375-002	30	1719982	1151736	1054834	1741041				
SMP	AC83380-005	31	1668665	1071872	1195870	1699253				
SMP	AC83380-006	32	1688780	1082241	1254238	1729652				
SMP	AC83389-001	33	1696621	1103267	1133589	1708078				
SMP	AC83221-003	34	1522066	1008315	993092.2	1538980				
SMP	AC83221-006	35	1508598	1002490	860526.6	1518850				
SMP	AC83221-007	36	1530165	1000866	915911.3	1551653				
SMP	AC83221-010	37	1480171	990368.8	821286.3	1491183				
SMP	RINSE	38	1505305	1023931	858046.1	1526208				
CCV	CCV V-204583	39	1567370	1041900	858189.5	1582604				
LLCCV	LLCCV V-204584	40	1556593	1054398	853166.4	1565060				
CCB	CCB V-204580	41	1537492	1034766	848735.1	1550913				
SMP	AC83221-011	42	1483785	988998.1	941502.4	1504515				
SMP	AC83221-014	43	1519757	1009543	882522.8	1530179				
SMP	AC83221-015	44	1488418	979346.8	956908.8	1495479				
SMP	AC83385-001	45	1469131	959797.3	1072843	1476343				
SMP	AC83385-002	46	1530465	955505.1	1172084	1556025				
SMP	AC83385-003	47	1472716	953513.3	998858.8	1469331				
SMP	AC83385-004	48	1480230	941747.8	1227256	1481489				

* Indicates Internal Standard Area outside of limits

ICPMS Internal Standard Summary Report

TuneID: 2

SMP	AC83390-001	49	1605824	949669.4	1127711	1612075
SMP	AC83390-002	50	1590486	950752.6	1085183	1584129
SMP	RINSE	51	1455421	987434.6	813696.8	1478302
CCV	CCV V-204583	52	1483188	992850.5	803896.8	1510448
LLCCV	LLCCV V-204584	53	1478721	997357.1	788544.1	1490161
CCB	CCB V-204580	54	1457264	988953.8	784500.4	1468873
SMP	AC83390-003	55	1537603	943844.9	1031510	1538111
SMP	RINSE	56	1467366	993555.8	815108.1	1477991
CCV	CCV V-204583	57	1498027	998045.6	817377.9	1509638
LLCCV	LLCCV V-204584	58	1483457	995953.8	805257.4	1500139
CCB	CCB V-204580	59	1472406	1002293	812274.6	1496502

* Indicates Internal Standard Area outside of limits

TCLP Metal Data

Form1
Inorganic Analysis Data Sheet

Sample ID:	AC83375-003	% Solid:	0	Lab Name:	Veritech	Nras No:	
Client Id:	WC01	Units:	MG/L	Lab Code:		Sdg No:	
Matrix:	TCLP	Date Rec:	2/13/2015	Contract:		Case No:	
Level:	LOW						

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7440-38-2	Arsenic	0.10	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7440-39-3	Barium	0.25	0.29	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7440-43-9	Cadmium	0.050	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7440-47-3	Chromium	0.10	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7439-92-1	Lead	0.050	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7439-97-6	Mercury	0.00070	ND	1	25	25	02/23/15	41953	H17477T	14	CV	HGCV2A
7440-02-0	Nickel	0.10	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7782-49-2	Selenium	0.10	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A
7440-22-4	Silver	0.050	ND	1	100	100	02/19/15	41953	T17477A3	15	P	PEICP3A

Comments: _____

_____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

Form1
Inorganic Analysis Data Sheet

Sample ID: MB 41953 (1) % Solid: 0 Lab Name: Veritech
Client Id: MB 41953 (1) Units: MG/L Lab Code:
Matrix: TCLP
Level: LOW

Cas No.	Analyte	RL	Conc	Dil Fact	Initial Wt/Vol	Final Wt/Vol	Analysis Date	Prep Batch	File:	Seq Num	M	Instr
7429-90-5	Aluminum	1.0	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-36-0	Antimony	0.070	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-38-2	Arsenic	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-39-3	Barium	0.25	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-41-7	Beryllium	0.012	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-43-9	Cadmium	0.050	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-70-2	Calcium	5.0	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-47-3	Chromium	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-48-4	Cobalt	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-50-8	Copper	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7439-89-6	Iron	1.0	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7439-92-1	Lead	0.050	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7439-95-4	Magnesium	5.0	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7439-96-5	Manganese	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7439-97-6	Mercury	0.00070	ND	1	25	25	02/23/15	41953	H17477T	11	CV	HGCV2A
7439-98-7	Molybdenum	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-02-0	Nickel	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7782-49-2	Selenium	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-22-4	Silver	0.050	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-28-0	Thallium	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-31-5	Tin	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-32-6	Titanium	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-62-2	Vanadium	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A
7440-66-6	Zinc	0.10	ND	1	50	50	02/19/15	41953	T17477A3	12	P	PEICP3A

Comments: _____

Flag Codes:

U or ND - Indicates Compound was not found above the detection/reporting limit
P - ICP-AES
CV -ColdVapor
MS - ICP-MS

FORM 2
(ICV/CCV Summary)

Date Analyzed: 02/19/15
Data File: T17477A3
Prep Batch: 41953
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	ICV/CCV Amt	ICV (1) V-202964-7	Rec	CCV V-202964-20	Rec	CCV V-202964-28	Rec	Rec	Rec	Rec	Rec	Rec
Arsenic	1/.5	0.48259	97	0.47546	95	0.49956	100					
Barium	1/.5	0.48887	98	0.48534	97	0.50048	100					
Cadmium	1/.5	0.49226	98	0.49229	98	0.51223	102					
Chromium	1/.5	0.49294	99	0.48869	98	0.51014	102					
Lead	1/.5	0.48933	98	0.48266	97	0.50299	101					
Nickel	1/.5	0.49688	99	0.49275	99	0.51751	104					
Selenium	1/.5	0.47842	96	0.47004	94	0.49416	99					
Silver	0.2/0.1	0.10397	104	0.10254	103	0.10619	106					

Notes: a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits: ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 2
(LLICV/LLCCV Summary)

Date Analyzed: 02/19/15
Data File: T17477A3
Prep Batch: 41953
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

Analyte	LLICV/ LLCCV Amt	LLICV [leach] V-202606-	Rec	LLCCV [leach] V-202606-21	Rec	LLCCV [leach] V-202606-29	Rec	Rec	Rec	Rec	Rec	Rec
Arsenic	0.1/0.1	0.0972397	97	0.0935488	94	0.0944650	94					
Barium	0.25/0.25	0.244634	98	0.244318	98	0.244301	98					
Cadmium	0.05/0.05	0.0481943	96	0.0481506	96	0.0480276	96					
Chromium	0.1/0.1	0.105420	105	0.106232	106	0.105982	106					
Lead	0.05/0.05	0.0478044	96	0.0509374	102	0.0471894	94					
Nickel	0.1/0.1	0.0965149	97	0.0949748	95	0.0961109	96					
Selenium	0.1/0.1	0.0905496	91	0.0921953	92	0.0900811	90					
Silver	0.05/0.05	0.0484398	97	0.0488590	98	0.0497175	99					

Notes: a-indicates analyte failed the LLICV limits for 6010B, 6010C, 6020, 6020A
c-indicates analyte failed the LLCCV limits for 6010B, 6010C, 6020, 6020A

Qc Limits: LLCCV- 6010B/6010C/6020/6020A (70-130)
LLICV -6010B/6010C/6020/6020A :70-130

FORM 2
(ICV/CCV Summary)

Date Analyzed: 02/23/15
Data File: H17477T
Prep Batch: 41953
Analytical Method: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: HGCV2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICV/CCV SOURCE: VHG LABS

		ICV (2)-9		CCV-20									
Analyte	ICV/CCV Amt		Rec		Rec	Rec	Rec	Rec	Rec	Rec	Rec	Rec	Rec
Mercury	20/10	21.19000	106	10.99000	110								

Notes:
a-indicates analyte failed the ICV limits for 6010B/6010C, 6020/6020A
b-indicates analyte failed the ICV limits for 200.7 or 200.8
c-indicates analyte failed the CCV limits for 200.7/200.8/245.1/6010B/6010C (Except Hg 7470/7470A,7471A/7471B),6020/6020A
d-indicates analyte failed the CCV limits Hg 7470A/7471A/7471B

Qc Limits:
ICV - 200.7 : 95-105
CCV- 200.7/200.8/6010B/6010C/245.1 : 90-110 (Except Hg 7470/7470A/ 7471A/7471B=80-120)
ICV -6010B/6010C/6020/6020A/200.8 : 90-110

CLP ICP ICV/CCV: 90-110
CLP Hg ICV/CCV: 80-120

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 02/19/15
Data File: T17477A3
Prep Batch: 41953
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB V-200561-9	CCB V-200561-22	CCB V-200561-30	MB 41953 (1)-12	EF-V-204478-25
Arsenic	.1 U	.1 U	.1 U	.1 U	.1 U
Barium	.25 U	.25 U	.25 U	.25 U	.25 U
Cadmium	.05 U	.05 U	.05 U	.05 U	.05 U
Chromium	.1 U	.1 U	.1 U	.1 U	.1 U
Lead	.05 U	.05 U	.05 U	.05 U	.05 U
Nickel	.1 U	.1 U	.1 U	.1 U	.1 U
Selenium	.1 U	.1 U	.1 U	.1 U	.1 U
Silver	.05 U	.05 U	.05 U	.05 U	.05 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 3
(ICB/CCB/MB Summary)

Date Analyzed: 02/23/15
Data File: H17477T
Prep Batch: 41953
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: HGCV2A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:

Analyte	ICB-10	CCB-21	MB 41953 (1)-11	EF1-V-204478-19
Mercury	.7 U	.7 U	.7 U	.7 U

Notes: a-indicates absolute value of result found above the reporting limits in CCB/ICB or result found above reporting limit in the MB
u-indicates result below reporting limit

FORM 4
(ICSA/ICSAB Summary)

Date Analyzed: 02/19/15
Data File: T17477A3
Prep Batch: 41953
Reporting Limits Used: 6010B/6010C/7470A,7471A/7471B(Hg),6020/6020A
Instrument: PEICP3A
Units: All units in ppm except Hg and icp-ms in ppb
Project Number: 5021319

Lab Name: Veritech
Lab Code:
Contract:
Nras No:
Sdg No:
Case No:
ICSA/ICSAB: SOURCE: VHG LABS

Analyte	Spk Amt	ICSA V-203071-10	Rec	ICSAB V-202076-11	Rec	ICSA V-203071-26	Rec	ICSAB V-202076-27	Rec	Rec	Rec	Rec	Rec
Aluminum	500	534.518	107	535.35700	107	537.309	107	541.08900	108				
Arsenic	1	U		1.01612	102	U		1.02759	103				
Barium	.5	U		0.56117	112	U		0.56600	113				
Cadmium	1	U		1.06256	106	U		1.07321	107				
Calcium	500	493.032	99	499.12000	100	502.817	101	498.87800	100				
Chromium	.5	U		0.51713	103	U		0.52948	106				
Iron	200	207.544	104	207.62800	104	210.004	105	211.84100	106				
Lead	1	U		1.04976	105	U		1.06201	106				
Magnesium	500	540.088	108	539.63700	108	535.192	107	532.61100	107				
Nickel	1	U		1.01258	101	U		1.02737	103				
Selenium	1	U		0.97212	97	U		0.98355	98				
Silver	1	U		1.08909	109	U		1.10093	110				

Notes: a-indicates absolute value of the concentration > 2 * Reporting Limits In the ICSA
b-indicates absolute value of the concentration above Reporting Limits but < 2 * Reporting Limits in the ICSA
c-indicates the recovery failed the Qc Criteria in the ICSAB
u-indicates the absolute value of the concentration was below the reporting limit

FORM5/FORM7
SPIKE RECOVERY DATA
PREP BATCH: 41953

5021319 0377

Instrument Type: ICP/HG
Analytical Method(s):6010/200.7/7470A/7471A/245.1 ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: TCLP SampleID: LCSW MR 41953

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Arsenic	41953	1	T17477A3	14	0.4684	0.50	94		80	120
Barium	41953	1	T17477A3	14	0.4728	0.50	95		80	120
Cadmium	41953	1	T17477A3	14	0.4770	0.50	95		80	120
Chromium	41953	1	T17477A3	14	0.4770	0.50	95		80	120
Lead	41953	1	T17477A3	14	0.4885	0.50	98		80	120
Mercury	41953	1	H17477T	13	10.9100	10	109		80	120
Nickel	41953	1	T17477A3	14	0.4916	0.50	98		80	120
Selenium	41953	1	T17477A3	14	0.4598	0.50	92		80	120
Silver	41953	1	T17477A3	14	0.0933	0.100	93		80	120

TxtQcType: LCS Matrix: TCLP SampleID: LCSW 41953

Analyte	BatchId	DF	Data Fil	Seq#:	Spk Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Arsenic	41953	1	T17477A3	13	0.4652	0.50	93		80	120
Barium	41953	1	T17477A3	13	0.4766	0.50	95		80	120
Cadmium	41953	1	T17477A3	13	0.4784	0.50	96		80	120
Chromium	41953	1	T17477A3	13	0.4817	0.50	96		80	120
Lead	41953	1	T17477A3	13	0.4831	0.50	97		80	120
Mercury	41953	1	H17477T	12	10.8400	10	108		80	120
Nickel	41953	1	T17477A3	13	0.4897	0.50	98		80	120
Selenium	41953	1	T17477A3	13	0.4582	0.50	92		80	120
Silver	41953	1	T17477A3	13	0.0951	0.100	95		80	120

TxtQcType: MS Matrix: TCLP SampleID: AC83375-003

Analyte	BatchId	DF	Data Fil	Seq#:	NS Data Fil	Seq#	Spk Conc:	NS Conc:	Spk Adde	Recov	Qual	Lo Lim	Hi Lim
Arsenic	41953	1	T17477A3	17	T17477A3	15	0.5072	.1U	0.50	101		50	
Barium	41953	1	T17477A3	17	T17477A3	15	0.7977	0.2947	0.50	101		50	
Cadmium	41953	1	T17477A3	17	T17477A3	15	0.5009	.05U	0.50	100		50	
Chromium	41953	1	T17477A3	17	T17477A3	15	0.4910	.1U	0.50	98		50	
Lead	41953	1	T17477A3	17	T17477A3	15	0.5231	.05U	0.50	105		50	
Mercury	41953	1	H17477T	16	H17477T	14	11.2200	.70U	10	112		50	
Nickel	41953	1	T17477A3	17	T17477A3	15	0.5301	.1U	0.50	106		50	
Selenium	41953	1	T17477A3	17	T17477A3	15	0.5255	.1U	0.50	105		50	
Silver	41953	1	T17477A3	17	T17477A3	15	0.0994	0.05U	0.10	99		50	

a-Indicates Recovery Failed the criteria b-Indicates Recovery Failed the criteria but non spike concentration >4*spike amount

FORM6/FORM9

RPD/%Difference Data

PREP BATCH: 41953

5021319 0378

trument Type: ICP/HG

alytical Method(s):6010/200.7/7470A/7471A/245.1

ICP units in ppm, ICPMS and Hg in ppb

TxtQcType: LCSMR Matrix: TCLP SampleID: LCSW MR 41953

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Arsenic	41953	T17477A3	14	T17477A3	13	0.4684	0.4652	.69	20
Barium	41953	T17477A3	14	T17477A3	13	0.4728	0.4766	.8	20
Cadmium	41953	T17477A3	14	T17477A3	13	0.4770	0.4784	.3	20
Chromium	41953	T17477A3	14	T17477A3	13	0.4770	0.4817	.97	20
Lead	41953	T17477A3	14	T17477A3	13	0.4885	0.4831	1.1	20
Mercury	41953	H17477T	13	H17477T	12	10.9100	10.8400	.64	20
Nickel	41953	T17477A3	14	T17477A3	13	0.4916	0.4897	.39	20
Selenium	41953	T17477A3	14	T17477A3	13	0.4598	0.4582	.34	20
Silver	41953	T17477A3	14	T17477A3	13	0.0933	0.0951	1.8	20

TxtQcType: MR Matrix: TCLP SampleID: AC83375-003

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	Result 1	Result 2	RPD	Limit
Arsenic	41953	T17477A3	16	T17477A3	15	.1U	.1U	---	20
Barium	41953	T17477A3	16	T17477A3	15	0.2897	0.2947	1.7	20
Cadmium	41953	T17477A3	16	T17477A3	15	.05U	.05U	---	20
Chromium	41953	T17477A3	16	T17477A3	15	.1U	.1U	---	20
Lead	41953	T17477A3	16	T17477A3	15	.05U	.05U	---	20
Mercury	41953	H17477T	15	H17477T	14	.70U	.70U	---	20
Nickel	41953	T17477A3	16	T17477A3	15	.1U	.1U	---	20
Selenium	41953	T17477A3	16	T17477A3	15	.1U	.1U	---	20
Silver	41953	T17477A3	16	T17477A3	15	0.05U	0.05U	---	20

TxtQcType: SD Matrix: TCLP SampleID: AC83375-003

Analyte	BatchId	Data Fil	Seq#:	NS File	Seq#	DF	Result 1	Result 2	%Diff		Limit
Arsenic	41953	T17477A3	19	T17477A3	15	5	-0.0052	-0.0021	---		10
Barium	41953	T17477A3	19	T17477A3	15	5	0.0612	0.2947	3.8		10
Cadmium	41953	T17477A3	19	T17477A3	15	5	-0.0003	0.0011	---		10
Chromium	41953	T17477A3	19	T17477A3	15	5	0.0007	0.0049	25	c	10
Lead	41953	T17477A3	19	T17477A3	15	5	0.0052	0.0122	115	c	10
Nickel	41953	T17477A3	19	T17477A3	15	5	0.0049	0.0330	26	c	10
Selenium	41953	T17477A3	19	T17477A3	15	5	0.0120	0.0135	346	c	10
Silver	41953	T17477A3	19	T17477A3	15	5	-0.0009	0.0005	---		10

a-Indicates Rpd Failed the criteria

b-Method Rep Out but concentrations < 5*RL

c-Serial dilution Out but conc < 10 * IDL

Hampton-Clarke/Veritech

ICP SAMPLE PREPARATION LOG

ANALYTICAL METHOD: (3010A) 3005A 3050B (6020) 200.7/200.8 OTHER _____

Batch No.: 17477 Analyst: bm

QC Number: 41953 Prep Date: 2/19/15

Matrix: TCLP Reviewed By: ~~QA~~

LAB ID#	ICP		ICP-MS (Secondary dil)		TCLP		COMMENTS
	Initial	Final	Aliquot	Final	Eff	TCLP	
Method blank	50ml	50ml				–	
LCS						–	
LCSD						–	
1. ~~LC~~83375-003	100ml	100ml			V204478	83375-003	
MR 83375-003	50ml	50ml					
MS 83375-003	↓	↓			↓	↓	
~~MSD~~							
2. 83414-001	50ml	50ml			V204478	83375-003	
3. 83414-002	↓	↓			↓	↓	
4. V-204478							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							

Hot Plate Temperature: 94.0 C (90-95° C)

	Volume mL	Lot #
LCS, LCSD	0.25ml	V-8934, 8935
LLLCS, LLLCSD		V-
MS, MSD	0.25ml	V-8934, 8935
LLMS, LLMSD		V-

Acid	Vol mL	Lot#
HNO_3	3ml	V-9066
HCl		V-
H_2O_2		V-

Acid	Vol mL	Lot#
1:1 HNO_3		V-
1:1 HCl	5ml	V202629

Relinquished By bm Date 2/19/15

Received By QA Date 02/19/2015

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5021319 0380

ANALYTICAL METHOD: 245.1 7470A 7471B OTHER_____

Batch No.:* 17479

QC Number: 41953

Matrix: TCLP

Analyst: [signature]

Prep Date: 2/19/15

Review By: [signature]

LAB ID#	MERCURY		COMMENTS
	INITIAL	FINAL	
Method blank	25ml	25ml	
LCS	↓	↓	
LCSD	↓	↓	
1 EC83375-003	↓	↓	
MR 83375-003	↓	↓	
MS 83375-003	↓	↓	
~~MSD~~			
2 83414-001	25ml	25ml	
3 83414-002	↓	↓	
4 V-204478	↓	↓	EF-1-V204478
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Lot Numbers	Acid	Volume (mL)	Lot #
$KmnO_4$: V- 203662	HNO_3	0.625 ml	V- 9067
$K_2S_2O_8$: V- 198008	HCl		V-
NH_2OH: V- 201080	H_2SO_4	1.25 ml	V- 9081
	Aqua Regia		V-

**Block Temp.	92.1 °C
Time In Block:	11:30
Time Out of Block	13:30

Spike Volume & Lot #

☐ LCS V- 204814 0.15g / 0.25 ml

☐ MS V- 204814 0.250 ml

☐ Standards/Control Batch B- 18845

**Temperature ranges:
245.1 / 7470A: 90-95C
7471B : 92-98C

Relinquished By: [signature]

*25 mLs of each standard was digested with this batch using the same reagents and at the same time as the above samples. The preparation of each standard may be referenced in Veriprog using the standard batch number and the corresponding V #s.

HG prep log 2010.xls

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Run Log

Data File: W:\METALS.FRM\ICPDATA\New\PEICP3A\T17477A3.txt

Analysis Date: 02/19/15 **Instrument:** PEICP3A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
CALBLK V-200561	1	CAL	16:08	1							V-200561(ICB/CCB)
CALST1 V-202549	1	CAL	16:12	2							V-202549(ICS1 Lowest std)
CALST2 V-202401	1	CAL	16:14	3							V-202401(ICS2- Low Std)
CALST3 V-202402	1	CAL	16:18	4							V-202402(ICS3 - Middle Std)
CALST4 V-203077	1	CAL	16:22	5							V-203077(ICS4 High std)
ICS3 V-202402	1	ICS	16:26	6							V-202402(ICS3 - Middle Std)
ICV (1) V-202964	1	ICV	16:30	7							V-202964(CCV)
LLICV [leach] V-202606	1	LLICV	16:34	8		TCLP	TCLP	SW846	41953		V-202606(LLICV/CCV TCLP/SPLP STD)
ICB V-200561	1	ICB	16:38	9							V-200561(ICB/CCB)
ICSA V-203071	1	ICSA	16:41	10							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	16:45	11							V-202076(ICSAB)
MB 41953 (1)	1	MB	16:49	12		TCLP	TCLP	SW846	41953		0
LCSW 41953	1	LCS	16:52	13		TCLP	TCLP	SW846	41953		0
LCSW MR 41953	1	LCS	16:56	14		TCLP	TCLP	SW846	41953		0
AC83375-003	1	SMP	17:01	15	METALS-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	1	MR	17:04	16	METALS-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	1	MS	17:08	17	METALS-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	1	PS	17:11	18	METALS-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	5	SD	17:16	19	METALS-TCLP	TCLP	TCLP	SW846	41953		0
CCV V-202964	1	CCV	17:19	20							V-202964(CCV)
LLCCV [leach] V-202606	1	LLCCV	17:23	21		TCLP	TCLP	SW846	41953		V-202606(LLICV/CCV TCLP/SPLP STD)
CCB V-200561	1	CCB	17:27	22							V-200561(ICB/CCB)
AC83414-001	1	SMP	17:30	23	METALS-TCLP	TCLP	TCLP	SW846	41953		0
AC83414-002	1	SMP	17:34	24	METALS-TCLP	TCLP	TCLP	SW846	41953		0
EF-V-204478	1	EF	17:38	25		TCLP	TCLP	SW846	41953		V-204478(EF-1)
ICSA V-203071	1	ICSA	17:41	26							V-203071(ICSA)
ICSAB V-202076	1	ICSAB	17:45	27							V-202076(ICSAB)
CCV V-202964	1	CCV	17:49	28							V-202964(CCV)
LLCCV [leach] V-202606	1	LLCCV	17:53	29		TCLP	TCLP	SW846	41953		V-202606(LLICV/CCV TCLP/SPLP STD)
CCB V-200561	1	CCB	17:56	30							V-200561(ICB/CCB)

Comments/Reviewedby:

olufemi
192.168.1.85 2/19/2015 6:03:44 PM

RUN IS OK
All elements reported

2/20/15

Standard/Batch/SnCl2 Lot #:

5021319 0382

Run Log

Data File: W:\METALS.FRM\ICPDATA\New\HGCV2A\H17477T.txt

Analysis Date: 02/23/15 **Instrument:** HGCV2A

Sample Id	DF	Qc Type	Time	Run #	Test Group	Rept Limit Matrix	Qc Matrix	Anal Method	Prep Batch	Comments:	Stds:
Calibration Blank	1	CAL	10:43	1							0
.2 PPB	1	CAL	10:45	2							0
.5 PPB	1	CAL	10:46	3							0
1 PPB	1	CAL	10:48	4							0
2 PPB	1	CAL	10:49	5							0
5 PPB	1	CAL	10:51	6							0
10 PPB	1	CAL	10:52	7							0
25 PPB	1	CAL	10:54	8							0
ICV (2)	1	ICV	10:55	9							0
ICB	1	ICB	10:57	10							0
MB 41953 (1)	1	MB	10:58	11	HG-TCLP	TCLP	TCLP	SW846	41953		0
LCS 41953	1	LCS	11:00	12	HG-TCLP	TCLP	TCLP	SW846	41953		0
LCS MR 41953	1	LCS	11:01	13	HG-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	1	SMP	11:03	14	HG-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	1	MR	11:04	15	HG-TCLP	TCLP	TCLP	SW846	41953		0
AC83375-003	1	MS	11:06	16	HG-TCLP	TCLP	TCLP	SW846	41953		0
AC83414-001	1	SMP	11:07	17	HG-TCLP	TCLP	TCLP	SW846	41953		0
AC83414-002	1	SMP	11:09	18	HG-TCLP	TCLP	TCLP	SW846	41953		0
EF1-V-204478	1	EF	11:10	19	HG-TCLP	TCLP	TCLP	SW846	41953		V-204478(EF-1)
CCV	1	CCV	11:12	20							0
CCB	1	CCB	11:13	21							0

Comments/Reviewedby:

carmele
192.168.1.89 2/23/2015 11:34:26 AM

OK

2/23/15

Standard/Batch/SnCl2 Lot #:

V-204995

Wet Chemistry Data

VERITECH Wet Chem Form1 Analysis Summary

Lab#: AC83375-003
Matrix Soil/Encore
Client SampleID: WC01

Project Number: 5021319
Received Date: 2/13/2015
Collect Date: 2/13/2015

Analysis	TestGroup	Dilution:	Result	Units:	RL	Prep Date:	Analysis Date:
Cyanide (Reactive)	CN-REACTIVE	1	ND	mg/Kg	0.50	02/17/15	02/18/15
Ignitability Screen (POS/NEG)	IGNIT-1030	1	NEG			02/17/15	02/17/15
Burning Rate (mm/sec)	IGNIT-1030	1	NA			02/17/15	02/17/15
Flame Propagation (POS/NEG)	IGNIT-1030	1	NA			02/17/15	02/17/15
pH	PH-SOIL	1	11	pH			02/17/15
Sulfide (Reactive)	S-REACTIVE	1	ND	mg/kg	100	02/17/15	02/17/15

VERITECH Wet Chem Form1 Analysis Summary
% Solids

TestGroupName: % Solids SM2540G **Project #: 5021319**

TestGroup: %SOLIDS

Lab#	Client SampleID	Matrix	Dilution:	Result	Units:	RL	Prep Date	Analysis Date	Received Date	Collect Date
AC83375-001	SB01	Soil/Encore	1	87	Percent			02/14/15	02/13/15	02/13/15
AC83375-002	SB02	Soil/Encore	1	94	Percent			02/14/15	02/13/15	02/13/15
AC83375-003	WC01	Soil/Encore	1	93	Percent			02/14/15	02/13/15	02/13/15

% Solids Report

Analysis Type: SOLIDS-SS
BatchID: SOLIDS-SS-3948

QcType	SampleID:	Rounded Result	Raw Result	Units	Tare Weight	Wet Weight	Dry Weight	Analysis Date	Analyzed By	QC RPD	Rpd Limit
DUP	AC83366-001	95	95.37037	Percent	1.09	11.89	11.39	02/14/15	Admin	0.39	5
Sample	AC83335-002	89	88.87876	Percent	1.09	12.06	10.85	02/14/15	Admin		
Sample	AC83335-003	84	84.40367	Percent	1.11	12.01	10.31	02/14/15	Admin		
Sample	AC83366-001	95	95.00000	Percent	1.10	11.90	11.35	02/14/15	Admin		
Sample	AC83366-002	92	92.32176	Percent	1.10	12.04	11.19	02/14/15	Admin		
Sample	AC83371-029	84	84.25842	Percent	1.09	12.08	10.35	02/14/15	Admin		
Sample	AC83371-030	85	84.96310	Percent	1.09	11.93	10.30	02/14/15	Admin		
Sample	AC83371-031	83	83.04308	Percent	1.10	12.01	10.16	02/14/15	Admin		
Sample	AC83371-032	84	84.09926	Percent	1.10	11.98	10.25	02/14/15	Admin		
Sample	AC83375-001	87	87.20293	Percent	1.09	12.03	10.63	02/14/15	Admin		
Sample	AC83375-002	94	94.42897	Percent	1.10	11.87	11.27	02/14/15	Admin		
Sample	AC83375-003	93	92.85060	Percent	1.10	12.01	11.23	02/14/15	Admin		

* - Indicates Failed Rpd Criteria

MS/MSD/DUP Recovery

5021319 0387

Prep Batch: S-774 Sample ID: AC83375-003
Method: SW846 7.3.3 Matrix: Soil

Qc Type: MS		Limits		MS	Sample			MS/MSD/DUP			Non Spike		
Analyte	Amt	Recov	Dil	Conc	Conc	% Rec	Flag	Batch	RunID	Analysis Date	Batch	RunID	Analysis Date
Cyanide (Reactive)	0.4	75-125	1	0.4237	0	106		20150218142	13	02/18/15 14:53	20150218142	15	02/18/15 14:58

Qc Type: MSD		Limits			MSD	Sample			MS/MSD/DUP			Non Spike		
Analyte	Amt	Recov	Rpd	Dil	Conc	Conc	% Rec	Rpd	Flag	Batch	RunID	Analysis Date	Batch	RunID	Analysis Date
Cyanide (Reactive)	0.4	75-125	20	1	0.4218	0	105	0.4		20150218142	14	02/18/15 14:56	20150218142	15	02/18/15 14:58

LCS Recoveries

	BatchRunID/RunID:⟹	201502181425-12				
	QcBatchID:⟹	LCSS-774				
	Date/Time:⟹	02/18/15 14:51				
	Analytical Method:⟹	SW846 7.3.3				
	Matrix:⟹	Soil	Soil	Soil	Soil	Soil
Analyte	SW846 7.3. Amt Limits Amt Limits	% Rec Flags	% Rec Flags	% Rec Flags	% Rec Flags	% Rec Flags
Cyanide (Rea	0.4 75-125	102				

Calibration Summary:

5021319 0389

Instrument: DA1
Analysis Meth: SW846 7.3.3

Analyte	Batch ID	Run#	Qc Type	Recov	Spk Amt	Limit
Cyanide (Reactive)	20150218142	9	ICV	103	0.4	90-110
Cyanide (Reactive)	20150218142	19	CCV	103	0.4	90-110

Blank Summary

Instrument: DA1

Qc Type: Method Blank Summary Prep Date: 2/17/15

Run Batch ID	Analysis Date/Time	Sample ID	Run#	Analyte	Conc	RL
20150218142	2/18/15 14:49	MBS-774	11	Cyanide (	ND	0.50

Qc Type: ICB Summary Prep Date: NA

Run Batch ID	Analysis Date/Time	Sample ID	Run#	Analyte	Conc	RL
20150218142	2/18/15 14:46	CCB	10	Cyanide (	ND	0.020

Qc Type: CCB Summary Prep Date: NA

Run Batch ID	Analysis Date/Time	Sample ID	Run#	Analyte	Conc	RL
20150218142	2/18/15 15:06	CCB	20	Cyanide (	ND	0.020

Analysis Type: PH-S

5021319 0391

Batch Number: PH-S-1158

Units: pH

Calibration Curve Information

Qc Summary Results

Qc Type	Qc Name	SpkAmt	Rec Lim	Rpd Lim	Raw Result	Recov	Rpd	Flags
DUP	AC83375-003	0	NA	20	10.49	NA	0.95	
LCS	LCS-1	4.4	75-125	NA	4.37	99	NA	

Analytical Method(s)

9040C/9045D

Sam #	Type	MB	Result	RL	Per Sol	Full Result	PH	Prep Date	Prep By	Anal Date	Anal By
LCS-1	LCS		4.4		100	4.37	4.37			02/17/15	SDL
AC83375-003	DUP		10		100	10.49	10.49			02/17/15	SDL
AC83375-003	Sample		11		100	10.59	10.59			02/17/15	SDL
AC83323-007	Sample		11		100	11.11	11.11			02/17/15	SDL
AC83335-001	Sample		8.2		100	8.15	8.15			02/17/15	SDL
AC83335-002	Sample		8		100	7.97	7.97			02/17/15	SDL
AC83335-003	Sample		7.7		100	7.72	7.72			02/17/15	SDL

SM
2/17/15

BB
2/18/15

Flag Codes: Ra - Recovery failed specified criteria (PVS/LCS/MS/MSD/ICV/CAL) Rp - RPD failed specified criteria.
Na - Not Applicable Nc - Not Checked ..either one or both values =ND

Analysis Type: RS

Batch Number: RS-774

Units: mg/kg

5021319 0392

Calibration Curve Information

Qc Summary Results

Qc Type	Qc Name	SpkAmt	Rec Lim	Rpd Lim	Raw Result	Recov	Rpd	Flags
CAL-01	CAL-01-02/17/15	16	90-110	NA	16.43075	103	NA	
LCS	LCS	400	75-125	NA	410.76875	103	NA	
MS	AC83375-003	400	75-125	NA	420.7875	105	NA	
MSD	AC83375-003	400	75-125	20	400.75	100	4.9	

Analytical Method(s)

SW846 7.3.4

Sam #	Type	MB	Result	RL	Per Sol	Full Result	Titr Vol	Iod Vol	DF	Sam Wt (g)	Scrb Vol (ml)	Prep Date	Prep By	Anal Date	Anal By
CAL-01-02/17/15	CAL-01		16		100	16.431	5.9	10	1	250	250			02/17/15	HS
MB-1-02/17/15	MB	MB-1-02/17/15	ND	100	100	0	10.0	10	1	10	250	02/17/15	HS	02/17/15	HS
LCS	LCS	MB-1-02/17/15	410	100	100	410.77	5.9	10	1	10	250	02/17/15	HS	02/17/15	HS
AC83375-003	MS	MB-1-02/17/15	420	100	93	420.79	5.8	10	1	10	250	02/17/15	HS	02/17/15	HS
AC83375-003	MSD	MB-1-02/17/15	400	100	93	400.75	6.0	10	1	10	250	02/17/15	HS	02/17/15	HS
AC83375-003	Sample	MB-1-02/17/15	ND	100	93	30.056	9.7	10	1	10	250	02/17/15	HS	02/17/15	HS
AC83307-006	Sample	MB-1-02/17/15	ND	100	79	40.075	9.6	10	1	10	250	02/17/15	HS	02/17/15	HS
AC83312-002	Sample	MB-1-02/17/15	ND	100	47	10.019	9.9	10	1	10	250	02/17/15	HS	02/17/15	HS
AC83323-007	Sample	MB-1-02/17/15	ND	100	89	30.056	9.7	10	1	10	250	02/17/15	HS	02/17/15	HS

HS 2/20/15

2/23/15

Flag Codes: Ra - Recovery failed specified criteria (PVS/LCS/MS/MSD/ICV/CAL) Rp - RPD failed specified criteria.

Na - Not Applicable Nc - Not Checked ..either one or both values =ND

5021319 0393

Miscellaneous Data

5021319 0394

ZERO HEADSPACE EXTRACTION- SAMPLE ENTRY

Sample ID	Vessel #	Initial Pressure	Final Pressure	Ext. Fluid #	Wt./Vol. Of Sample	Start Date	Start Time	Finish Date	Finish Time	Ext. Type *	pH of HCl preserv vial	Analyst(s)	Transfer To**	Transfer To**	Comments
EFlu-20447B	AB	20	20	20447B EFlu	500mL	2-18	12:00	2-19	6:00	T	<2	SW	[illegible]		
AC83323-006	A6	"	"	"	25g/500mL	"	"	"	"	"	"	"	↓		
AC83375-003	A2	"	"	"	"	"	"	"	"	"	"	"			
EFBV-9069	A7	20		9069 EFBV-	500mL	2-23	10:00	2-24		S		SW			
AC83425-006	A6	"		"	25g/500mL	"	"	"		"		"			
AC -007	24	"		"	"	"	"	"		"		"			
AC -011	23	"		"	"	"	"	"		"		"			
AC -012	A1	"		"	"	"	"	"		"		"			

*Ext. Type TCLP=T ASTM=A SPLP=S MEP = M
** Initials of person taking custody of extractions

0072

HAZ. - 475

5021319 0395

Hampton-Clarke/Veritech

LEACHATE PREPARATION LOG
(TCLP, SPLP)

Start Date: 2/18/15 Finish Date: 2/19/15

**TCLP Ext. Fluid #1 pH: 4.89 (criteria: 4.93 ± 0.5)
**TCLP Ext. Fluid #2 pH: (criteria: 2.88 ± 0.05)
**SPLP Ext. Fluid #3 pH: 4.20 (criteria: 4.20 ± 0.5)

Sample #	pH (units)	pH in HCL (units)	Final pH (units)	Ext. Fluid (number)	Wt./Vol of Sample (g or mL)	Start Time	Finish Time	Analyst (s)	Ext. Type*	Comments
AC 83375-003	10.03	1.68	6.18	EFI 204478	150g/2L	13:00	8:60	ER	T	Metals and Organics
AC 83336-001	—	—	9.42	SPLP 204046	100g/2L				P	Organics only.
AC 83336-002	↓	↓	9.18	↓	↓				↓	↓
AC 83336-004			9.36							
AC 83289-001			9.47							
SPLP 204046	4.20	—	9.89		2L					
AC 83150-001	—	—	9.76	↓	100g/2L				↓	Metals and Organics
EFI 204478	4.89	—	4.94	EFI 204478	3L				T	Metals
AC 83294-001	—	—	9.60	SPLP 204046	100g/2L				P	Metals and Organics
AC 83414 @1	9.05	1.73	9.01	EFI 204478	50g/1L	1730	10:00			Organics only.
AC 83414 @2	10.05	2.10	9.19	↓	↓	↓	↓	↓	↓	metals only
										↓

* Ext. Type: TCLP = T (Method 1311) LAMP=L (Methods 1311 / ANSI/NEMA C78.LL 1256-2003)
SPLP = P (Method 1312) MEP=M (Method 1320)
ZHE = Z (Method 1311/1312)

** The pH of the extraction fluid must be checked prior to use and must be within limits specified above

Leachate prep log 2010.xls

HAZ. - 476

Hampton-Clarke
Analytical & Field Services

Last Page of Report

(NO TEXT THIS PAGE)

U - PAGES

SECTION U (VERSION 2.0)

NOTICE

THE PAGES CONTAINED IN THIS SECTION U VERSION 2.0 (U-PAGES) REPRESENT ADDITIONAL CONTRACT REQUIREMENTS APPLYING TO WORK PERFORMED IN THE PRESENCE OF PRIVATELY OWNED UTILITY FACILITIES.

(NO TEXT ON THIS PAGE)

SECTION U (VERSION 2.0)

DATED: October 27, 2016

1. The Contractor shall be responsible for compliance with all the provisions of the following Sections and Schedules, which are hereby made a part of the original contract documents:

   A. "SECTION U: Additional Contract Requirements Applying to Work Performed in the Presence of Privately Owned Utility Facilities" (Pages U-3 through U-13)

   B. Schedule U-1 (Page U-15)

   C. Schedule U-2 listing scope of utility interferences is no longer included in City contract. Such information will be part of Interference Agreement between Utility Operator and the Contractor.

   D. Schedule U-3 Page U-16 (as per the Private Utilities reference document for SECTION U called "CET SPECIFICATIONS AND SKETCHES", dated November 2010).

2. Each facility operator shall provide inspectors at the work site to inspect methods of interference work, verify quantities and items of Utility Work, and coordinate all phases of the facility operator operations.

3. In addition, the following statements are made to provide clarification of various paragraphs under Section U:

   A. Section U, Paragraph 3, requires the Contractor to immediately commence negotiations with each Company for an Interference Agreement under which the Company will compensate the Contractor for any Interference Work which the Company does not elect to perform with its own forces or by specialty contractors retained by the Company. Thus the Contractor is on notice that its work under the Contract may be affected by Interference Work performed by (a) the Contractor pursuant to a separate Interference Agreement with the Company, (b) the Company, or (c) partly by each.

B. The City has no contract with any of the Companies for work on or adjacent to the site of work under this Contract, and the Companies are not "Other Contractors" as defined for the purposes of this Contract. The Contractor is reminded, however, that pursuant to Section U, Paragraph 3, the City will not compensate the Contractor for any direct and/or indirect costs related to Interference Work, regardless of whether such Interference Work is covered by an Interference Agreement between the Contractor and the Company or is performed by the Company using its own forces or by specialty contractors retained by the Company.

C. Section U, Paragraph 13, provides that the provisions of Section U are material provisions of the Contract and that the Contractor's failure to comply with the procedures set forth in Section U are sufficient for the Commissioner to declare the Contractor in default pursuant to Article 48 of the Contract.

Pursuant to this Section, the Contractor is informed that the Performance Bond required of the Contractor pursuant to the Contract is not deemed to guarantee performance of any of the Interference Work.

Section U: Additional Contract Requirements Applicable to Work Performed in the Presence of Privately Owned Utility Facilities

The Contractor is hereby notified that pursuant to the law and franchise agreements issued by the City, certain private utility and public service companies named in Schedule U-1 ("the Companies") own and/or operate surface and/or subsurface facilities within the limits of this contract. The existence of these facilities impacts the productivity of the City work called for in the contract. In order to improve coordination of the City construction with the private utility facilities owned and/or operated by the Companies named in Schedule U-1, Article 1.06.30 of the Standard Highway Specifications of the New York City Department of Transportation, Dated August 1, 2015; and/or Articles 10.15 through 10.18 of the Standard Sewer and Water Main Specifications of the New York City Department of Environmental Protection, Dated July 1, 2014; as applicable, are amended and will be implemented as follows:

1. Means and methods for City work:

a) The Contractor is hereby notified that the utility interferences may impact the performance of, and/or interferes with, City work. The Contractor will be required to perform such utility work as directed by the Resident Engineer in order to clear all utility interferences from the project site as required for satisfactory completion of City work within specified contract schedule.

b) In areas serviced by overhead lines on poles carrying electric, telecommunication and cable system, the Contractor understands and by bidding for this contract agrees that he/she will be required to perform the public work in the presence of energized electrical overhead lines and appurtenances located in areas adjacent and/or within the project area. As a consequence he/she will select means and method of construction appropriate to maintain the safety clearances required or as permitted by electric operators in order to avoid damaging the insulation or shielding of these lines and also to prevent knocking them down.

2. *Field inspection prior to construction*:

Prior to the start of any contract work in areas serviced by overhead electric lines, and after the award to the apparent low bidder for this contract, the Contractor must request a field walk of the project area along with the operator of the overhead electrical facilities and the DDC Engineer-In-Charge. At that time the facility operator will confirm the type and condition of the overhead electrical lines and the sufficiency of their insulating properties with respect to the means and methods proposed by the Contractor. The Contractor must be prepared to describe in enough details his/her proposed means and methods of construction operations in order to anticipate the likelihood that electric lines insulation would be cut or otherwise compromised. Also such details will allow the facility operator to anticipate the need for added insulation and/or shielding of non-insulated lines.

3. *Compensation for interference work:*

Compensation for Interference Work is a matter of adjustment between the Contractor and each private utility company located within the limits of the project area and whose utility facilities are affected by City contract work. In particular, the City will not compensate the Contractor for any direct and/or indirect costs related to Interference Work, including, but not limited to, delay, lost profit, increased overhead, or any other impact costs. Upon receipt of a Notice of Award from the City, the Contractor shall immediately commence negotiations with each of the Companies concerning the manner in which and the price for which the Contractor, through its own forces or by others hired by it, will perform and be paid by the Company for all necessary Interference Work as defined above, and at known locations of City contract work, that the Company(ies) choose(s) not to perform with its(their) own forces or by specialty contractors hired by it (them) (as per "Interference Agreement"). Specialty contractors' work is limited to (i) insulation installation and removal, (ii) live gas and steam work, (iii) cleanup and disposal of hazardous materials, (iv) splicing live electrical and telecommunications facilities, and (v) work not traditionally performed by general construction contractors.

4. Interference Agreement:

a) Although the parties may negotiate an Interference Agreement in any format or manner they deem fit, the Contractor is hereby advised that the Companies have indicated to the City that they will agree to compensate the Contractor on a unit price basis for Types of Interferences encountered on this Contract in accordance to the Private Utilities reference document for SECTION U called "CET SPECIFICATIONS AND SKETCHES", dated November 2010, copy of which is available on demand.

b) The Contractor shall notify the City upon concluding an Interference Agreement with each of the Companies.

5. City contract work to continue without Interference Agreement :

If, prior to the start of construction, as directed by the City's Order to work / Notice To Proceed (OTW/ NTP) date any of the Companies and the Contractor have not concluded an Interference Agreement as described above, then the City shall issue a written "48 Hours' notice to Public Corporation" as prescribed by the City of New York Administrative Code, commonly referred to as "Order-Outs" and City construction will proceed as ordered and the Contractor will be directed by the Resident Engineer (RE) to perform the City work on Time, Material and Equipment basis (T&M) as specified in standard City contract agreement Article 26.2. T&M records will include identification of types of utility facilities interfering with City work, utility facility owners, specifying the nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such work and crew size, such as: name and number of each worker employed on such work. T&M records will also indicate the hours of active time, standby time and idle time. The Company (ies) and the Contractor will maintain separate records of the actual quantity and cost of labor, materials, and equipment expended, and will provide copies of this information to the other party on a daily basis for reconciliation. These T&M records along with cost evaluations will be submitted daily to the Resident Engineer for review and approval. The total cost of City work will be based on quantity of work performed multiplied by unit price contract bid items. The total interference cost will be calculated as the difference between the total

T&M cost and total cost for City work. The Resident Engineer will conduct a monthly reconciliation session of the daily T&M records with the affected Company (ies) and the Contractor. If the Contractor and affected utility companies cannot reconcile their T&M records, by the last day of each month, then the Resident Engineer will submit the approved City's T&M records along with total cost evaluations to the DDC Director of Construction who will review these records and recommend approval and validity certification by the DDC Construction Assistant Commissioner.

a) Copies of the DDC approved and certified T&M records will then be transmitted by the DDC to the Contractor and the utility companies. These certified records may be used by the Contractor for compensation claims against the responsible private facility owners, or may be used by any party as supporting documentation in dispute regarding compensation for performing Interference Work. The Contractor will be required to perform City work while invoices are submitted by the Contractor to the Utility companies for payment within 30 days, or while compensation disputes between the Contractor and affected company (ies) are submitted to Binding Arbitration process described in Paragraph 9.
b) All issues related to utility work and/or delays due to compensation disputes or claims against utility companies are not allowable as justification for granting contract time extensions or delay claims against the City. The City may assess liquidated damages specified in the contract for net overall delays suffered by City contract work as a result of utility issues, disputes and claims.
c) The standard City contract dispute resolution process specified in Article 27 "Presentation of disputes to Commissioner", of the standard City contract agreement is not applicable to any disputes related to utility work and/or compensation for such work or claim against utility companies. Utility work issues, disputes and claims may only be submitted to Binding Arbitration process described in Paragraph 9.
d) The Contractor will notify the Resident Engineer when utility work that require the intervention of company utility specialty crews causes excessive contractor's labor and equipment standby or idleness and, thereby jeopardizing the City project

schedule. The Resident Engineer will submit the facts to the DDC Director of Construction who will recommend to the DDC Deputy Commissioner regarding the issuance of a "48 Hours' notice to Public Corporation" to the concerned utility company as authorized by the New York City Administrative Code Section 19-143 and/or Section 24-521 as applicable.

e) Utility delays caused by utility and/or by unavailability of utility specialty crews cannot be discounted for earning any contractual bonus when such bonus clause is included in a contract. However, if such specified bonus is not earned or is disallowed by the City or if the City assesses specified liquidated damages as a result of such excessive delays, the Contractor may seek damages from the responsible utility company (ies).

6. *Extra utility work with Interference Agreement:*

If during construction the Contractor encounters utility facilities interferences or utility scope of work that it believes is not covered by the Interference Agreement as described above, then the Contractor shall immediately notify the Company in writing, with a copy to the City, describing the nature and location of the extra work in question. The Company then has five (5) business days to investigate the conditions and then:

a) Advise the Contractor and the City in writing that no interference with its facilities exists at the location in question, and hence that the Contractor may proceed with City work without providing for any impact from Company facilities;

b) Advise the Contractor and the City in writing that the Interference Agreement negotiated pursuant to Paragraph 4, provides for the scope of work encountered.

c) Advise the Contractor and the City in writing that it intends to perform the necessary utility Work with company forces or with its own contractor including, but not limited to, relocating its facility out of the way of the proposed City work. In this case, the Company shall provide a written schedule for the performance of the utility work it proposes to perform, which shall be subject to approval by

the City based on its impact to the Contractor's currently approved progress schedule. Upon approval of the Company's schedule by the City, the Contractor shall provide access to the worksite to the Company and/or any contractors hired by it to perform this utility work. If necessary, the City may grant a contract time extension for delays caused by the performance of such utility work by the company.

d) Reasonably specify in writing the scope of work to be performed by the Contractor on behalf of the Company that is not covered under the Interference Agreement negotiated pursuant to Paragraph 5, including, but not limited to, relocating, supporting, and/or protecting the Company's facilities, and/or shifting the City facility if approved by the Resident Engineer, and/or otherwise changing its operations to work in the presence of the Company's facilities. Should the Company elect this option, it must adequately define and provide an initial price offer for the work required to be performed.

7. Means and Methods for utility work:

Upon receipt of the Company's determination pursuant to Paragraphs 6.b, or 6.d, above, the Contractor shall determine reasonable means and methods of performing the work defined by the Company. These means and methods are subject to approval of the Company, which shall not be unreasonably withheld. If, however, the Company objects to the Contractor's proposed means and methods then it shall define an alternate method of construction. Upon receipt of the Company's approval or its proposed alternate method of construction, the Contractor shall commence performance of the work defined by the Company as soon as possible, and shall perform the work in a good, workmanlike, and efficient manner, using the means and methods approved by the Company, in order to permit the City work to proceed in the most expeditious manner possible, but without imposing unreasonable and/or unnecessary costs on the Company. It is expressly understood by all parties that the City's rights pursuant to Article 4 of the Contract apply to Utility Work performed pursuant to this Section.

8. Disputed utility work covered by an interference agreement:

The City Work will continue as described in Paragraph 5 above. In the event of any dispute between the Company (ies) and the Contractor regarding any issue related to the performance of, or payment for, utility work, including, but not limited to, any indirect or impact costs incurred by the Contractor due to the Utility Work and/or to the existence of facilities owned or operated by the Company (ies) on the line of the work. The Company (ies) and the Contractor hereby agree to submit to each other a "Final Offer," in writing, by certified mail. Each party shall then have three business days to consider each other's Final Offer. In the event that neither party accepts the other's Final Offer within those three days, the Company (ies) and the Contractor agree to immediately submit the dispute to binding arbitration as described in Paragraph 9. During the pendency of any arbitration, the Company (ies) and the Contractor shall maintain separate records of the actual quantity and cost of labor, materials, and equipment expended, and to provide copies of this information to the other party on a daily basis for reconciliation. Any and all disagreement with the records maintained and provided by the other, must be documented in writing to all parties. However, these records are solely for the benefit of presentation to the arbitrator, whose decision may not necessarily be based on these records and in any event is final. Both parties should be aware that the City will not confirm or deny the accuracy of any records that is not certified by DDC.. While the arbitration is pending, the Company shall pay the Contractor on a monthly basis, based on the price offered by the Company to the Contractor for the performance of the work.

9. Arbitration of utility work:

The arbitration of the issues described above shall be conducted pursuant to the Construction Industry Arbitration Rules of the American Arbitration Association (hereinafter "the Rules" and "AAA") in effect on the date the arbitration is initiated except as set forth herein. The arbitration award shall be final and binding upon the parties to the arbitration and judgment upon the award may be entered in a court having jurisdiction.

(a) Once an arbitrator(s) has been appointed by the AAA, the arbitration shall be scheduled as promptly as possible given the arbitrator(s) and the parties' schedules.

(b) No later than seven days prior to the first arbitration hearing, Company and the Contractor shall submit to the arbitrator(s), and to each other, a summary of each party's respective position and such other information as is deemed appropriate, along with a copy of each party's Final Offer as specified in Paragraph 8.

(c) The arbitration shall be conducted and concluded in two days.

(d) On the morning of the first day of the arbitration, the Contractor and/or representatives shall have 3 ½ hours to make a presentation of its claim to the arbitrator. During its presentation, the Contractor shall not be permitted to produce any documents or cost records which have not already been provided to the Company. The Contractor shall be permitted to produce any analysis or description of its claim which has been prepared for the purpose of its presentation.

(e) Company and/or its representatives shall have two hours to ask the Contractor questions about its claim and its presentation. Thereafter the arbitrator(s) shall have two hours to ask the Contractor questions about its claim and its presentation.

(f) On the morning of the second day of the arbitration, Company and/or its representatives shall have 3 ½ hours to make a presentation of its claim to the arbitrator. During its presentation, the Company shall not be permitted to produce any documents or cost records which have not already been provided to the Contractor. The Company shall be permitted to produce any analysis or description of its claim which has been prepared for the purpose of its presentation.

(g) The Contractor and/or its representatives shall have two hours to ask Company questions about its claim and its presentation. Thereafter the arbitrator(s) shall have two hours to ask Company questions about its claim and its presentation.

(h) Subject to the above time limitations, the arbitrator(s) may conduct the arbitration in such manner as the arbitrator(s) deems reasonable.

(i) The arbitrator(s) shall then have one week to select in writing, as the arbitrator ('s) award, that party's Final Offer which appears to be more reasonable, based on the presentations at the arbitration hearings.

(j) The arbitrator shall have no discretion to grant an award other than one of the two Final Offers submitted by the parties.

(k) Any award for work that has already been performed shall be paid on the 7th day after receipt of the arbitrator's decision, or on the 30th day after completion of the work, whichever is later. Payment for work not yet completed at the time of the arbitrator's decision shall be paid within 30 days of completion of work. Interest shall accrue from the date payment is due at the rate of 9% per annum. Either party may cause judgment to be entered in accordance with the arbitrator(s) decision in a court in the State of New York, County of New York.

(l) The arbitrator's fees and any other costs of the arbitration shall be initially shared equally by Company and the Contractor. The non-prevailing party shall then pay all arbitrator's fees and costs of the arbitration and shall reimburse the prevailing party for its share of such fees and costs theretofore paid.

(m) The parties may, at any time, settle any matter submitted to arbitration.

10. Order-out waiver:

The Contractor and all subcontractors hired by it, if an Interference Agreement is executed as specified between the concerned parties, agree to waive any rights they may have, if any, under law, contract or otherwise to compel the City to assert any right the City may have, including the issuance of any directives required under the New York City Administrative Code, Section 19-143 and Section 24-521, to require any or all of the Companies to maintain, repair, replace, protect, support, shift, alter, relocate, and/or remove utility facilities in connection with the work to be performed under this contract. However, nothing in this Section shall preclude the City from exercising its rights under the Law to issue such a directive to the Company.

11. Cost of insurance:

Each of the named Companies, at their option and if an Interference Agreement is executed as specified between the concerned parties, may be named as an additional insured on all insurance policies required to be maintained under this contract. In the event that a Company opts to be so named as an additional insured, the actual incremental cost, if any, to the Contractor of providing such insurance coverage shall be borne by that Company. The Contractor shall provide a written statement from its insurance provider documenting the actual cost of this added coverage to the Company. Under no circumstances shall the cost of insurance coverage on behalf of any Company be borne by the City. Nothing in this paragraph shall be interpreted to imply the City's acceptance of any additional responsibility or liability for any matter related to the performance of Utility Work. In particular, the Company and the Contractor bear joint and full responsibility to ensure that any Utility Work performed by the Contractor is in compliance with all applicable government and Company regulations.

12. Cost of utility interference work:

The Companies, by virtue of a prior agreement with the City, have agreed to perform their obligations described in this section. It is expressly understood that the cost of Utility Work or any delays cost caused by such utility work shall not be a charge against the City, but shall be a matter for adjustment between the Contractor and the Company or Companies concerned. The City and the Contractor agree that the Companies are third party beneficiaries of this Section of the contract, if an Interference Agreement is executed between the Contractor and utility company (ies). The provisions of this Section shall govern in all cases where Company property interferes with or is about to be disturbed by the City work, notwithstanding any other provision of the Contract, except for Natural Gas transmission/distribution facilities covered subject to the Gas Facility Cost Allocation Act (GFCAA) and covered separately in this contract.

13. Default declaration:

The Contractor agrees that the provisions of this Section are material provisions of the contract, and that the Contractor's failure to comply with the procedures set forth above are sufficient for the Commissioner to declare the Contractor in default pursuant to Article 48 of the Contract.

14. NYS Labor Law:

The Contractor is hereby advised that New York State Labor Law and/or, Davis-Bacon Act if federally funded, applies to public work. The work described in this Section U of the contract performed by utility company (ies) with their own forces or vendors hired by such company (ies) is not public work.

15. Facility operators:

The insurance requirements in Paragraph 11 of this Section U apply to: (i) additional Companies, if any, who were not named in Schedule "A" but which have executed an Interference Agreement with the Contractor for utility work; and (ii) additional coverage, if any, paid for by Utility Companies whose utility facilities are located within the project limits, that they may require for the utility work pursuant to an Interference Agreement between the Contractor and such utility company (ies).

[End]

"STANDARD UTILITY LETTER OF AGREEMENT"

(Name)
Deputy Commissioner, Infrastructure Division
Department of Design and Construction
30-30 Thomson Avenue
Long Island City, NY 11101

RE: City Work Performed in the Presence of Private Utility Facilities
Project No: _____

Dear (Name):

This letter is to certify that _____, has requested the inclusion of the attached "Section U: Additional contract requirements applying to work performed in the presence of privately owned utility." The company agrees to abide by the terms of this Section U at the company's own expenses due to their facilities interferences with the Public work.

Sincerely,

_____
By: Authorized Company Representative

_____
Title

NOTARY PUBLIC

CERTIFIED AS TO FORM
AND LEGAL AUTHORITY:

By:_____

SCHEDULE U-1

LISTING OF COMPANIES NAMED FOR THIS CONTRACT

COMPANY NAME	CONTACT NAME	CONTACT TELEPHONE
CON EDISON	THERESA KONG	212-460-4834
VERIZON	AUBREY MAKHANLALL	718-977-8165
TIME WARNER	JOHN PIAZZA	718-888-4261

SCHEDULE U-3

(NO TEXT IN THIS SECTION)

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 3 OF 4

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE
INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND
TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

_____

Contractor.

_____

Dated _____, **20**____

_____

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000
WEBSITE www1.nyc.gov/site/ddc/index.page

VOLUME 4 OF 4

DDC STANDARD GENERAL CONDITIONS FOR SINGLE CONTRACT PROJECTS
ADDENDUM TO THE GENERAL CONDITIONS
SECTION BVM11 BARUCH COLLEGE VERTICAL CAMPUS BUILDING VAULT MODIFICATIONS

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE

INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

FOR THE DEPARTMENT OF TRANSPORTATION
PREPARED BY MATHEWS NIELSEN LANDSCAPE ARCHITECTS, P.C.

AUGUST 26, 2016

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS

ADDENDUM TO THE GENERAL CONDITIONS FOR SINGLE CONTRACT PROJECTS

The General Conditions are hereby amended in accordance with the terms and conditions set forth in this Addendum.

I. PROJECT DESCRIPTION

FMS #: HWBARUCH

PROJECT NAME: Reconstruction of East 25th Street Plaza
Between Lexington Avenue and 3rd Avenue
At Baruch College

PROJECT DESCRIPTION:

This Project consists of the reconstruction of East 25th Street Plaza at Baruch College. The portion of Project HWBARUCH which is described in **Section BVM11** consists of the rehabilitation of the Baruch College vault, including but not limited to the demolition of existing stone walls and paving at street level, construction of concrete topping slab, flagpole foundations, stone walls, structural rehabilitation of the vault's steel framing structure, steel fireproofing, vault waterproofing, and associated plumbing.

PROJECT LOCATION: East 25th Street between Lexington Avenue and 3rd Avenue
BOROUGH: Manhattan
CITY OF NEW YORK
ZIP CODE: 10010
COMMUNITY BOARD #: 6

LANDMARK STATUS:

N/A

DESIGNATED LANDMARK STRUCTURE OR SITE: NO
If this is a Designated Landmark Structure or Site, Section 01 3591, Historic Treatment Procedures applies to this project.
LANDMARK QUALITY STRUCTURE: NO
If this is a Landmark Quality Structure, Section 01 3591, Historic Treatment Procedures applies to this project.

II. LEED GREEN BUILDING REQUIREMENTS

Not Used

III. COMMISSIONING REQUIREMENTS

Not Used

IV. PROJECT MANAGEMENT

[X] DDC shall publicly bid and enter into all contracts for the Project. DDC shall manage the Project using its own personnel.

[ ] DDC shall publicly bid and enter into all contracts for the Project. A Construction Management firm (the "CM") hired by DDC shall manage the Project. The Contractor is advised that the CM shall serve as the representative of the Commissioner at the site and shall, subject to review by the Commissioner, be responsible for the inspection, management, coordination and administration of the required construction work, as delineated in the article of the Standard Construction Contract entitled "The Resident Engineer".

V. CONTRACTS FOR THE PROJECT

The Project consists of a single contract, the Contract for General Construction Work. The Contractor for General Construction Work is responsible for the performance of all required work for the Project as set forth in the Contract Documents (General Conditions, Drawings and Specifications), including all responsibilities and obligations assigned to separate Contractors for the following subdivisions of the work: Plumbing Work, HVAC Work, and Electrical Work. All responsibilities and obligations in the Contract Documents assigned to separate Contractors for such subdivisions of the work are the responsibility of the Contractor for General Construction Work.

VI. SCHEDULES

The Contractor is advised that Schedules A through F are attached to, and incorporated as part of, this Addendum to the General Conditions. These schedules contain important information that is specific to this Project. The Contractor is advised to carefully review these schedules.

VII. APPLICABILITY OF SECTIONS/SUB-SECTIONS AND AMENDED SUB-SECTIONS

The Contractor is advised that various Sections/Sub-Sections in the General Conditions may not apply to this Project or may apply as amended. Such Sections/Sub-Sections advise the Contractor to "Refer to the Addendum for the applicability of this Section/Sub-Section." Such Sections/Sub-Sections are set forth below. A check mark indicates whether the Section/Sub-Section (1) applies to the Project, (2) does not apply to the Project, or (3) applies to the Project as amended. If no box is checked, the Section/Sub-Section, as set forth in the General Conditions, applies to the Project. Amended Sections/Sub-Sections, if any, are set forth following this list of Sections.

Section	Sub-Section	Sub-Section	Applies	Does not Apply	Applies as Amended
01 1000	1.4 (B)	Scope and Intent / LEED		x	
	1.4(C)	Scope and Intent / Commissioning		x	
01 1000	1.10 (D)	Mobilization Payment		x	
01 3233		Photographic Documentation		x	
01 3300	1.7 (A-D)	LEED Submittals		x	
01 3503		General Mechanical Requirements		x	
01 3506		General Electrical Requirements		x	
01 3591		Historic Treatment Procedures		x	
01 5000	3.2 (A)	Temporary Water Facilities / Temporary Water		x	
	3.2 (B)	Temporary Water Facilities / Temporary Water – Work in Existing Facilities		x	
	3.3 (B)	Temporary Sanitary Facilities / Self-Contained Toilet Units		x	
	3.3 (C)	Temporary Sanitary Facilities / Existing Toilets		x	
	3.4 (B) 1	Temporary Power, Lighting, and Site Lighting / Connection to Utility Lines		x	
	3.4 (B) 2	Temporary Power, Lighting, and Site Lighting / Connection to Existing Electrical Power Service		x	
	3.4 (B) 3	Temporary Power, Lighting, and Site Lighting / Electrical Generator Power Service		x	
	3.4 (D)	Temporary Power, Lighting, and Site Lighting / Temporary Lighting		x	
	3.4 (E)	Temporary Power, Lighting, and Site Lighting / Site Security Lighting (for New Construction Only)		x	
	3.5 (A-J)	Temporary Heat		x	
	3.8 (A)	DDC Field Office / Office Space in Existing Building		x	
	3.8 (B)	DDC Field Office / DDC Field Office Trailer		x	
	3.8 (B-3a)	DDC Field Office / DDC Managed Field Office Trailer		x	
	3.8 (B-3b)	DDC Field Office / CM Managed Field Office Trailer		x	
	3.8 (D)	DDC Field Office / Additional Equipment for the DDC Field Office		x	
	3.13(A-D)	Work Fence Enclosure		x	
	3.17(B)	Project Rendering		x	
	3.18 (A-C)	Security Guards / Fire Guards on Site		x	

Section	Sub-Section	Sub-Section	Applies	Does not Apply	Applies as Amended
01 5411	3.1 (A-J)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Up To and Including 15 Stories		x	
	3.2 (A-M)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Over 15 Stories		x	
	3.3 (A-E)	Temporary Use, Operation and Maintenance of Elevators During Construction for Existing Buildings	x		
01 7300	3.3 (A-I)	Surveys	x		
	3.4 (A-B)	Borings		x	
	3.12 (A-D)	Sleeves and Hangers	x		
	3.13 (A)	Sleeve and Penetration Drawings	x		
	3.15 (A)	Location of Partitions		x	
01 7419	1.5 (C)	Waste Management Performance Requirements / LEED Certification		x	
01 7900		Demonstration and Owner's Pre-Acceptance Orientation	x		
01 8113		Sustainable Design Requirements for LEED Buildings		x	
01 8113.13		VOC Limits for Adhesives, Sealants, Paints and Coatings for LEED Buildings		x	
01 8119		Indoor Air Quality Requirements for LEED Buildings		x	
01 9113		General Commissioning Requirements		x	

AMENDED SECTIONS/SUB-SECTIONS

SECTION 01 3200, SUBSECTION 1.2, ADD to the end of this subsection: All schedules shall be coordinated with the overall contract schedule.

SECTION 01 1000, SUBSECTION 1.1 , ADD to the end of this subsection: C. The general conditions and the addendum shall apply only to the work covered by specification SECTION BVM11, in Volume 4 of 4 of this contract.

ADDITIONAL SECTIONS/SUB-SECTIONS

NOT USED

VIII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

NOT USED

IX. REVISIONS: SPECIFICATIONS AND CONTRACT DRAWINGS

The Specifications and the Contract Drawings for the Project are revised in accordance with the provisions set forth below.

(1) Owner: Wherever the term "Owner" is used in the Specifications and/or the Contract Drawings, such term shall mean the City of New York.

(2) Other Entities: In the event any entity other than the City of New York is referred to or named as the "Owner" in the Specifications and/or the Contract Drawings, the name of such other entity is deemed deleted and replaced with the "City of New York".

(3) Architect / Engineer: Wherever the words "Architect", "Engineer", "Architect / Engineer" or "Architect and/or Engineer" are used in the Specifications and/or the Contract Drawings, such words are deemed deleted and replaced with the word "Commissioner".

(4) Products / Manufacturers: Wherever the Specifications and/or the Contract Drawings require the contractor to provide a particular product (i.e., material and/or equipment) from a designated manufacturer and/or vendor, the term "or approved equal" is deemed inserted, even if only one product and/or manufacturer is specified, except as otherwise provided below.

(a) Proprietary Items: If the Bid Booklet contains a Notice which identifies a particular product from a designated manufacturer as a "Proprietary Item", the Contractor shall be required to provide such specified product. In such case, no substitution or "approved equal" will be permitted.

(5) Special Experience Requirements: Special Experience Requirements for the Project, if any, are set forth in the Bid Booklet. Special Experience Requirements may apply to contractors, subcontractors, installers, manufacturers and/or suppliers. If the Specifications and/or the Contract Drawings contain any Special Experience Requirement that is not set forth in the Bid Booklet, such Special Experience Requirement is deemed deleted, except as otherwise provided below.

(a) Any Special Experience Requirement that provides that the entity performing the work or supplying the material must have more than three (3) years of experience, is revised to provide that the entity performing the work or supplying the material must have three (3) years of experience, except as described in paragraph (b) below.

(b) Any Special Experience Requirement that pertains to the abatement of hazardous materials shall not be subject to the deletion and/or revision set forth above. Such Special Experience Requirement shall remain in full force and effect.

(c) Any Special Experience Requirement that provides that the entity performing the work must be licensed, authorized, certified, approved by or acceptable to the manufacturer, is deemed deleted and replaced with the requirement that such entity must be properly trained for the specified work.

(d) Any Special Experience Requirement that provides that the individual workers performing the work must be licensed, authorized, certified, approved by or acceptable to the manufacturer, is deemed deleted and replaced with the requirement that such individual workers must be properly trained for the specified work.

(6) Alternate Bids: If the agency is requesting the submission of Alternate Bids, a Notice regarding such Alternate Bids is set forth in the Bid Booklet. In the event of any conflict or inconsistency between (1) the Notice regarding Alternate Bids set forth in the Bid Booklet and (2) a provision in the Specifications and/or the Contract Drawings regarding Alternate Bids, the Notice set forth in the Bid Booklet shall prevail. If the agency is not requesting the submission of Alternate Bids, as indicated by the absence of a Notice in the Bid Booklet, and the Specifications and/or the Contract Drawings contain any provision regarding Alternate Bids, such provision is deemed deleted.

(7) Contractor Retained Engineer: If the Specifications and/or the Contract Drawings require the Contractor to retain an Engineer to provide engineering services for the Project, the following sentence is deemed inserted: "Such Engineer must be a Professional Engineer, licensed in the State of New York."

(8) LEED Related Provisions: If the Specifications and/or the Contract Drawings require the Contractor to purchase FSC certified wood, rapidly renewable materials, or materials within 500 miles, such provisions are deemed deleted and replaced with the requirement that if the contractor has purchased FSC certified wood, rapidly renewable materials, or materials within 500 miles, the contractor shall submit such forms or documentation as may be required by the City in order for the USGBC to certify that the Project qualifies for the related LEED credit(s).

(9) Guarantees: Requirements for Guarantees and Maintenance are set forth in Schedule B, which is included in the Addendum to the General Conditions. In the event of any conflict or inconsistency between (1) a guarantee and/or maintenance requirement set forth in the Specifications and/or the Contract Drawings and (2) a guarantee and/or maintenance requirement set forth in Schedule B, the guarantee and/or maintenance requirement set forth in Schedule B shall prevail.

(10) Warranties: Requirements for Warranties are set forth in Schedule B, which is included in the Addendum to the General Conditions.

(a) In the event of any conflict or inconsistency between (1) a warranty requirement set forth in the Specifications and/or the Contract Drawings and (2) a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall prevail.

(b) In the event a warranty requirement set forth in the Specifications and/or the Contract Drawings is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications and/or the Contract Drawings, shall remain in full force and effect.

(c) In the event a warranty requirement for a particular item of material or equipment is omitted from Schedule B, as well as from the Specifications or the Contract Drawings, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.

(11) Exculpatory Provisions: In the event the Specifications and/or the Contract Drawings contain any provision whereby the consultant and/or any of its officers, employees or agents, including subconsultants, is absolved of responsibility for any act or omission, such provision is deemed deleted.

(12) Insurance: Provisions regarding insurance coverage the Contractor is required to provide are set forth in Article 22 of the City of New York Standard Construction Contract and Schedule A, which is included in the Volume 3 of the contract documents. In the event the Specifications and/or the Contract Drawings contain any provision regarding insurance requirements, such provision is deemed deleted.

(13) Indemnification: Provisions regarding indemnification are set forth in Articles 7, 12, 22 and 57 of the City of New York Standard Construction Contract. In the event the Specifications and/or the Contract Drawings contain any provision regarding indemnification, such provision is deemed deleted.

(14) Dispute Resolution: Provisions regarding dispute resolution are set forth in Article 27 of the City of New York Standard Construction Contract. In the event the Specifications and/or the Contract Drawings contain any provision regarding dispute resolution, such provision is deemed deleted.

(15) Payment to Other Entities: In the event the Specifications and/or the Contract Drawings contain any provision which requires the Contractor to make payments to an entity other than a subcontractor and/or supplier providing services and/or material for the project, such provision is deemed deleted.

(16) General Conditions: In the event of any conflict or inconsistency between (1) the Specifications and/or the Contract Drawings and (2) the General Conditions, the General Conditions shall prevail.

(17) Standard Construction Contract: In the event of any conflict or inconsistency between (1) the Specifications and/or the Contract Drawings and (2) the City of New York Standard Construction Contract, the City of New York Standard Construction Contract shall prevail.

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

NOT USED. The bidder is advised the Schedule A for this Contract is located in Volume 3 of the Contract Documents.

SCHEDULE B

Guarantees and Warranties

(Reference: Section 01 7839, Article 2.7 of the DDC Standard General Conditions)

GUARANTY FROM CONTRACTOR

(1) Contractor's Guaranty Obligation: The Contractor shall promptly repair, replace, restore or rebuild, as the Commissioner may determine, any finished Work in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of Substantial Completion (or use and occupancy in accordance with the Contract), except for the areas of Work set forth below:

- Roofing, Waterproofing, and Joint Sealant Work. For these types of work, the guarantee period shall be (2) two years.

- Trees and/or Plant Material. For trees and/or plant material furnished and installed, the guarantee period shall be (2) two years. During the guarantee period, the Contractor shall provide all maintenance services set forth in the Specifications.

(2) Guaranty Period: The obligation of the Contractor, and its Surety under the Performance Bond, is limited to the period(s) of time specified above.

(3) Other Provisions Deemed Deleted: In the event the Specifications and/or the Contract Drawings contain any provisions regarding guaranty requirements, such provisions are deemed deleted and replaced with the guaranty requirements set forth in this Schedule B.

****

WARRANTY FROM MANUFACTURER

(1) Contractor's Obligation to Provide Warranties: The items of material and/or equipment for which manufacturer warranties are required are listed below. For each item of material and/or equipment listed below, the Contractor shall obtain a written warranty from the manufacturer. Such warranty shall provide that the material or equipment is free from defects for the period set forth below and will be replaced or repaired within such specified period. The Contractor shall deliver all required warranties to the Commissioner.

(2) Required Warranties:

Specification Number	Material or Equipment	Warranty Period
071325	Self-Adhering Sheet Waterproofing	5 years
079200	Joint Sealants	5 years

(3) Application: The obligations under the warranty for the periods specified above shall apply only to the manufacturer of the material or equipment, and not to the Contractor or its Surety; provided, however, the Contractor retains responsibility for obtaining all required warranties from the manufacturers and delivering the same to the Commissioner.

(4) Other Provisions: The warranty requirements set forth in this Schedule B are also included in the Specifications.

(a) In the event of any conflict between a warranty requirement set forth in the Specifications and a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall take precedence.

(b) In the event a warranty requirement set forth in the Specifications is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications, shall remain in full force and effect

(c) In the event a warranty requirement for a particular item of material or equipment is omitted from both Schedule B and the Specifications, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.

(d) In the event a warranty requirement is provided for a particular item of material or equipment, and such requirement specifies a warranty period that is longer than that which is actually provided by any of the specified manufacturers, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by any of the specified manufacturers, unless otherwise directed in writing by the Commissioner.

(e) Unless indicated otherwise Warranties are to take effect on the date of Substantial Completion.

SCHEDULE C

Contract Drawings

(Reference: Section 01 1000, Article 1.5 (A) of the DDC Standard General Conditions)

NOT USED. The bidder is advised that the drawing list is located in Volume 1 of the Contract Documents.

SCHEDULE D

No Text

SCHEDULE E

Separation of Trades

NOT USED FOR SINGLE CONTRACTS

SCHEDULE F

Submittals Schedule

(Reference: Section 01 3300 Article 1.5 (C) of the General Conditions)

The Schedule set forth below lists all submittal requirements for the Contract. In the event of any conflict between the Specifications and this Schedule F, Schedule F shall take precedence; provided, however, in the event of an omission from Schedule F (i.e., Schedule F omits either a reference to or information concerning a submittal requirement which is set forth in the Specifications), such omission from Schedule F shall have no effect and the Contractor's submittal obligation, as set forth in the Specifications, shall remain in full force and effect.

CONSULTANT: Mathews Nielsen Landscape Architects, P.C. DATE:

TELEPHONE NUMBER: 212-431-3609
DDC PROJECT MANAGER:
TELEPHONE NUMBER:

APPROVED: _____
(DDC RESIDENT ENGINEER/CPM)

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:							CONTRACT #: **Contract 1 – GENERAL CONSTRUCTION** TRADE: SHOP DRAWING LOG SHEET #								
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL			SUB. DATE	REQ'D DEL.	FABRIC. TIME	SUBMISSIONS								
			SHOP DWG.	SAMPLE	CAT. CUTS				REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
01 3526	Safety and Health Program	X															
01 3526	Contractor's Safety Plan	X															
01 3591	Historic Treatment Plan	X															
01 5000	Site Plan		X														
01 5000	Reports	X															
01 5423	NYC DOB Scaffold & Sidewalk Shed Permits	X	X														

01 5423	Site Logistics/Site Safety Plan	X															
01 5423	Scaffold & Shed Installation Drawings		X														
01 7419	Waste Management Plan	X															
01 7900	Instruction Program for Demonstration & Orientation	X															
01 7900	Qualification Data	X															
01 8113.13	MSDS			X	X												
01 8119	IAQ Management Plan	X															
01 8119	Product Cut Sheets				X												
01 8119	IAQ Management Plan Photographs	X															
03 3000	Cast-In-Place Concrete	x	x		x												
04 2200	Concrete Unit Masonry	x	x		x												
05 1200	Structural Steel Framing	x	x		x												
05 3100	Steel Decking	x	x		x												
07 1325	Self-Adhering Sheet Waterproofing	x		x	x												
07 8100	Applied Fireproofing	x		x	x												
07 9200	Joint Sealants	x		x													

22 0529	Hangers and Supports For Plumbing Pipings	x			x												
22 1000	Plumbing Piping	X			x												
22 2000	Plumbing Specialties	x			x												
26 0500	Common Work Results for Electrical	x	x		x												

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

Issue Date - June 01, 2013
Revised - January 15, 2015

DDC STANDARD GENERAL CONDITIONS

FOR SINGLE CONTRACT PROJECTS

No Text

NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

Issue Date - June 01, 2013
Revised - January 15, 2015

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SINGLE CONTRACT PROJECTS
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NO TEXT

SECTION 01 10 00
SUMMARY

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

B. Addendum to the General Conditions: These General Conditions include and are supplemented by the Addendum to the General Conditions (the "Addendum"). The Addendum includes the following: (1) schedules referred to in these General Conditions (Schedule A through F), (2) information regarding the applicability of various articles, and (3) amended articles, if any.

1.2 SUMMARY:

A. This section includes the following:
   1. Scope and Intent
   2. Provisions Referenced in the Contract
   3. Performance of Work During Non-Regular Work Hours (Pursuant to a Change Order)
   4. Interruption of Services at Existing Facilities

1.3 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 SCOPE AND INTENT:

A. Description of Project: Refer to the Addendum for a description of the project.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 B

B. LEED: The City of New York will seek U.S. Green Building Council (USGBC) LEED (Leadership in Energy and Environmental Design) certification for this Project as specified in Section 01 81 13, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS" and the Addendum to the General Conditions.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 C

C. COMMISSIONING: The project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning shall be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS, and the Addendum to the General Conditions. The Contractor shall cooperate with the commissioning agent and provide whatever assistance is required.

D. PROGRESS SCHEDULE: Refer to Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION for requirements of the project.

E. COMPLETION OF WORK: Work to be done under the Contract is comprised of the furnishing of all labor, materials, equipment and other appurtenances, and obtaining all regulatory agency approvals necessary and required to complete the construction work in accordance with the Contract.

F. OMISSION OF DETAILS: All work called for in the Specifications applicable to the Contract but not shown on the Contract Drawings in their present form, or vice versa, is required, and shall be performed by the Contractor as though it were originally delineated or described. The cost of such work shall be deemed included in the total Contract Price.

G. WORK NOT IN SPECIFICATIONS OR CONTRACT DRAWINGS: Work not particularly specified in the Specifications nor detailed on the Contract Drawings but involved in carrying out their intent or in the complete and proper execution of the work, is required, and shall be performed by the Contractor. The cost of such work shall be deemed included in the total Contract Price.

H. SILENCE OF THE SPECIFICATIONS: The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best practice is to prevail and that only the best material and workmanship is to be used and interpretation of the Specifications shall be made upon that basis.

I. CONFLICT BETWEEN CONTRACT DRAWINGS AND SPECIFICATIONS: Should any conflict occur in or between the Drawings and Specifications, the Contractor shall be deemed to have estimated the most expensive way of doing the work unless the Contractor shall have asked for and obtained a decision in writing from the Commissioner before the submission of the bid as to what shall govern.

1.5 CONTRACT DRAWINGS AND SPECIFICATIONS:

A. SCHEDULE C - The Contract Drawings are listed in Schedule C, which is set forth in the Addendum. Such drawings referred to in the Contract, and in the applicable Specifications for the Contract, bear the general title:

City of New York
Department of Design and Construction
Division of Public Buildings

B. DOCUMENTS FURNISHED TO THE CONTRACTOR - After the award of the Contract, the Contractor will be furnished with five (5) complete sets of paper prints of all Contract Drawings mentioned in Paragraph A above, as well as a copy of the Specifications.

C. ADDITIONAL COPIES of Drawings and Specifications, when requested, will be furnished to the Contractor if available.

D. SUPPLEMENTARY DRAWINGS - When, in the opinion of the Commissioner, it becomes necessary to more fully explain the work to be done, or to illustrate the work further, or to show any changes which may be required, drawings known as Supplementary Drawings will be prepared by the Commissioner.

E. COMPENSATION - Where Supplementary Drawings entail extra work, compensation therefore to the Contractor shall be subject to the terms of the Contract. The Supplementary Drawings shall be binding upon the Contractor with the same force as the Contract Drawings.

F. SUPPLEMENTARY DRAWING PRINTS - Three (3) copies of prints of these Supplementary Drawings will be furnished to the Contractor.

G. COPIES TO SUBCONTRACTORS - The Contractor shall furnish each of its subcontractors and material suppliers such copies of Contract Drawings, Supplementary Drawings, or copies of the Specifications as may be required for its work.

1.6 COORDINATION:

A. COORDINATION AND COOPERATION - The Contractor shall consult and study the requirements of the Contract Drawings and Specifications for all required work, including all work to be performed by trade subcontractors, so that the Contractor may become acquainted with the work of the project as a whole in order to achieve the proper coordination and cooperation necessary for the efficient and timely performance of the work.

B. CONTRACTOR TO CHECK DRAWINGS: - The Contractor shall verify all dimensions, quantities and details shown on the Contract Drawings, Schedules, or other data received from the Commissioner, and shall notify the Commissioner of all errors, omissions, conflicts and discrepancies found therein. Notice of such errors shall be given before the Contractor proceeds with any work. Figures shall be used in preference to scale dimensions and large-scale drawings in preference to small-scale drawings.

1.7 SHOP DRAWINGS AND RECORD DRAWINGS:

Refer to Division I Section 01 33 00 – SUBMITAL PROCEDURES and Section 01 78 39 – PROJECT RECORD DRAWINGS for requirements applicable to shop drawings and record drawings.

1.8 TEMPORARY FACILITIES, SERVICES AND CONTROLS:

Refer to Division I Section 01 50 00 – TEMPORARY FACILITIES SERVICES AND CONTROLS for the responsibilities of the Contractor.

1.9 DUST CONTROL:

The Contractor shall prepare, execute and manage a "Dust Control Plan" for the prevention of the emission of dust from construction related activities in compliance with 15 RCNY 13-01 et. seq.

1.10 PROVISIONS REFERENCED IN THE CONTRACT:

A. SCHEDULE A - Various Articles of the Contract refer to requirements set forth in Schedule A of the General Conditions. Schedule A, which is included in the Addendum, sets forth (1) the referenced Articles of the Contract, and (2) the specific requirements applicable to the Contract.

B. EXTENSION OF TIME - Applications for Extensions of Time, as indicated in Article 13 of the Contract, shall be made in accordance with the Rules of the Procurement Policy Board.

C. PARTIAL PAYMENTS FOR MATERIALS IN ADVANCE OF THEIR INCORPORATION IN THE WORK PURSUANT TO ARTICLE 42 OF THE CONTRACT – In order to better insure the availability of materials, fixtures and equipment when needed for the work, the Commissioner may authorize partial payment for certain materials, fixtures and equipment, prior to their incorporation in the work, but only in strict accordance with, and subject to, all the terms and conditions set forth in the Specifications, unless an alternate method of payment is elsewhere provided in the Specifications for specified materials, fixtures or equipment.

1. The Contractor shall submit to the Commissioner a written request, in quadruplicate, for payment for materials purchased or to be purchased for which the Contractor needs to be paid prior to their actual incorporation in the work. The request shall be accompanied by a schedule of the types and quantities of materials, and shall state whether such materials are to be stored on or off the site.

2. Where the materials are to be stored off the site, they shall be stored at a place other than the Contractor's premises (except with the written consent of the Commissioner) and under the conditions prescribed or approved by the Commissioner. The Contractor shall set apart and separately store at the place or places of storage all materials and shall clearly mark same "PROPERTY OF THE CITY OF NEW YORK", and further, shall not at any time move any of said materials to another off-site place of storage without the prior written consent of the Commissioner. Materials may be removed from their place of storage off the site for incorporation in the work upon approval of the Resident Engineer.

3. Where the materials are to be stored at the site, they shall be stored at such locations as shall be designated by the Resident Engineer and only in such quantities as, in the opinion of the Resident Engineer, will not interfere with the proper performance of the work by the Contractor or by other Contractors then engaged in performing work on the site. Such materials shall not be removed from their place of storage on the site except for incorporation in the work, without the approval of the Resident Engineer.

4. INSURANCE

   a. STORAGE OFF-SITE – Where the materials are stored off the site and until such time as they are incorporated in the work, the Contractor shall fully insure such materials against any and all risks of destruction, damage or loss including but not limited to fire, theft, and any other casualty or happening. The policy of insurance shall be payable to the City of New York. It shall be in such terms and amounts as shall be approved by the Commissioner and shall be placed with a company duly licensed to do business in the State of New York. The Contractor shall deliver the original and one (1) copy of such policy or policies marked "Fully Paid" to the Commissioner.

   b. STORAGE ON THE SITE – Where the materials are stored at the site, the Contractor shall furnish satisfactory evidence to the Commissioner that they are properly insured against loss, by endorsements or otherwise, under the policy or policies of insurance obtained by the Contractor to cover losses to materials owned or installed by the Contractor. The policy of insurance shall cover fire and extended coverage against windstorm, hail, explosion and riot attending a strike, civil commotion, aircraft, vehicles and smoke.

5. All costs, charges and expenses arising out of the storage of such materials, shall be paid by the Contractor and the City hereby reserves the right to retain out of any partial or final payment made under the Contract an amount sufficient to cover such costs, charges and expenses with the understanding that the City shall have and may exercise any and all other remedies at law for the recovery of such cost, charges and expenses. There shall be no

increase in the Contract price for such costs, charges and expenses and the Contractor shall not make any claim or demand for compensation therefore.

6. The Contractor shall pay any and all costs of handling and delivery of materials, to the place of storage and from the place of storage to the site of the work; and the City shall have the right to retain from any partial or final payment an amount sufficient to cover the cost of such handling and delivery.

7. In the event that the whole or any part of these materials are lost, damaged or destroyed in advance of their satisfactory incorporation in the work, the Contractor, at the Contractor's own cost, shall replace such lost, damaged or destroyed materials of the same character and quality. The City will reimburse the Contractor for the cost of the replaced materials to the extent, and only to the extent, of the funds actually received by the City under the policies of insurance hereinbefore referred to. Until such time as the materials are replaced, the City will deduct from the value of the stored materials or from any other money due under the Contract, the amount paid to the Contractor for such lost, damaged or destroyed materials.

8. Should any of the materials paid for the City hereunder be subsequently rejected or incorporated in the work in a manner or by a method not in accordance with the Contract Documents, the Contractor shall remove and replace, at Contractor's own cost, such defective or improperly incorporated material with materials complying with the Contract Documents. Until such materials are replaced, the City will deduct from the value of the stored materials or from any other money due the Contractor, the amount paid by the City for such rejected or improperly incorporated materials.

9. Payments for the cost of materials made hereunder shall not be deemed to be an acceptance of such materials as being in accordance with the Contract Documents, and the Contractor always retains and must comply with the Contractor's duty to deliver to the site and properly incorporate in the work only materials which comply with the Contract Documents.

10. The Contractor shall retain any and all risks in connection with the damage, destruction or loss of the materials paid for hereunder to the time of delivery of the same to the site of the work and their proper incorporation in the work in accordance with the Contract Documents.

11. The Contractor shall comply with all laws and the regulations of any governmental body or agency pertaining to the priority purchase, allocation and use of the materials.

12. When requesting payment for such materials, the Contractor shall submit with the partial estimate duly authenticated documents of title, such as bills of sale, invoices or warehouse receipts, all in quadruplicate. The executed bills of sale shall transfer title to the materials from the Contractor to the City. (In the event that the invoices state that the material has been purchased by a subcontractor, bills of sale in quadruplicate will also be required transferring title to the materials from subcontractor to the Contractor).

13. Where the Contractor, with the approval of the Commissioner, has purchased unusually large quantities of materials in order to assure their availability for the work, the Commissioner, at the Commissioner's option, may waive the requirements of Paragraph 12 provided the Contractor furnishes evidence in the form of an affidavit from the Contractor in quadruplicate, and such other proof as the Commissioner may require, that the Contractor is the sole owner of such materials and has purchased them free and clear of all liens and other encumbrances. In such event, the Contractor shall pay for such materials and submit proof thereof, in the same manner as provided in Paragraph 12 hereof, within seven (7) days after receipt of payment therefore from the Comptroller. Failure on the part of the Contractor to submit satisfactory evidence that all such materials have been paid for in full, shall preclude the Contractor from payments under the Contract.

14. The Contractor shall include in each succeeding partial estimate requisition a summary of materials stored which shall set forth the quantity and value of materials in storage, on or off the site, at the end of each preceding estimate period; the amount removed for incorporation in the work; the quantity and value of materials delivered during the current period and the total value of materials on hand for which payment thereof will be included in the current payment estimate.

15. Upon proof to the satisfaction of the Commissioner of the actual cost of such materials and upon submission of proper proof of title as required under Paragraph 12 or Paragraph 13 hereof, payment will be made therefore to the extent of 85%, provided however, that the cost so verified, established and approved shall not exceed the estimated cost of such materials included in the approved detailed breakdown estimate submitted in accordance with Article 41 of the Contract; if it does, the City will pay only 85% approved estimated cost.

16. Upon the incorporation in the work of any such materials, which have been paid for in advance of such incorporation in accordance with the foregoing provisions, payment will be made for such materials incorporated in the work pursuant to Article 42 of the Contract, less any sums paid pursuant to Paragraph 15 herein.

D. MOBILIZATION PAYMENT – A line item for mobilization shall be allowed on the Contractor's Detailed Bid Breakdown submitted in accordance with Article 41 of the Contract. The Mobilization Payment is intended to include the cost of required bonds, insurance coverage and/or any other expenses required for the initiation of the Contract Work. All costs for mobilization shall be deemed included in the total Contract Price. The Detailed Bid Breakdown shall reflect, and the Mobilization Payment shall be made, in accordance with the following schedule:

Contract Amount		**Percent**		**Mobilization**
Less than - $ 50,000	x 0	=	0	
$ 50,000 - $ 100,000	x	=	$ 6,000	
$ 100,001 - $ 500,000	x 6	=	$ 6,000 (min)	- $ 30,000 (max)
$ 500,000 - $ 2,500,000	x 5	=	$ 30,000 (min)	- $ 125,000 (max)
Over - $ 2,500,000	x 4	=	$ 125,000 (min)	- $ 300,000 (max)

The Contractor may requisition for one-half (1/2) of the Mobilization Payment upon satisfactory completion of the following:

1. Installation of any required field office(s).
2. Submission of all required insurance certificates and bonds.
3. Approval by the Department of Design and Construction of the coordinated progress schedule for the project and the Contractor's Shop Drawing schedule.

The remaining balance of the Mobilization Payment may be requisitioned only after 10 percent (10%) of the Contract price, exclusive of the total amount of Mobilization Payments made or to be made hereunder, shall have been approved for payment.

E. ULTRA LOW SULFUR DIESEL FUEL AND BEST AVAILABLE TECHNOLOGY REPORTING: The Contractor shall submit reports to the Commissioner regarding the use of Ultra Low Sulfur Diesel Fuel in Non-Road Vehicles, and the implementation of Best Available Technology (BAT), as set forth in Article 5.4 of the Contract. Such reports shall be submitted in accordance with the schedule, format, directions and procedures established by the Commissioner.

1.11 PERFORMANCE OF WORK DURING NON-REGULAR WORK HOURS:

A. NON-REGULAR WORK HOURS: The Commissioner may issue a change order in accordance with Article 25 of the Contract which (1) directs the Contractor to perform the Work, or specific components thereof, during other than regular work hours (i.e., evenings, weekends and holidays), and (2) provides compensation to the Contractor for costs in connection with the performance of Work during other than regular work hours. The Commissioner may issue a change order if a delay has occurred and such delay is not the fault of the Contractor, or if the work is of such an important nature that delay in completing such work would result in serious disadvantage to the public.

B. PROCEDURE: The Contractor shall (1) obtain whatever permits may be required for performance of the work during other than regular business hours, and (2) pay all necessary fees in connection with such permits. In addition, if directed by the Commissioner, the Contractor shall make immediate application to the Commissioner of the Department of Labor, State of New York, for dispensation in accordance with Subdivision 2 of Section 220 of the Labor Law.

1.12 INTERRUPTION OF SERVICES AT EXISTING FACILITIES:

A. EVENING AND WEEKEND WORK - Where performance of the Work requires the temporary shutdown(s) of services, such shutdown(s) shall be made at night or on weekends or at such times that will cause no interference with the established routines and operations of the facility in question.

1 Where weekend or evening work is required due to unavoidable service shutdowns, such work shall be performed at no extra cost to the City. Components of the Work that must be performed during other than regular work hours are indicated in the Drawings and/or the Specifications.

B. INTERRUPTION OF EXISTING FACILITIES:

1 The Contractor shall not interrupt any of the services of the facility nor interfere with such services in any way without the permission of the Commissioner. Such interruption or interferences shall be made as brief as possible, and only at such time stated.

2 Under no circumstances shall the Contractor, its subcontractors, or its workers, be permitted to use any part of the project as a shop, without the permission of the Commissioner.

3 Unnecessary noise shall be avoided at all times and necessary noise shall be reduced to a minimum.

4 Toilet facilities, water and electricity must be operational at all times (i.e. 24/7). No services of the facility can be interrupted in any way without the permission of the Commissioner. Careful coordination of all work with the Resident Engineer must be done to maintain the operational level of the project personnel at the facility.

5 The Contractor shall schedule the work to avoid noise interference that will affect the normal functions of the facility. In particular, construction operations producing noises that are objectionable to the functions of the facility must be scheduled at times of day or night, day of the week, or weekend, which will not interfere with personnel at the facility. Any additional cost resulting from this scheduling shall be borne by the Contractor.

6 The Contractor shall arrange to work continuously, including evening and weekend hours, if required, to assure that services will be shut down only during the time actually required to make the necessary connections to the existing facility.

7 The Contractor shall give ample written notice in advance to the Commissioner and personnel at the facility of any required shutdown.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

B. LEED: Refer to the Addendum to identify whether this project is designed to comply with a Certification Level according to the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS."

C. COMMISSIONING: Refer to the Addendum to identify whether this project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning shall be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor shall cooperate with the commissioning agent and provide whatever assistance is required.

1.2 SUMMARY:

A. This Section includes administrative provisions for coordinating construction operations on the Project including without limitation the following.

1. Coordination Drawings.
2. Administrative and supervisory personnel.
3. Project meetings.
4. Requests for Interpretation (RFIs).

B. This section includes the following:

1. Definitions
2. Coordination
3. Submittals
4. Administrative and Supervisory Personnel
5. Project Meetings
6. Requests for Interpretation (RFI's)
7. Correspondence
8. Contractor's Daily Reports
9. Alternate and Substitute Equipment

C. RELATED SECTIONS: include without limitation the following:

1. Section 01 10 00 SUMMARY
2. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
3. Section 01 33 00 SUBMITTALS
4. Section 01 35 26 SAFETY REQUIREMENTS
5. Section 01 73 00 EXECUTION REQUIREMENTS
6. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

7. Section 01 77 00 PROJECT CLOSEOUT PROCEDURES

1.3 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 COORDINATION:

A. Coordination: The Contractor shall coordinate its construction operations, including those of its subcontractors, with other entities to ensure the efficient and orderly installation of each part of the Work. The Contractor shall coordinate the various operations required by different Sections of the Specifications that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence in order to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. The Contractor shall prepare memoranda for distribution to its subcontractors and other involved entities, outlining special procedures required for coordination. Such memoranda shall include required notices, reports, and meeting minutes as applicable.

C. Administrative Procedures: The Contractor shall coordinate scheduling and timing of required administrative procedures with other construction activities and activities of its subcontractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include without limitation the following:

1. Preparation of Contractor's Construction Schedule.
2. Installation and removal of temporary facilities and controls.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Pre-installation conferences..
6. Startup and adjustment of systems.
7. Project closeout activities.

D. Conservation: The Contractor shall coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

E. Salvaged Items, Material and/or Equipment: The Specifications may identify certain items, materials or equipment which must be salvaged by the Contractor and handled or disposed of as directed. The Contractor shall comply with all directions in the Specifications regarding the salvaging and handling of identified items, material or equipment.

1.5 SUBMITTALS:

A. Submit shop drawings, product data, samples etc. in compliance with Section 01 33 00, SUBMITTAL PROCEDURES.

B. Coordination Drawings: The Contractor shall prepare applicable Coordination Drawings in compliance with the requirements for Coordination Drawings in Section 01 33 00, SUBMITTAL PROCEDURES.

C. Safety Plan in compliance with Section 01 35 26, SAFETY REQUIREMENTS PROCEDURES.

D. Waste Management Plan in compliance with Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

E. Key Personnel Names: Within 15 days after the Notice to Proceed, the Contractor shall submit a list of key personnel assignments of the Contractor and its subcontractors, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in case of the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

2. In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work. Include special personnel required for coordinating all operations by its subcontractors.

1.6 PROJECT MEETINGS:

A. General: The Resident Engineer will hold regularly scheduled construction progress meetings at the site, at which time the Contractor and appropriate subcontractors shall have their representatives present to discuss all details relative to the execution of the work. The Resident Engineer shall preside over these meetings.

1. Agenda: Prior to each meeting, the Resident Engineer will consult with the Contractors and will prepare an agenda of items to be discussed. In general, after informal discussion of any item on the agenda, the Resident Engineer will summarize the discussion in a brief written statement, and the Contractor will then dictate a brief statement for the record.

2. Coordination: In addition to construction progress meetings called by the Resident Engineer, the Contractor shall hold regularly scheduled meetings for the purpose of coordinating; expediting and scheduling the work in accordance with the master coordinated Job Progress Chart. The Contractor and its subcontractors, material suppliers or vendors whose presence is necessary, are required to attend. These meetings may, at the discretion of the Contractor, be held at the same place and immediately following the project meetings held by the Resident Engineer. Minutes of these meetings shall be recorded, typed and printed by the Contractor and distributed to all parties concerned.

B. PRECONSTRUCTION KICK-OFF MEETING:

1. The Resident Engineer will schedule a preconstruction kick-off meeting either at DDC's main office or at the Project site to review responsibilities and personnel assignments and clarify the

role of each participant. Unless otherwise directed the Design Consultant will record and distribute meeting minutes.

2. Attendees: Authorized representative of the Client Agency; Design Consultant; the Contractor and its superintendents, subcontractor(s) and their superintendent(s); LEED sub-consultant and Commissioning Authority /Agent (CxA) as applicable and other concerned parties. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Contract Work.
3. Agenda: Includes without limitation the following as applicable:
   a. Establishing construction schedule
   b. Schedule for regular construction meetings
   c. Phasing
   d. Critical work sequencing and long-lead items
   e. Designation of key personnel and their duties
   f. Reviewing Application for Payment and Change Order Procedures
   g. Procedures for Requests for Information (RFIs.)
   h. Review Permits and Approval requirements
   i. Review all recent Administrative Code reporting requirements relating to the project, (i.e. LL 77, LL86 etc.)
   j. Procedures for testing and inspecting
   k. Reviewing special conditions at the Project site
   l. Distribution of the Contract Documents
   m. Submittal procedures
   n. Safety Procedures
   o. LEED requirements
   p. Commissioning Requirements
   q. Preparation of Record Documents
   r. Historic Treatment requirements
   s. Use of the premises
   t. Work restrictions
   u. Client Agency occupancy requirements
   v. Responsibility for temporary facilities, services and controls
   w. Construction Waste Management and Disposal
   x. Indoor Air Quality Management Plan
   y. Dust Mitigation Plan
   z. Office, work, and storage areas
   aa. Equipment deliveries and priorities
   bb. Security
   cc. Progress cleaning
   dd. Working hours

C. CONSTRUCTION PROGRESS MEETINGS:

1. The Resident Engineer will schedule and conduct construction progress meetings at bi-weekly intervals or as otherwise determined. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work. Unless otherwise directed the Design Consultant will record and distribute meeting minutes.
2. Attendees:
   a. Design Consultant and applicable sub-consultants
   b. Client Agency Representative
   c. Representatives from the Contractor, sub-contractor(s), suppliers or other entities involved in the current progress, planning, coordination or future activities of the Work
   d. Other appropriate DDC personnel, DDC consultants and concerned parties
3. Agenda: Includes without limitation the following:
   a. Review the Construction Schedule and progress of the Work. Determine if the Work is on time, ahead of schedule or behind schedule. Determine actions to be taken to maintain or accelerate the schedule
   b. Review and approve prior meeting minutes and follow up open issues
   c. Coordinate work between each subcontractor
   d. Sequence of Operations
   e. Status of submittals, deliveries and off-site fabrication
   f. Status of inspections and approvals by governing agencies
   g. Temporary facilities and controls
   h. Review Site Safety
   i. Quality and work standards
   j. Field observations
   k. Status of correction of deficient items
   l. RFI's
   m. Pending changes
   n. Status of outstanding Payments and Change Orders
   o. LEED requirements including Construction Waste Management, Indoor Air Quality Plan, Dust Mitigation and Commissioning
   p. Status of Administrative Code reporting requirements related to the project

1.7 REQUESTS FOR INFORMATION (RFI):

A. Procedure: Immediately on discovery of the need for information or interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, the Contractor shall prepare and submit an RFI in the form specified by the Resident Engineer.

1. RFI shall originate with the Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
2. Coordinate and submit RFI in a prompt manner to the Resident Engineer so as to avoid delays in Contractor's work or work of its subcontractors.
3. RFI Log: The Contractor shall prepare, maintain, and submit a tabular log of RFIs organized by the RFI number monthly to the Resident Engineer.

4. On receipt of responses and action to the RFI, the Contractor shall update the RFI log and immediately distribute the RFI response to affected parties. Review response(s) and notify the Resident Engineer immediately if the Contractor disagrees with response(s).

1.8 CORRESPONDENCE:

Copies of all correspondence to DDC shall be sent directly to the Resident Engineer at the job site.

1.9 CONTRACTOR'S DAILY REPORTS:

The Contractor shall prepare and submit Daily Construction Progress Reports as outlined in Section 01 32 00, CONSTRUCTION PROGRESS DOCUMENTATION.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for establishing an effective base line schedule for the project and documenting the progress of construction during performance of the Work by developing, revising as necessary, various documents including but not limited to the following:

1. Baseline Construction Schedule.
2. Composite Schedule for entire project
3. Recovery Composite Schedule
4. Revised and/or updated Composite Schedule
5. Submittals Schedule.
6. Daily construction reports.
7. Material location reports.
8. Field condition reports.
9. Special reports.

B. RELATED SECTIONS: include without limitation the following:

1. Section 01 10 00 SUMMARY
2. Section 01 32 22 PHOTOGRAPHIC DOCUMENTATION
3. Section 01 33 00 SUBMITTAL PROCEDURES
4. Section 01 40 00 QUALITY REQUIREMENTS

1.3 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Baseline Construction Schedule:
A horizontal bar chart type schedule (Microsoft Project OR similar program) listing all the activities and their duration for entire contract duration OR construction period, including logical ties and interrelations between the activities necessary for the timely and successful completion of the project. Critical path activities shall be clearly marked. The Baseline construction schedule is a preliminary schedule that must be reviewed and approved by the Resident Engineer.

D. Composite Schedule:
A composite horizontal bar chart type schedule (Microsoft Project OR similar program) listing all activities to be performed by the Contractor and its subcontractors, the duration of each activity including logical ties and interrelations between activities, and the sequence of each of necessary activities for the timely and successful completion of the project within the stipulated contract duration. Critical path activities shall be clearly marked. The Composite schedule must be signed and submitted by the Contractor within thirty (30) calendar days after the date established for commencement of the Contract, unless otherwise directed. The Composite Schedule must be reviewed and approved by the Resident Engineer.

E. Recovery Composite Schedule: A Recovery Composite Schedule is not required unless the City issues an Acceleration Change Order.

A Composite Schedule outlining and incorporating extraordinary efforts required to recover lost time with the aim of achieving completion of the project within the stipulated contract duration, plus authorized time extensions. In such case special attention must be given to keep the delays as minimum as possible and must establish the nature of efforts such as extended hours of work, weekend work, accelerated fabrication, required action(s) or effort(s) by the Contractor, its subcontractors, consultants, clients, end users and/or other concerned parties.

Such schedule must be prepared and submitted within Five (5) calendar days of request by the Resident Engineer. The Recovery Composite Schedule must be reviewed and approved by the Resident Engineer.

F. Revised and/or Updated Composite Schedule:

A Baseline construction schedule OR Composite Schedule OR Recovery Composite Schedule for the project that shows the actual duration of all the completed activities, including duration of and the reasons for delays, if any has occurred, AND revisions to all remaining activities of the Contractor and its subcontractors, including changes, if any, to logical ties, interrelations and the sequence of each of the outlined activities. Any such revisions should be shown on the row just below the approved schedule of the respective activity so that revisions can be compared.

The Revised and/or updated Composite Schedule must be reviewed and approved by the Resident Engineer.

G. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

H. Event: The starting or ending point of an activity.

I. Fragment: A part of the activity that breaks down activities into smaller activities for greater detail.

J. Milestone: A key or critical point in time for reference or measurement.

K. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

PART II – PRODUCTS

2.1 BASELINE CONSTRUCTION SCHEDULE:

A. The Contractor shall prepare a Baseline horizontal bar-chart-type construction schedule for the project. Submit the Baseline Construction Schedule to the Resident Engineer within (15) fifteen calendar days after the date established for commencement of the Contract, unless directed otherwise. The Baseline Schedule must be reviewed and approved by the Resident Engineer.

1. Provide a separate time bar for each significant construction activity. Coordinate each activity on the schedule with other construction activities for proper interrelationship & sequence.
2. Duration: The duration of each activity on the schedule besides installation must clearly show required duration of filing for permits, inspections, testing, approvals, shop drawings and materials submittals and approvals, fabrication, delivery, phasing for each construction activity.
3. Schedule shall be time-scaled in not more than weekly increments, with the dates of the first day (Monday) of each week indicated.
4. Completion of all the project activities shall be indicated in advance of the date established for completion of the Contract, allowing time for required inspection and punch list work.
5. Clearly show time bar for all the tasks, to be completed before start of physical work of scheduled activities, including but not limited to obtaining required permit, subcontractor approval, submission and approval of shop drawings, field verification, time for fabrication and delivery, testing of materials and/or samples, preparation and approval of mock-up sample, curing, pre-testing of soil, pre-testing of equipment - including start up, testing & adjusting, filing for inspection by regulatory agencies, training, final use, etc. required to maintain orderly progress of the activity. A special consideration must be given to those activities requiring early approvals because of long lead-time for manufacture or fabrication.
6. Phasing: Arrange all activities in proper sequence to reflect requirements for phased completion, work by other entities, work by the City, City furnished items, coordination with existing work, limitations arising due to continued occupancies, non-interruptible services, partial completion for occupancy, site restrictions, provisions for future work, seasonal variations, environmental control, and similar conditions of the project.
7. Arrange all activities and/or show interrelationship and logical sequence of all activities, determine and mark all critical path activities including any phasing reflecting actual project condition.
8. Keep at least two blank horizontal bars between all activities for recording actual progress and submitting Revised Schedule as defined in Sub-Section 1.3 G
9. If necessary a new revised schedule shall be prepared in the same manner as outlined above.

2.2 COMPOSITE SCHEDULE FOR THE PROJECT:

A. The Contractor shall prepare a Composite Schedule based on the approved Baseline Schedule Such schedule shall indicate graphically and chronologically the start and completion of each and every activity, including all the pre-activity and post activity tasks. Keep at least two blank horizontal bars between all activities for recording actual progress and/or revisions.

1. If necessary the Contractors shall meet with each subcontractor and with the Resident Engineer to review and make warranted adjustments and finalize the Composite Schedule. Once the schedule is finalized, the Contractor shall sign and date a reproducible form of the Composite Schedule. The Composite Schedule must be finalized and signed by the Contractor within (30) thirty calendar days after the date established for commencement of the Contract, unless directed otherwise. The Composite Schedule must be reviewed and approved by the Resident Engineer.

2.3 RECOVERY COMPOSITE SCHEDULE:

A. A Recovery Composite Schedule is not required unless the City issues an Acceleration Change Order. A Recovery Composite Schedule outlining and incorporating extraordinary efforts required to recover lost time with the aim of achieving completion of the project within the stipulated contract duration, plus authorized time extensions, must be developed and submitted within (5) five calendar days of the request by the Resident Engineer. Such Recovery Composite Schedule shall include all information as defined in Article 1.3 F and shall be prepared in the same manner as outlined in Sub-Sections 2.1 and 2.2. The Recovery Composite Schedule must be reviewed and approved by the Resident Engineer.

2.4 REVISED AND/OR UPDATED COMPOSITE SCHEDULE:

A. The Contractor shall revise and/or update the approved Composite Schedule as directed. The Revised schedule shall be prepared in the same manner as outlined above in Sub-Sections 2.1 and 2.2.

B. The Contractor shall mark actual progress, delays, work stoppage etc. in the row just below the approved schedule for the respective activity so that revisions can be compared.

C. Such schedule also shall indicate graphically and chronologically any revisions to the start and completion of the remaining activities including revisions to all the pre-activity and post activity tasks for all subcontractors.

D. If necessary, the Contractor shall meet with each subcontractor and with the Resident Engineer to review and make warranted adjustments and finalize the Revised Composite Schedule. Once the schedule is finalized, the Contractor shall sign and date a reproducible form of the Schedule. Such schedule must be prepared and submitted by the Contractor within Five (5) calendar days of request by the Resident Engineer. The Revised Composite Schedule must be reviewed and approved by the Resident Engineer.

2.5 SUBMITTALS SCHEDULE:

A. Preparation: The Contractor shall submit a schedule of submittals, arranged in chronological order by dates required by the construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

B. SCHEDULE F: Schedule F sets forth all submittal requirements for shop drawings and material samples. Schedule F is included in the Addendum. At the kick-off meeting, the Contractor must review this Schedule with the Resident Engineer and the Design Consultant. Within 10 days after the kick-off meeting, the Contractor must complete information on Schedule F concerning the submission date, the required delivery date and the fabrication time. For all required submittals of shop drawings and material samples, the Schedule F provided by the Contractor must indicate a submission date which is at least 20 business days prior to the date of the manufacture of the item or materials to be installed. In addition, if so directed by the Commissioner, the Schedule F provided by the Contractor must indicate a submission date for shop drawings and/or material samples of specified items or materials which is within 60 business days after the kick-off meeting. In the event of any conflict between the Specifications and Schedule F, Schedule F shall take precedence; provided, however, in the event of an omission from Schedule F (i.e., Schedule F omits either a reference to or information concerning a submittal requirement which is set forth in the Specifications), such omission from Schedule F shall have no effect and the Contractor's submittal obligation, as set forth in the Specifications, shall remain in full force and effect.

C. Review: The Resident Engineer will review the Schedule F submitted by Contractor. Upon acceptance, the Resident Engineer will date and sign the schedule as approved and transmit it to the Consultant, Contractor and others within DDC as he/she deems appropriate.

2.6 REPORTS:

A. Daily Construction Reports: The Contractor shall submit to the Resident Engineer written Daily Construction Reports at the end of each work day, recording basic information such as the date, day, weather conditions, and contract days passed, remaining contract duration/days and the following information concerning the Project.

Information: The reports shall be prepared by the Contractor's Superintendent and shall bear the Contractor's Superintendents signature. Each report shall contain the following information:

1. List of name of Contractor, subcontractors, their work force in each category, and details of activities performed.
2. The type of materials and/or major equipment being installed by the Contractor and/or by each subcontractor.
3. The major construction equipment being used by the Contractor and/or subcontractors.
4. Material and Equipment deliveries.
5. High and low temperatures and general weather conditions.
6. Accidents.
7. Meetings and significant decisions.
8. Unusual events.
9. Stoppages, delays, shortages, and losses.
10. Meter readings and similar recordings
11. Emergency procedures.
12. Orders and/or requests of authorities having jurisdiction.
13. Approved Change Orders received and implemented.
14. Field Orders and Directives received and implemented.
15. Services connected and disconnected.
16. Equipment or system tests and startups.
17. Partial Completions and occupancies.
18. Substantial Completions authorized.

NOTE: If there is NO ACTIVITY at site, a daily report indicating so and the reason for no activity at the site must be submitted.

B. Material Location Reports: The contractor shall submit a Material Location Report at weekly OR monthly intervals as determined and established by the Resident Engineer. Such report shall include a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit a Request For Information (RFI) form with a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.7 SPECIAL REPORTS:

A. Accident report, incident report, special condition report for the conditions out of control of any party involved with the project effecting project progress, explaining impact on the project schedule and cost if any.

PART III – EXECUTION (Not Used)
END OF SECTION 01 32 00

No Text

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SECTION 01 32 33

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract]

1.2 SUMMARY:

A. This Section includes the following:
1. Photographic Media
2. Construction Photographs
3. Pre-construction Photographs
4. Periodic Construction Progress Photographs
5. Special Photographs
6. DVD Recordings
7. Final Completion Construction Photographs

B. RELATED SECTIONS: include without limitation the following:

1.	Section 01 10 00	SUMMARY
2.	Section 01 33 00	SUBMITTAL PROCEDURES
3.	Section 01 35 91	HISTORIC TREATMENT PROCEDURES
4.	Section 01 78 39	CONTRACT RECORD DOCUMENTS
5.	Section 01 81 19	INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS

C. PHOTOGRAPHER - The Contractor shall employ and pay for the services of a professional photographer who shall take photographs showing the progress of the work for all Contracts.

1.3 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 SUBMITTALS:

A. Qualification Data: For photographer.

B. Key Plan: With each Progress Photograph Submittal include a key plan of Project site and building with notation of vantage points marked for location and direction of each image. Indicate location, elevation or story of construction. Include same label information as corresponding set of photographs.

C. Construction Progress Photograph Prints: Take Progress Photographs bi-weekly and submit four color prints of each photographic view for each trade to the Resident Engineer. Such photographs shall be included in each monthly progress report or as otherwise directed by the Resident Engineer.

D. Construction Photograph Negatives: Submit a complete set of photographic negatives in individually protected negative sleeves with each submittal of prints. Identify negatives with label matching photographic prints.

E. Digital Images: If Digital Media is used, submit a complete set of digital color image electronic files on CD-ROM with each submittal of prints. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, un-cropped.

1.5 QUALITY ASSURANCE:

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.6 COORDINATION:

A. The Contractor and its subcontractor(s) shall cooperate with the photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

1.7 COPYRIGHT:

A. The Contractor shall include the provisions set forth below in the agreement between the Contractor and the Photographer who will provide the construction photographs described in this section. The Contractor shall submit to the Resident Engineer a copy of its agreement with the Photographer.

B. Any photographs, images and/or other materials produced pursuant to this Agreement, and any and all drafts and/or other preliminary materials in any format related to such items produced pursuant to this Agreement, shall upon their creation become the exclusive property of the City.

C. Any photographs, images and/or other materials provided pursuant to this Agreement ("Copyrightable Materials") shall be considered "work-made-for-hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 U.S.C. § 101, and the City shall be the copyright owner thereof and of all aspects, elements and components thereof in which copyright protection might exist. To the extent that the Copyrightable Materials do not qualify as "work-made-for-hire," the Photographer hereby irrevocably transfers, assigns and conveys exclusive copyright ownership in and to the Copyrightable Materials to the City, free and clear of any liens, claims, or other encumbrances. The Photographer shall retain no copyright or intellectual property interest in the Copyrightable Materials. The Copyrightable Materials shall be used by the Photographer for no purpose other than in the performance of this Agreement without the prior written permission of the City. The Department may grant the Photographer a license to use the Copyrightable Materials on such terms as determined by the Department and set forth in the license.

D. The Photographer acknowledges that the City may, in its sole discretion, register copyright in the Copyrightable Materials with the United States Copyright Office or any other government agency authorized to grant copyright registrations. The Photographer shall fully cooperate in this effort, and agrees to provide any and all documentation necessary to accomplish this.

E. The Photographer represents and warrants that the Copyrightable Materials: (i) are wholly original material not published elsewhere (except for material that is in the public domain); (ii) do not violate any copyright Law; (iii) do not constitute defamation or invasion of the right of privacy or publicity; and (iv) are not an infringement, of any kind, of the rights of any third party. To the extent that the Copyrightable Materials incorporate any non-original material, the Photographer has obtained all necessary permissions and clearances, in writing, for the use of such non-original material under this Agreement, copies of which shall be provided to the City.

PART II – PRODUCTS

2.1 PHOTOGRAPHIC MEDIA:

A. Photographic Film: Medium format, 2-1/4 by 2-1/4 inches (60 by 60 mm).

B. Digital Images:

1. Construction Progress Images: Color images in JPEG format with minimum sensor size of 1.3 megapixels.

2. Presentation Quality Images: Provide Color images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 with 8"x10" original capture at 300 dpi or greater.

C. Prints:

1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte color prints on single-weight commercial-grade stock paper, with 1inch wide margins and punched for standard 3-ring binder.

2. Identification: On the front of each photograph affix a label in the margin with Project name and date photograph was taken. On the back of each print, provide an applied label or rubber-stamped impression with the following information:
   a. Project Contract I.D. Number.
   b. Project Contract Name.
   c. Name of Contractor. (and Subcontractor Trade Represented)
   d. Subject of Image Taken.
   e. Date and time photograph was taken if not date stamped by camera.
   f. Description of vantage point, indicating location, direction and other pertinent information.
   g. Unique sequential identifier.
   h. Name and address of photographer.

PART III – EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS:

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location and direction of view.

B. Film Images:

1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Commissioner.

C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in filename for each image.

2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Commissioner.

3.2 PRE-CONSTRUCTION & PRE-DEMOLITION PHOTOGRAPHS:

A. Before commencement of Contract work at the site, take color photographs of Project site and surrounding properties, including existing structures or items to remain during construction, from different vantage points, as directed by the Resident Engineer.

1. Flag applicable excavation areas and construction limits before taking construction photographs.

2. Take photographs of minimum eight (8) views to show existing conditions adjacent to property before starting the Work.

3. Take applicable photographs of minimum eight (8) views of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

4. Take additional photographs as required or directed by the Resident Engineer to record settlement or cracking of adjacent structures, pavements, and improvements.

B. Demolition Operations: Take photographs as directed by the Resident Engineer of minimum of eight (8) views each before commencement of demolition operations, at mid-point of operations and at completion of operations.

C. Pre-Demolition Photographs: Take archival quality color photographs, to include all exterior building facades, of all structures at the Project site designated to be fully demolished or removed in compliance with NYC Building Code requirements. Submit four (4) complete sets of pre-demolition photographs, in the format specified herein, to the Resident Engineer for submission to the Department of Buildings.

3.3 PERIODIC CONSTRUCTION PROGRESS PHOTOGRAPHS:

A. Take photographs of minimum eight (8) views bi-weekly as directed by the Resident Engineer of construction progress for each contract trade. Select vantage points to show status of construction and progress since last photographs were taken.

3.4 SPECIAL PHOTOGRAPHS:

A. The photographer shall take special photographs of subject matter or events as specified in other sections of the Project Specifications from vantage points specified or as otherwise directed by the Resident Engineer.

B. Historical Elements: As required in Section 01 35 91, HISTORIC TREATMENT PROCEDURES, for Contract work at designated landmark structures or sites the photographer, as specified and required by individual sections of the Contract documents or at the direction of the Commissioner, shall take images of existing elements scheduled to be removed for replacement, repair or replication in quantities as directed, including post-construction photographs of completed work as directed by the Commissioner.

1. Take Presentation Quality Photographs of designated landmark structures as directed by the Commissioner for submission to the New York City Landmarks Preservation Commission. Provide a minimum of four color photographic prints of each view as directed.

3.5 DVD RECORDING:

A. When DVD Recording of Demonstration and Training sessions is required for Non-Commissioned projects the Contractor shall provide the services of a Videographer as indicated in Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.

3.6 FINAL COMPLETION CONSTRUCTION PHOTOGRAPHS:

A. Take color photographs of minimum eight (8) unobstructed views of the completed project or project and site, as directed by the Commissioner and after all scaffolding, hoists, shanties, field offices or other temporary work has been removed and final cleaning is done after date of Substantial Completion for submission as Project Record Documents. Submit four (4) sets of each view of Presentation Quality photographic prints including negatives and/or digital images electronic file.

END OF SECTION 01 32 33

No Text

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART I – GENERAL:

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Coordination Drawings, Catalogue Cuts, Material Samples and other submittals required by the Contract Documents.

B. Review of submittals does not relieve the Contractor of responsibility for any Contractor's errors or omissions in such submittals, nor from responsibility for complying with the requirements of the Contract.

C. Responsibility of the Contractor: The approval of Shop Drawings will be general and shall not relieve the Contractor of responsibility for the accuracy of such Shop Drawings, nor for the proper fitting and construction of the work, nor of the furnishing of materials or work required by the Contract and not indicated on the Shop Drawings. Approval of Shop Drawings shall not be construed as approving departures from the Contract Drawings, Supplementary Drawings or Specifications.

D. This Section includes the following:
1. Definitions
2. Submission Procedures
3. Coordination Drawings
4. LEED Submittals
5. Ultra Low Sulfur Diesel Fuel Reporting
6. Construction Photographs and DVD Recordings
7. As-Built Documents

1.3 RELATED SECTIONS: Include without limitation the following:

A.	Section 01 10 00	SUMMARY
B.	Section 01 31 00	PROJECT MANAGEMENT AND COORDINATION
C.	Section 01 32 00	CONSTRUCTION PROGRESS DOCUMENTATION
D.	Section 01 32 33	PHOTOGRAPHIC DOCUMENTATION
E.	Section 01 77 00	CLOSEOUT PROCEDURES
F.	Section 01 78 39	CONTRACT RECORD DOCUMENTS
G.	Section 01 81 13	SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or

combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Submittals: Written and graphic information that requires responsive actions and includes without limitation all shop drawings, product data, letters of certification, tests and other information required for quality control and as required by the Contract Documents.

D. Informational Submittals: Written information that does not require responsive action. Submittals may be rejected for non-compliance with the Contract.

E. Shop Drawings: Include drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data, except for coordination drawings, specifically prepared for the project by the Contractor or any subcontractor, manufacturer, supplier or distributor, which illustrates how specific portions of the work shall be fabricated and/or installed.

F. Coordination Drawings: As required in Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION.

G. Product Data and Quality Assurance Submittals: Includes manufacturer's standard catalogs, pamphlets and other printed materials including without limitation the following:

1. Catalogue and Product specifications
2. Installation instructions
3. Color charts
4. Catalog cuts
5. Rough-in diagrams and templates
6. Wiring diagrams
7. Performance curves
8. Operational range diagrams
9. Mill reports
10. Design data and calculations
11. Certification of compliance or conformance
12. Manufacturer's instructions and field reports

1.5 COORDINATION DRAWINGS:

A. The Contractor shall provide reproducible Coordination Drawing(s) of the reflective ceiling showing the integration of all applicable contract work, including general construction work as well as trade work (Plumbing, HVAC, and Electrical) to be performed by subcontractors. The Coordination Drawing(s) shall include, without limitation, the following information:
   1. General Construction work showing the reflective ceiling plan including starting points, ceiling and beam soffits elevations, ceiling heights, roof openings, etc.
   2. HVAC Contract work showing ductwork, heating and sprinkler piping, location of grilles, registers etc. and access doors in hung ceilings. Locations shall be fixed by elevations and dimensions from column centerlines and/or walls.
   3. Plumbing Contract work including piping, valves, cleanouts etc., indicating locations and elevations and shall indicate the necessary access doors.
   4. Electrical Contract work indicating fixtures, large conduit runs, clearances, pull boxes, junction boxes, sound system speakers, etc.

B. The Contractor shall issue the completed Coordination Drawing(s) to the Resident Engineer for his/her review. The Resident Engineer may call as many meetings as necessary with the Contractor, including

attendance by applicable subcontractors, and may call on the services of the Design Consulting where necessary, to resolve any conflicts that become apparent.

C. Upon resolution of any conflicts, the Contractor shall provide a final Coordination Drawing(s) which will become the Master Coordination Drawing(s). The Master Coordination Drawing(s) shall be signed and dated by the Contractor to indicate acceptance of the arrangement of the work.

D. A reproducible copy of the Master Coordination Drawing(s) shall be provided by the Contractor to each of the appropriate subcontractor(s), the Resident Engineer and the Design Consultant for information.

E. Shop Drawings shall not be submitted prior to acceptance of the final coordinated drawings and shall be prepared in accordance with the Master Coordination Drawing(s). No work will be permitted without accepted Shop Drawings. It is therefore essential that this procedure be instituted as quickly as possible.

1.6 SUBMITTAL PROCEDURES:

A. Refer to Section 01 35 03 GENERAL MECHANICAL REQUIREMENTS and Section 01 35 06 GENERAL ELECTRICAL REQUIREMENTS for additional submittal requirements involving electrical and mechanical work or equipment of any nature called for the project.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activities, with the Submittal Schedule specified in Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
3. The Commissioner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: The Submittals Schedule is set forth in Schedule F, which is included in the Addendum.

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Design Consultant.
3. Include the following minimum information on label for processing and recording action taken:
   a. Project name, DDC Project Number and Contract Number
   b. Date
   c. Name and address of Design Consultant
   d. Name and address of Contractor
   e. Name and address of subcontractor
   f. Name and address of supplier
   g. Name of manufacturer
   h. Submittal number or other unique identifier, including revision identifier
   i. Number and title of appropriate Specification Section
   j. Drawing number and detail references, as appropriate
   k. Location(s) where product is to be installed, as appropriate
   l. Other necessary identification

E. Transmittal:

1. Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form in triplicate. Transmittals received from sources other than the

Contractor will be returned without review. Re-submission of the same drawings or product data shall bear the original number of the prior submission and the original titles.

2. Transmittal Form: Provide locations on form for the following information:

   a. Project name, DDC Project number and Contract Number
   b. Date
   c. Destination (To:)
   d. Source (From:)
   e. Names of Contractor, subcontractor, manufacturer, and supplier
   f. Category and type of submittal
   g. Submittal purpose and description
   h. Specification Section number and title
   i. Drawing number and detail references, as appropriate
   j. Transmittal number, numbered consecutively
   k. Submittal and transmittal distribution record
   l. Remarks
   m. Signature of transmitter

F. Shop Drawings:

1. Procedures for Preparing, Forwarding, Checking and Returning all Shop Drawings shall be, generally, as follows:

   a. The Contractor shall make available to its subcontractors the necessary Contract Documents and shall instruct such subcontractor to determine dimensions and conditions in the field, particularly with reference to coordination between the trade subcontractors. The Contractor shall direct its subcontractors to prepare Shop Drawings for submission to the Design Consultant in accordance with the requirements of these General Conditions. The Contractor shall also direct its subcontractors to "Ring Up" corrections made on all re-submissions for approval, so as to be readily seen, and that the symbol "sub" be used to identify the source of the correction or information that has been added.

      The Contractor shall:

      1. Review and be responsible to the Commissioner, for information shown on its subcontractor's Shop and Installation drawings and manufacturers' data, and also for conformity to Contract Documents.
      2. "Ring Up" corrections made on all submissions for approval, so as to be readily seen, and that the symbol "GC", "PL", "HVAC" or "EL" be used to indicate that the correction and/or information added was made by the Contractor and/or its subcontractor(s).
      3. Clearly designate which entity is to perform the work when the term, "work by others" or other similar phrases are indicated on the Contract Drawings before submission to the Design Consultant.
      4. Stamp submissions "Recommended for Acceptance", date and forward to the Design Consultant.

2. The Contractor shall promptly prepare and submit project specific layout detail and Shop Drawings of such parts of the work as are indicated in the Specifications, Schedule F of the Addendum or as required. These Shop Drawings shall be made in accordance with the Contract Drawings, Specifications and Supplementary Drawings, if any. The Shop Drawings shall be accurate and distinct and give all the dimensions required for the fabrication, erection and installation of the work.

3. Size of Drawings: The Shop Drawings, unless otherwise directed, shall be on sheets of the same size as the Contract Drawings, drawn accurately and of sufficient scale to be legible, with a one half (1/2) inch marginal space on each side and a two (2) inch marginal space for binding on the left side.

4. Scope of Drawings: Shop Drawings shall be numbered consecutively and shall accurately and distinctly represent all aspects of the work, including without limitation the following:

   a. All working and erection dimensions
   b. Arrangements and sectional views
   c. Necessary details, including performance characteristics, and complete information for making necessary connections with other work
   d. Kinds of materials including thickness and finishes
   e. Identification of products
   f. Fabrication and installation drawings
   g. Roughing-in and setting diagrams
   h. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring
   i. Shop work manufacturing instructions
   j. Templates and patterns
   k. Schedules
   l. Design calculations
   m. Compliance with specified standards
   n. Notation of coordination requirements
   o. Notation of dimensions established by field measurement
   p. Relationship to adjoining construction clearly indicated
   q. Seal and signature of professional engineer if specified
   r. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring
   s. All other information necessary for the work and/or required by the Commissioner

5. Titles and Reference: Shop Drawings shall be dated and contain:
   a. Name of the Project, DDC Project Number and Contract Number
   b. The descriptive names of equipment, or materials covered by the Contract Drawings and the classified item number or numbers, if any, under which it is, or they are required
   c. The locations or points and sequence at which materials, or equipment, are to be installed in the work
   d. Cross references to the section number, detail number and paragraph number of the Contract Specifications
   e. Cross references to the sheet number, detail number, etc., of the Contract Drawings

6. Field Measurements: In addition to the above requirements, the Shop Drawings shall be signed by the Contractor and, if applicable, the subcontractor responsible for preparation of the Shop Drawings. Each Shop Drawing shall be stamped with the following wording:

   FIELD MEASUREMENTS: The Contractor certifies that it has verified and supplemented the Contract Drawings by taking all required field measurements, which said measurements correctly reflect all field conditions and that this Shop Drawing incorporates said measurements.

7. Contractor's Statement with Submittal: Any Submittal by the Contractor for acceptance, including without limitation, all dimensional drawings of equipment, blueprints, catalogues, models, samples and other data relative to the equipment, the materials, the work or any part thereof, must be accompanied by a statement that the Submittal has been examined by the Contractor and that everything shown in the Submittal is in accordance with the requirements of the Contract Drawings and Specifications. If there is any discrepancy between what is shown in the Submittal and the requirements of the Contract Drawings and Specifications, the Contractor shall, in its statement, list and clearly describe each such discrepancy.

   Acceptance will be given based upon the Contractor's representation that what is shown in the Submittal is in accordance with the requirements of the Contract Drawings and Specifications. If

the Contractor's statement indicates any discrepancy between what is shown in the Submittal and the requirements of the Contract Drawings and Specifications, such change is subject to review and prior written acceptance by the Design Consultant. In addition, such change may require a change order in accordance with Article 25 of the Contract. In the event any such change is approved, any additional expense or increased cost in connection with the change is the sole responsibility of the Contractor.

8. Submission of Shop Drawings:

   a. Initial Submission: The Contractor shall submit seven (7) copies of each Shop Drawing to the Design Consultant for his/her review and acceptance. The Design Consultant will transmit Shop Drawings to appropriate sub-consultants for review and acceptance, including Commissioning Authority/Agent as applicable. A satisfactory Shop Drawing will be stamped "No Exceptions Taken", be dated and distributed by the Design Consultant as follows:
      1) Two (2) copies thereof will be returned to the Contractor by letter
      2) Three (3) copies of the approved Shop Drawing and copy of the transmittal letter to the Contractor will be forwarded to DDC
      3) One copy will be retained by the Design Consultant
      4) One copy will be forwarded / retained by sub-consultant(s) as appropriate

      Should the Shop Drawing(s) be "Rejected" or noted "Revise and Resubmit" by the Design Consultant, the Design Consultant will return the Shop Drawings to the Contractor with the necessary corrections and changes to be made as indicated thereon.

   b. Revisions: The Contractor must make such corrections and changes and again submit seven (7) copies of each shop drawing to the Design Consultant. The Contractor shall revise and resubmit the Shop Drawing as required by the Design Consultant until the Shop Drawings are stamped "No Exceptions Taken". However, Shop Drawings which have been stamped "Make Corrections Noted" shall be considered an "Acceptable" Shop Drawing and NEED NOT be resubmitted.

   c. Commencement of Work: No work or fabrication called for by the Shop Drawings shall be done until the acceptance of the said drawings by the Design Consultant is given. In addition to the foregoing Shop Drawing transmissions, a copy of any Shop Drawing prepared by any of the Contractor's subcontractors which Shop Drawing indicated work related to, adjacent to, impinging upon, or affecting work to be done by other subcontractors shall be transmitted to the subcontractors so affected. [These accepted Shop Drawings shall be distributed to the affected subcontractors when required with a copy of the transmittal to the Resident Engineer.]

   d. Variations: If the Shop Drawings show variations from the Contract requirements because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in its letter of submittal. Acceptance of the Shop Drawings shall constitute acceptance of the subject matter thereof only and not of any structural apparatus shown or indicated.

G. Product Data:

1. General: Except as otherwise prescribed herein, the submission, review and acceptance of Product Data and Catalogue cuts shall conform to the procedures specified in Sub-Section 1.6 F, Shop Drawings.

2. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

3. Mark each copy of each submittal to show which products and options are applicable.

4. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operation and maintenance manuals.
k. Compliance with specified referenced standards.
l. Testing by recognized testing agency.
m. Application of testing agency labels and seals.
n. Notation of coordination requirements.

5. Submit Product Data before or concurrent with Samples.

6. Submission of Product Data:

   a. Initial Submission: The Contractor shall submit seven (7) sets of Product Data to the Design Consultant for his/her review and acceptance. The Design Consultant will transmit Product Data to appropriate sub-consultants for review and acceptance, including Commissioning Authority/Agent as applicable. A satisfactory catalogue cut will be stamped "No Exception Taken", be dated and distributed as follows:

      1) Two (2) copies thereof will be returned to the Contractor by letter

      2) Three (3) copies of the Product Data and copy of the transmittal letter to the Contractor will be forwarded to DDC

      3) One copy will be retained by the Design Consultant

      4) One copy will be forwarded / retained by sub-consultant(s) as appropriate

      Should the Product Data be "Rejected" or noted "Revise and Resubmit" by the Design Consultant, the Design Consultant will return one (1) set of such Product Data to the Contractor with the necessary corrections and changes to be made indicated and one (1) set to DDC.

7. Revisions: The Contractor must make such corrections and changes and again submit seven (7) copies of each Product Data for the review of the Design Consultant. The Contractor shall revise and resubmit the Product Data as required by the Design Consultant until the submission is stamped "No Exceptions Taken" by the Design Consultant. However, Product Data which has been stamped "Make Corrections Noted" shall be considered an "Accepted" Product Data and NEED NOT be resubmitted.

H. Samples of Materials:

1. For samples of materials involving electrical work of any nature, refer to Section 00 35 06 - General Electrical Requirements.

2. Samples shall be in triplicate, of sufficient size to show the quality, type, range of color, finish and texture of the material.

3. Each of the samples shall be labeled as follows:

   a. Name of the Project, DDC Project Number and Contract Number
   b. Name and quality of the material
   c. Date

d. Name of Contractor, subcontractor, manufacturer and supplier
e. Related Specification or Contract Drawing reference to the samples submitted

4. A letter of transmittal, in triplicate, from the Contractor requesting acceptance must accompany all such samples.

5. Transportation charges to the Design Consultant's office must be prepaid on all samples forwarded.

6. Samples for testing purposes shall be as required in the Specifications.

7. Samples on Display: When samples are specified to be equal to approved product, they shall be carefully examined by the Contractor and by those whom the Contractor expects to employ for the furnishing of such materials.

8. Timely Submissions Log/Schedule: Samples shall be submitted in accordance with approved Shop Drawing log so as to permit proper consideration without delaying any operation under the project. Materials should not be ordered until acceptance is received, in writing, from the Design Consultant. All materials shall be furnished equal in every respect to the accepted samples.

9. The Acceptance of any samples will be given as promptly as possible, and shall be only for the characteristic color, texture, strength, or other feature of the material named in such approval, and no other. When this approval is issued by the Design Consultant, it is done with the distinct understanding that the materials to be furnished will fully and completely comply with the Specifications, the determination of which may be made at some later date by a laboratory test or by other procedure. Use of materials will be permitted only so long as the quality remains equal to the approved samples and complies in every respect with the Specifications, and the colors and textures of the samples on file in the office of the Design Consultant, for the project.

10. Acceptability of test Data: The Commissioner will be the final judge as to acceptability of laboratory test data and performance in service of materials submitted.

11. Valuable Samples: Valuable samples, such as hardware, plumbing and electrical fixtures, etc., not destroyed by inspection or test, will be returned to the Contractor and may be incorporated into the work after all questions of acceptability have been settled, providing suitable permanent records are made as to the location of the samples, their properties, etc.

12. Equivalent Quality: Any material, article and/or equipment which is designated in the Drawings and/or Specifications by a number in the catalogue of any manufacturer or by a manufacturer's grade or trade name is designated for the purpose of describing the material, article and/or equipment and fixing the standard of performance and/or function, as well as the quality and/or finish. Any material, article and/or equipment which is other than what is specified in the Drawings and/or Specifications will only be accepted if the Commissioner makes a written determination that such material, article and/or equipment is equivalent to that which is specified in the Drawings and/or Specifications.

13. The submission of any material, article and/or equipment as the equal of any material, article and/or equipment set forth in the Drawings and/or Specifications as a standard shall be accompanied by any and all information essential for determining whether such proposed material, article and/or equipment is equivalent to that which is specified. Such information shall include, without limitation, illustrations, drawings, descriptions, catalogues, records of tests, samples, as well as information regarding the finish, durability and satisfactory use of such proposed material, article and/or equipment under similar operating conditions.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.7

1.7 LEED SUBMITTALS:

A. Comply with submittal requirements specified in Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL; Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS; Section 01 81 13.13, VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED BUILDINGS; Section 01 81 19, INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS and Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS.

B. LEED Building submittal information shall be assembled into one package per each applicable specification section, separate from all other non-LEED submittals. Each submittal package shall have a separate transmittal and identification as described in Sub-Section 1.5 herein.

C. Number of Copies: Submit FOUR (4) copies of LEED submittals, in accordance with procedure described in Article 1.5 herein, unless otherwise indicated.

D. Material Safety Data Sheets (MSDSs) for LEED Certification: Submit information necessary to show compliance with LEED certification requirements, which will be the limit of the Design Consultant's review for LEED compliance.

1. Designated LEED submittals that include non-LEED MSDS data will not be reviewed. The entire submittal will be returned for re-submission.

E. Product Cut Sheets and/or Shop Drawings for LEED Certification: Provide product cut sheets and/or shop drawings with the Contractor's or sub-contractor's stamp, confirming that the submitted products are the products installed in the Project. For detailed requirements refer to Sub-Section 1.6 of Section 01 81 13 SUSTAINALE DESIGN REQUIREMENTS FOR LEED PROJECTS.

1. Provide the quantity, length, area, volume, weight, and/or cost of each product submitted as required to satisfy LEED documentation requirements. Refer to Sub-Section 1.6 of Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED PROJECTS.

1.8 ULTRA LOW SULFUR DIESEL FUEL AND BEST AVAILABLE TECHNOLOGY REPORTING:

A. In accordance with Section 01 10 00 Summary, Sub-Section 1.5 E, the Contractor shall submit reports to the Commissioner regarding the use of Ultra Low Sulfur Diesel Fuel and Best Available Technology (BAT) in Non road Vehicles. Submission of such reports shall be in accordance with the schedule, format, directions and procedures established by the Commissioner.

1.9 CONSTRUCTION PHOTOGRAPHS AND DVD RECORDINGS:

A. Submit construction progress photographs and DVD recordings in accordance with requirements of Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION

1.10 AS-BUILT DOCUMENTS:

A. Submit all as-built documents in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 33 00

SECTION 01 35 03
GENERAL MECHANICAL REQUIREMENTS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 35 03

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. The General Mechanical Requirements contained herein shall be followed by the Contractor, as well as its subcontractor for HVAC work. This Section sets forth the General Requirements applicable to mechanical work for the Project. Such requirements are intended to be read in conjunction with the Specifications and Contract Drawings for the Project. In the event of any conflict between the requirements set forth in this Section and the requirements of the Specifications and/or the Contract Drawings, whichever requirement is the most stringent, as determined by the Commissioner, shall take precedence.

1.3 RELATED SECTIONS: Include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 33 00 SUBMITTAL PROCEDURES
C. Section 01 35 06 GENERAL ELECTRICAL REQUIREMENTS
D. Section 01 42 00 REFERENCES
E. Section 01 77 00 CLOSEOUT PROCEDURES
F. Section 01 78 39 CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

A. CONCEALED PIPING AND DUCTS -: shall mean piping and ducts hidden from sight in masonry or other construction, in floor fill, trenches, partitions, hung ceilings, furred spaces, pipe shafts and in service tunnels not used for passage. Where piping and ducts run in areas that have hung ceilings, such piping and ducts shall be installed in the hung ceilings. For work on existing piping any insulation on such existing piping is to be tested for asbestos and abated, if found to be positive by a certified asbestos contractor. Such testing and abatement shall occur prior to the performance of any work on these pipes.

1.5 SUBMITTALS:

A. INTENT OF MECHANICAL CONTRACT DRAWINGS – Mechanical Contract Drawings are in part diagrammatic and show the general arrangement of the equipment, ducts and piping included in the Contract and the approximate size and location of the equipment.

B. The Contractor shall follow these Contract Drawings in laying out the work and verify the spaces in which it will be installed. The Contractors shall submit, as directed, Mechanical Shop Drawings, roughing drawings, manufacturer's Shop Drawings, field drawings, cuts, bulletins, etc., of all materials, equipment and methods of installation shown or specified in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

1. Submit sheet metal shop standards. Submit manufacturer's product data including gauges, materials, types of joints, scaling materials and installations for metal ductwork materials and products.

2. Submit scaled layout drawing (3/8"=1') of metal ductwork and fittings including, but not limited to, duct sizes, locations, elevations, slopes of horizontal runs, wall and floor penetrations and connections. Show modifications of indicated requirements made to conform to local shop practice and how those modifications ensure that free area, materials and rigidity are not reduced. Layouts should include all the room plans, mechanical equipment rooms and penthouses. Method of attachment of duct hangers to building construction all with the support details. Coordinate shop drawings with related trades prior to submission.

3. Indicate duct fittings, particulars such as gauges, sizes, welds and configuration prior to start of work for low-pressure systems.

4. Submit maintenance data and parts lists for metal ductwork materials and products. Include this data, product data and shop drawings in maintenance manual.

1.6 ACCESSIBILITY:

All work shall be installed by the Contractor so as to be readily accessible for inspection, operation, maintenance and repair. Minor deviations from the arrangement indicated on the Contract Drawings may be made to accomplish this, but they shall not be made without approval by the Commissioner.

1.7 CHANGES IN PIPING, DUCTS, AND EQUIPMENT:

Wherever field conditions are such that for proper execution of the work, reasonable changes in location of piping, ducts and equipment are necessary and required, the Contractor shall make such changes as directed and approved, without extra cost to the City.

1.8 CLEANING OF PIPING, DUCTS, AND EQUIPMENT:

Piping, ducts and equipment shall be thoroughly cleaned by the Contractor of all dirt, cuttings and other foreign substances. Should any pipe, duct or other part of the several systems be obstructed by any foreign matter, the Contractor will be required to pay for disconnecting, cleaning and reconnecting wherever necessary for the purpose of locating and removing obstructions. The Contractor shall pay for repairs to other work damaged in the course of removing obstructions. For work on existing piping, ducts and equipment the Contractor shall pay special attention during this task so as not to disturb the insulation on such piping, ducts or equipment.

1.9 STANDARDIZATION OF SIMILAR EQUIPMENT:

Unless otherwise particularly specified, all equipment of the same kind, type or classification, and used for identical purposes, shall be the product of one (1) manufacturer.

1.10 SUPPORTING STRUCTURES DESIGNED BY THE CONTRACTOR:

Unless otherwise specified, supporting structures for equipment to be furnished by the Contractor shall be designed by an Engineer licensed in New York State retained by the Contractor. Supporting structures shall be built by the Contractor of sufficient strength to safely withstand all stresses to which they may be subjected, within permissible deflections, and shall meet the following standards:

A. Structural Steel - ASTM Standard Specifications, AISC and New York City Construction Codes.

B. Concrete for supports for equipment shall conform to the Specifications for concrete herein, but in no case shall be less than the requirements of the New York City Construction Codes for average concrete.

C. Steel reinforcement for concrete shall be of intermediate grade and shall meet the requirements of the Standard Specifications for Billet Steel-Concrete Reinforcement Bars, ASTM.

D. Drawings and calculations shall be submitted for review and acceptance in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

1.11 ELIMINATION OF NOISE:

A. All systems and/or equipment provided under the Contract shall operate without objectionable noise or vibration.

B. Should operation of any one or more of the several systems produce noise or vibration which is, in the opinion of the Commissioner, objectionable, the Contractor shall at its own expense make changes in piping, equipment, etc. and do all work necessary to eliminate objectionable noise or vibration.

C. Should noise or vibration found objectionable by the Commissioner be transmitted by any pipe or portions of the structure from systems and/or equipment installed under the Contract, the Contractor shall at its own expense install such insulators and make such changes in or additions to the installations as may be necessary to prevent transmission of this noise or vibration.

1.12 PRELIMINARY FIELD TEST:

As soon as conditions permit, the Contractor shall furnish all necessary labor and materials for, and shall make, preliminary field tests of the equipment to ascertain compliance with the requirements of the Contract. If the preliminary field tests disclose equipment that does not comply with the Contract, the Contractor shall, prior to the acceptance test, make all changes, adjustments and replacements required.

1.13 INSTRUCTIONS ON OPERATION:

At the time the equipment is placed in permanent operation by the City, the Contractor shall make all adjustments and tests required by the Commissioner to prove that such equipment is in proper and satisfactory operating condition. The Contractor shall instruct the City's operating personnel on the proper maintenance and operation of the equipment for the period of time called for in the Specifications.

1.14 CERTIFICATES:

On completion of the work, the Contractor shall obtain certificates of inspection, approval, acceptance and of compliance with all laws from all agencies and/or entities having jurisdiction over the work and shall deliver these certificates to the Commissioner in accordance with Section 01 77 00 CLOSEOUT PROCEDURES. The work shall not be deemed substantially complete until the certificates have been delivered. See General Comments regarding problems with specifying items required for substantial completion.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 35 03

No Text

SECTION 01 35 06
GENERAL ELECTRICAL REQUIREMENTS

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section sets forth the General Requirements applicable to electrical work for the Project. Such requirements are intended to be read in conjunction with the Specifications and Contract Drawings for the Project. In the event of any conflict between the requirements set forth in this Section and the requirements of the Project Specifications and/or the Contract Drawings, whichever requirement is the most stringent, as determined by the Commissioner, shall take precedence.

B. This Section includes the following:

1. Procedure for Electrical Approval
2. Submittals
3. Electrical Installation Procedures
4. Electrical Conduit System Including Boxes (Pull, Junction and Outlet)
5. Electrical Wiring Devices
6. Electrical Conductors and Terminations
7. Circuit Protective Devices
8. Distribution Centers
9. Motors
10. Motor Control Equipment
11. Schedule of Electrical Equipment

1.3 RELATED SECTIONS: Include without limitation the following:

A.	Section 01 10 00	SUMMARY
B.	Section 01 33 00	SUBMITTAL PROCEDURES
C.	Section 01 35 03	GENERAL MECHANICAL REQUIREMENTS
D.	Section 01 42 00	REFERENCES
E.	Section 01 77 00	CLOSEOUT PROCEDURES
F.	Section 01 78 39	CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

A. WIRING: means both wire and raceway (rigid steel, heavy wall conduit unless specifically indicated otherwise).

B. POWER WIRING: means wiring from a panel board or other specified source to a starter (if required) then to a disconnect (if required), then to the final point of usage such as a motor, unit or device.

C. CONTROL and/or INTERLOCK WIRING: means that wiring that signals the device to operate or shut down in response to a signal from a remote control device such as a temperature, smoke, pressure, float,

etc. device (starters and disconnect switches are not included in this definition) regardless of the voltage required for the controlling device.

D. RIGID STEEL CONDUIT: shall mean rigid steel, heavy wall conduit that is hot dipped galvanized inside and outside. The conduit shall meet the requirements of the latest edition, as amended, of the "Standard for Rigid Steel Conduit" of the Underwriters' Laboratories, Inc. Unless otherwise specified in the Specifications or indicated on the Contract Drawings, rigid steel conduit shall be used for all exposed work, for all underground conduits in contact with earth and for fire alarms systems, as required by the New York City Construction Codes.

E. ELECTRICAL METALLIC TUBING (EMT): shall mean industry standard thin wall conduit of galvanized steel only. All elbows, bends, couplings and similar fittings which are installed as a part of the conduit system shall be compatible for use with electric metallic tubing. Couplings and terminating fittings shall be of the pressure type as approved by the Commissioner. Set screw fittings will not be acceptable. EMT shall meet the requirements of the latest edition, as amended, of the "Standard for Electrical Metallic Tubing of the Underwriters Laboratories Inc." EMT may only be used where specifically indicated. In no case will EMT be permitted in spaces other than hung ceilings and dry wall partitions.

F. FLEXIBLE METALLIC CONDUIT (FMC): Shall mean a conduit made through the coiling of a self-interlocking ribbed strip of aluminum or steel, forming a hollow tube through which wires can be pulled. For final connections to motors and motorized equipment, not more than a 4' - 0" length of flexible conduit may be used. For watertight installations, this conduit shall be of a watertight type, attached with watertight glands or fittings for final connections from outlet box to recessed lighting fixtures and in locations only where specifically permitted by the Specifications or Contract Drawings.

1.5 PROCEDURE FOR ELECTRICAL APPROVAL:

This Sub-Section sets forth General Electrical information, as well as required approvals for all electrical work required for the Project, including ancillary electrical work which may be included in the work of other trade subcontractors.

A. ELECTRIC SERVICE: The electric service supply is subject to commercial and operating variation of the utility company. Proper provision shall be made to have all apparatus operate normally under these conditions.

B. ACCEPTANCE: Acceptance and approval of the work will be contingent upon the inspection and test of the installation by the City regulatory agency.

C. TESTS: The Contractor shall notify the Commissioner when the Contractor has completed the work and is ready to have it inspected and tested. Upon completion of the work tests shall be made as required by the Commissioner of all electrical materials, electrical and associated mechanical equipment, and of appliances installed hereunder. The Contractor shall furnish all labor and material for such tests. Should the tests show that any of the material, appliances or workmanship is not first class or not in compliance with the Contract, the Contractor on written notice shall remove and promptly replace them with other materials in conformity with the Contract.

D. CERTIFICATE OF THE BUREAU OF ELECTRICAL CONTROL, OF THE DEPARTMENT OF BUILDINGS (B.E.C.): The Contractor must file prior to requesting a substantial completion inspection a Certificate of Inspection issued by B.E.C. On completion of the work the Contractor shall obtain certificates of inspection, approval, acceptance and compliance from all agencies and/or entities having jurisdiction over the work and shall deliver these certificates to the Commissioner in accordance with Section 01 77 00 CLOSEOUT PROCEDURES.

E. RESPONSIBILITY FOR CARE AND PROTECTION OF EQUIPMENT:

1. The Contractor furnishing any equipment shall be responsible for the equipment until it has been finally inspected, tested and accepted, in accordance with the requirements of the Contract.

2. After delivery and before and after installation, the Contractor shall protect all equipment against theft, injury or damage from all causes. The Contractor shall carefully store all equipment received for work, which is not immediately installed. If any equipment has been subject to possible injury by water, it shall be thoroughly dried out and put through a special dielectric test as directed by the Commissioner, at the expense of the Contractor or replaced by the Contractor without additional cost to the City.

F. UNIFORMITY OF EQUIPMENT: Any two (2) or more pieces of equipment, apparatus or materials of the same kind, type or classification which are intended to be used for identical types of service, shall be made by the same manufacturer.

1.6 SUBMITTALS:

A. CONTRACTOR'S ELECTRICAL DRAWINGS AND SAMPLES FOR APPROVAL:

1. The Contractor shall submit to the Commissioner for approval, in accordance with Section 01 33 00 SUBMITTAL PROCEDURES, complete dimensional drawings of all equipment, wiring diagrams, motor test data, details of control, installation layouts showing all details and locations and including all schedules, and descriptions and supplementary data to comprise complete working drawings and instructions for the performance of the work. A description of the operation of the equipment and controls shall be included. A letter, in triplicate, shall accompany each submittal.

2. The Contractor shall submit in accordance with Section 01 33 00 SUBMITTAL PROCEDURES, duplicate samples of such materials and appliances as may be requested by the Commissioner for approval. These samples shall be properly tagged for identification and submitted for examination and test. After the samples are approved, one (1) sample will be returned to the Contractor and the other sample will be filed in the office of the Commissioner's representative for inspection use. After the Contract is completed, the second set of samples will be returned to the Contractor.

B. TIMELINESS: All material shall be submitted in accordance with the submittal schedule in sufficient time for the progress of construction. Failure to promptly submit acceptable samples and dimensional drawings of equipment will not be accepted as grounds for an extension of time. The Commissioner may decline to consider submittals unless all related items are submitted at the same time.

C. CONTRACTOR'S STATEMENT WITH SUBMITTALS: Contractor shall submit statement in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.

D. BULLETINS AND INSTRUCTIONS: The Contractor shall furnish and deliver to the Commissioner in accordance with Section 01 78 39, CONTRACT RECORD DOCUMENTS and Section 01 77 00, CLOSEOUT PROCEDURES, after acceptance of the work, four (4) complete sets of instructions, technical bulletins and any other printed matter (diagrams, prints, or drawings) required to provide complete information for the proper operation, maintenance and repair of the equipment and the ordering of spare parts.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 ELECTRICAL INSTALLATION PROCEDURES:

This Sub-Section sets forth the General Installation Procedure that shall apply to all electrical work and electrical equipment appearing in the Contract.

(Refer to Sub-Section 1.4 DEFINITIONS for terms used in this section)

A. INTENT OF CONTRACT DOCUMENTS: The Drawings and Specifications are to be interpreted as a means of conveying the scope and intent of the work without giving every minor electrical detail. It is intended, nevertheless, that the Contractor shall provide whatever labor and materials are found necessary, within the scope of the Contract, for the successful operation of the installation. Specific details of individual installations are to be finally decided upon when the Contractor submits Working or Shop Drawings for approval to DDC. Whenever there are two (2) or more methods to complete project work within the Contract scope, the Commissioner reserves the right to choose that method which, in the Commissioner's opinion, will afford the most satisfactory performance, lasting qualities, and accessibility for repairs, even though this selection is the most costly.

B. SCHEMATIC PLANS – APPROXIMATE LOCATIONS: Conduits and wiring are shown on the plans for diagrammatic purposes only. Therefore, conduit layouts may not necessarily give the actual physical route of the conduits. The Contractor who installs a conduit system will also be required, as part of the work, to furnish and install all hangers and pull-boxes, including any special pull-boxes found necessary to overcome interferences, and to facilitate the pulling of electrical cables. Similarly, the locations of equipment, appliances, outlets and other items shown on Contract Drawings are only approximate and are to be definitively established when equipment Shop Drawings are submitted and approved by DDC during construction.

C. SLEEVES: required for conduits passing through walls or floors, shall be furnished and set by the Contractor installing the conduits. Sleeves in waterproofed floors shall be provided with flashing extending 12 inches in all directions from sleeve and secured to waterproofing. Flashing shall be turned down into space between pipe and sleeve and caulked watertight. Flashing shall be 20 oz. cold rolled copper. Sleeves shall be supplied with welded flanges similar to those supplied by the subcontractor for Plumbing Work and shall extend one (1) inch above finished floor.

D. COORDINATION: The Contractor shall keep in close touch with the construction progress and obtain the necessary information for the accurate placement of its work in ample time before project construction operations obstruct its work. The Contractor is to consult all other Contract Drawings, as well as approved equipment Shop Drawings on file in the Resident Engineer's Field Office. This will aid in avoiding interferences, omissions and errors in the electrical installation.

E. RESTORATION: If drilling or cutting is done on finished surfaces of equipment or the structure, any marring of the surface shall be repaired or replaced by the Contractor. The Contractor shall be held responsible for corrective restoration due to its cutting or drilling, and for any damage to the project or its contents caused by the Contractor or the Contractor's workers. If any piercing of waterproofing occurs because of the installation of the work, the Contractor shall restore the waterproofing, at its own expense, to the satisfaction of the Commissioner.

F. ELECTRICAL WORK AT SITE: The Contractor furnishing equipment consisting of a number of related electrical devices or appliances, mounted in a single enclosure, or on a common base, shall furnish this unit complete with internal wiring, connections, terminal boxes with copper connectors and/or lugs and ample electrical leads, ready for connection and operation. The cost of any wiring, re-wiring or other work required to be done on this unit in the field, shall be borne by the Contractor, without additional cost to the City.

G. COOPERATION AMONG SUBCONTRACTORS: Whenever an electrically operated unit or system involves the combined work of several subcontractors for its installation and successful operation, the

Contractor shall require each subcontractor to exercise the utmost diligence in cooperating with others to produce a complete, harmonious installation.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2

3.2 ELECTRICAL CONDUIT SYSTEM INCLUDING BOXES (PULL, JUNCTION AND OUTLET):

This Sub-Section sets forth the requirements applying to the installation of electrical conduits, boxes or fittings. Rigid steel conduit shall be used throughout, unless otherwise directed by the Commissioner. Where the word 'conduit', without a modifier such as, rigid steel, EMT, etc., is specified to be used, it shall be interpreted to mean, rigid steel, heavy wall, threaded conduit.

(Refer to Sub-Section 1.4 DEFINITIONS for terms used in this section)

A. INSTALLATIONS AND APPLICATIONS:

1. Unless otherwise specified or indicated on the Contract Drawings, conduit runs shall be installed concealed in finished spaces.
2. CONDUIT SIZES: The sizes of conduit shall be as indicated on the Contract Drawings. Wherever conduit sizes are not indicated, the conduit shall meet the requirements of the New York City Electrical Code to accommodate the conductors to be installed therein.
3. Conduits shall be reamed smooth after cutting. No running threads will be permitted. Universal type couplings shall be used where required. Conduit joints shall be screwed up to butt. Empty conduits after installation shall have all open ends temporarily plugged to prevent the entrance of water or other foreign matter.
4. Conduits being installed in concrete or masonry shall be securely held in place during pouring and construction operations. A group of conduits terminating together shall be held in place by a template.
5. UNDERGROUND STEEL CONDUITS: Unless otherwise specified, all underground steel conduits in contact with earth shall be encased by the Contractor who installs them, in a covering of not less than two (2) inches of an approved concrete mixture. Concrete mix shall be one (1) part cement to four and one-half (4 ½) parts of fine and coarse aggregate.
6. EXCAVATION RESTORATION PERMITS: When installing underground conduits, duct banks or manholes the Contractor shall perform the work of cutting pavement, excavation shoring, keeping trenches or holes pumped dry, backfilling, restoration of surfaces to original condition and removal of excess earth and rubbish from premises. During the work, the Contractor shall provide adequate crossovers, protective barriers, lamps, flags, etc., to safeguard traffic and the public. When the work is in a public highway or street, the Contractor shall secure and pay for all necessary permits and inspection fees and pay the cost of repaving.
7. EXPOSED CONDUIT SUPPORTS: Exposed conduit shall be supported by Galvanized hangers with necessary inserts, beam clamps of approved design or attached to walls or ceilings by expansion bolts. Exposed conduits shall be supported or fastened at intervals not more than five (5) feet.
8. Exposed conduit shall be installed parallel or at right angles to ceiling, walls and partitions. Where direction changes of exposed conduit cannot be made with neat bends, such as required around beams or columns, conduit type fitting shall be used.

9. The conduit shall be installed with an approved expansion joint:
   a. Wherever the conduit crosses a building expansion joint the Contractor will be held responsible for determining where the building expansion joints are located.
   b. Every 200 feet, when in straight runs of 200 feet or longer.
10. Conduit may only enter and leave a floating slab in the vertical direction, and then only in an approved manner. Horizontal entries into floating slabs are not permitted.
11. Conduit installed in pipe shafts shall be properly supported to carry the total weight of the raceway system complete with cable. In addition at least one (1) horizontal brace per 10 ft. section shall be provided to assure stability of the raceway system.
12. BUSHINGS AND LOCKNUTS: Approved bushings and locknuts shall be used wherever conduits enter outlet boxes, switch boxes, pull boxes, panel board cabinets, etc.
13. CONDUIT BENDS: shall be made without kinking conduit or appreciably reducing the internal diameter. All bends in conduit of two (2) inch in diameter or larger shall be made with an hydraulic or power pipe bender. The radius of the inner edge of any bend shall not be less than six (6) times the internal diameter of the conduit where rubber covered conductors are to be installed, and not less than 10 times the internal diameter of the conduit where lead covered conductors are to be used. Long gradual sweeps will be required, rather than sharp bends, when changes of direction are necessary.
14. EMPTY CONDUITS
   a. TESTS: All conduits and ducts required to be installed and left empty shall be tested for clear bore and correct installation by the Contractor using a ball mandrel and a brush and snake before the installation will be accepted. The ball shall be turned to approximately 85% of the internal diameter of the raceway to be tested. Two (2) short wire brushes shall be included in the mandrel assembly. Snaking of conduits, ducts, etc., shall be performed by the Contractor in the presence of the Resident Engineer. Any conduits or ducts which reject the mandrel shall be cleared at once with the Contractor bearing all costs, such as chopping concrete, to replace the defective conduit and restore the surface to its original condition.
   b. TAGS: Numbers or letters shall be assigned to the various conduit runs, and as they test clear they shall be identified by a fiber tag not less than 1-¼ inch width, attached by means of a nylon cord. All conduit terminations in panel, splice or pull boxes as well as those out of the floor or ceiling shall be tagged.
   c. TEST RECORDS: As the conduit runs clear, a record shall be kept under the heading of "Empty Conduit Tested, Left Clear, Tagged and Capped" showing conduit designation, diameter, location, date tested and by whom. When complete, this record shall be signed by the Resident Engineer and submitted in triplicate for approval. This record shall be entered on the Contract Record Drawings under Section 01 78 39, CONTRACT RECORD DOCUMENTS.
   d. CAPPING: All empty conduit and duct openings, after test, shall be capped or plugged by the Contractor as directed.
   e. DRAG LINES: A drag line shall be left in all empty conduit.

B. BOXES:

1. The Contractor shall furnish and erect all pull boxes indicated on the plans or where required. Sides, top and bottom of pull boxes shall be Galvanized coated and shall be built of No. 12 USSG steel reinforced at corners by substantial angle irons and riveted or welded to plates. Bottom or side

of pull boxes shall be removable and held in place by corrosion resistant machine screws. Pull boxes in damp locations shall have threaded hubs and gaskets and be NEMA 4X. All pull boxes shall be suspended from ceiling or walls in the most substantial manner.

2. In centering outlets, the Contractor is cautioned to allow for overhead pipes, ducts and other obstructions, and for variations in arrangement and thickness of fireproofing, soundproofing and plastering. Precaution should be exercised regarding the location of window and door trims, paneling, etc. Mistakes resulting from failure to exercise precaution must be corrected by the Contractor at no additional cost to the City. Outlets in hung ceilings shall be supported from the black iron or structure.

3. The exact location of all outlets in finished rooms shall be as directed. When the interior finish has been applied, the Contractor shall make any necessary adjustment of its work to properly center the outlets. All outlet boxes for local switches near doors shall be located at the strike side of doors as finally hung, whether so indicated on the drawings or not.

4. Exposed wall outlet boxes shall be erected neatly and tight against the walls and securely anchored to same.

5. All wall outlets of each type shall be set accurately at the same level on each floor, except where otherwise specified or directed. Where special conditions occur, outlets shall be located as directed.

6. MOUNTING HEIGHTS: The following heights are standard heights and are subject to correction due to coordination with Contract Drawings. All such changes must be approved by the Resident Engineer. Heights given are from finished floor to center line of outlet or device on wall or partition, unless otherwise indicated.

a.	General Convenience Outlets (mount vertical)	1'-6"
b.	Clock Outlets	8'-6"or 1'-6" below ceiling
c.	Wall Lighting Switches	4'-0"
d.	Motor Controllers	5'-0"
e.	Motor Push-button	4'-2"
f.	Telephone Outlets	As Directed
g.	Fire Alarm Bells	8'-6"or 1'-6" below ceiling
h.	Fire Alarm Stations	4'-0"
i.	Intercom Outlet	1'-6"
j.	Cooking and Refrigerator Unit	As Directed

7. Outlet boxes shall be of approved design and construction; of form and dimensions suited and adapted to its specific location; the kind of fixture to be used and the number and arrangements of conduits, etc., connecting therewith. All ferrous outlet boxes shall meet the requirements for zinc coating as specified under Electrical Conduit Systems.

8. There shall be knockouts opened only for the insertion of conduit. Any outlet boxes with more openings than are necessary for conduit insertion shall be sealed by the Contractor without additional charge.

9. All outlet boxes and junction boxes for exposed work shall be galvanized cast iron or cast aluminum with threaded openings. Outlet boxes for exposed inside work in damp locations shall be galvanized cast iron or cast aluminum with threaded hubs and neoprene gaskets.

10. Junction boxes shall not be less than 4 11/16" square and shall be equipped with zinc coated plates. Where plates are exposed they shall be finished to match the room decor.

11. FIXTURE SUPPORTS: Outlet boxes supporting lighting fixtures shall be equipped with fixture studs held by approved galvanized stove bolts or integral with the box. Cast iron or malleable boxes shall have four (4) tapped holes for mounting required cover or fixtures.

12. Outlet boxes exposed to the weather or indicated W.P. shall be cast iron or cast aluminum and the covers made watertight with neoprene gaskets. The boxes shall have external lugs for mounting. Drilling of the body of the fitting for mounting will not be permitted. The cover screws shall be appropriate in size, non-corrodible and not less than four (4) in number for each box opening.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3

3.3 ELECTRICAL WIRING DEVICES:

A. WALL SWITCHES shall be of the best specification grade, quiet type, and shall have a rating of 20 Amperes at 277 volts, as manufactured by Bryant, Hubbell or approved equal. The mechanism shall be equipped with arc snuffers. They shall be of the tumbler type, single pole. Switches of the 3-way type shall have a similar rating.

B. RECEPTACLES:

1. CONVENIENCE OUTLETS: shall be of the best specification grade, duplex, two-pole, 3-wire, 20 Amperes at 125 volts. It shall have a grounding pole that shall be grounded to the conduit system. Receptacles shall be capable of both back and side wiring and shall have only one (1) grounding screw. Receptacles shall be Hubbell Cat. #5262 or approved equal.

2. HEAVY DUTY RECEPTACLE OUTLETS: shall have the Ampere rating and the number of poles specified on the Contract Drawings and shall be Hubbell, Russell-Stoll, Bryant, AH & H or approved equal. Each outlet shall have a grounding pole, which shall be grounded to the conduit system.

3. FLOOR RECEPTACLES: shall be Russell & Stoll #3040 or approved equal, to fit into floor box previously specified.

4. NAMEPLATES: are required for all receptacles other than 120V.

C. CLOCK HANGERS: Clock outlets for surface type clocks shall be equipped with a supporting hook and recessed faceplate to conceal the electrical cord.

D. WATERTIGHT DEVICES: For installations exposed to weather or in damp locations, the devices shall be in a gasketed, cast iron enclosure.

E. PLATES:

1. Every convenience outlet and switch outlet shall be covered by means of a stainless steel No. 302 - 0.4" antimagnetic plate with an approved finish, unless provided otherwise in the detailed Specifications.

2. Where two (2) or three (3) switches are grouped together, a single faceplate shall be used. Where more than three (3) switches are located at one (1) point, the faceplates may be made up in multiple units.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4

3.4 ELECTRICAL CONDUCTORS AND TERMINATIONS:

A. CONDUCTORS FOR LIGHT AND POWER - All wire and cable shall be of annealed copper of 98% conductivity. Aluminum wire or cable will not be permitted. The insulation shall be flame retardant, moisture and heat resistant, thermoplastic, type THW or THWN rated for 600 volts at 75 degrees C. for

both wet and dry locations. Wires No. 8 or larger shall be stranded. Wires and cables shall also be subject to the requirements of the NYCEC. Cables for incoming service or wire in conduits contiguous with the earth or in concrete or other damp or wet locations shall be synthetic rubber insulated with neoprene jacket, heat and moisture resistant and shall be equal to UL Type USE and rated for 600 volts at 75 degrees C. for both wet and dry locations.

B. FIXTURE WIRE: Lighting fixtures shall be wired with No. 14 gauge wire designated as AWM and rated at 105 degrees C.

C. OTHER TYPES: Cables and wires for interior communication systems are described in applicable detailed Specifications.

D. MINIMUM SIZE: Conductors smaller than No. 12 AWG shall not be used for light or power.

E. COLOR CODE: Wires shall have a phase color code, and multiple conductor cables shall be color coded.

F. CABLE DATA: The Contractor shall submit for approval the following information for each size and type of cable to be furnished.

1. Manufacture of Cable - Location of Plant.
2. Minimum insulation resistance at standard test temperature.
3. Days required for delivery to site of work after order to proceed with manufacture.

G. ORIGINAL REELS: Cable and wire shall be delivered to the site of the work on original sealed factory reels.

H. WIRE INSTALLATION:

1. INSTALL WIRES AFTER PLASTERING - Feeder and branch circuits wiring shall not be installed in conduit before the rough plastering work is completed. No conductors shall be pulled into floor conduits before floor is poured.
2. CONDUIT SECURED IN PLACE - No conductor shall be pulled into any conduit run before all joints are made up tightly and the entire run rigidly secured in place.
3. WIRE ENDS - All wires shall be left with sufficiently long ends for proper connection and stowing.
4. PULLING COMPOUNDS - When required to ease the pulling-in of wires into conduit, only approved compounds as recommended by cable manufacturers shall be used.
5. PRESSURE CONNECTORS - for wires shall be of the cast copper or forged copper pressure plate type. Connectors shall be O.Z., Burndy, National Electric Products or approved equal.
6. Splices and feeder taps in the gutters of panel boxes shall be made by means of pressure plate type connectors encased in composition covers as manufactured by O.Z., Burndy, National Electric Products or approved equal.
7. Splices in branch wiring for sound systems and fire systems, shall be first made mechanically secure, then soldered and taped.
8. In lieu of soldered splices (except for sound and Fire Systems, which must have soldered splices) the following alternates are acceptable for operating temperatures up to 105 degrees C., for fluorescent fixtures and for the splicing of branch circuit wiring up to No. 8 AWG wire:
    a. Mechanical splices made with mechanical connectors as manufactured by the Minnesota Manufacturing Company "Scotchlock" or approved equal. Mechanical connectors requiring a special tool (pressure connectors, insulators and locking rings) by Buchanan or approved equal. The tool used for connector application shall be as approved by the connector manufacturer.

b. For wire and cable No. 6 AWG and larger for branch circuit wiring the seamless tubular connector will only be accepted. Application of this connector shall be with a tool recommended by the connector manufacturer.

9. TAGS: All feeders and risers shall be tagged at both ends, and in all pull and junction boxes and gutter spaces through which they pass. Such tags shall be of fiber and have the feeder designation and size stamped thereon.

10. BRANCH CIRCUIT WIRING:

a. The Contractor installing branch circuit wiring shall test the work for correct connections and leave all loop splices in the fixture outlet boxes properly spliced and taped. The Contractor shall provide wire ends long enough for convenient connection to device.

b. NEUTRALS: No common neutrals shall be used except for lighting branch circuits. Each neutral wire shall be terminated separately on a neutral busbar in the panelboard. No common neutrals will be permitted for convenience receptacle branch circuits.

I. TERMINATIONS

1. LUGS: All lugs for all devices and all cable terminations shall be copper. AL/CU rated lugs will not be permitted. The only exception to this requirement is when the particular device is not manufactured with copper lugs by any manufacturer. Lugs for No. 6 AWG cable and larger shall be cast copper or forged copper pressure plate type. Lugs for 1/0 and larger shall be fastened with two (2) bolts.

2. All lugs shall be of the proper size to accept the cable connected to them. Any subcontractor furnishing a device containing lugs is to coordinate with the Contractor to insure that the device terminations are adequate for the wire or cable (whose size may be larger than expected due to voltage drop considerations) connected to the device.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.5

3.5 CIRCUIT PROTECTIVE DEVICES:

This Section sets forth the circuit protective devices such as circuit breakers and safety switches, used in connection with Motor Control Equipment, Distribution Centers, Panel boards and Service Entrance.

A. CIRCUIT BREAKERS:

1. CIRCUIT BREAKERS: shall be operable in any position and shall be of the quick-make, quick-break type on manual operation. The handle shall be trip free, preventing contacts from being held in closed position against abnormal overloads or short circuits. Positive visual indication of automatic tripped position of breaker shall be provided, in addition to the "On" and "Off" indication. All circuit breakers shall be of the bolted type.

2. TRIP RATING: Circuit breakers shall be provided with the required number of trip elements, calibrated at 40 degrees C., ambient temperature, in accordance with wire sizes or motor currents as shown on Contract Drawings or indicated in the Specifications.

3. POLE BARRIER: Multipole pole breakers shall be designed to break all poles simultaneously. They shall be provided with barriers between poles and arc suppressing devices.

4. ELEMENTS: Multipole circuit breakers shall have frames of not less than a 100 Ampere rating. Multipole circuit breakers for 480 volts AC operation shall have an NEMA interrupting rating of 18,000 Amperes, unless a higher rating is specified in the Specific Requirements or indicated on the Contract Drawings.

5. For circuit breakers with frame size up to and including 225 Amperes, the breakers may be provided with non-interchangeable trip elements. For frame ratings above 225 Amperes, the breakers shall be provided with interchangeable trip elements, which can be replaced readily.

6. Single pole circuit breakers for branch circuits shall have a frame size of no less than 100 Amperes, and shall be rated at 125 volt A.C. with a NEMA interrupting rating of 10,000 Amperes, unless a higher rating is specified in the Specifications or indicated on the Contract Drawings.

7. INVERSE TIME ACTION: The circuit breakers shall be dual element type, one (1) element with time limit characteristics, so that tripping will be prevented on momentary overloads, but will occur before dangerous values are reached and the other with instantaneous trip action. Inverse time delay action shall be effective between a minimum tripping point of 125% of rating of breaker and an instantaneous tripping point between 600% and 700% of rated current.

8. CONSTANCY OF CALIBRATION: The tripping elements shall insure constant calibration and be capable of withstanding excessive short circuit conditions without injury.

9. CONTACTS: shall be non-welding under operating conditions and of the silver to silver type.

10. TEMPERATURE RISE: Current carrying parts, except thermal elements, shall not rise in temperature in excess of 30 degrees C. while carrying rated current at rated frequency.

11. NUMBERING: Each circuit breaker shall be distinctly numbered when installed in a group with other breakers. The calibration of trip element shall be indicated on each breaker.

B. SAFETY SWITCHES:

NEMA TYPE HD: When safety switches are permitted to be used for service entrance, motor disconnecting means or to control other types of electrical equipment, they shall be of the type HD of a rating not less than 30 Amperes. Enclosures shall be provided with means for locking. For ratings above 60 Amperes terminals shall have double studs.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.6

3.6 DISTRIBUTION CENTERS:

This Section sets forth the construction and installation procedure for Switchboards, Panel boards and Cabinets.

A. PANELBOARDS-GENERAL TYPE: The panel boards shall be of the automatic circuit breaker type with individual breakers for each circuit, removable without disturbing the other units. Circuit breakers shall be in accordance with the requirements outlined under "Circuit Protective Devices."

B. NUMBER AND RATING OF CIRCUIT BREAKERS: The Contract Drawings show a layout of each panel, giving the number, frame, size and trip setting of circuit breakers and number of branch circuits and spare breakers. Each branch circuit shall be distinctly numbered.

C. BUS-BAR CONSTRUCTION AND SUPPORT: Panel Boards shall be of the dead front type and shall have bus bars and branch circuits designed to suit the system and voltage. Current carrying parts, exclusive of circuit breakers shall be copper and based on a maximum density of 1,000 Amperes per square inch. Bus bars for the main switchboard shall be designed for the frame rating of the Service Breaker. Bus bars shall run up the center of the panel, unless otherwise indicated, and shall have connected thereto the various branch circuits. Unless otherwise specified, bus bars for each panel board shall be equipped with main lugs only and capacity as required on Contract Drawings. Where main protection is required, automatic circuit breakers shall be used. A neutral bus of at least the same capacity as a live bus bar shall be provided for the connection of all neutral conductors. Each terminal shall be identified. All current carrying parts, exclusive of circuit breakers, shall be of copper with a minimum number of joints. The bus bar structure shall be a self-supporting unit, firmly fastened to a ½

inch plastic board, extending the full length and width of assembly which shall serve to insulate the bus structure from the back of panel box. Other methods affording equally effective bus structure support and insulation will be given consideration. An insulating barrier shall separate neutral bus from other parts of panel.

D. CIRCUIT BREAKER ASSEMBLY: The entire circuit breaker and bus bar assembly shall be mounted on an adjustable metal base or pan and secured to the back of panel box. The panel shall have edges flanged for rigidity.

E. PANEL MOUNTING: The panel shall be centered in the panel box to line up with door openings and set level and plumb so that no live parts are exposed with the door open.

F. PANEL CABINET:

1. PANEL CABINET INSTALLATION: When installed surface mounted in panel closets they shall be mounted on Kindorf channel.

2. Where cabinets cannot be set entirely flush due to shallow walls or partitions or where cabinet is extra deep, the protruding sides of cabinet shall be trimmed with a metal or hardwood return molding of approved design and fastened to cabinet so as to conceal the intersection between the wall and cabinet.

G. NAMEPLATES: Nameplates where required, shall be made of engraved Lamicoid sheet, or approved equal. Letters and numbers shall be engraved white on a black background (except for Firehouse projects which shall have white letters on a red background). The Contractor shall submit an engraved sample for approval as to design and style of lettering before proceeding with the manufacture of the nameplate. Nameplates shall be of suitable size and shall also be provided at the top of the switchboard or section thereof and on the trim at the top of all lighting and power panels. Similar nameplates shall also be provided for each distribution circuit breaker giving the breaker number, the number of the feeder, and the name of the equipment fed.

H. SHOP DRAWINGS: showing all details of boxes, panels, etc., shall be submitted for approval.

I. DIRECTORIES: A directory shall be fastened with brass screws and consist of a noncorrosive metal frame with dimensions not less than five (5) inches x eight (8) inches and a transparent window of Plasticile, Plexiglass, Lucite, Polycarbonate or approved equal that is not less than 1/16 inch thick over cardboard or heavy paper. The directory shall be typewritten and show the number of each circuit, the name of circuit and lighting or equipment supplied. The size of riser feeder shall be as indicated on directory. The dimensions of directory shall be submitted for approval for each size of panel.

J. CONSTRUCTION

1. FINISH: Panel boxes, doors and trim for installation in dry locations, shall be zinc coated after fabrication by the hot-dip galvanizing or electroplate process on inside and outside surfaces. In damp locations, panel boards shall be enclosed and gasketed NEMA 3R type. Panel boards located outdoors or exposed to the weather shall be NEMA 3X type.

2. PAINTING: Panel boxes, doors and trim shall receive a coat of approved priming paint and a second coat of approved paint in the field after installation. Paint shall be applied to the inside and outside of boxes and on both sides of trim. Panel trims and doors shall receive a third or finishing coat on the outside after installation. Approval as to texture and color must be obtained before the final coat is applied.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.7

3.7 MOTORS:

This Section sets forth the general design, construction and performance requirements, which shall apply to all motors furnished in the Contract.

A. MOTOR DESIGN: All motors shall be designed to comply with the New York State Energy Conservation Construction Code and the New York City Energy Conservation Code. In the event of any conflict or inconsistency between such codes, the New York City Energy Conservation Code shall prevail. Motors shall have standard NEMA frames and shall have nameplate ratings adequate to meet the specified conditions of operation. Motor performance under variable conditions of voltage and frequency shall be within the limits set in NEMA standards, unless modified in the Specifications. Motors shall be expressly designed for the hazard duty load, voltage and frequency as specified in the Contract. All motor windings shall be copper. All motors intended to operate on a 208 volt system shall be designed and rated for 200 volts.

B. STANDARDS OF COMPARISON: In the absence of specific motor specifications, in general, the best standard products of the leading motor manufacturers shall be considered as a standard for comparison. The requirements of the NEMA standards for motors and generators shall be deemed to contain the minimum requirements of performance and design.

C. OBJECTIONABLE NOISES: Objectionable noises will not be tolerated and exceptionally quiet motors may be required for certain specified locations. Noise control tests as per the New York City Construction Codes may be performed as directed by the Commissioner. Such motors shall bear a nameplate lettered "Quiet Motor." Springs and slip rings shall be of approved non-ferrous material.

D. BEARINGS:

1. Bearings, unless specified otherwise, shall be of the ball or roller type. Motors one (1) horsepower and larger that are equipped with ball roller bearings shall also have lubrication of the pressure-relief greasing type. The Contractor furnishing four (4) or more such motors shall also furnish, as part of the Contract, a pressure grease gun of rugged design, of approximately 10 ounce capacity, complete with necessary adapters. The Contractor shall also provide 10 pounds of approved gun grease.

2. For any particular unit where sleeve bearings are deemed desirable, permission for their use may be granted by the Commissioner. Motors one (1) horsepower and larger that are equipped with sleeve type bearings shall in addition to having protected accessible fittings for oiling be provided with visible means for determining normal oil level. Lubrication shall be positive, automatic and continuous.

E. MOTOR TERMINALS AND BOXES: Each motor shall be furnished with flexible leads of sufficient length to extend for a distance of not less than three (3) inches beyond the face of the conduit terminal box. This box shall be furnished of ample size to make and house motor connections. These requirements shall be met irrespective of any other standards or practices. Size of cable terminals and conduit terminal box holes shall be subject to approval. For motors five (5) horsepower. or larger, each terminal shall come with two (2) cast or forged copper pressure type connectors with bolts, nuts and washers. For motors of smaller ratings, connectors of other acceptable types may be furnished. For installations exposed to the weather or moist locations, terminal boxes shall be of cast iron with threaded hubs and gasketed covers. Cover screws shall be of non-corrosive material.

F. MOTOR TEMPERATURE RISES: The motor nameplate temperature rises for the various types of motor enclosures shall be as listed below:

1.	Open Frame	40 degrees C.
2.	Totally enclosed and enclosed fan cooled	55 degrees C.

3.	Explosion proof and submersible	55 degrees C.
4.	Partially enclosed and drip proof	40 degrees C.

The temperature of the various parts of a motor shall meet the requirements of NEMA standards for the size and type of the motors. Tests for heating shall be made by loading the motor to its rated horsepower and keeping it so loaded for the rated time interval or until the temperature becomes constant.

G. SPECIAL CODE INSTALLATIONS: Electrical installations covered by special publications of NBFU and by special City rulings and regulations shall comply in design and safety features with such applicable codes, regulations and rulings, and shall be furnished and installed complete with all accessories and safety devices as therein specified.

H. MOTORS ON LIGHTING PANELS: The largest A.C. motor permitted on branch circuits of lighting panels shall not exceed 1/4 horsepower.

I. MOTORS RATED: ½ horsepower and larger shall be polyphase.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8

3.8 MOTOR CONTROL EQUIPMENT:

This Section sets forth the requirements for motor controllers and associated devices. Such requirements are applicable to all motor control equipment furnished or installed.

A. MANUFACTURER: All control equipment furnished under the Contract shall be the product of a single manufacturer. Exceptions to this rule may be granted in the case of controllers for fractional horsepower motors driving special equipment, the various units of which have been engineered to obtain specific performance.

B. CONTROL ITEMS REQUIRED: The Contractor furnishing motors shall also furnish therewith complete disconnecting, starting and control equipment as required by the detailed Specifications, the various code authorities and for the successful operation of the driven equipment. These items include circuit breaker, magnetic starter with overload protection and low voltage release or protection, push button stations, pilot lights and alarms, float, pressure, temperature and limit switches, load transfer switches, devices for manual operation and speed controllers, etc. The Contractor shall furnish as many of these items as are required for the successful operation of the driven unit.

1. Where a motor is to be located out of sight of the controller, the Contractor shall furnish an approved disconnecting means to be mounted near motor.

C. TYPES OF STARTERS:

1. SQUIRREL CAGE: A.C. motors of the squirrel cage type, rated from one (1) to 30 horsepower, shall have magnetic across the line starters; motors rated above 30 horsepower shall be furnished with reduced voltage (autotransformer type) starter or part winding start with time delay to reduce inrush current. Size of starters shall be based on 200V operation.

2. SLIP RING: A.C. Motors of the slip-ring type shall be furnished with primary across the line starters interlocked with secondary starting and regulating equipment. The interlocking feature shall prevent starting of the motor when the secondary controller is off the initial starting point.

3. MAGNETIC: For fractional horsepower motors, magnetic type starters are not required unless the particular method of controlling the driven equipment makes them necessary. Where individual single phase fractional horsepower motors or the sum of fractional horsepower motors controlled by an automatic device are ½ horsepower or more, magnetic starters and circuit breakers shall be used. Single phase A.C. motors smaller than ½ horsepower or three-phase A.C. motors smaller than one (1) horsepower where manual control is specified may be furnished with starters of toggle

switch or push button type with inbuilt thermal protection. No additional disconnecting means is required to be furnished with this type of starter. This type of starter may also be used in series with automatic control devices such as thermostats, float and pressure switches, provided the individual motor or the sum of fractional horsepower motors is less than ½ horsepower. Means for manual operation shall be provided.

D. DISCONNECTING BREAKER: All motor starters, unless otherwise specified, shall be provided with a disconnecting means in the form of a circuit breaker of the type specified under Article 3.5 CIRCUIT PROTECTIVE DEVICES. This disconnecting means shall be contained in the same housing with the starter and shall be operable from outside. Means shall be provided for locking the handle of the circuit breaker in the "OFF" position if it is desired to take the equipment out of service and prevent unauthorized starting.

E. CONTROL CABINET: DRY LOCATIONS - All starters shall be furnished with general purpose, NEMA Type 1, sheet metal enclosures with hinged covers and baked enamel finish.

F. CONTROL CABINET – WATERTIGHT: In wet locations, cast iron watertight enclosures with threaded hubs, galvanized and gasketed hinged covers shall be provided.

G. 1. PANELS: Motor control devices and appliances shall be mounted on approved insulating slabs with all wiring and connections made on the back of the slabs.

2. WIRING AND TERMINALS: Wiring connections for currents of 100 Amperes or less may be made with copper wire or cable with special flameproof insulating coverings. Such wires shall be installed in a neat workmanlike manner, flat against the slab, and held in place by clips. Connections shall be made with pressure connectors for No. 8 AWG and larger wires, and with grommets for small stranded wires. Except for incoming and outgoing main leads, all connections shall terminate on approved connector blocks, which may be installed on the face of the slab. For small, across the line starters, the above requirements may be modified if satisfactory connections are provided.

3. COPPER BUS: For currents exceeding 100 Amperes, copper bus shall be used in place of wires. The bus shall be constructed of copper rods, tubing or flat strap, bent and shaped properly and securely attached to the slab in a neat and workmanlike manner. The cross section of copper shall provide sufficient areas to keep current density at not more than 1,000 Amperes per square inch.

H. COOPERATION: The Contractor's subcontractor(s) who furnish electrically operated equipment shall give to the Contractor and the Contractor's electrical subcontractor full information relative to sizes and locations of apparatus furnished by them which require electrical connections.

I. SPARE PARTS:

1. FURNISH: The Contractor shall furnish the following spare parts pertaining to equipment furnished by each subcontractor.

One (1) set of contact fingers and springs and thermal elements for each three (3) (or fraction) of each size of magnetic contactor starter.

One (1) holding coil for each three (3) (or fraction) of each size of magnetic contactor starter.

2. WRAPPER MARKING: All parts shall be delivered to the Resident Engineer neatly wrapped and boxed and plainly tagged and marked for identification and reordering.

END OF SECTION 01 35 06

No Text

SECTION 01 35 26
SAFETY REQUIREMENTS PROCEDURES

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

B. The Contractor shall comply with the requirements of "*The City of New York Department of Design and Construction Safety Requirements*". This document is included in the Information for Bidders.

1.2 SUMMARY:

A. This Section includes administrative and general procedural requirements for Safety and Health Requirements, including:

1. Definitions
2. Required Safety Meeting
3. Compliance with Regulations
4. Submittals
5. Personnel Protective Equipment
6. Hazardous Materials
7. Emergency Suspension of Work
8. Protection of Personnel
9. Environmental Protection

1.3 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 REQUIRED SAFETY MEETINGS:

A. Prior to commencing construction, the Resident Engineer will schedule and hold a preconstruction kick-off meeting either at DDC's main office or at the Project site with representatives of the Contractor, including the principal on-site project representative and one or more safety representatives, Commissioner's designated representatives and other concerned parties for the purpose of reviewing the Contract Safety requirements. The Contractor's safety requirements shall be reviewed, and implementation of safety provisions pertinent to the Work shall be discussed.

B. The Contractor is responsible for conducting weekly documented jobsite safety meetings, given to all jobsite personnel including all subcontractors on the project, with the purpose of discussing safety topics and job specific requirements at the DDC worksite.

1.5 COMPLIANCE WITH REGULATIONS:

A. The Work, including contact with or handling of hazardous materials, disturbance or dismantling of structures containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirement for CFR Parts 1910 and 1926, and 40 CFR, Parts 61, 261, 761 and 763.

B. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763, as applicable.

C. Work shall additionally comply with all applicable federal, state and local safety and health regulations.

D. In case of a conflict between applicable regulations, the more stringent requirements shall apply.

E. All workers working on the DDC project site are required by NYC Local Law 41 to complete the OSHA 10 –hour training course.

1.6 SUBMITTALS:

A. The Contractor shall submit, to the Resident Engineer, copies of the Safety Program, Site Safety Plan and other required documentation in accordance with the "*New York City Department of Design and Construction Safety Requirements.*"

B. Permits: If hazardous materials are disposed of off-site submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations to the Resident Engineer.

C. Accident Reporting: Submit a copy of each accident report to the Resident Engineer in accordance with the "*New York City Department of Design and Construction Safety Requirements.*"

D. All Asbestos and Lead project regulatory notifications are to be submitted to DDC's Bureau of Environmental and Geotechnical Services (BEGS) through the Resident Engineer.

E. Request for Subcontractor Approval: Any subcontractor performing environmental work shall submit required documentation for approval to perform such work as required by DDC's BEGS.

PART II – PRODUCTS

2.1 PERSONNEL PROTECTIVE EQUIPMENT:

Special facilities, devices, equipment and similar items used by the Contractor in execution of the Work shall comply with 29 CFR Part 1910, subpart I, Part 1926, subpart E and other applicable regulations.

2.2 HAZARDOUS MATERIALS:

A. The Contractor shall bring to the attention of the Commissioner, any material encountered during execution of the Work that the Contractor suspects to be hazardous.

B. The Commissioner shall determine whether the Contractor shall perform tests to determine if the material is hazardous. A change to the Contract price may be provided, subject to the applicable provisions of the Contract.

C. If the material is found to be hazardous, the Commissioner may direct the Contractor to remediate the hazard and a change to the Contract price may be provided, subject to the applicable provisions of the Contract.

PART III – EXECUTION

3.1 EMERGENCY SUSPENSION OF WORK:

A. When the Contractor is notified by the Commissioner of noncompliance with the safety provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe condition, at no additional cost to the City.

B. If the Contractor fails to comply promptly, all or part of the Work may be stopped by notice from the Commissioner.

C. When, in the opinion of the Commissioner, the Contractor has taken satisfactory corrective action, the Commissioner shall provide written notice to the Contractor that work may resume.

D. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe condition.

3.2 PROTECTION OF PERSONNEL:

A. The Contractor shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.

B. Whenever practical, the work area shall be fenced, barricaded or otherwise blocked off from the Public or occupants to prevent unauthorized entry into the work area, in compliance with the requirements of Section 01 50 00, TEMPORARY FACILITIES, SERVICES AND CONTROLS, and including, without limitation, the following:

1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe condition to the public or occupants.
3. Store, position and use equipment, tools, materials, scraps and trash in a manner that does not present a hazard to the public or occupant by accidental shifting, ignition or other hazardous activity.
4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Resident Engineer. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks or other vehicles.

3.3 ENVIRONMENTAL PROTECTION:

A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.

B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR 1910.95, 29 CFR 1926.52 and NYC Administrative Code Chapter 28 of Title 15.

END OF SECTION 01 35 26

No Text

SECTION 01 35 91
HISTORIC TREATMENT PROCEDURES

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 35 91

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes administrative and procedural requirements for the treatment of Landmark Structures and Landmark Quality Structures, as identified in the Addendum. Specific requirements are indicated in other sections of the Specifications.

B. This Section includes, without limitation, the following:

1. Storage and protection of existing historic materials
2. Temporary protection of historic materials during construction
3. General Protection
4. Protection during use of heat-generating equipment
5. Photographic Documentation
6. NYC Landmarks Preservation Commission Final Approval signoffs

1.3 RELATED SECTIONS: include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION
C. Section 01 33 00 SUBMITTAL PROCEDURES
D. Section 01 77 00 CLOSEOUT PROCEDURES
E. Section 01 78 39 CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Landmark Structure or Site: Any building or site which has been designated as a landmark, or any building or site within a landmark district, as designated by the New York City Preservation Commission or the New York State Historic Preservation Office.

D. Landmark Quality Structure: Any building which has been determined by the City to be of landmark quality and/or historical significance.

E. Preservation: To apply measures necessary to sustain the existing form, integrity, and materials of a historic property. Work may include preliminary measures to protect and stabilize the property.

F. Rehabilitation: To make possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

G. Restoration: To accurately depict the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period.

H. Reconstruction: To reproduce in the exact form and detail a building, structure, or artifact as it appeared at a specific period in time.

I. Stabilize: To apply measures designed to reestablish a weather-resistant enclosure and the structural reinforcement of an item or portion of the building while maintaining the essential form as it exists at present.

J. Protect and Maintain: To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

K. Repair: To stabilize, consolidate, or conserve; to retain existing materials and features while employing as little new material as possible. Repair includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials. Within restoration, repair also includes limited replacement in kind, rehabilitation, and reconstruction, with compatible substitute materials for deteriorated or missing parts of features when there are surviving prototypes.

L. Replace: To duplicate and replace entire features with new material in kind. Replacement includes the following conditions:
   1. Duplication: Includes replacing elements damaged beyond repair or missing. Original material is indicated as the pattern for creating new duplicated elements.
   2. Replacement with New Materials: Includes replacement with new material when original material is not available as patterns for creating new duplicated elements.
   3. Replacement with Substitute Materials: Includes replacement with compatible substitute materials. Substitute materials are not allowed, unless otherwise indicated.

M. Remove: To detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

N. Remove and Salvage: To detach items from existing construction and deliver them to the City ready for reuse.

O. Remove and Reinstall: To detach items from existing construction, repair and clean them for reuse, and reinstall them where indicated.

P. Existing to Remain or Retain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged, or removed and reinstalled.

Q. Material in Kind: Material that matches existing materials, as much as possible, in species, cut, color, grain, and finish.

1.5 SUBMITTALS:

A. Historic Treatment Program: Submit a written plan for each phase or process, including protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work.

B. Alternative Methods and Materials: If alternative methods and materials to those indicated are proposed for any phase of work, submit for Commissioner's approval a written description including evidence of successful use on other comparable projects, and program of testing to demonstrate effectiveness for use on this Project.

C. Qualification Data: For historic treatment specialists as specified and required by individual sections of the project specifications.

D. Photographs for Designated Landmark Structures: Submit photographs in accordance with Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION and as described in this section.

E. Record Documents: Include modifications to manufacturer's written instructions and procedures, as documented in the historic treatment preconstruction conference and as the Work progresses.

1.6 QUALITY ASSURANCE:

A. Special Experience Requirements: Special Experience Requirements may apply to the firm that will provide Historic Treatment Services. If applicable, such Special Experience Requirements are set forth in the Bid Booklet and the Addendum.

B. Historic Treatment Preconstruction Conference: The Resident Engineer will schedule and hold a preconstruction meeting at the site in accordance with Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION.

1. Review manufacturer's written instructions for precautions and effects of products and procedures on building materials, components, and vegetation.

a. Record procedures established as a result of the review and distribute to affected parties.

1.7 STORAGE AND PROTECTION OF HISTORIC MATERIALS:

A. Removed and Salvaged Historic Materials: As specified and required by individual sections of the project specifications.

B. Removed and Reinstalled Historic Materials: As specified and required by individual sections of the project specifications.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling during historic treatment. When permitted by the Commissioner, items may be removed to a suitable, protected storage location during historic treatment and reinstalled in their original locations after historic treatment operations are complete.

D. Storage and Protection: When removed from their existing location, store historic materials, at a location acceptable to the Commissioner, within a weather tight enclosure where they are protected from wetting by rain, snow, or ground water, and temperature variations. Secure stored materials to protect from theft.

1. Identify removed items with an inconspicuous mark indicating their original location.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 PROTECTION, GENERAL:

A. Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation.

B. Ensure that supervisory personnel are present when work begins and during its progress.

C. Temporary Protection of Historic Materials during Construction:

1. Protect existing materials during installation of temporary protections and construction. Do not deface or remove existing materials.
2. Attachments of temporary protection to existing construction shall be approved by the Commissioner prior to installation.

D. Protect landscape work adjacent to or within work areas as follows:

1. Provide barriers to protect tree trunks.
2. Bind spreading shrubs.
3. Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than 8 hours at a time.
4. Set scaffolding and ladder legs away from plants.

E. Existing Drains: Prior to the start of work or any cleaning operations, test drains and other water removal systems to ensure that drains and systems are functioning properly. Notify Commissioner immediately of drains or systems that are stopped or blocked. Do not begin Work of this Section until the drains are in working order.

1. Provide a method to prevent solids, including stone or mortar residue, from entering the drains or drain lines. Clean out drains and drain lines that become blocked or filled by sand or any other solids because of work performed under this Contract.
2. Protect storm drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT:

A. No roofing work requiring the use of an open flame shall be permitted on any Landmark Structure or any Landmark Quality Structure, whose roof or wall structure is made of wood or primarily of wood.

B. Comply with the following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used:

1. Obtain Commissioner's approval for operations involving use of open-flame or welding equipment. Notification shall be given for each occurrence and location of work with heat-generating equipment.
2. As far as practical, use heat-generating equipment in shop areas or outside the building.
3. Before work with heat-generating equipment commences, furnish personnel to serve as a fire watch (or watches) for location(s) where work is to be performed.

4. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
5. Remove and keep the area free of combustibles, including, rubbish, paper, waste, etc., within area of operations.
6. If combustible material cannot be removed, provide fireproof blankets to cover such materials.
7. Where possible, furnish and use baffles of metal or gypsum board to prevent the spraying of sparks or hot slag into surrounding combustible material.
8. Prevent the extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
9. Inspect each location of the day's work not sooner than 30 minutes after completion of operations to detect hidden or smoldering fires and to ensure that proper housekeeping is maintained.

C. Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, shield the individual heads temporarily with guards.

3.3 PHOTOGRAPHIC DOCUMENTATION:

Photographs for Designated Landmark Structures: Show existing conditions prior to any historic treatments, including one overall photograph and two close-up photographs of all areas of work affected. Show one overall photograph and two close-up photographs of all areas of work after the successful execution of all historical treatments.

3.4 NEW YORK CITY LANDMARKS PRESERVATION COMMISSION FINAL APPROVALS SIGNOFF:

For all projects involving a Landmark Structure or Site, the Contractor, at the completion of the work, shall submit to the Commissioner, in accordance with Section 01 78 39, CONTRACT RECORD DOCUMENTS, all documentation concerning the successful execution of all historic treatments. This shall include, but not be limited to, copies of all before and after photographs of historic treatments, one copy of the Contractor's as-built drawings, copies of testing and analysis results, including cleaning, mortar analysis, pointing mortars and all other information pertaining to work performed under the New York City Landmarks Preservation Commission jurisdiction.

END OF SECTION 01 35 91

No Text

SECTION 01 40 00
QUALITY REQUIREMENTS

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes the following:
   a. Definitions
   b. Conflicting Requirements
   c. Quality Assurance
   d. Quality Control
   e. Approval of Materials
   f. Special Inspections (Controlled Inspection)
   g. Inspections by Other City Agencies
   h. Certificates of Approval
   i. Acceptance Tests
   j. Repair and Protection

B. This Section includes administrative and procedural requirements for quality control to assure compliance with quality requirements specified in the Contract Documents.

C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

D. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.

E. Provisions of this Section do not limit requirements for the Contractor to provide quality-assurance and -control services required by the Commissioner or authorities having jurisdiction.

F. Specific test and inspection requirements are specified in the individual sections of the Specifications.

G. LEED: Refer to the Addendum to identify whether this project is designed to comply with a Certification Level according to the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS."

H. COMMISSIONING: Refer to the Addendum to identify whether this project will be Commissioned by an independent third party under separate contract with the City of New York. Commissioning shall be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor shall cooperate with the commissioning agent and provide whatever assistance is required.

1.3 RELATED SECTIONS: Include without limitation the following:

A.	Section 01 10 00	SUMMARY
B.	Section 01 31 00	PROJECT MANAGEMENT AND COORDINATION
C.	Section 01 32 00	CONSTRUCTION PROGRESS DOCUMENTATION
D.	Section 01 33 00	SUBMITTAL PROCEDURES
E.	Section 01 77 00	CLOSEOUT PROCEDURES
F.	Section 01 78 39	CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Commissioning: A Total Quality Assurance process that includes checking the design and installation of equipment, as well as performing functional testing of the same to confirm that the installed equipment is operating and in conformance with the Contract Documents and the City's requirements.

1.5 CONFLICTING REQUIREMENTS:

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, the Contractor shall comply with the most stringent requirement as determined by the Commissioner. The Contractor shall refer any uncertainties and/or conflicting requirements to the Commissioner for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. The Contractor shall refer any uncertainties to the Commissioner for a decision before proceeding.

1.6 QUALITY ASSURANCE:

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required. Individual Specification Sections specify additional requirements.

B. Installer Qualifications: Special Experience Requirements may apply to the firm that will install, erect or assemble specified work required for the Project. If applicable, such Special Experience Requirements are set forth in the Bid Booklet and the Addendum.

C. Manufacturer Qualifications: Special Experience Requirements may apply to the firm that will manufacture equipment, products or systems specified for the Project. If applicable, such Special Experience Requirements are set forth in the Bid Booklet and the Addendum.

D. Fabricator Qualifications: Special Experience Requirements may apply to the firm that will fabricate material, products or systems specified for the Project. If applicable, such Special Experience Requirements are set forth in the Bid Booklet and the Addendum.

E. Professional Engineer Qualifications: A professional engineer who is licensed to practice in the State of New York and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.

F. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

G. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by the Resident Engineer.
2. Notify Resident Engineer seven (7) days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Design Consultant's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise directed or indicated.

1.7 QUALITY CONTROL:

A. City's Responsibilities: Where quality-control services are indicated as the City's responsibility in the Specifications, the City will engage a qualified testing agency to perform these services.

1. COST OF TESTS BORNE BY THE CITY: Where the City directs tests to be performed to determine compliance with the Specifications regarding materials or equipment, and where such compliance is ascertained as a result thereof, the City will bear the cost of such tests.
2. The City will furnish the Contractor with names, addresses, and telephone numbers of testing entities engaged and a description of the types of testing and inspecting they are engaged to perform.
3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to the Contractor.

B. Contractor's Responsibility: Tests and inspections not explicitly assigned to the City are the Contractor's responsibility. Unless otherwise indicated, the Contractor shall provide quality-control services as set forth in the Specifications and those required by Authorities having jurisdiction. The Contractor shall provide quality-control services required by Authorities having jurisdiction, whether specified or not.

1. COST OF TESTS BORNE BY CONTRACTOR – In the case of tests which are specifically called for in the Specifications to be provided by the Contractor or tests which are required by any Authority having jurisdiction, but are not indicated as the responsibility of the City, the cost thereof shall be borne by the Contractor and shall be deemed to be included in the Contract price. The Contractor shall reimburse the City for expenditures incurred in providing tests on materials and equipment submitted by the Contractor as the equivalent of that specifically named in the Specifications and rejected for non-compliance.
2. Where services are indicated as Contractor's responsibility, the Contractor shall engage a qualified testing agency to perform these quality-control services. Any testing agency engaged by the Contractor to perform quality control services is subject to prior approval by the Commissioner.

3. The Contractor shall not employ same entity engaged by the City, unless agreed to in writing by the Commissioner.
4. The Contractor shall notify testing agencies and the Resident Engineer at least 72 hours in advance of the date and time for the performance of Work that requires testing or inspecting.
5. Where quality-control services are indicated as Contractor's responsibility, the Contractor shall submit a certified written report, in triplicate to the Commissioner, of each quality-control service.
6. Testing and inspecting requested by the Contractor and not required by the Contract Documents are Contractor's responsibility.
7. The Contractor shall submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, the Contractor shall engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Results shall be submitted in writing as specified in Section 01 33 00 SUBMITTAL PROCEDURES.

D. Retesting/Re-inspecting: Regardless of whether the original tests or inspections were the Contractor's responsibility, the Contractor shall provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Associated Services: The Contractor shall cooperate with entities performing required tests, inspections, and similar quality-control services, and shall provide reasonable auxiliary services as requested. The Contractor shall notify the testing agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist testing entity in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing entities.
6. Design mix proposed for use for material mixes that require control by the testing entity.
7. Security and protection for samples and for testing and inspecting equipment at the Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

2. Coordinate and cooperate with the Commissioning Authority/Agent as applicable for start-up, inspection and functional testing in the implementation of the Commissioning Plan.

G. Manufacturer's Directions: Where the Specifications provide that the manufacturer's directions are to be used, such printed directions shall be submitted to the Commissioner.

H. Inspection of Material: In the event that the Specifications require the Contractor to engage the services of an entity to witness and inspect any material especially manufactured or prepared for use in or part of the permanent construction, such entity shall be subject to prior written approval by the Commissioner.

1. NOTICE - The Contractor shall give notice in writing to the Commissioner sufficiently in advance of its intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Commissioner will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials, or the Commissioner will notify the Contractor that the inspection will be made at a point

other than the point of manufacture, or the Commissioner will notify the Contractor that inspection will be waived.

I. No Shipping Before Inspection: The Contractor shall comply with the foregoing before shipping any material.

J. Certificate of Manufacture: When the Commissioner so requires, the Contractor shall furnish to the Commissioner authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Specifications. These certificates shall include copies of the results of physical tests and chemical analyses where necessary, that have been made directly on the product, or on similar products being fabricated by the manufacturer. This may include such approvals as B.S.A., M.E.A., B.E.C. Advisory Board, etc.

K. Acceptance: When materials or manufactured products shall comprise such quantity that it is not practical to make physical tests or chemical analyses directly on the product furnished, a certificate stating the results of such tests or analyses of similar materials which were concurrently produced may, at the discretion of the Commissioner, be considered as the basis for the acceptance of such material or manufactured product.

L. Testing Compliance: The testing personnel shall make the necessary inspections and tests, and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Specifications, indicating thereon all analyses and/or test data and interpreted results thereof.

M. Reports: Six (6) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Commissioner as a prerequisite for the acceptance of any material or equipment.

N. Rejections: If, in making any test, it is ascertained by the Commissioner that the material or equipment does not comply with the Specifications, the Contractor will be notified thereof, and will be directed to refrain from delivering said materials or equipment, or to promptly remove it from the site or from the work and replace it with acceptable material at no additional cost to the City.

O. Furnish Designated Materials: Upon rejection of any material or equipment submitted as the equivalent of that specifically named in the Specifications, the Contractor shall immediately proceed to furnish the designated material or equipment.

1.8 APPROVAL OF MATERIALS:

A. Local Laws: All materials, appliances and types or methods of construction shall be in accordance with the Specifications and shall in no event be less than that necessary to conform to the requirements of the New York City Construction Codes, Administrative Code and Charter of the City of New York.

B. Approval of Manufacturer: The names of proposed manufacturers, material suppliers, and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Commissioner for approval, as early as possible, to afford proper review and analysis. No manufacturer will be approved for any materials to be furnished under the Contract unless it shall have a plant of ample capacity and shall have successfully produced similar products. All approvals of materials or equipment that are legally required by the New York City Construction Codes and other governing Authorities must be obtained prior to installation.

C. All Materials: Fixtures, fittings, supplies and equipment furnished under the Contract shall be new and unused, except as approved by the Commissioner, and of standard first-grade quality and of the best workmanship and design. The City of New York encourages the use of recycled products where practical.

D. INFORMATION TO SUPPLIERS - In asking for prices on materials under any item of the Contract, the Contractor shall provide the manufacturer or dealer with such complete information from the

Specifications and Contract Drawings as may in any case be necessary, and in every case the Contractor shall inform the manufacturer or dealer of all the General Conditions and requirements herein contained.

1.9 SPECIAL INSPECTIONS:

A. SPECIAL INSPECTIONS:

1. Inspection of selected materials, equipment, installation, fabrication, erection or placement of components and connections made during the progress of the Work to ensure compliance with the Contract Documents and provisions of the New York City Construction Codes, shall be made by a Special Inspector. The City of New York will retain the services of the Special Inspector and bear the costs for the performance of Special Inspections in compliance with NYC Construction Codes requirements or as additionally may be called for in the project specifications, except as noted below for Form TR-3: Technical Report for Concrete Design Mix. The Special Inspector shall be an entity compliant with the requirements of the New York City Construction Codes. The Contractor shall notify the relevant Special Inspector in writing at least 72 hours before the commencement of any work requiring special inspection.
2. Form TR3: Technical Report Concrete Design Mix: The contractor shall be responsible for, and bear all costs associated with the filing and securing of approvals, if any, for Form TR3: Technical Report Concrete Design Mix, including, but not limited to, engaging the services of a New York City licensed Concrete Testing Lab for the review and approval of concrete design mix, testing, signatures and professional seals, etc., compliant with NYC Department of Buildings requirements, for each concrete design mix.
3. The Contractor shall notify the relevant Special Inspector in writing at least 72 hours before the commencement of any work requiring Special Inspection. The contractor shall be responsible for, and bear related costs to assure that all construction or work shall remain accessible and exposed for inspection purposes until the required inspection is completed.
4. Inspections and tests performed under "Special Inspection" shall not relieve the Contractor of the responsibility to comply with the Contract Documents, and that there is no warranty given to the Contractor by the City of New York in connection with such inspection and tests or certifications made under "Special Inspections".
5. The contractor must coordinate with the Resident Engineer or DDC Project Manager to provide access and schedule the work for inspection by the Special Inspector.

1.10 INSPECTIONS BY OTHER CITY AGENCIES:

A. Letter of Completion: Just prior to substantial completion of this Project, the Commissioner will file with the Department of Buildings, an application for a Letter of Completion or a Certificate of Occupancy for the structure.

B. Final Inspections: In connection with the above mentioned application for a Letter of Completion or a Certificate of Occupancy and before certificates of final payments are issued, the Contractor will be required to arrange for all final inspections by the inspection staff of the Department of Buildings, Fire Department or other Governmental Agencies having jurisdiction, and secure all reports, sign offs, certificates, etc., by such inspection staff or other governmental agencies, in order that a Letter of Completion or Certificate of Occupancy can be issued promptly.

1.11 CERTIFICATES OF APPROVAL:

A. Responsibility: The Contractor shall be responsible for and shall obtain all final approvals for the work installed under the Contract in the form of such certificates that are required by all governmental agencies having jurisdiction over the work of the Contract.

B. Transmittal: All such certificates shall be forwarded to the Commissioner through the Resident Engineer.

1.12 ACCEPTANCE TESTS:

A. Government Agencies: All equipment and appliances furnished and installed under the Contract shall conform to the requirements of the Specifications, and shall in no event be less than that necessary to comply with the minimum requirements of the law and all of the governmental agencies having jurisdiction.

B. Notice of Tests: Whenever the Specifications and/or any governmental agency having jurisdiction requires the acceptance test, the Contractor shall give written notice to all concerned of the time when these tests will be conducted.

C. Energy: The City will furnish all energy, fuel, water and light required for tests.

D. Labor and Materials: The Contractor shall furnish labor and all other material and instruments necessary to conduct the acceptance tests at no additional cost to the City.

E. Certificates: The final acceptance by the Commissioner shall be contingent upon the Contractor delivering to the Commissioner all necessary certificates evidencing compliance in every respect with the requirements of the regulatory agencies having jurisdiction.

F. Results: If the results of tests and Special Inspections indicate that the material or procedures do not meet requirements as set forth on the Contract Drawings or in the Specifications or are otherwise unsatisfactory, the Contractor shall only proceed as directed by the Resident Engineer. Additional costs resulting from retesting, re-inspecting, replacing of material and/or damage to the work and any delay caused to the schedule shall be borne by the Contractor.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, the Contractor shall repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

END OF SECTION 01 40 00

No Text

SECTION 01 42 00
REFERENCES

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 DEFINITIONS:

REFER TO THE ADDENDUM, Article IX, FOR ADDITIONAL DEFINITIONS AND REVISIONS TO THE CONTRACT AND SPECIFICATIONS

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. "APPROVED," ETC. - "Approved," "acceptable," "satisfactory," and words of similar import shall mean and intend approved, acceptable or satisfactory to the Commissioner.

C. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

D. "DIRECTED," "REQUIRED," ETC.- Wherever reference is made in the Contract to the work or its performance, the terms "directed," "required," "permitted," "ordered," "designated," "prescribed," "determined," and words of similar import shall, unless expressed otherwise, imply the direction, requirements, permission, order, designation or prescription of the Commissioner.

E. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings.

1.3 CODES, AGENCIES AND REGULATIONS:

A.D.A.A.G.	Americans with Disabilities Act (ADA) – Architectural Barriers Act (ABA)
B.G. & E.	Bureau of Gas and Electricity of the City of New York
B.S. & A.	New York City Board of Standards and Appeals
DOE	Department of Energy
E.C.C.C.N.Y.S.	Energy Conservation Construction Code of New York State
EPA	Environmental Protection Administration
N.Y.C.C.C.	New York City Construction Codes – includes:
	New York City Plumbing Code
	New York City Building Code
	New York City Mechanical Code
	New York City Fuel Gas Code
N.Y.S.D.O.L	New York State Department of Labor
N.Y.C.D.E.P	New York City Department of Environmental Protection
N.Y.C.E.C.	New York City Electrical Code
N.Y.C.E.C.C	New York City Energy Conservation Code
N.Y.C.F.C	New York City Fire Code
N.Y.S...D.E.C.	New York State Department of Environmental Conservation
O.S.H.A.	Occupational Safety & Health Administration

1.4 INDUSTRY STANDARDS:

A. STANDARD REFERENCES – Unless otherwise specifically indicated in the Contract Documents, whenever reference is made to the furnishing of materials or testing thereof that conforms to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specification adopted and published by that technical society, organization or body, as of the date of the bid opening, Unless the provisions of the New York City Construction Codes adopts a different or earlier dated version of such standard.

B. APPLICABILITY OF STANDARDS: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect, to the extent referenced, as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.

C. CONFLICTING REQUIREMENTS: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantity or quality, comply with the most stringent requirements. Immediately refer uncertainties, and requirements that are different but apparently equal, to the Commissioner in writing for a decision before proceeding.

D. STANDARD SPECIFICATIONS - When no reference is made to a code, standard or specification, the Standard Specifications of the ASTM or the AIEE, as the case may be, shall govern.

E. REFERENCES - Reference to a technical society, organization or body may be made in the Specifications by abbreviations. Abbreviations and acronyms used in the Specifications and other Contract Documents mean the associated name. The following names are subject to change and are

believed, but are not assured, to be accurate and up-to-date as of the Issue Date of the Contract Documents.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists (The)
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AGMA	American Gear Manufacturer Association
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)

ALSc	American Lumber Standard Committee, Incorporated
ALI	Automotive Lift Institute
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	APA - The Engineered Wood Association
APA	Architectural Precast Association
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE/SEI	American Society of Civil Engineers, Structural Engineering Institute
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	AWCI International (Association of the Wall and Ceiling Industry International)
AWCMA	American Window Covering Manufacturers Association (Now WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWSC	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)

BICSI	BICSI
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
CIBSE	Charted Institute of Building Services Engineers
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CGSB	Canadian General Standards Board
CIMA	Cellulose Insulation Manufacturers Association
CIPRA	Cast Iron Pipe Research Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CPSC	Consumer Product Safety Commission
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)

DASMA	Door and Access Systems Manufacturer's Association International
DHI	Door and Hardware Institute
DOC	U.S. Department of Commerce – National Institute of Standards and Technology
EIA	Electronic Industries Alliance
DOJ	U.S. department of Justice
EIMA	EIFS Industry Members Association
DOL	U.S. Department of labor
EJCDC	Engineers Joint Contract Documents Committee
DOTn	U.S. Department of Transportation
EN	European Committee of Standards
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
EVO	Efficiency Valuation Organization
FEME	Federal Emergency Management Agency
FIBA	Federation Internationale de Basketball Amateur (The International Basketball Federation)
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation)
FMG	FM Global (Formerly: FM - Factory Mutual System)
FMRC	Factory Mutual Research (Now FMG)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Now GSI)
GS	Green Seal
GSI	Geosynthetic Institute

HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
HUD	U.S. Department of Housing and Urban Development
IAPMO	International Association of Plumbing and Mechanical Officials
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation
ICC	International Code Council, Inc.
ICEA	Insulated Cable Engineers Association, Inc.
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association

MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council

NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NIS	National Institute of Standards and Technology
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Acquired by ITS - Intertek)
PCI	Precast / Pre-stressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PPS	Power Piping Society
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
RMI	Rack Manufacturers Institute
RTI	(Formerly: NTRMA - National Tile Roofing Manufacturers Association) (Now TRI)

SAE	SAE International
SCAQMD	South Coast Air Quality Management District
SCS	Scientific Certification System
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SGCC	Safety Glazing Certification Council
SHBI	Steel Heating Boiler Institute
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society

TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute (Formerly: RTI - Roof Tile Institute)
UL	Underwriters Laboratories Inc.
ULC	Underwriters Laboratories of Canada
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USC	United States Code
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association (Now WCSC)
WCSC	Window Covering Safety **Council** (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WRI	Wire Reinforcement Institute, Inc.
USEPA	United States Environmental Protection Agency
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 42 00

No Text

SECTION 01 50 00
TEMPORARY FACILITIES, SERVICES AND CONTROLS

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This section includes the following:
   a. Temporary Water System
   b. Temporary Sanitary Facilities
   c. Temporary Electric Power, Temporary Lighting System, And Site Security Lighting
   d. Temporary Heat
   e. Dewatering Facilities And Drains
   f. Temporary Field Office for Contractor
   g. Resident Engineer's Office
   h. Material Sheds
   i. Temporary Enclosures
   j. Temporary Partitions
   k. Temporary Fire Protection
   l. Work Fence Enclosure
   m. Rodent and Insect Control
   n. Plant Pest Control Requirements
   o. Project Identification Signage
   p. Security Guards/Fire Guards on Site
   q. Project Sign and Rendering
   r. Safety

1.3 RELATED SECTIONS: include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 42 00 REFERENCES
C. Section 01 54 11 TEMPORARY ELEVATORS AND HOISTS
D. Section 01 54 23 TEMPORARY SCAFFOLDS AND SWING STAGING
E. Section 01 77 00 CLOSE OUT PROCEDURES

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Permanent Enclosure: As determined by Commissioner, permanent or temporary roofing that is complete, insulated, and weather tight; exterior walls which are insulated and weather tight; and all openings that are closed with permanent construction or substantial temporary closures.

C. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 SUBMITTALS:

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Reports: Submit reports of tests, inspections, meter readings and similar procedures for temporary use.

1.6 PROJECT CONDITIONS:

A. Temporary Use of Permanent Facilities and Services: The Contractor shall be responsible for the operation, maintenance, and protection of each permanent facility and service during its use as a construction facility before Final Acceptance by the City, regardless of previously assigned responsibilities.

B. Install, operate, maintain and protect temporary facilities, services and controls.
1. Keep temporary services and facilities clean and neat in appearance.
2. Operate temporary services in a safe and efficient manner.
3. Relocate temporary services and facilities as needed as Work progresses.
4. Do not overload temporary services and facilities or permit them to interfere with progress.
5. Provide necessary fire prevention measures.
6. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on-site.

1.7 NON-REGULAR WORK HOURS (OVERTIME):

A. The Contractor shall provide the temporary services, facilities and controls set forth in this Section during other than regular working hours if the Drawings and/or the Specifications indicate that the Work, or specific components thereof, must be performed during other than regular working hours. In such case, all costs for the provision of temporary services, facilities and controls during other than regular working hours shall be deemed included in the total Contract Price.

B. The Contractor shall provide the temporary services, facilities and controls set forth in this Section during other than regular working hours if a change order is issued directing the Contractor to perform the Work, or specific components thereof, during other than regular working hours. In such case, compensation for the provision of temporary services, facilities and controls during other than regular working hours shall be provided through the change order.

1.8 SERVICES BEYOND COMPLETION DATE:

A. The Contractor shall provide the temporary services, facilities and controls set forth in this Section until the date on which it completes all required work at the site, including all punch list work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. The Contractor shall provide such temporary services, facilities and controls even if completion of all required work at the site occurs after the time fixed for such completion in Schedule A.

PART II – PRODUCTS

2.1 MATERIALS:

A. Provide undamaged materials in serviceable condition and suitable for use intended.
B. Tarpaulins: Waterproof, fire-resistant UL labeled with flame spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
C. Water: Potable and in compliance with requirements of the Department of Environmental Protection.

2.2 EQUIPMENT:

A. Provide undamaged equipment in serviceable condition and suitable for use intended.
B. Water Hoses: Heavy-duty abrasive-resistant flexible rubber hoses, 100 feet (30 m) long with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
C. Electric Power Cords: Grounded extension cords.
   1. Provide hard-service cords where exposed to abrasion or traffic.
   2. Provide waterproof connectors to connect separate lengths of electric cords where single lengths will not reach areas of construction activity.
   3. Do not exceed safe length-voltage ratio.
D. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART III –EXECUTION:

3.1 INSTALLATION, GENERAL:

A. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities as approved by the Resident Engineer.

3.2 TEMPORARY WATER SYSTEM:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2 A

A. TEMPORARY WATER SYSTEM - NEW FACILITIES: During construction, the Contractor shall furnish a Temporary Water System as set forth below.
   1. Immediately after the Commissioner has issued an order to start work, the Contractor shall file an application with the Dept. of Environmental Protection for the schedule of charges for water use during construction. The Contractor will be responsible for payment of water charges.
   2. Immediately after the Commissioner has issued an order to start work, the Contractor shall file an application with the Department of Environmental Protection's Bureau of Water Supply and obtain a permit to install the temporary water supply system. The system shall be installed and maintained for the use of the Contractor and its subcontractors. A copy of the above mentioned permit shall be filed with the Commissioner. The Contractor shall provide temporary water main, risers and waste stacks as directed and install on each floor, outlets with two (2) 3/4" hose valve connections over a barrel installed on a steel pan. The Contractor shall provide drains from the pans to the stack and house sewer and hose bibs to drain the water supply

risers and mains. During winter months, the Contractor shall take the necessary precautions to prevent the temporary water system from freezing. The Contractor shall provide repairs to the temporary water supply system for the duration of the project until said temporary system is dismantled and removed.

3. Disposition of Temporary Water System: The Contractor shall be responsible for dismantling the temporary water system when no longer required for the construction operations, or when replaced by the permanent water system installed for the project, or as otherwise directed by the Resident Engineer. All repair work resulting from the dismantling of the temporary water system shall be the responsibility of the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2 B

B. TEMPORARY WATER SYSTEM – PROJECTS IN EXISTING FACILITIES:
   1. When approved by the Commissioner, use of existing water system will be permitted for temporary water service during construction, as long as the system is cleaned and maintained in a condition acceptable to the Commissioner. At Substantial Completion, the Contractor shall restore the existing water system to conditions existing before initial use.
   2. The Contractor shall be responsible for all repairs to the existing water system permitted to be used for temporary water service during construction. The Contractor shall be responsible to maintain the existing system in a clean condition on a daily basis, acceptable to the Commissioner.
   3. The Contractor will be responsible for payment of water charges as directed by the Commissioner. Billing will be in accordance with the Department of Environmental Protection schedule of charges for Building Purposes.

C. WASH FACILITIES: The Contractor shall install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition.
   1. Dispose of drainage properly.
   2. Supply cleaning compounds appropriate for each condition.
   3. Include safety showers, eyewash fountains and similar facilities for the convenience, safety and sanitation of personnel.

D. DRINKING WATER FACILITIES: The Contractor shall provide drinking water fountains or containerized tap-dispenser bottled-drinking water units, complete with paper cup supplies. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg. F (7 to 13 deg. C).

3.3 TEMPORARY SANITARY FACILITIES:

A. The Contractor shall provide toilets, wash facilities and drinking water fixtures in compliance with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities. Provide toilet tissue, paper towels, paper cups and similar disposable materials as appropriate for each facility, and provide covered waste containers for used materials.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3 B

B. SELF-CONTAINED TOILET UNITS:
   1. The Contractor shall provide temporary single-occupant toilet units of the chemical, aerated re-circulation, or combustion type for use by all construction personnel. Units shall be properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Quantity of toilet units shall comply with the latest OSHA regulations.
   2. Toilets: Install separate self-contained toilet units for male and female personnel. Shield toilets to ensure privacy.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3 C

C. EXISTING TOILETS:

1. TOILET FACILITIES: When approved by the Commissioner, the Contractor shall arrange for the use of existing toilet facilities by all personnel during the execution of the work. The Contractor shall be responsible to clean and maintain facilities in a condition acceptable to the Resident Engineer and, at completion of construction, to restore facilities to their condition at the time of initial use.
2. MAINTENANCE - The Contractor shall maintain the temporary toilet facilities in a clean and sanitary manner and make all necessary repairs.
3. NUISANCES - The Contractors shall not cause any sanitary nuisance to be committed by its employees or the employees of its subcontractors in or about the work, and shall enforce all sanitary regulations of the City and State Health Authorities.

3.4 TEMPORARY ELECTRIC POWER, TEMPORARY LIGHTING SYSTEM, AND SITE SECURITY LIGHTING:

A. SCOPE: This Section sets forth the General Conditions and procedures relating to Temporary Electric Power, Temporary Lighting System and Site Security Lighting during the construction period.

B. TEMPORARY ELECTRIC POWER:

The Contractor shall provide and maintain a Temporary Electric Power service and distribution system of sufficient size, capacity and power characteristics required for construction operations for all required work by the Contractor and its subcontractors, including but not limited to power for the Temporary Lighting System, Site Security Lighting, construction equipment, hoists, temporary elevators and all field offices. Temporary Electric Power shall be provided as follows:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 B (1)

1. CONNECTION TO UTILITY LINES:
   a. Temporary Electric Power Service for use during construction shall be provided as follows: The Contractor shall make all necessary arrangements with the Public Utility Company and pay all charges for the Temporary Electric Power system. The Contractor shall include in its total Contract Price any charges for Temporary Electric Power, including charges that may be made by the Public Utility Company for extending its electrical facilities, and for making final connections. The Contractor shall make payment directly to the Public Utility Company.
   b. APPLICATIONS FOR METER: The Contractor shall make application to the Public Utility Company and sign all documents necessary for, and pay all charges incidental to, the installation of a watt hour meter or meters for Temporary Electric Power. The Contractor shall pay to the Public Utility Company, all bills for Temporary Electric energy used throughout the work, as they become due.
   c. SERVICE AND METERING EQUIPMENT - The Contractor shall furnish and install, at a suitable location on the site, approved service and metering equipment for the Temporary Electric Power System, ready for the installation of the Public Utility Company's metering devices. The temporary service mains to and from the metering location shall be not less than 100 Amperes, 3-phase, 4-wire and shall be of sufficient capacity to take care of all demands for all construction operations and shall meet all requirements of the NYCEC.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 B (2)

2. CONNECTION TO EXISTING ELECTRICAL POWER SERVICE:
   a. When approved by the Commissioner, electrical power service for the Temporary Lighting System and for the operation of small tools and equipment less than ¼ horsepower may be taken from the existing electric distribution system if the existing system is of adequate capacity for the temporary power load. The Contractor shall cooperate and coordinate with the facility custodian, so as not to interfere with the normal operation of the facility.
   b. There will be no charge to the Contractor for the electrical energy consumed.
   c. The Contractor shall provide, maintain and pay all costs for separate temporary electric power for any temporary power for equipment larger than 1/4 horsepower. When directed by the Commissioner, the Contractor shall remove its own temporary power system.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 B (3)

3. ELECTRICAL GENERATOR POWER SERVICE:
   a. When connection to Utility Lines or existing facility electric service is not available or is not adequate to supply the electric power need for construction operations, the Contractor shall provide self-contained generators to provide power beyond that available.
   b. Pay for all energy consumed in the progress of the Work, exclusive of that available from the existing facility or Utility Company.
   c. Provide for control of noise from the generators.
   d. Comply with the Ultra Low Sulfur Fuel in Non-Road Vehicles requirements as set forth in Article 5.4 of the Contract.

C. USE OF COMPLETED PORTIONS OF THE ELECTRICAL WORK:
   1. USE OF MAIN DISTRIBUTION PANEL: As soon as the permanent electric service feeders and equipment, metering equipment and main distribution panel are installed and ready for operation, the Contractor shall have the temporary lighting and power system changed over from the temporary service points to the main distribution panel.
   2. COST OF CHANGE OVER - The Contractor shall be responsible for all costs due to this change over of service and it shall also make application to the Public Utility Company for a watt hour meter to be set on the permanent meter equipment.
   3. The requirements for temporary electric power service specified herein shall be adhered to after change over of service until final acceptance of the project.
   4. NO EXTRA COST - The operation of the service and switchboard equipment shall be under the supervision of the Contractor, but this shall in no way be interpreted to mean the acceptance of such part of the installation or relieve the Contractor from its responsibility for the complete work or any part thereof. There shall be no additional charge for supervision by the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 D

D. TEMPORARY LIGHTING SYSTEM:
   1. The Contractor shall provide adequate service for the temporary lighting system, or a minimum of 100 Amperes, 3-phase, 4-wire service for the temporary lighting system, whichever is

greater, and make all necessary arrangements with the Public Utility Company and pay all charges by them for the Temporary Lighting System

2. The Contractor shall furnish and connect to the metered service point, a Temporary Lighting System to illuminate the entire area where work is being performed and points adjacent to the work, with separately fused circuits for stairways and bridges. Control switches for stairway circuits shall be located near entrance on ground floor.
3. ITEMS: The Temporary Lighting System provided by the Contractor shall consist of wiring, fixtures, left-hand double sockets, (one (1) double socket for every 400 square feet, with one (1) lamp and one (1) three-prong outlet) lamps, fuses, locked type guards, pigtails and any other incidental material. Additional details may be outlined in the detailed Specifications for the Electrical Work. Changes may be made, provided the full equivalent of those requirements is maintained.
4. The Temporary Lighting System shall be progressively installed as required for the advancement of the work under the Contract.
5. RELOCATION: The cost for the relocation or extension of the original Temporary Lighting System, required by the Contractor or its subcontractors, that is not required due to the normal advancement of the work, as determined by the Resident Engineer, shall be borne by the Contractor.
6. PIGTAILS: shall be furnished with left-hand sockets with locked type guards and 40 feet of rubber covered cable. The Contractor shall furnish and distribute a minimum of three (3) complete pigtails to each subcontractor. See the detailed Electrical Specifications for possible additional pigtails required.
7. LAMPS: The Contractor shall furnish and install one (1) complete set of lamps, including those for the trailers. Broken and burned out lamps in the temporary lighting system, DDC field office and construction trailers, shall be replaced by the Contractor. All lamps shall be compact fluorescent.
8. CIRCUIT PROTECTION: The Contractor shall furnish and install GFI protection for the Temporary Lighting and Site Security Lighting Systems.
9. MAINTENANCE OF TEMPORARY LIGHTING SYSTEM:
   a. The Contractor shall maintain the Temporary Lighting System in good working order during the scheduled hours established.
   b. The Contractor shall include in its total Contract Price all costs in connection with the Temporary Lighting System, including all costs for installation, maintenance and electric power.
10. REMOVAL OF TEMPORARY LIGHTING SYSTEM: The temporary lighting system shall be removed by the Contractor when authorized by the Commissioner.
11. HAND TOOLS: The temporary lighting system shall not be used for power purposes, except that light hand tools not larger than 1/4 horsepower may be operated from such system by the Contractor and its subcontractors.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 E

E. SITE SECURITY LIGHTING (FOR NEW CONSTRUCTION ONLY):

1. The Contractor shall furnish, install and maintain a system of site security lighting, as herein specified, to illuminate the construction site of the project, and it shall be connected to and energized from the Temporary Lighting System. All costs in connection with site security lighting shall be deemed included in the total Contract Price.
2. It is essential that the site security lighting system be completely installed and operating, at the earliest possible date. The Contractor shall direct its subcontractors to cooperate, coordinate and exert every effort to accomplish an early complete installation of the site security lighting system. After the system is installed and in operation, if a part of the system interferes with the work of any trade, the Contractor shall be completely responsible for the expense of removing,

relocating and replacing all equipment necessary to reinstate the system to proper operating conditions.

3. The system shall consist of flood lighting by pole mounted guarded sealed-beam units. Floodlight units shall be mounted 16 feet above grade. Floodlights shall be spaced around the perimeter of the site to produce an illumination level of no less than one (1) foot candle around the perimeter of the site, as well as in any potentially hazardous area or any other area within the site that might be deemed by the Resident Engineer to require security illumination. The system shall be installed in a manner acceptable to the Resident Engineer. The first lighting unit in each circuit shall be provided with a photoelectric cell for automatic control. The photoelectric cell shall be installed as per manufacturer's recommendations.
4. All necessary poles shall be furnished and installed by the Contractor.
5. The site security lighting shall be kept illuminated at all times during the hours of darkness. The Contractor shall, at its own expense, shall keep the system in operation, and shall furnish and install all material necessary to replace all damaged or burned out parts.
6. The Contractor shall be on telephone call alert for maintaining the system during the operating period stated above.
7. All materials and equipment furnished under this section shall remain the property of the Contractor and shall be removed and disposed of by the Contractor when authorized in writing by the Resident Engineer.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.5

3.5 TEMPORARY HEAT:

A. GENERAL:

1. Definition: The provision of Temporary Heat shall mean the provision of heat in order to permit construction to be performed in accordance with the Progress Schedule during all seasons of the year and to protect the work from the harmful effects of low temperature. In the event the building, or any portion thereof, is occupied during construction, the provision of Temporary Heat shall include the provision of heat to permit normal operations in such occupied areas.
   a. The provision of Temporary Heat shall be in accordance with the temperature requirements set forth in Sub-Section 3.5 C herein.
   b. The provision of Temporary Heat shall include the provision of: 1) all fuel necessary and required, 2) all equipment necessary and required, and 3) all operating labor necessary and required. Operating labor shall mean that minimum force required for the safe day to day operation of the system for the provision of Temporary Heat and shall include, without limitation, heating maintenance labor and/or Fire Watch as required by NYC Fire Department regulations. Operating labor may be required seven (7) days per week and during other than normal working hours, for the period of time required by seasonal weather conditions.
   c. In the event the building, or any portion thereof, is occupied and the Project involves the replacement, modification and/or shut down of the permanent heating system, or any key component thereof; and such system is a combined system which furnishes domestic hot water for the building occupants, the provision of Temporary Heat shall include the provision of domestic hot water at the same temperature as the system which is being replaced. Domestic hot water shall be provided in accordance with the phasing requirements set forth in the Contract Documents.
2. Responsibility: The Contractor's responsibility for the provision of Temporary Heat, including all expenses in connection therewith, shall be as set forth below:
   a. Projects Involving Enclosure of the Building:

1) Prior to Enclosure - Until the Commissioner determines that the building has been enclosed, as set forth in Sub-Section 3.5 B; the Contractor shall be responsible for the provision of Temporary Heat.
2) Post Enclosure - Once the Commissioner determines that the building, or any portion thereof, has been enclosed, as set forth in Sub-Section 3.5 B, the Contractor shall be responsible for the provision of Temporary Heat by one or more of the following means: 1) by an existing heating system (if any), 2) by a permanent heating system which is being installed as part of the Project, or 3) by a temporary heating system(s).
3) The Contractor shall, within two (2) weeks of the kick-off meeting, submit to DDC for review its proposed plan to provide Temporary Heat. Such plan is subject to approval by the Resident Engineer. The Contractor shall provide Temporary Heat in accordance with the approved plan until written acceptance by the Commissioner of the work of all Contractors, including punch list work, unless directed otherwise in writing by the Commissioner. The responsibility of the Contractor provided for herein is subject to the exception set forth in Sub-Section 3.5 A.2 (b) herein.

b. Projects not involving Enclosure of the Building:
1) If the Project involves the installation of a new permanent heating system if one did not exist previously, or the replacement, modification and/or shut down of the existing permanent heating system, or any key component thereof, the Contractor shall be responsible for the provision of Temporary Heat, except as otherwise provided in Sub-Section 3.5 H.3(b).2 herein.
2) If the Project does not involve the installation of a new permanent heating system if one did not exist previously, or the replacement, modification and/or shut down of the existing permanent heating system, or any key component thereof; there is no Contractor responsibility of the provision of Temporary Heat, unless otherwise specified in the Contract Documents. However, if the Commissioner, pursuant to Sub-Section 3.5 H.3 (b).1 herein, determines that the provision of Temporary Heat is necessary due to special and/or unforeseen circumstances, the Contractor shall be responsible for the provision of Temporary Heat and shall be paid for the same in accordance with Sub-Section 3.5 H.3 (b).1 herein.

B. ENCLOSURE OF STRUCTURES:
1. Notification: The Contractor shall notify all its subcontractors and the Resident Engineer at least 30 days prior to the anticipated date that the building(s) will be enclosed.
2. Commissioner Determination: The Commissioner shall determine whether the building, or any portion thereof, has been enclosed. As indicated in Sub-Section 3.5 A.2 above, once the building has been enclosed, the Contractor shall be responsible for the provision of Temporary Heat. The Commissioner's determination with respect to building enclosure shall be based upon all relevant facts and circumstances, including without limitation, 1) whether the building meets the criteria set forth in Paragraph 3 below, and 2) whether the openings in the building, such as doorways and windows, have been sufficiently covered so as to provide reasonable heat retention and protection from the elements.
3. Criteria for enclosure:
a. Roof Area:
1) A building shall be considered to be roofed when the area to be roofed is covered by a permanent structure and all openings through the permanent structure are covered and protected by temporary covers as described in Paragraph (c) below.
2) Intermediate floor structures of multi-floor buildings shall be considered to be roofed subject to the same requirements of the building roof.

3) The final roofing system need not be in place for the building or structure to be determined to be enclosed; provided, however, all openings through the permanent structure covering the roof must be covered and protected by temporary covers, as described in Paragraph (c) below.

b. Walls: For the walls to be determined to be enclosed permanent exterior wall elements or facing material must be in place and all openings must be covered and protected by temporary covers, as described in Paragraph (c) below.

c. Temporary Covers: In order to be acceptable, temporary covers must be securely fixed to prevent the entrance of rain, snow and direct wind. The minimum material requirements for temporary covers are as follows: 1) minimum 10 mil. Plastic 2) minimum 12 ounce waterproof canvas tarpaulins, or 3) a minimum three-eighths (3/8) inch thickness exterior grade plywood.

d. Temporary covers for openings shall be the responsibility of the Contractor and such work shall be deemed included in the Contract price.

C. TEMPERATURE REQUIREMENTS:

1. Unoccupied Buildings: The temperature requirement for the provision of Temporary Heat in unoccupied buildings shall be the GREATER of the following: 1) 50 degrees Fahrenheit, or 2) the temperature requirement for the particular type of work set forth in the Contract Documents.

2. Occupied Buildings: The temperature requirement for the provision of Temporary Heat in occupied buildings, or portions thereof, shall be the GREATER of the following: 68 degrees Fahrenheit or the temperature requirement for the particular type of work set forth in the Contract Documents.

D. DURATION:

1. The Contractor shall be required to provide Temporary Heat until the date on which it completes all required work at the site, including all punch list work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. The Contractor shall be responsible for the provision of Temporary Heat for the time specified herein, regardless of any delays in completion of the Project, including delays that result in the commencement of the provision of Temporary Heat during a season that is later than that which may have been originally anticipated. The Contractor shall include in its Total Contract Price all expenses in connection with the provision of Temporary Heat in accordance with the requirements specified herein.

2. The total Contract duration is set forth in consecutive calendar days in Schedule A of the Addendum. The Table set forth below indicates the number of full heating seasons that are deemed included in various contract durations, which are specified in consecutive calendar days (ccd)s. At a minimum, a full heating season shall extend from October 15th to April 15th.

Contract Duration	Full Heating Seasons Required
up to 360 ccds	1 full heating season
360 to 720 ccds	2 full heating seasons
more than 720 ccds	3 full heating seasons

E. METHOD OF TEMPORARY HEAT:

1. The method of temporary heat shall be in conformance with the New York City Fire Code and with all applicable laws, rules and regulations. Prior to implementation, such method shall be subject to the written approval of the Commissioner.

2. The method of temporary heat shall:

a. Not cause the deposition of dirt or smudges upon any finished work or cause any defacement or discoloration to the finished work.

b. Not be injurious or harmful to people or materials.

c. Portable fueled heating devises or equipment SHALL NOT BE ALLOWED for use as temporary heat other than construction-related curing or drying in conformance with the NYC Fire Code.

3. No open fires will be permitted.

F. TEMPORARY HEATING SYSTEM:

1. The temporary system for the provision of Temporary Heat provided by the Contractor following enclosure of the building shall be complete including, subject to provisions of paragraph E above, boilers pumps, radiators, space heaters, water and heating piping, insulation and controls. The temporary system for the provision of Temporary Heat shall be capable of maintaining the minimum temperature requirements set forth in Paragraph C above.

G. COORDINATION:

1. The Contractor, in the provision of Temporary Heat, shall coordinate its operations in order to insure sufficient and timely performance of all required work, including work performed by trade subcontractors. The Contractor shall supply and pay for all water required and used in the building for the operation of the heating system(s) for the purpose of Temporary Heat. The Contractor shall include all expenses in connection with the supply of water for Temporary Heat in its Total Contract Price. During the period in which Temporary Heat in an enclosed building is being furnished and maintained, the Contractor shall provide proper ventilating and drying, open and close the windows and other openings when necessary for the proper execution of the work and also when directed by DDC. The Contractor shall maintain all permanent or temporary enclosures at its own expense.

H. USE OF PERMANENT HEATING SYSTEMS:

1. Use of Permanent Heating System for Temporary Heat after Building Enclosure
   a. The Contractor shall provide all labor and materials to promptly furnish and set all required equipment and convectors and/or radiators, piping, valves, fitting, etc., in ample time for their use for the provision of Temporary Heat after enclosure of the building.
   b. New portions of the permanent heating system that are used for furnishing Temporary Heat shall be left in near perfect condition when delivered to the City for operation. Any repairs required, other than for ordinary wear and tear on the equipment, shall be made by the Contractor at his/her expense. The starting date for the warranty or guarantee period for such equipment shall be the date of Substantial Completion acceptance.
   c. In the event that the Contractor does not advance the installation of the permanent heating system in sufficient time to permit its use for Temporary Heat as determined by DDC, the Contractor shall furnish and install a separate system for the provision of Temporary Heat as required to maintain the minimum temperature requirements set forth in Paragraph C above.

2. All equipment for the system for the provision of Temporary Heat shall be placed so as to comply with the requirements specified hereinbefore, and shall be connected, disconnected and suitably supported and located so as to permit construction work, including finish work such as wall plastering and painting, to proceed. The installation of the system for the provision of Temporary Heat by the Contractor, including the placing of ancillary system equipment, shall be coordinated with the operations of all trade subcontractors so as to insure sufficient and timely performance of the work. Once the permanent heating system is operating properly, the Contractor shall remove all portions of the system for Temporary Heat not part of the permanent heating system.

3. Temporary Heat Allowance for Special Conditions or and/or Unforeseen Circumstances.
   a. The City may establish an allowance in the Contract for payment of costs and expenses in connection with the provision of Temporary Heat as set forth herein. If established, the City will include an amount for such allowance on the Bid Form, and the Contractor shall

include such allowance amount in its Total Contract Price. The Contractor shall only be entitled to payment from this allowance under the conditions and in accordance with the requirements set forth below. In the event this allowance or any portion thereof remains unexpended at the conclusion of the Contract, such allowance shall remain the sole property of the City. Should the amount of the allowance be insufficient to provide payment for the expenses specified below, the City will increase the amount of the allowance.

b. The allowance set forth herein may be utilized only under the conditions set forth below.
   1. In the event the Project does not involve the installation of a new permanent heating system if one did not exist previously, or the replacement, modification and/or shut down of the existing permanent heating system, or any key component thereof, and the Commissioner determines that the provision of Temporary Heat is necessary due to special and/or unforeseen circumstances, the Contractor shall be responsible for the provision of Temporary Heat, as directed by the Commissioner. The City shall pay such Contractor for all costs for labor, material, and equipment necessary and required for the same. Payment shall be made in accordance with Article 26 of the Contract, except that the cost of fuel shall be as set forth in Paragraph (c) below.
   2. In the event the Commissioner determines that there is a need for maintenance of the permanent heating system by the Contractor after written acceptance by the Commissioner of the work, and that the need for such maintenance is not the fault of the Contractor, the Contractor shall provide the required maintenance of the permanent heating system for the period of time directed by the Commissioner. The City shall pay the Contractor for the cost of direct labor and fuel necessary and required in connection with such maintenance, excluding the cost of any foremen or other supervision. Payment shall be made in accordance with Article 26 of the Contract, except that the cost of fuel shall be as set forth in Paragraph (c) below.

c. Payment for Fuel Costs - Payment from the allowance set forth herein for the cost of fuel necessary and required to operate the system for the provision of Temporary Heat or to maintain the permanent heating system under the conditions set forth in Paragraph b above shall be limited to the direct cost of such fuel. The Contractor shall not be entitled to any overhead and/or profit for such fuel costs. In order to receive payment for such fuel costs, the Contractor must present original invoices for the same. DDC reserves the right to furnish the required fuel.

I. RELATED ELECTRICAL WORK:

1. The Contractor shall be responsible for providing the items set forth below and shall include all expenses in connection with such items in its Total Contract Price. The Contractor shall provide such items promptly when required and shall in all respects coordinate its work with the work performed by trade subcontractors in order to facilitate the provision of Temporary Heat.
   a. The Contractor shall provide all labor, materials, equipment and power necessary and required to furnish and maintain any temporary or permanent electrical connections to all equipment specified to be connected as part of the work of his Contract.
   b. The Contractor shall supply and pay for all power necessary and required for the operation of the system for the provision of Temporary Heat and/or the permanent heating system used for Temporary Heat. Such power shall be provided by the Contractor for the duration the Contractor is required to provide Temporary Heat, as set forth in Sub-section 3.5 D herein.
2. In providing the items set forth in Paragraph 1 above, the Contractor is advised that labor may be required seven (7) days a week and/or during other than normal working hours for the period of time required by seasonal weather conditions.

J. RELATED PLUMBING WORK:

1. The Contractor shall be responsible for providing all labor, materials and equipment necessary and required to furnish and maintain all temporary or permanent connections to all equipment or plumbing outlets specified to be provided as part of the work of this Contract. The Contractor shall include all expenses in connection with such items of work in its Total Contract Price. The Contractor shall provide such items of work promptly when required and shall in all respects coordinate its work with the work performed by trade subcontractors in order to facilitate the provision of Temporary Heat.
2. In the event portions of the permanent plumbing equipment furnished by the Contractor as part of the work of this Contract are used for the provision of Temporary Heat either during construction or prior to acceptance by the City of the complete plumbing system, the Contractor shall be responsible to provide such plumbing equipment to the City in near perfect condition and shall make any repairs required, other than for ordinary wear and tear on the equipment, at his expense. The starting date for warranty and/or guarantee period for such plumbing equipment shall be the date of Substantial Completion acceptance by the City.
3. For Projects requiring the installation of new and/or modified gas service, as well as associated meter installations, the Contractor shall promptly perform all required filings and coordination with the Utility Companies in order to expedite the installation, testing, and approval of the gas service and associated meter(s).

3.6 STORM WATER CONTROL, DEWATERING FACILITIES AND DRAINS:

A. PUMPING:

1. Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rainfall.
2. Contractor shall furnish and install all necessary automatically operated pumps of adequate capacity with all required piping to run-off agencies, so as to maintain the excavation, cellar floor, pits and exterior depressions and excavations free from accumulated water during the entire period of construction and up to the date of final acceptance of work of the Contract.
3. All pumps shall be maintained at all times in proper working order.
4. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
5. Remove snow and ice as required to minimize accumulations.

3.7 TEMPORARY FIELD OFFICE FOR CONTRACTOR:

A. The Contractor shall establish a temporary field office for its own use at the site during the period of construction, at which readily accessible copies of all Contract Documents shall be kept.

B. The field office shall be located where it will not interfere with the progress of any part of the work or with visibility of traffic control devices.

C. CONTRACTOR'S REPRESENTATIVE: In charge of the office there shall be a responsible and competent representative of the Contractor, duly authorized to receive orders and directions and to put them into effect.

D. Arrangements shall be made by the Contractor whereby its representative may be readily accessible by telephone.

E. All temporary structures shall be of substantial construction and neat appearance, and shall be painted a uniform gray unless otherwise directed by the Commissioner.

F. CONTRACTOR'S SIGN - The Contractor shall post and keep posted, on the outside of its field office, office or exterior fence or wall at site of work, a legible sign giving full name of the company, address of the company and telephone number(s) of responsible representative(s) of the firm who can be reached in event of an emergency at any time.

G. ADVERTISING PRIVILEGES - The City reserves the right to all advertising privileges. The Contractor shall not cause any signs of any kind to be displayed at the site unless specifically required herein or authorized by the Commissioner.

3.8 DDC FIELD OFFICE:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 A

A. OFFICE SPACE IN EXISTING BUILDING:

1. The Resident Engineer will arrange for office space for sole use in the building where work is in progress. The Contractor shall provide and install a lockset for the door to secure the equipment in the room. The Contractor shall provide two (2) keys to the Resident Engineer. After completion of the project the Contractor shall replace the original lockset on the door and ensure its proper operation.
2. In addition to equipment specified in Sub-Section 3.8 D, the Contractor shall provide, for exclusive use of the DDC Field Office, the following:
   a. Two (2) single pedestal desks, 42" x 32"; two (2) swivel chairs with arms and three (3) side chairs without arms to match desk. Two metal (2) lockers, single units, 15" x 18" x 78" overall including 6" legs. Lockers to have flat key locks with two (2) keys each, General Steel products or approved equal. Two (2) full ball bearing suspension four (4) drawer vertical legal filing cabinets with locks, approximately 52"H x 28 ½"D x 18"W.
   b. One (1) 9000 B.T.U air conditioner or as directed by Commissioner. Wiring for the air conditioner shall be minimum No. 12 AWG fed from individual circuits in the fuse box.
   c. One (1) folding conference table, 96" x 30" and ten (10) folding chairs.
   d. Two (2) metal wastebaskets.
   e. One (1) fire extinguisher, one (1) quart vaporizing liquid type, brass, wall mounted by Pyrene No. C21 or approved equal.
   f. One (1) Crystal Springs water cooler with bottled water, Model No. LP14058 or approved equal to be furnished for the duration of the project as required.
3. The Contractor shall provide one (1) telephone, where directed and shall pay all costs for telephone service for calls within the New York City limits for the duration of the project.
4. All furniture and equipment, except computer equipment specified in Sub-Section 3.8 D.3, shall remain the property of the Contractor.
5. Computer Workstation quantities shall be provided as specified in Sub-Section 3.8 B 3-a for DDC Managed Projects, or Sub-Section 3.8 B 3-b for CM Managed Projects.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 B

B. DDC FIELD OFFICE TRAILER:

1. GENERAL: The Contractor shall, for the time frame specified herein, provide and maintain at its own cost and expense a DDC Construction Field Office and all related items as specified herein [hereinafter collectively referred to as the "DDC Field Office"] for the exclusive use of the Resident Engineer. The DDC Field Office shall be located at the Project site and shall be solely dedicated to the Project. Provision of the DDC Field Office shall commence within THIRTY (30) days from Notice to proceed and shall continue through forty-five (45) days after Substantial Completion of the required construction at the Project site. The Contractor shall remove the DDC Field Office forty-five (45) days after Substantial Completion of the required construction, or as otherwise directed in writing by the Commissioner.
2. TRAILER: The Contractor shall provide at its own cost and expense a mobile office trailer for use as the DDC Field Office. The Contractor shall install and connect all utility services to the

trailer within thirty (30) days from Notice to Proceed. The trailer shall have equipment in compliance with the minimum requirements hereinafter specified. Any permits and fees required for the installation and use of said trailer shall be borne by the Contractor. The trailer including furniture and equipment therein, except computer equipment specified in Sub-Section 3.8D.3 herein, shall remain the property of the Contractor.

3. Trailer shall be an office type trailer of the size specified herein, with exterior stairs at entrance. Trailer construction shall be minimum 2 x 4 wall construction fully insulated with paneled interior walls, pre-finished gypsum board ceilings and vinyl tile floors.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8.B.3a or SUB-SECTION 3.8.B.3b.

a. DDC Managed Project Trailer: DDC Field Office Trailer Size, Layout and Computer Workstation:
   1) Overall length: 32 Feet
      Overall width: 10 Feet
   2) Interior Layout:
      Provide one (1) general office/conference room area and one (1) private office at one end of the trailer. Provide equipment and amenities as specified in Sub-Section 3.8.B herein.
   3) Computer Workstation: Provide one (1) complete computer workstation, as specified in Sub-Section 3.8.D herein, in the private office area as directed by the Resident Engineer.

b. CM Managed Project Trailer: DDC Field Office Trailer Size, Layout and Computer Workstation:
   1) Overall length: 50 Feet
      Overall width: 10 Feet
   2) Interior Layout:
      Provide one (1) large general office/conference room in the center of the trailer and two (2) private offices, one (1) each at either end of the trailer. Provide equipment and amenities as specified in Sub-Section 3.8.B herein.
   3) Computer Workstation:
      Provide three (3) complete computer workstations as specified in Sub-Section 3.8.D herein. Provide one (1) each complete computer workstation in each private office and one (1) complete computer workstation at the secretarial position as directed by the Resident Engineer.

4. The exterior of the trailer shall be lettered with black block lettering of the following heights with white borders:

CITY OF NEW YORK	2-1/2"
DEPARTMENT OF DESIGN AND CONSTRUCTION	3-3/4"
DIVISION OF PUBLIC BUILDINGS	3-1/2"
DDC FEILD OFFICE	2-1/2"

NOTE: In lieu of painting letters on trailer the Contractor may substitute a sign constructed of a good quality weatherproof material with the same type and size of lettering above.

5. All windows and doors shall have aluminum insect screens. Provide wire mesh protective guards at all windows.

6. The interior shall be divided by partitions into general and private office areas as specified herein. Provide a washroom located adjacent to the private office and a built-in wardrobe closet opposite the washroom. Provide a built-in desk in the private office(s) with fixed overhead shelf and clearance below for two (2) file cabinets.

7. Provide a built-in drafting or reference table, located in the general office/conference room, at least 60 inches long by 36 inches wide with cabinet below and wall type plan rack at least 42 inches wide.
8. The washroom shall be equipped with a flush toilet, wash basin with two (2) faucets, medicine cabinet, complete with supplies and a toilet roll tissue holder. Plumbing and fixtures shall be approved house type, with each appliance trapped and vented and a single discharge connection. Five (5) gallon capacity automatic electric heater for domestic hot water shall be furnished.
9. HVAC: The trailer shall be equipped with central heating and cooling adequate to maintain a temperature of 72 degrees during the heating season and 75 degrees during the cooling season when the outside temperature is 5 degrees F. winter and 89 degrees F. summer.
10. Lighting shall be provided via ceiling mounted fluorescent lighting fixtures to a minimum level of 50 foot candles in the open and private office(s) along with sufficient lighting in the washroom. Broken and burned out lamps shall be replaced by the Contractor. A minimum of four (4) duplex convenience outlets shall be provided in the open office and two (2) each in the private office(s). These outlets shall be in addition to special outlet requirements for computer stations, copiers, HVAC unit, etc.
11. Electrical service switch and panel shall be adequately sized for the entire trailer load. Provide dedicated circuits for HVAC units, hot water heater, copiers and other equipment as required. All wiring and installation shall conform to the New York City Electrical Code.
12. The following movable equipment shall be furnished:
    a. Two (2) single pedestal desks, 42" x 32"; two (2) swivel chairs with arms and three (3) side chairs without arms to match desk. Two (2) full ball bearing suspension four (4) drawer vertical legal filing cabinets with locks and two (2) full ball bearing two (2) drawer vertical legal filing cabinets in each private office located below built-in desk.
    b. One (1) folding conference table, 96" x 30" and ten (10) folding chairs.
    c. Three (3) metal wastebaskets.
    d. One (1) fire extinguisher one (1) quart vaporizing liquid type, brass, wall mounted by Pyrene No. C21 or approved equal.
    e. One (1) Crystal Springs water cooler with bottled water, Model No. LP14058 or approved equal to be furnished for the duration of the Contract as required.
13. TRAILER TEMPORARY SERVICE: Plumbing and electrical work required for the trailer will be furnished and maintained as below.

    a. PLUMBING WORK: The Contractor shall provide temporary water and drainage service connections to the DDC Field Office trailer for a complete installation. Provide all necessary soil, waste, vent and drainage piping.

       Contractor to frost-proof all water pipes to prevent freezing.
       1) REPAIRS, MAINTENANCE: The Contractor shall provide repairs for the duration of the project until the trailer is removed from the site.
       2) DISPOSITION OF PLUMBING WORK: At the expiration of the time limit set forth in Sub-Section 3.8 B 1 herein, the temporary water and drainage connections and piping to the DDC Field Office trailer shall be removed by the Contractor and shall be plugged at the mains. All piping shall become the property of the Contractor for Plumbing Work and shall be removed from the site, all as directed. All repair work due to these removals shall be the responsibility of the Contractor.

    b. ELECTRICAL WORK:
       1) The Contractor shall furnish, install and maintain a temporary electric feeder to the DDC Field Office trailer immediately after it is placed at the job site.
       2) The temporary electrical feeder and service switch/fuse shall be adequately sized based on the trailer load and installed per the New York City Electrical Code and complying with utility requirements.

3) Make all arrangements and pay all costs to provide electric service.
4) The Contractor shall pay all costs for current consumed and for maintenance of the system in operating condition, including the furnishing of the necessary bulb replacements lamps, etc., for the duration of the project and for a period of forty-five (45) days after the date of Substantial Completion.
5) Disposition of Electric Work: At the expiration of the time limit set forth, the temporary feeder, safety switch, etc., shall be removed and disposed of as directed.
6) All repair work due to these removals shall be the responsibility of the Contractor.

c. MAINTENANCE
1) The Contractor shall provide and pay all costs for regular weekly janitor service and furnish toilet paper, sanitary seat covers, cloth towels and soap and maintain the DDC Field Office in first-class condition, including all repairs, until the trailer is removed from the site.
2) Supplies: The Contractor shall be responsible for providing (a) all office supplies, including without limitation, pens, pencils, stationery, filtered drinking water and sanitary supplies, and (b) all supplies in connection with required computers and printers, including without limitation, an adequate supply of blank CD's/DVD's, storage boxes for blank CDs/DVDs, and paper and toner cartridges for the printer.
3) Risk of Loss: The entire risk of loss with respect to the DDC Field Office and equipment shall remain solely and completely with the Contractor. The Contractor shall be responsible for the cost of any insurance coverage determined by the Contractor to be necessary for the Field Office.
4) At forty-five (45) days after the date of Substantial Completion, or sooner as directed by the Commissioner, the Contractors shall have all services disconnected and capped to the satisfaction of the Commissioner. All repair work due to these removals shall be the responsibility of the Contractor.

d. TELEPHONE SERVICE: The Contractor shall provide and pay all costs for the following telephone services for the DDC Field Office trailer:
1) Separate telephone lines for one (1) desk phone in each private office.
2) One (1) wall phone (with six (6) foot extension cord) at plan table.
3) Separate telephone lines for the fax machine and internet access in each private office. Telephone service shall include voice mail.
4) A remote bell located on outside of trailer
5) The telephone service shall continue until the trailer is removed from the site.

e. PERMITS: The Contractor shall make the necessary arrangements and obtain all permits and pay all fees required for this work.

C. RENTED SPACE: The Contractor has the option of providing, at its cost and expense, rented office or store space in lieu of trailer. Said space shall be in the immediate area of the Project and have adequate plumbing, heating and electrical facilities. Space chosen by the Contractor for the DDC Field Office must be approved by the Commissioner before the area is rented. All insurance, maintenance and equipment, including computer workstations specified in Sub-Section 3.8 D in quantities required as specified in Sub-Section 3.8 B 3 for the DDC Field Office trailer, shall also apply to rented spaces.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 D

D. ADDITIONAL EQUIPMENT FOR THE DDC FIELD OFFICE:
1. The Contractor shall provide a high volume copy machine (50 copies per minute) for paper sizes 8½ x 11, 8½ x 14 & 11 x 17. Copier shall remain at job site until the DDC Field office trailer is removed from the site.

2. The Contractor shall furnish a fax machine and a telephone answering machine at commencement of the project for the exclusive use of the DDC Field Office. All materials shall be new, sealed in manufacturer's original packaging and shall have manufacturers' warrantees. All items shall remain the property of the City of New York at the completion of the project.

3. COMPUTER WORKSTATION: The Contractor shall provide one complete computer workstation, in quantities specified in Sub-Section 3.8.B.3, as specified herein:

   a. Hardware/Software Specification:
      1) Computer Equipment - Computers shall be provided for all contracts that have a Total Consecutive Calendar Days for construction duration as set forth in Schedule "A" of 180 CCD's or greater. Contracts of lesser duration shall not require computers.
      2) Computers furnished by the Contractor for use by City Personnel, for the duration of the contract, shall be in accordance with Specific Requirements, contained herein, shall remain the property of the City of New York at the completion of the project and shall meet the following minimum requirements:
      3) Personal Computer(s) – Each Workstation Configuration.

a)	Make and Model:	Dell; HP; Gateway; Acer; or, an approved equivalent. (Note: an approved equivalent requires written approval of the Assistant Commissioner of ITS.)
b)	Processor:	i5-2400 (6MB Cache, 3.1GHz) or faster computer - Single Processor.
c)	System RAM:	Minimum of 4GB (Gigabytes) Dual Channel DDR3 SDRAM at 1333MHz – 2 DIMMSs
d)	Hard Disk Drive(s):	500 GB (Gigabytes) Serial ATA (7200RPM) w/DataBurst Cache, or larger.
e)	CD-RW:	Internal CD-RW, 48x Speed or faster.
f)	16xDVD+/-RW	DVD Burner (with double layer write capability) 16x Speed or faster
g)	I/O Ports:	Must have at least one (1) Serial Port, one (1) Parallel Port, and three (3) USB Ports.
h)	Video Display Card:	HD Graphics (VGA, HDMI) with a minimum of 64 MB of RAM.
i)	Monitor:	22" W, 23.0 Inch VIS, Widescreen, VGA/DVI LCD Monitor.
j)	Available Exp. Slots:	System as configured above shall have at least two (2) full size PCI Slots available.
k)	Network Interface:	Integrated 10/100/1000 Ethernet card.
l)	Other Peripherals:	Optical scroll Mouse, 101 Key Keyboard, Mouse Pad and all necessary cables.
m)	Software Requirement:	Microsoft Windows 7 Professional SP1, 32 bit; Microsoft Office Professional 2010 or 2013; Microsoft Project 2010; Adobe Acrobat reader; Anti-Virus software package with 2 year updates subscription; and, either Auto Cad LT or Microsoft

Visio Standard Edition, as directed by the Resident Engineer.

4) DDC Field Office Specs: DDC Field Offices requiring computers shall be provided with the following:
   a) One (1) broad-band internet service account. Wideband Internet connectivity at a minimum throughput of 15 Mbps download and 5 Mbps upload is required at each field office location with 1-5 staffers. For larger field offices see table below for minimum required upload speeds. Telephone service should be bundled together with Internet connectivity. Because of throughput requirements Verizon FIOS is the preferred connectivity provider where available.

Office Personnel #	**Upload Speeds (*Minimum*)**
1 – 5	5 Mbps
6 – 10	10 Mbps
11 – 15	15 Mbps
16 – 20 ...	20 Mbps

   This account will be active for the life of the project. The e-mail name for the account shall be the DDC Field Office/project Id (e.g. FLD K HWK666 McGuinness@earthlink.com).
   b) One (1) 600 DPI HP Laser Jet Printer (twelve (12) pages per minute or faster) with one (1) Extra Paper (Legal Size)
   c) All necessary cabling for equipment specified herein.
   d) Storage Boxes for Blank CD's
   e) Printer Table
   f) UPS/Surge Suppressor combo

5) All computers required for use in the Engineer's Field Office shall be delivered, installed, and setup in the Field Office by the Contractor.

6) All Computer Hardware shall come with a three (3) year warranty for on-site repair or replacement. Additionally, and notwithstanding any terms of the warranty to the contrary, the Contractor is responsible for rectifying all computer problems or equipment failures within one (1) business day.

7) An adequate supply of blank CDs/DVDs, and paper and toner cartridges for the printer shall be provided by the Contractor, and shall be replenished by the Contractor as required by the Resident Engineer.

8) It is the Contractor's responsibility to ensure that electrical service and phone connections are also available at all times; that is, the Field Office Computer(s) is to be powered and turned on twenty-four (24) hours each day.

9) Broadband connectivity is preferred at each field office location. Please take into consideration that an extra phone line dedicated to the modem must be ordered as part of the contract unless Internet broadband connectivity, via Cable or DSL, is available at the planned field office location. Any questions regarding this policy should be directed to the Assistant Commissioner of Information Technology Services at 718-391-1761.

10) Ownership: The equipment specified above shall, unless otherwise directed by the Commissioner, be the sole property of the City of New York upon delivery to the DDC Field Office. The Contractor shall prepare and maintain an accurate inventory of all equipment which it purchases for the DDC Field Office. Such inventory shall be provided to the City of New York. Upon completion of the

required services, as directed by the Commissioner, the Contractor shall turn such equipment over to the City of New York.

E. HEAD PROTECTION (HARD HATS):
1. The Contractor shall provide a minimum of 10 standard protective helmets for the exclusive use of Department of Design and Construction personnel and their visitors. Helmets shall be turned over to the Resident Engineer and kept in the DDC Field Office.
2. Upon completion of the project, the helmets shall become the property of the Contractor.

3.9 MATERIAL SHEDS:

A. Material sheds used by the Contractor for the storage of its materials shall be kept at locations which will not interfere at any time with the progress of any part of the work or with visibility of traffic control devices.

B. Store combustible materials apart from the facility.

3.10 TEMPORARY ENCLOSURES:

A. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.

B. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

3.11 TEMPORARY PARTITIONS:

A. Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate occupied tenant areas from fumes and noise.
1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
2. Construct dustproof partitions with 2 layers of 3-mil (0.07-mm) polyethylene sheet on each side. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.
    a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
3. Insulate partitions to provide noise protection to occupied areas.
4. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
5. Protect air-handling equipment.
6. Weather strip openings.
7. Provide walk-off mats at each entrance through temporary partition.

3.12 TEMPORARY FIRE PROTECTION:

A. Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

B. Prohibit smoking in all areas.

C. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

D. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

E. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.13

3.13 WORK FENCE ENCLOSURE:

A. The Contractor shall furnish, erect and maintain a wood construction or chain-link fence to the extent shown on the drawings or required by the work enclosing the entire project on all sides. All materials used shall be new. Any permit required for the installation and use of said fence and costs shall be borne by the Contractor.

B. WOOD FENCE shall be 7'-0" high with framing construction of yellow pine, using 4" x 4" approved preservative-treated posts on not more than 6'-0" centers, with three (3) rails of at least 2" x 4" size to which shall be secured minimum 1/2 inch thick exterior grade plywood. Posts shall be firmly fixed in the ground at least 30" and thoroughly braced. Top edge of fence shall be trimmed with a rabbeted edge mould. Provide on the street traffic sides of fence, observation openings as directed.
   1. GATES - Provide an adequate number of double gates, complete with hardware, located as approved by the Resident Engineer. Double gates shall have a total clear opening of 14'-0" with two (2) 7'-0" hinged swinging sections. Hanging posts shall be 6" x 6" and shall extend high enough to receive and be provided with tension or sag rods for the swinging sections.
   2. PAINTING - The fence and gates shall be entirely painted on the street and public sides with one (1) coat of exterior primer and one (1) top coat of exterior grade acrylic-latex emulsion paint. Black stenciled signs reading "POST NO BILLS" shall be painted on fence with three (3) inch high letters on 25 foot spacing for the entire length of fence on street traffic sides. Signs shall be stenciled five (5) feet above the sidewalk.

C. CHAIN-LINK FENCING shall be minimum 2-inch thick, galvanized steel, chain-link fabric fencing; 8 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Fence shall be accurately aligned and plumb, adequately braced and complete with gates, locks and hardware as required. Under no condition shall fencing be attached or anchored to existing construction or trees.

D. 1. It shall be the obligation of the Contractor to remove all posters, advertising signs, and markings, etc., immediately.
   2. Should the fencing be required to be relocated during the course of the Contract, it shall be done by the Contractor at no additional cost to the City.
   3. Where sidewalks are used for "drive over" purposes for Contractor vehicles, a suitable wood mat or pad shall be provided for protection of sidewalks and curbs.
   4. Where required, make provision for fire hydrants, lampposts, etc.
   5. REMOVAL - When directed by the Resident Engineer, the fence shall be removed.

3.14 RODENT AND INSECT CONTROL:

A. DESCRIPTION: The Contractor shall provide all labor, materials, plant and equipment, and incidentals required to survey and monitor rodent activity and to control any infestation or outbreak of rodents, rats, mice, water beetles, roaches and fleas within the project area. Special attention should be paid to the following conditions or areas:

1 Wet areas within the project area, including all temporary structures.
2 All exterior and interior temporary toilet structures within the project area.
3 All Field Offices and shanties within the project area of all subcontractors and DDC.
4 Wherever there is evidence of food waste and/or discarded food or drink containers, in quantity, that would cause breeding of rodents or the insects herein specified.
5 Any other portion of the premises requiring such special attention.

B. MATERIALS:

1 All materials shall be approved by the New York State Department of Environmental Conservation and comply with the New York City Health Code, OSHA and the laws, ordinances and regulations of State and Federal agencies pertaining to such chemical and/or materials.

C. PERSONNEL:

1 All pest control personnel must be supervised by an exterminator licensed in categories 7A and 8.

D. METHODS:

1. Application and dosage of all materials shall be done in strict compliance with the manufacturer's recommendations.
2. Any unsanitary conditions, such as uncollected garbage or debris, resulting from all Contractor's activities, which will provide food and shelter to the resident rodent population shall be corrected by the Contractor immediately after notification of such condition by the Resident Engineer.

E. RODENT CONTROL WORK:

1 In wetlands, woodlands and areas adjacent to a stream, special precautions must be taken to protect water quality and to ensure the safety of other wildlife. To prevent poisoned bait from entering streams, no poisoned bait shall be used in areas within seventy-five (75) feet of all stream banks. Live traps must be used in these seventy-five (75) foot buffer zone areas and within wetland and woodland areas.
2 In areas outside the seventy-five (75) foot zone of protection adjacent to streams, and in areas outside wetlands and woodlands, tamper proof bait stations with poisoned bait shall be placed during the period of construction and any consumed or decomposed bait shall be replenished as directed.
3 At least one month prior to initiation of the construction work, and periodically thereafter, live traps and/or rodenticide bait in tamper proof bait stations, as directed above, shall be placed at locations that are inaccessible to pets, human beings, children and other non-target species, particularly wildlife (for example-birds) in the project area.
4 The Contractor shall be responsible for collecting and disposing of all trapped and poisoned rodents found in live traps and tamper proof bait stations. The Contractor shall also be responsible for posting and maintaining signs announcing the baiting of each particular location.
The Contractor shall be responsible for the immediate collection and disposal of any visible rodent remains found on streets or sidewalks within the project area.
5 It is anticipated that public complaints will be addressed to the Commissioner. The Contractor, where directed by the Commissioner, shall take appropriate actions, like baiting, trapping, proofing, etc., to remedy the source of complaint within the next six (6) hours of normal working time which is defined herein for the purposes of this section as 7 A.M. to 6 P.M. on Mondays through Saturdays.
6 Emergency service during the regular workday hours (Monday through Friday) shall be rendered within 24 hours, if requested by the Commissioner, at no additional cost to the City.

F. EDUCATION & NOTICES:

1 The Contractor shall post notices on all Construction Bulletin Boards advising workers, employees, and residents to call the Engineer's Field Office to report any infestation or outbreak of rodents, rats, mice, water beetles, roaches and fleas within the project area. The Contractor shall provide and distribute literature pertaining to IPM techniques of rodent control to affected businesses and superintendents of nearby residential buildings to ensure their participation in maintaining their establishments free of unsanitary conditions, harborage removal and rodent proofing.

2 Prior to application of any chemicals, the Contractor shall furnish to the Commissioner copies or sample labels for each pesticide, antidote information, and Material Data Safety Sheets (MSDS) for each chemical used.

G. RECORDS

1. The Contractor shall keep a record of all rodent and waterbug infestation surveys conducted by him/her and make available, upon request, to the Commissioner. The findings of each survey shall include, but not be limited to, recommended Integrated Pest Management (IPM) techniques, like baiting, trapping, proofing, etc., proposed for rodent and waterbug pest control.
2. The Contractor shall maintain records of all locations baited along with the type and quantity of rodenticide and insecticide bait used.

3.15 PLANT PEST CONTROL REQUIREMENTS and TREE PROTECTION REQUIREMENTS:

A. Plant Pest Control Requirements: The Contractor and its subcontractors, including the Certified Arborist described below, shall comply with all Federal and New York State laws and regulations concerning Asian Longhorned Beetle (ALB) management, including protocols for ALB eradication and containment promulgated by the New York State Department of Agriculture and Markets (NYSDAM). The Contractor is referred to: (1) Part 139 of Title 1 NYCRR, Agriculture and Markets Law, Sections 18, 164 and 167, as amended, and (2) State Administrative Procedure Act, Section 202, as amended.

1. All tree work performed within the quarantine areas must be performed by New York State Department of Agriculture and Markets (NYSDAM) certified entities. Transportation of all host material, living, dead, cut or fallen, inclusive of nursery stock, logs, green lumber, stumps, roots, branches and debris of a half inch or more in diameter from the quarantine areas is prohibited unless the Contractor or its sub-contractor performing tree work has entered into a compliance agreement with NYSDAM. The terms of said compliance agreement shall be strictly complied with. Any host material so removed shall be delivered to a facility approved by NYSDAM. For the purpose of this contract host material shall be ALL species of trees.

2. Any host material that is infested with the Asian Longhorned Beetle must be immediately reported to NYSDAM for inspection and subsequent removal by either State or City contracts, at no cost to the Contractor.

3. Prior to commencement of tree work, the Contractor shall submit to the Commissioner a copy of a valid Asian Longhorned Beetle compliance agreement entered into with NYSDAM and the Contractor or its sub-contractor performing tree work. If any host material is transported from the quarantine area the Contractor shall immediately provide the Commissioner with a copy of the New York State 'Statement of Origin and Disposition' and a copy of the receipt issued by the NYSDAM approved facility to which the host materials are transported.

4. Quarantine areas, for the purpose of this contract shall be defined as all five boroughs of the City of New York. In addition, prior to the start of any tree work, the Contractor shall contact the

NYC Department of Parks & Recreation's Director of Landscape Management at (718) 699-6724, to determine the limits of any additional quarantine areas that may be in effect at the time when tree work is to be performed. The quarantine area may be expanded by Federal and State authorities at any time and the Contractor is required to abide by any revisions to the quarantine legislation while working on this contract. For further information please contact: NYSDAM (631) 288-1751.

B. Tree Protection Requirements: The Contractor shall retain a Certified Arborist, as defined by New York City Department of Parks and Recreation (NYCDPR) regulations, to provide the services described below.

1. Surveys and Reports: The Certified Arborist shall, at the times indicated below, conduct a survey and prepare a plant material assessment report which includes: (1) identification, by species and pertinent measurements, of all plant material located on the project site, or in proximity to the project site, as described below, including all trees, significant shrubs and/or planting masses; (2) identification and plan for the containment of plant pests and pathogens, including the ALB, as described in paragraph A above; (3) evaluation of the general health and condition of any infected plant material.

2. Frequency of Reports: The Certified Arborist shall conduct a survey and provide a plant material assessment report at two (2) points in time: (1) prior to the commencement of construction work; and (2) at the time of substantial completion. In addition, for projects exceeding 24 months in duration, the Certified Arborist shall conduct a survey and prepare a report at the midpoint of construction. Copies of each plant material assessment report shall be submitted to the Resident Engineer within two (2) weeks of the survey.

3. Proximity to Project Site: Off-site trees, significant shrubs and/or planting masses shall be considered to be located in proximity to the project site under the circumstances described below.

   a. The tree trunk, significant shrub, or primary cluster of stems in a planting mass is within 50 (fifty) feet of the project's Contract Limit Lines (CLLs) or Property Lines (PLs).
   b. Any part of the tree or shrub stands within 50 (fifty) feet of: (a) a path for site access for vehicles and/or construction equipment; or (b) scaffolding to be erected for construction activity, including façade remediation projects.
   c. The Certified Arborist determines that the critical root zone (CRZ) of an off-site tree, significant shrub, or primary cluster of stems in a planting mass extends into the project site, whether or not that plant material is located within the 50-foot inclusionary perimeter as outlined above.

4. Tree Protection Plan: The Certified Arborist shall prepare, and the Contractor shall implement, a Tree Protection Plan, for all trees that may be affected by any construction work, excavation or demolition activities, including without limitation, (1) on-site trees, (2) street trees, as defined below, (3) trees under NYCDPR jurisdiction as determined by the Department of Transportation, and (4) all trees that are located in proximity to the project site, as defined above. The Tree Protection Plan shall comply with the NYC DPR rules, regulations and specifications. The Contractor is referred to Chapter 5 of Title 56 of the Official Compilation of the Rules of the City of New York. Copies of the Tree Protection Plan shall be submitted to the Resident Engineer prior to the commencement of construction. Implementation of the Tree Protection Plan for street trees and trees under NYCDPR jurisdiction shall be in addition to any tree protection requirements specified or required for the project site. For the purpose of this article, a "street tree" means the following: (1) a tree that stands in a sidewalk, whether paved or unpaved, between the curb lines or lateral lines of a roadway and the adjacent property lines

of the project site, or (2) a tree that stands in a sidewalk and is located within 50 feet of the intersection of the project's site's property line with the street frontage property line.

C. No Separate Payment. No separate payment shall be made for compliance with Plant Pest Control Requirements or Tree Protection Requirements. The cost of compliance with Plant Pest Control Requirements and Tree Protection Requirements shall be deemed included in the Contractor's bid for the Project.

3.16 PROJECT IDENTIFICATION SIGNAGE:

A. The Contractor shall provide, install and maintain Project identification and other signs where indicated to inform public and individuals seeking entrance to the Project.
B. In order to properly convey notice to persons entering upon a City construction site, the Contractor shall furnish and install a sign at the entrance (gates) as follows:

NO TRESPASSING

AUTHORIZED PERSONNEL ONLY

C. If no construction fence exists at the site, this notice shall be conveyed by incorporating the above language into safety materials (barriers, tape, and signs).
D. Provide temporary, directional signs for construction personnel and visitors.
E. Maintain and touch up signs so that they are legible at all times.

3.17 PROJECT CONSTRUCTION SIGN AND RENDERING:

A. PROJECT SIGN:
1 Responsibility: The Contractor shall produce and install one (1) project sign which shall be posted and maintained upon the site of the project at a place and in a position directed by the Commissioner. The Contractor shall protect the sign from damage during the continuance of work under the Contract and shall do all patching of lettering, painting and bracing thereof necessary to maintain the sign in first class condition and in proper position. Prior to fabrication, the Contractor shall submit an 8-1/2" x 11" color match print proof from the sign manufacturer of the completed sign for approval by the Commissioner.
2 Sign Quality: The Contractor shall provide all materials required for the production of the sign as specified herein. Workmanship shall be of the best quality, free from defects and shall be produced in a timely manner.
3 Schedule: Upon project mobilization, the Contractor shall commence production and installation of the sign.
4 Removal: At the completion of all work under the Contract, the Contractor shall remove and dispose of the project sign away from the site.
5 Sign construction:
a. Frame: The frame shall be from quality dressed 2"x2" pine, fire retardant, pressure treated lumber, that surrounds the inside back edge of the sign. The sign shall have one (1) intermediate vertical and two (2) diagonal supports, glued and screwed for rigidity. Frame shall be painted white with two (2) coats of exterior enamel paint, prior to mounting of sign panel.
b. Edging: U-shaped, 22 gauge aluminum edging, with a white enameled finish to match sign

background, shall run around entire edging of sign panel and frame. Corners shall be mitered for a tight fit. Channel dimensions shall be 1" inch (overlap to sign panel face) x 1 3/4" (or as required across frame depth) x 1" (back overlap).

c. Sign Panel: 4' x 8' panel shall be constructed in one (1) piece of 14 gauge (.0785") 6061-T6 aluminum. This panel shall be pre-finished both sides with a glossy white baked-on enamel finish and be flush with edge of 2" x 2" wood frame. Samples must be submitted for approval.

d. Fastening: Fasten sign panel to wood frame using cadmium plated no. 8 sheet metal screws at ½" below edge of panel and 8" on center. The U-shaped aluminum channel shall be applied over the wood frame edge and fastened with cadmium plated no. 8 sheet metal screws at 12" on center around the entire perimeter.

6 Sign Graphics:

a. A digital file of the project sign will be provided to the Contractor by the Commissioner's representative for printing. The Commissioner's representative shall insert the project name and names and titles of personnel (3 or more) and any other required information associated with the project. All signs may include a second panel for a project rendering as described in Sub-Section 3.17.B herein.

b. The digital file shall be reproduced at the Sign Panel size of 4' x 8' on 3M High Performance Vinyl or approved equal. The 3M High Performance Vinyl or equivalent shall be guaranteed for nine (9) years. Guarantee must cover fading, peeling, chipping or cracking. The sign manufacturer is required to maintain all specified Pantone Matching System (PMS) type and other composition elements represented in the digital file of the project sign.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SETION 3.17 B

B. PROJECT RENDERING:

1. Responsibility: In addition to the Project Sign, the Contractor shall furnish and install one (1) sign showing a rendering of the project. A digital file of the project rendering will be provided to the Contractor by the Commissioner's representative. From an approved image file provided by DDC, the Project Rendering is to be sized, printed, and mounted in an identical manner as described in Sub-Section 3.17.A above for the Project Sign. A color match print proof from the sign manufacturer of the Rendering Sign printed from the supplied file is to be submitted to DDC for approval before fabrication. The Rendering Sign is to be posted at the same height as the Project Sign. Where possible, the Rendering Sign shall be mounted with a perfect match of the short sides of the rectangle so that the Rendering Sign and the Project Sign together will create one long rectangle.

2. Removal: At the completion of all work under the Contract, the Contractor shall remove and dispose of the project rendering away from the site.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.18

3.18 SECURITY GUARDS/FIRE GUARDS ON SITE:

A. SECURITY GUARDS (WATCHMEN):

1. The Contractor shall provide competent Security Guard Service on the site, beginning on the date on which the Contractor commences actual construction work, or on such earlier date on which there is activity at the site related to the work, including without limitation, delivery of

materials or construction set-up. The Contractor shall continue to provide such Security Guard Service until the date on which it completes all required work at the site, including all punch list work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. Throughout the specified time period, there shall be no less than one (1) Security Guard on duty every day, including Saturdays, Sunday and Holidays, 24 hours a day, except between the hours of 8:00 A.M. and 4:00 P.M. on any day which is a regular working day for a majority of the trade subcontractors. This exception during the working day shall not apply after the finishing painting of the plaster work is commenced; thereafter, not less than one (1) Security Guard shall be on duty continuously, 24 hours a day.

2. Every Security Guard shall be required to hold a "Certificate of Fitness" issued by the Fire Department. Every Security Guard shall, during his/her tour of duty, perform the duties of Fire Guard in addition to his/her security obligations.
3. Should the Commissioner find that any Security Guard is unsatisfactory; such guard shall be replaced by the Contractor upon the written demand of the Commissioner.
4. Each Security Guard furnished by the Contractor shall be instructed by the Contractor to include in his/her duties the entire construction site including the Field Office, temporary structures, and equipment, materials, etc.
5. Should the Contractor or any other subcontractor consider the security requirements outlined above inadequate, the Contractor shall provide such additional security as it thinks necessary, after obtaining the written consent of the Commissioner. The additional cost of such approved increased protection will be paid by the Contractor.
6. Nothing contained in this Sub-Section shall diminish in any way the responsibility of the Contractor and each subcontractor for its own work, materials, tools, equipment, nor for any of the other risks and obligations outlined hereinbefore in this Article.

B. COSTS - The Contractor shall employ Security Guards/Fire Guards throughout the specified time period, except as otherwise modified by the detailed Specifications and as approved by the Commissioner, for the purpose of safeguarding and protecting the site. All costs for Security Guards/Fire Guards shall be borne by the Contractor.

C. RESPONSIBILITY - The Contractor and its subcontractors will be responsible for safeguarding and protecting their own work, materials, tools and equipment.

3.19 SAFETY:

A. The Contractor, in compliance with requirements of Section 01 35 26, SAFETY REQUIREMENTS PROCEDURES, shall provide and maintain all necessary temporary closures, guard rails, and barricades to adequately protect all workers and the public from possible injury. Any removal of these items, during the progress of the work, shall be replaced by the Contractor at no additional cost to the City.

END OF SECTION 01 50 00

No Text

SECTION 01 54 11
TEMPORARY ELEVATORS AND HOISTS

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This section includes the following:
   1. Temporary Use, Operation and Maintenance of Elevators during Construction
      a. For New buildings up to 15 Stories
      b. For New buildings over 15 Stories
      c. For Existing Buildings
   2. Temporary Construction Hoists and Hoist ways (For Material and Personnel)

1.3 RELATED SECTIONS: include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 42 00 REFERENCES
C. Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS
D. Section 01 54 23 TEMPORARY SCAFFOLDS AND SWING STAGING
E. Section 01 77 00 CLOSE OUT PROCEDURES

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.1

3.1 TEMPORARY USE, OPERATION AND MAINTENANCE OF ELEVATORS DURING CONSTRUCTION FOR NEW BUILDINGS UP TO AND INCLUDING 15 STORIES:

A. INSTALLATION: The Contractor shall install, complete, operate, and maintain in good working order, as indicated herein, one (1) selected main elevator for the transport of employees of the Contractor and/or its subcontractors, and representatives of the DDC and other Governmental Agencies having jurisdiction of work at the project. The Contractor shall furnish, install, and maintain such elevator in good working order, including all necessary hoisting ropes, governor cables, traveling conductor cables, operating devices, temporary hand reset target annunciators, temporary signal devices, and all other permanent or temporary parts. The installation, operation and maintenance of the temporary elevator and all equipment and/or parts utilized in connection therewith shall be in accordance with the rules and regulations of all agencies and/or entities having jurisdiction over elevators in temporary use.

B. RESPONSIBILITY: The Contractor shall be responsible for any injury to persons or damage to property arising out of the temporary elevator and all equipment and/or parts utilized in connection therewith.

C. COSTS: The Contractor shall be responsible for all costs in connection with the temporary elevator, including without limitation: (1) installing and operating the temporary elevator, (2) maintaining the temporary elevator in clean, proper operating condition, including the cost of lubricants and/or parts for such maintenance, (3) performing all work in pits, shaft ways and machine rooms necessary for the operation of the temporary elevator, (4) replacing the temporary elevator or any equipment or parts utilized in connection therewith, if required, due to damage, destruction or excessive wear or corrosion, except for the replacement of hoisting ropes as set forth below, (5) performing all required electrical work in connection with the temporary elevator, (6) providing all electric power required to operate the temporary elevator, (7) providing all necessary conduit and wiring connections for the proper operation and signaling of the temporary elevator, and (8) providing all labor for the operation and maintenance of the temporary elevator, including on an overtime basis if necessary. The total Contract Price shall include all costs in connection with the temporary elevator, including without limitation, the costs specified herein.

D. COMMENCEMENT OF SERVICE: The Contractor shall begin to provide temporary elevator service using the selected main passenger elevator no later than eight (8) weeks (40 working days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed. No later than three (3) weeks (15 working days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed the following work shall have been completed:

1. The shaft shall have been completely enclosed by either the permanent or a temporary enclosure meeting the requirements of the law.
2. The machine room shall have been made completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary shall be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
3. There shall have been installed on all floors at the shaft way entrances to the elevator, solid substantial frames and either sliding or swing doors with substantial hardware and door locks and any necessary approved wire mesh barricades for adjacent shaft ways.
4. There shall have been furnished and installed solid substantial enclosures at front, back, sides and top of car platform enclosure, with emergency exit at top of car, excepting that the portion of the front at the elevator entrance shall have been provided with a substantial temporary door or gate.

E. ELECTRICAL INSTALLATION: The Contractor, not later than 20 calendar days after the machine room roof slab or that portion of its surrounding the elevator has been placed, shall have furnished and installed temporary or permanent power and light feeders as required for the elevator used for temporary service and shall have connected such feeders to the terminals on the starter panels or controllers in the machine room to the low voltage transformers and car light outlets in the center of shaft way and for the car control and signal traveling cables. The Contractor shall make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer.

F. REMOVAL: When elevators for permanent use have been installed and are in condition for service, and when directed by the Commissioner, the Contractor shall remove the temporary enclosures and all temporary elevator equipment and promptly proceed with the installation of the permanent equipment as required under the Contract.

G. INSPECTION: Before temporary elevator equipment is removed, a joint inspection of the equipment shall be made by the Contractor and the Commissioner to determine the condition of this equipment upon the discontinuation of its temporary use. If this inspection deems it necessary, the Contractor shall furnish and install new governor and compensating ropes, new traveling cables and new controller parts, etc. The car and counterweight safeties shall be thoroughly cleaned of all dirt and all foreign matter, then properly lubricated and placed in good operating condition to the satisfaction of the Commissioner. If it is determined and ordered by the Commissioner that new hoist ropes are required, such ropes shall be installed and payment therefore will be made in accordance with Article 26 of the Contract.

H. REPLACEMENT: The Contractor shall furnish and install new equipment or parts for any equipment or parts of the temporary elevator installation that have been damaged, destroyed, or that indicate excessive wear or corrosion, excepting the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheave spaces used for temporary operation of elevators shall be thoroughly cleaned. Where lubricated rails are used they shall be washed down. If roller guides are used, all rust, dirt, etc., must be moved from the rails. The full cost of parts replacement, cleaning, etc., shall be borne by the Contractor except for the replacement of hoisting ropes.

I. LIMITATIONS ON USE: The temporary elevator shall not be used during its operation for the hoisting of materials or the removal of rubbish, but shall be limited only to the transportation of employees of the Contractor and/or its subcontractors, and representatives of DDC and other Governmental Agencies having jurisdiction of work at the project. However, the Resident Engineer may grant special permission at specified times to the Contractor and/or its subcontractors to hoist materials, which in the Resident Engineer's opinion will not overload or damage the elevator installation, but only after such times as all plastering has been completed from the second floor up. In the event of any damage to the temporary elevator, the Contractor shall notify the Resident Engineer within 24 hours after such damage has occurred. As indicated above, the Contractor shall be responsible for the replacement of any equipment or parts of the temporary elevator that have been damaged.

J. LIQUIDATED DAMAGES: The Contractor will be charged at the rate of $100 per day for each day it fails to provide the temporary elevator service described in this section beginning with the 41st working day after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed and stripped. This charge will be deducted from any amount due and owing to the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2

3.2 TEMPORARY USE, OPERATION AND MAINTENANCE OF ELEVATORS DURING CONSTRUCTION FOR NEW BUILDING OVER 15 STORIES:

A. INSTALLATION: The Contractor shall install, complete, operate, and maintain in good working order, as indicated herein, two (2) selected main elevators for the transport of employees of the Contractor and/or its subcontractors, and representatives of the DDC and other Governmental Agencies having jurisdiction of work at the project. The Contractor shall furnish, install, and maintain such elevators in good working order, including all necessary hoisting ropes, governor cables, traveling conductor cables, operating devices, temporary hand reset target annunciators, temporary signal devices, and all other permanent or temporary parts. The installation, operation and maintenance of the temporary elevators and all equipment and/or parts utilized in connection therewith shall be in accordance with the rules and regulations of all agencies and/or entities having jurisdiction over elevators in temporary use. The two (2) elevators shall not be operated simultaneously.

B. RESPONSIBILITY: The Contractor shall be responsible for any injury to persons or damage to property arising out of the temporary elevators and all equipment and/or parts utilized in connection therewith.

C. COSTS: The Contractor shall be responsible for all costs in connection with the temporary elevators, including without limitation: (1) installing and operating the temporary elevators, (2) maintaining the temporary elevators in clean, proper operating condition, including the cost of lubricants and/or parts for such maintenance, (3) performing all work in pits, shaft ways and machine rooms necessary for the operation of the temporary elevators, (4) replacing the temporary elevators or any equipment or parts utilized in connection therewith, if required due to damage, destruction or excessive wear or corrosion, except for the replacement of hoisting ropes as set forth below, (5) performing all required electrical work in connection with the temporary elevators, (6) providing all electric power required to operate the temporary elevators, (7) providing all necessary conduit and wiring connections for the proper operation and signaling of the temporary elevators, and (8) providing all labor for the operation and maintenance of the temporary elevators, including on an overtime basis if necessary. The total Contract Price shall

include all costs in connection with the temporary elevators, including without limitation, the costs specified herein.

D. LOW RISE ELEVATOR: The Contractor shall begin to provide temporary elevator service using one (1) selected main passenger elevator no later than six (6) weeks (30 working days) after the 12th Floor slab, or that portion of it surrounding the elevator shaft, has been placed and stripped. No later than one (1) week, five (5) working days, after the 12th Floor slab, or that portion of it surrounding the elevator shaft, has been placed and stripped the following work shall have been completed:

1. The shaft shall have been completely enclosed up to the 12th Floor by either the permanent or a temporary enclosure meeting the requirements of the law.
2. A temporary machine room enclosure shall have been provided at the 11th Floor and shall have been made completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary, shall be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
3. There shall have been installed on all floors up to and including the 9th Floor at the shaft entrances to the elevator, solid substantial wood frames and either sliding or swing doors with substantial hardware and door locks, also any necessary approved wire mesh barricades for adjacent shaft ways.
4. There shall have been furnished and installed solid substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at top of car, excepting that the portion of the front at the elevator entrance shall have been provided with a substantial temporary door or gate.

E. ELECTRICAL INSTALLATION: The Contractor not later than 10 calendar days after the 12th Floor slab or that portion of it surrounding the elevator, has been poured and stripped, shall have furnished and installed temporary or permanent power and light feeders as required for the elevator used for temporary service and shall have connected such feeders to the terminals on the starter panels or controllers in the temporary machine room, to the low voltage transformers and car light outlets in the center of the shaftway and for the car control and signal traveling cables. The Contractor shall make all these required connections as soon as the Equipment is declared ready for such connections by the Resident Engineer.

F. HIGH RISE ELEVATOR: The Contractor shall begin to provide temporary elevator service to all floors, using a selected main passenger elevator, no later than eight (8) weeks (40 working days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed. No later than three (3) weeks (15 working days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed, the following work shall have been completed:

1. The shaft shall have been completely enclosed by either the permanent or temporary enclosure, meeting the requirements of the law.
2. The machine room shall have been made completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary shall be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
3. There shall have been installed on all floors at the shaft way entrances to the elevator, solid substantial frames and either sliding or swing doors with substantial hardware and door locks, also any necessary approved wire mesh barricades for adjacent shaft ways.
4. There shall have been furnished and installed, solid substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at top of car, excepting that the portion of the front at the elevator entrance shall have been provided with a substantial temporary door or gate.

G. ELECTRICAL INSTALLATION: The Contractor, not later than 20 calendar days after the machine room slab or that portion of it surrounding the elevator shaft has been placed, shall have furnished and installed temporary or permanent power and light feeders as required for the high rise elevator to be used for

temporary service and shall have connected such feeders to the terminals on the motor-generator starter panels or controllers in the machine room, to the signal circuits low voltage transformers for the annunciators and car light outlets in the center of shaft way. The Contractor shall make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer.

H. When the high rise elevator is completed and ready for temporary operation, the low rise temporary elevator shall be shut down.

I. REMOVAL: When one (1) or more elevators for permanent use have been installed and are in condition for service, and when directed by the Commissioner, the Contractor shall remove the temporary enclosures and all temporary elevator equipment, and promptly proceed with the installation of the permanent equipment as required under the Contract.

J. INSPECTION: Before temporary elevator equipment is removed, a joint inspection of the equipment shall be made by the Contractor and the Commissioner to determine the condition of this equipment upon the discontinuation of its temporary use. If this inspection determines it necessary, the Contractor shall furnish and install new governor and compensating ropes, new traveling cables, new controller parts, etc. The car and counterweight safeties shall be thoroughly cleaned of all dirt and all foreign matter, then properly lubricated and placed in good operating condition to the satisfaction of the Commissioner. If it is determined and ordered by the Commissioner that new hoist ropes are required, such ropes shall be installed and payment therefore will be made in accordance with Article 26 of the Contract.

K. REPLACEMENT: The Contractor shall furnish and install new equipment or parts for any equipment or parts of the temporary elevator installations that have been damaged, destroyed, or that indicate excessive wear or corrosion, excepting the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheaves spaces used for temporary operation of elevators shall be thoroughly cleaned down. Where lubricated rails are used they shall be washed down, if roller guides are used, all rust, dirt, etc., must be removed from the rails. The full cost of parts replacement cleaning, etc., shall be borne by the Contractor except for the replacement of hoisting ropes.

L. LIMITATIONS ON USE: The temporary elevators shall not be used during their operation for the hoisting of materials or the removal of rubbish, but shall be limited only to the transportation of employees of the Contractor and/or its subcontractors, and representatives of DDC and other Governmental Agencies having jurisdiction of work at the project. However, the Resident Engineer may grant special permission at specified times to the Contractor and/or its subcontractors to hoist materials, which in the Resident Engineer's opinion will not overload or damage the elevator installation, but only after such times as all plastering has been completed from the second floor up. In the event of any damage to the temporary elevator, the Contractor shall notify the Resident Engineer within 24 hours after such damage has occurred. As indicated above, the Contractor shall be responsible for the replacement of any equipment or parts of the temporary elevator that have been damaged.

M. LIQUIDATED DAMAGES: The Contractor will be charged at the rate of $100 per day for each day it fails to provide the temporary elevator service described in this Section beginning with the 31st working day after the 12th Floor slab, or that portion of the 12th Floor slab surrounding the elevator shaft, has been placed and stripped. This charge will be deducted from any amount due and owing to the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3

3.3 TEMPORARY USE, OPERATION AND MAINTENANCE OF ELEVATORS DURING CONSTRUCTION FOR EXISTING BUILDINGS:

A. The Contractor may use, at the Commissioner's discretion, one (1) selected elevator in the building for temporary operation by the Contractor for the transportation of employees of the Contractor and/or its subcontractors, and representatives of DDC and other Governmental Agencies having jurisdiction over the work at the Project. The operation of the temporary elevator and all equipment and/or parts utilized in

connection therewith shall be in accordance with the rules and regulations of all agencies and/or entities having jurisdiction over elevators in temporary use.

B. RESPONSIBILITY: The Contractor shall be responsible for any injury to persons or damage to property arising out of the temporary elevator and all equipment and/or parts utilized in connection therewith.

C. REPLACEMENT: The Contractor shall furnish and install new equipment or parts for any equipment or parts of the elevator for temporary operation that have been damaged, destroyed, or that indicate excessive wear or corrosion, excepting the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheave spaces used for temporary operation of elevators shall be thoroughly cleaned down. Where lubricated rails are used they shall be washed down, if roller guides are used, all rust, dirt, etc., must be moved from the rails. The full cost of parts replacement, cleaning, etc., shall be borne by the Contractor except for the replacement of hoisting ropes. If it is determined and ordered by the Commissioner that new hoist ropes are required, such ropes shall be installed and payment therefore will be made in accordance with Article 26 of the Contract.

D. LIMITATIONS ON USE: The temporary elevator shall not be used during its operation for the hoisting of materials or the removal of rubbish, but shall be limited only to the transportation of employees of the Contractor and/or its subcontractors, and representatives of DDC and other Governmental Agencies having jurisdiction of work at the project. However, the Resident Engineer may grant special permission at specified times to the Contractor and/or its subcontractors to hoist materials, which in the Resident Engineer's opinion will not overload or damage the elevator installation. In the event of any damage to the temporary elevator, the Contractor shall notify the Resident Engineer within 24 hours after such damage has occurred. As indicated above, the Contractor shall be responsible for the replacement of any equipment or parts of the temporary elevator that have been damaged.

E. LIQUIDATED DAMAGES: The Contractor will be charged at the rate of $100 per day for each day it fails to provide elevator services described in this section beginning with 15 consecutive calendar days from Notice to Proceed. This charge will be deducted from any amount due and owing to the Contractor.

3.4 TEMPORARY HOISTS AND HOISTWAYS (FOR MATERIAL AND PERSONNEL):

A. RESPONSIBILITY: The Contractor shall provide adequate numbers of material hoists for the most expeditious performance of all parts of the work including the work of all its subcontractors. .

B. LOCATIONS: No hoists shall be constructed at such locations as will interfere with, or affect the construction of, floor arches, or the work of subcontractors. The hoists may be located at the exterior sides of the structure or in the courtyard and extend upward adjacent to the line of window openings. The hoists shall be located a sufficient distance from the exterior walls and be so protected as to prevent any of the permanent work from being damaged, stained or marred.

C. ELEVATOR SHAFT: Wherever possible, one or more of the permanent elevator shafts may be used as temporary hoist ways, providing such use complies with the requirements of the Building Code of the City of New York and has been approved by the Commissioner, and providing further it entails no interference with the progress of the work.

D. PROTECTION FOR INTERIOR HOISTS: All interior material hoist ways shall be enclosed on each floor and shall be adequately protected with appropriate safety guards. In no event shall the protection be less than that required by law.

END OF SECTION 01 54 11

SECTION 01 54 23
TEMPORARY SCAFFOLDING AND PLATFORMS

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

B. Section 01 35 26: Safety Requirements Procedures.

C. The Contractor shall comply with the requirements of "*The City of New York Department of Design and Construction Safety Requirements*". This document is included in the Information for Bidders.

1.2 SUMMARY:

A. This Section includes administrative and general procedural requirements for Temporary Scaffolding and Platforms, including:

1. Conformance
2. Responsibility
3. Jobsite Documentation and Submittals
4. Inspections

B. This Section governs ALL scaffold used on DDC project sites including, but not limited to, Suspended Scaffold, Supported Scaffold and Sidewalk Sheds.

1.3 CONFORMANCE:

A. Unless otherwise indicated, the Contractor is responsible for providing, erecting, installing and maintaining all temporary scaffolding and platforms which shall comply with requirements of Chapter 33 (Safeguards During Construction or Demolition) of the NYC Building Code, NYC Local Law 52 of 2005, OSHA Construction Standard 1926 Subpart L, and furnishing the items and personnel set forth in this section.

1.4 RESPONSIBILITY:

A. Jobsite Safety Coordinator: The Contractor shall designate and employ a Jobsite Safety Coordinator, who shall be a competent person, who shall have a daily presence on the project site during scaffold use. This designee must possess and maintain a valid New York City Department of Buildings supported scaffold certificate of completion. An alternate shall also be designated, in the event that the Jobsite Safety Coordinator is absent. The Jobsite Safety Coordinator shall:

1. Verify completeness of documentation and submittals (as described below).
2. Verify that inspections are performed, including pull tests (see below), reports are filed and reported deficiencies are corrected.
3. Monitor trades using scaffold.
4. Limit access to scaffold areas that are tagged for non-use.
5. Inform trades of scaffold load limitations.
6. Monitor loading of decks.
7. Verify that any ties that are temporarily removed are properly restored in the same shift.
8. Verify that outriggers and planks that are moved are properly set up and secured.
9. Verify that all scaffold decks in use have proper access/egress.
10. Verify that all open sides of decks in excess of 14 inches have proper guardrails and toe-boards.

11. Notify appropriate parties, including but not limited to the Resident Engineer, site safety coordinator / monitor, site safety consultant, scaffold users, contractor and the scaffold engineer, of misuses, non-conformances, hazards and accidents.
12. Keep a log of significant actions and events connected with the scaffolding.

B. The Contractor shall be responsible for erecting, maintaining and dismantling the scaffolding and/or sidewalk shed in conformance with requirements of the New York City Building Code, OSHA and the Contract documents, including the specifications. The Contractor shall also be guided by generally accepted standards of scaffold industry practice as promulgated by the Scaffold Industry Association.

C. The Contractor shall require the subcontractor responsible for erecting the scaffolding to engage a Scaffold Engineer, licensed as a professional engineer by the State of New York. The Scaffold Engineer shall be responsible to ensure the following: (1) that the installation design is in compliance with requirements of the New York City Building Code and OSHA, (2) that the design comports with the capabilities of the components and the characteristics of the site, (3) that scaffold loads on the host building, including netting, have been properly considered, and (4) that the design documents provide accurate information for erectors and users.

D. Scaffold users are trade contractors assigned to work on the scaffold. Training certificates from a New York City Department of Buildings approved training provider are mandatory. These users have the duty to become familiar with the New York City Building Code and OSHA requirements germane to users, to obey the instructions of the Jobsite Safety Coordinator and to inform the Jobsite Safety Coordinator of known hazards, non-conformances or violations.

1.5 JOBSITE DOCUMENTATION AND SUBMITTALS:

The Contractor shall prepare, obtain and submit the following to the Resident Engineer:

A. NYC Department of Buildings permit(s) for scaffold and sidewalk sheds (as applicable) including filing applications signed and sealed by a Professional Engineer licensed in the State of New York;

B. Site logistics plan / site safety plan;

C. Installation drawing(s), design and product data to be provided for **all** scaffold(s) and shed(s) must include, at a minimum:

1. Plan(s);
2. Elevation(s);
3. Duty load designation; "standard" (150 psf live load) or "heavy duty" (300 psf live load).
4. Details including base support, anchors and ties;
5. Notes and specifications including load limits, number of planked levels, tie spacing, netting, and sequence of installation and removal.
6. Anchorage into sound material.
7. Load limits based on pull tests;
8. Specifications for pull test(s), method, proof load and the number of trials;
9. Elevations, levels or heights, where anchorage is made into masonry;
10. Specifications for frames, planks, screw jacks, anchors, and any other ancillary hardware;
11. Samples for anchors, ties and netting;
12. Sequence of operations for erection and demolition;
13. Location plan, heights, widths, "jumps" over doorways and driveways;
14. Specify size, maximum span and maximum spacing of headers and stringers;
15. Specify legs, girts, braces, nailing and connections;
16. All sidewalk sheds shall be designed, engineered, signed and sealed by a Professional Engineer licensed in the State of New York;
    a. Generic (not job specific) engineering drawings are satisfactory for standard sheds and arrangements.

b. Special engineering is required for custom sheds, site-specific problems or non-standard arrangements.

1.6 INSPECTIONS:

A. Signed inspection reports shall be issued for each inspection and pull-test below, and shall be logged and maintained on site by the Jobsite Safety Coordinator for the duration of the project.

B. Pull testing shall be required during design, and during or post erection, where anchorage is made into masonry. The Scaffold Engineer shall specify the test method, proof load and the number of trials.

C. Sidewalk sheds shall be inspected after initial installation, major modification, or damage and thence every three months. Inspections shall be by a Scaffold Engineer for custom sheds and by a Competent Person employed by the Contractor for standard sheds.

D. Scaffolds shall be inspected by the Scaffold Engineer during erection, post-erection and prior to use and thence every three months. The Scaffold Engineer shall repeat inspections after major alteration/modification, damage.

E. A Qualified Person assigned by the Contractor shall inspect the progress of erection and dismantling, and the condition and integrity of the sidewalk sheds after high winds, major storms and at least once per month during usage.

F. A Qualified Person assigned by the Contractor shall inspect the progress of erection and dismantling at least weekly, and the condition and integrity of the scaffold after high winds, major storms and at least once per month during usage.

G. Scaffolds and Sidewalk Sheds shall be inspected daily by the Jobsite Safety Coordinator or alternate prior to use by scaffold users. The inspection results must be recorded in the maintenance log, and be available on-site at all times.

H. At the completion of the project, submit all inspection documents as Miscellaneous Record Documents in accordance with Section 01 78 39, CONTRACT RECORD DOCUMENTS.

1.7 LADDERS AND STAIRS:

A. The Contractor shall provide and maintain ladders or temporary stairs extending from the street to the first story, and to and from every floor and roof level of the project.

1.8 ACCESS AND EXITS:

A. The ladders or temporary stairs shall be of acceptable size, number and location, so that proper and convenient access may be had by those required to proceed to and from all parts of the project.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 54 23

No Text

SECTION 01 73 00
EXECUTION

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes general procedural requirements governing execution of the Work including without limitation the following:

1. Delivery of Materials
2. Contractor's Superintendent
3. Surveys
4. Borings
5. Examination
6. Environmental Assessment
7. Preparation
8. Deferred Construction
9. Installation
10. Permits
11. Transportation
12. Sleeves and Hangers
13. Sleeve and Hanger Drawings
14. Cutting and Patching
15. Location of Partitions
16. Furniture and Equipment
17. Removal of Rubbish and Surplus Material
18. Cleaning
19. Security And Protection of Work Site
20. Maintenance of Site and Adjoining Property
21. Maintenance of Project Site
22. Safety Precautions for Control Circuits
23. Obstructions in Drainage Lines

1.3 RELATED SECTIONS: Include without limitation the following:

A.	Section 01 10 00	SUMMARY
B.	Section 01 31 00	PROJECT MANAGEMENT AND COORDINATION
C.	Section 01 33 00	SUBMITTAL PROCEDURES
D.	Section 01 74 19	CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
E.	Section 01 77 00	CLOSEOUT PROCEDURES
F.	Section 01 78 39	CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 QUALITY ASSURANCE:

A. Land Surveyor Qualifications: A professional land surveyor who is licensed in the State of New York and who is experienced in providing land-surveying services of the kind indicated.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 DELIVERY OF MATERIALS:

A. Material Orders: The Contractor shall furnish to the Commissioner a copy of each material order, indicating date of order and quantity of material, and shall also notify the Commissioner when materials have been delivered to the site and in what quantities.

B. Ample Quantities: The Contractor shall deliver materials in ample quantities to insure the most prompt and uninterrupted progress of the work so as to complete the work within the Contract time.

C. Containers: The manufacturer's containers shall be delivered with unbroken seals and shall bear proper labels.

D. Deliveries: The Contractor shall coordinate deliveries in order to avoid delaying or impeding the progress of the work.

E. Handling: The Contractor shall provide equipment and personnel to handle products by methods to prevent soiling or damage.

1. Promptly inspect shipments to assure products comply with requirements, quantities are correct, and products are undamaged.
2. Promptly return damaged shipments or incorrect orders to manufacturer.
3. For materials or equipment to be reused or salvaged, use special care in removal, storage and reinstallation to insure proper function in completed work.

F. Storage: Store products in accordance with provisions of Article 3.1, and periodically inspect to assure that stored products are undamaged and are maintained under required conditions.

G. Stacking: All materials shall be properly stacked in convenient places adjacent to the site, or where directed, and protected in a satisfactory manner. Stacked materials shall be so arranged as to not interfere with visibility of traffic control devices.

H. Overloading: If authority is given to store materials in any part of the project area, they shall be so stored as to cause no overloading.

I. No Interference: If it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the work or interfering with the work to be done by any trade subcontractor, the Contractor shall remove and restack such materials at no additional cost to the City.

3.2 CONTRACTOR'S CONSTRUCTION SUPERINTENDENT:

A. Contractor's Construction Superintendent: The Contractor shall devote its time and personal attention to the work and shall employ and retain at the project site, from the commencement until the entire completion of the work, a Contractor's Construction Superintendent. The Contractor's Construction Superintendent shall be registered with the New York City Department of Buildings in compliance with the Construction Superintendent Rule of the City of New York and shall be competent and capable of maintaining proper supervision and care of the work and shall be acceptable to the Commissioner. The Construction Superintendent shall, in the absence of the Contractor, and irrespective of any superintendent or foreman employed by any subcontractor, shall see that the instructions of the Commissioner are carried out.

B. Replacement: The Contractor's Construction Superintendent on the job shall not be changed or removed without the consent of the Commissioner.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3

3.3 SURVEYS:

A. Line and Grade: The City will establish a baseline and bench mark near the site of the work for use of the Contractor in connection with the performance of the work.

B. Responsibility: The Contractor shall establish all other lines and elevations required for its work and shall be solely responsible for the accuracy thereof.

C. Safeguard All Points: The Contractor shall safeguard all points, stakes, grade marks and bench marks made or established by the Contractor on the work, shall re-establish same if disturbed and bear the entire expense of rectifying the work improperly installed due to not maintaining, not protecting or removing without authorization such established points, stakes, or marks.

D. City Monuments and Markers: No work shall be performed near City monuments or marks so as to disturb them until the said monuments or marks have been referenced or reset or otherwise disposed of by the relevant Agency or party who installed them.

E. Foundations: The Contractor shall furnish certification from a licensed Surveyor that all portions of the foundation work are located in accordance with the Contract Drawings and at the elevations required thereby. This certification shall show the actual locations and the actual elevations of all the work in relation to the locations and elevations shown on the Contract Drawings, including but not restricted to the following:

1. The locations and elevations of all piles, if any.
2. Elevations of tops of all spread footings, tops of pile caps, and tops of all foundation walls, elevator pit walls and ramp walls.
3. Location of all footing centers and pier centers including those for exterior wall columns.
4. Location of all foundation walls including wall columns, elevator pit walls and ramp walls.

F. Wall Lines: After the first courses of masonry or stone have been laid, the Contractor shall establish the permanent lines of exterior walls. The Contractor shall furnish promptly, certification from a licensed Surveyor, in the form of signed original drawings showing the exact location of such wall lines, of all portions of all structures. Except at its own risk, the Contractor shall not proceed further with the erection of walls until the Surveyor's certification has been submitted and verified for correct location of wall lines.

G. Surveyor: The Surveyor selected for any of the purposes mentioned in Paragraph E and Paragraph F above, and Paragraph I below, shall be a land Surveyor licensed in the State of New York and shall be subject to the approval of the Commissioner. The Surveyor shall not be a regular employee of the Contractor, nor shall the Surveyor have any interest in the Contract. The Surveyor shall not be employed by the Contractor in laying out any work, it being intended that the Surveyor's certification shall represent an independent and disinterested verification of such layout. The Surveyor shall report to the Department of Design and Construction's Resident Engineer each time upon arrival to and departure from the site and review with the Resident Engineer the data required for the project.

H. Final Certification: Final certification shall be submitted upon completion of the work or upon completion of any subdivision of the work as directed by the Commissioner. Any exceptions or deviations from the drawings shall be noted on the final certificate and there shall be included any maps, plates, notes, pertinent documents and data necessary, in the opinion of the Commissioner, to constitute a full and complete report.

I. Final Survey: The Contractor shall submit to DDC for submission to the Department of Buildings a final Survey by the licensed Surveyor showing the location of the new Structure, before completion of the Structure. This Survey shall show the location of the first tier of beams or of the first floor; the finish grades of the open spaces on the plot; the established curb level and the location of all other Structures on the plan, together with the location and boundaries of the lot or plot upon which the Structure is constructed, curb cuts, all yard dimensions, etc.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4

3.4 BORINGS:

A. The work of this article shall be the responsibility of the Contractor unless otherwise indicated.

B. Reference Drawings: The Boring Drawings as listed on the title sheet are for information to the bidder and are to be used under the conditions as follows:

1. Boring Logs: shown on the Boring Drawings, record information obtained under engineering supervision in the course of exploration carried out by or under the direction of forces of the Department of Design and Construction at the site.

2. Soils and Rock Samples: All inferences are drawn from the indications observed as made by engineering and scientific personnel. All such inferences and all records of the work including soil samples and rock cores, if any, are available to bidders for inspection.

3. Certification of Samples: The City certifies that the work was carried out as stated, and that the soil samples and rock cores, if any were referred to, were actually taken from the site at the times, places and in the manner indicated. The samples are available for inspection in the Department of Design and Construction Subsurface Exploration Section.

4. Bidder's Responsibility: The bidder, however, is responsible for any conclusions to be drawn from the work. If the bidder accepts those of the City, it must do so at its own risk. If the bidder prefers not to assume such risk, the bidder is under the obligation of employing its own experts to analyze the available information, and must be responsible for any consequences of acting on their conclusions.

5. Continuity Not Guarantee: The City does not guarantee continuity of conditions shown at actual boring locations over the entire site. Where possible, borings are located to avoid all obstructions and previous construction which can be found by inspection of the surface and the bidder is required to estimate the influence of such features from its own inspection of the site.

3.5 EXAMINATION:

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground utilities and other construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with the subcontractor responsible for installation or application present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.6 ENVIRONMENTAL ASSESSMENTS:

A. City Responsibilities: An Environmental Assessment and survey is performed by the NYC DDC and its findings are included in the Contract Documents. In accordance with the NYC Administrative Code Title 15 Chapter 1 an asbestos survey is required to be performed by an Asbestos Investigator certified by the NYC Department of Environmental Protection (DEP) to identify the presence of asbestos containing material (ACM) prior to any alteration, renovation or demolition activity. The findings of such survey are required for the submission of approvals and permits issued by the NYC Department of Buildings (DOB). When the findings indicate that asbestos containing material is present and will be disturbed during the alteration, renovation or demolition activity then abatement design specifications will be incorporated into the contract documents. The Contractor shall comply with all federal, state and local asbestos regulations affecting the work for this Contract.

B. Contractor Responsibility: The Contractor shall comply with all federal, state and local environmental regulations, including without limitation USEPA and OSHA regulations which require the Contractor to assess if lead based paint will be disturbed during the work in order to protect his/her workers and the building occupants from migration of lead dust into the air. The Contractor shall comply with all federal, state and local environmental waste disposal regulation which may be required during the work. The Contractor is required to hire licensed abatement and disposal companies for the requisite work.

3.7 PREPARATION:

A. Field Measurements: The Contractor shall verify all dimensions and conditions on the job so that all work will properly join the existing work.

B. The Contractor, before commencing work, shall examine all adjoining work on which its work is in any way dependent on good workmanship in accordance to the intent of the Specifications and the Contract

Drawings. The Contractor shall report to the Commissioner any condition that will prevent it from performing work that conforms to the required standard.

C. Existing Utility Information: Furnish information to the Commissioner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

3.8 DEFERRED CONSTRUCTION:

A. Where necessity for deferred construction is certified by the Commissioner, in order to permit the installation of any item or items of equipment required to be furnished and installed concurrent with the time allowed for doing and completing the work of the Contract, the Contractor shall defer construction work limited to adequate areas as approved by the Commissioner.

B. The Contractor shall confer with the affected trade subcontractors and ascertain arrangements, time and facilities necessary to be made by the Contractor in order to execute the provisions specified herein.

3.9 INSTALLATION:

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work and work of trade subcontractors to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by the Design Consultant.

   2. Allow for building movement, including thermal expansion and contraction.

   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.10 PERMITS:

A. The Contractor shall comply with all local, state and federal laws, rules and regulations affecting the Work of this Project, including, without limitation, (1) obtaining all necessary permits for the performance of the Work prior to commencement thereof, and (2) complying with all requirements for the disposal of demolition and/or construction debris, waste, etc., including disposal in City landfills. The Contractor shall be responsible for all costs in connection with such regulatory compliance, unless otherwise specified in the Contract.

3.11 TRANSPORTATION:

A. Availability: It shall be the duty of the Contractor to determine the availability of transportation facilities and dockage for the use of its employees, equipment and material and the conditions under which such use will be permitted.

B. Costs: If transportation facilities and dockage are available and are permitted to be used by the governmental agency having jurisdiction, the Contractor shall pay all necessary costs and expenses, and abide by all rules and regulations promulgated in connection therewith.

C. Vehicles: With respect to the use of vehicles on highways and bridges, the Contractor's attention is directed to the limitations set forth in the Rules of the City of New York, Title 34, Chapter 4, Section 4-15.

D. Continued Use: It is understood that the Commissioner makes no warranty as to the continued use by the Contractor of such facilities.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.12

3.12 SLEEVES AND HANGERS:

A. Coordinate with Progress Schedule: The Contractor shall promptly furnish and install conduits, outlets, piping sleeves, boxes, inserts and all other materials and equipment that is to be built into the work in conformity with the requirements of the project.

B. Cooperation of Subcontractors: All subcontractors shall fully cooperate with each other in connection with the performance of the above work as "cutting in" new work is neither contemplated nor will it be tolerated.

C. Timeliness: In the event that timely delivery of sleeves and other materials cannot be made, and to avoid delay, the Contractor may arrange to have boxes or other forms set at the locations where the piping or other material is to pass through or into the slabs, walls or other work. Upon the subsequent installation of the sleeves or other material, the Contractor shall fill around them with materials as required by the Contract. The necessary expenditures incurred for the boxing out and filling in shall be borne by the Contractor.

D. Inserts: The Contractor is to install strip inserts four (4) foot on center and perpendicular to beams in ceiling slabs of boiler, machine and mechanical equipment rooms. Inserts are to be installed for strippable concrete slabs only.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.13

3.13 SLEEVE AND PENETRATION DRAWINGS:

A. As soon as practicable after the commencement of work and when the order in which concrete for the first slabs, walls, etc. to be poured is determined, the Contractor shall submit to the DDC a sketch indicating the location and size of all penetrations for sleeves, ducts, etc. which will be required to accommodate the mechanical trades, in order to determine if such penetrations will materially weaken the project's structure. The sketch shall be stamped and returned if approved and/or comments will be transmitted. The Contractor shall continue to submit sketches as the pouring schedule and the concrete work progresses and, until approvals for the penetration sketches have been given. The Contractor shall not predicate its layout work on unapproved sketches.

3.14 CUTTING AND PATCHING:

A. Responsibility: The Contractor shall do all cutting, patching and restoration required by its work, unless otherwise particularly specified in the Specifications.

B. Restore Work: The Contractor shall restore any work damaged during the performance of the work.

C. Competent Workers: All restoration work shall be done to the satisfaction of the Commissioner by competent workers skilled in the trade required by such restoration. If, in the judgment of the Commissioner, workers engaged in restoration work are incompetent, they shall be replaced immediately by competent workers.

D. Structural Elements: Do not cut and patch structural elements without the prior approval, in writing, of the Resident Engineer.

E. Operational Elements: Do not cut and patch operating elements and related components.

F. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Commissioner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

G. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

H. Removals: The Contractor must remove from the premises all demolished materials of every nature or description resulting from cutting, patching and restoration work, in accordance with the requirements hereinafter stipulated under Sub-Section 3.17 herein and as further required in Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.15

3.15 LOCATION OF PARTITIONS:

A. Within three (3) weeks after the concrete slabs have been poured on each floor level, the Contractor shall immediately locate accurately all of the partitions, including the door openings, on the floor slabs in a manner approved by the Resident Engineer.

3.16 FURNITURE AND EQUIPMENT:

A. Responsibility: The Contractor is responsible for moving all loose furniture and/or equipment in all areas where the location of such furniture and/or equipment interferes with the proper performance of its work.

B. Protection: All such furniture and/or equipment must be adequately protected with dust cloths and returned to their original locations when directed to do so by the Resident Engineer.

3.17 REMOVAL OF RUBBISH AND SURPLUS MATERIALS:

A. Of the waste that is generated during demolition, as many of the waste materials as economically feasible, and as stated here, shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized. Comply with requirements of Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

B. Rubbish: Rubbish shall not be thrown from the windows or other parts of the project. Mason's rubbish, dirt and other dust-producing material shall be wetted down periodically.

C. Location: The Contractor shall clean Project site and work area daily and sweep up and deposit, at a location designated on each floor, all of its rubbish, debris and waste materials, as it accumulates and when directed by the Resident Engineer. Wood crating shall be broken up, neatly bundled, tied and stacked ready for removal and be deposited at a location designated on each floor.
   1. Comply with requirements in NYC Fire Department for removal of combustible waste materials and debris.
   2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 degrees F (27 degrees C).
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

D. Laborers: The Contractor shall be responsible for the removal of all rubbish, etc., from the site. The Contractor shall remove from the designated locations all piles of rubbish, debris, waste material and wood crating as they accumulate and when directed by the Resident Engineer, and shall remove them from the site. The Contractor shall employ and keep engaged for this purpose an adequate number of laborers.

E. Surplus Materials: The Contractor shall remove from the site all surplus materials when there is no further use for same.

F. Tools And Materials: At the conclusion of the work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly removed.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

3.18 CLEANING:

A. The Contractor shall thoroughly clean all equipment and materials furnished and installed and shall deliver such materials and equipment undamaged in a clean and new appearing condition up to date of Final Acceptance.

B. Site: Maintain Project site free of waste materials and debris.

C. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

D. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

E. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration up to date of Final Acceptance.

F. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration up to date of Final Acceptance.

3.19 SECURITY AND PROTECTION OF WORK SITE:

A. Provide protection of installed work, including appropriate protective coverings and maintain conditions that ensure installed Work is without damage or deterioration up to date of Final Acceptance.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

C. Secure and protect work and work site against damage, loss, injury, theft and/or vandalism.

D. Maintain daily sign-in sheets of workers and visitors and make the sheets available to the Commissioner

3.20 MAINTENANCE OF SITE AND ADJOINING PROPERTY:

A. The Contractor shall take over and maintain the Project site, after order to start work.

B. The Contractor shall be responsible for the safety of the adjoining property, including sidewalks, paving, fences, sewers, water, gas, electric and other mains, pipes and conduits etc. until the date of Final Acceptance. The Contractor shall, at its own expense, except as otherwise specified, protect same and maintain them in at least as good a condition as that in which the Contractor finds them.

C. All pavements, sidewalks, roads and approaches to fire hydrants shall be kept clear at all times, maintained and repaired to serviceable condition with materials to match existing.

D. Provide and keep in good repair all bridging and decking necessary to maintain vehicular and pedestrian traffic.

E. The Contractor shall also remove all snow and ice as it accumulates on the sidewalks within the Contract Limits Lines.

3.21 MAINTENANCE OF PROJECT SITE:

A. The Contractor shall take over and maintain all project areas, after order to start work.

B. Until the date of Final Acceptance, the Contractor shall be responsible for the safety of all project areas, including water, gas, electric and other mains and pipes and conduits and shall at the Contractor's own expense, except as otherwise specified, protect same and maintain them in at least as good condition as that in which the Contractor finds them.

C. All pavements, sidewalks, roads and approaches to fire hydrants shall be kept clear at all times, maintained, and if damaged, repaired to serviceable conditions with materials to match existing.

D. The Contractor shall keep the space for the Resident Engineer in a clean condition.

3.22 SAFETY PRECAUTIONS FOR CONTROL CIRCUITS:

A. Control circuits, the failure of which will cause a hazard to life and property, shall comply with the New York City Dept. of Buildings, Bureau of Electrical Control requirements.

3.23 OBSTRUCTIONS IN DRAINAGE LINES:

A. The Contractor shall be responsible for all obstructions occurring in all drainage lines, fittings and fixtures after the installations and cleaning of these drainage lines, fittings and fixtures as certified by the Resident Engineer. Roof drains shall be kept clear of any and all debris. Any stoppage shall be repaired immediately at the expense of the Contractor.

END OF SECTION 01 73 00

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This section includes administrative and procedural requirements for the management and disposal of construction waste and includes the following requirements:
   1. Waste Management Goals
   2. Waste Management Plan
   3. Progress Reports
   4. Progress Meetings
   5. Management Plan Implementation

B. This Section includes:
   1. Definitions
   2. Waste Management Performance Requirements
   3. Reference Resources
   4. Submittals
   5. Quality Assurance
   6. Waste Plan Implementation
   7. Additional Demolition and Salvage Requirements
   8. Disposal

1.3 RELATED SECTIONS: Include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
C. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
D. Section 01 73 00 EXECUTION
E. Section 01 77 00 CLOSEOUT PROCEDURES
F. Section 01 78 39 CONSTRUCTION RECORD DOCUMENTS
G. Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk or the like.

D. Construction and Demolition Waste: Solid wastes typically including building materials, trash debris and rubble resulting from remodeling, repair and demolition operations. Hazardous materials and land clearing waste are not included.

E. Diversion from Landfill: To remove, or have removed, from the site for recycling, reuse or salvage, material that might otherwise be sent to a landfill.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product.

G. Recycle (recycling): To sort, separate, process, treat or reconstitute solid waste and other discarded materials for the purpose of redirecting such materials into the manufacture of useful products. Recycling does not include burning, incinerating or thermally destroying waste.

H. Return: To give back reusable items or unused products to vendors.

I. Reuse: To reuse excess or discarded construction material in some manner on the Project site.

J. Salvage: To remove a waste material from the Project site for resale or reuse.

K. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable and reusable material.

L. Waste Management Plan: A project-related plan for the collection, transportation and disposal of waste generated at the construction site. The purpose of the plan is to ultimately reduce the amount of material becoming landfill.

1.5 WASTE MANAGEMENT PERFORMANCE REQUIREMENTS:

A. The City of New York has established that this project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, inaccurate planning, breakage, mishandling, contamination, or other factors shall be employed.

B. Of the waste that is generated during demolition, as many of the waste materials as economically feasible, and as stated here, shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.5 C

C. LEED CERTIFICATION: The City of New York will seek LEED (Leadership in Energy and Environmental Design) certification for this Project as indicated in the Addendum to the General Conditions from the U.S. Green Building Council. The documentation required here will be used for this purpose. LEED awards points for a variety of sustainable design measures on a project, one of which is the reuse and recycling of project waste.

D. DIVERSION REQUIREMENTS. A minimum of 75% of total Project demolition waste (by weight) shall be diverted from landfill. The following waste categories are likely candidates to be included in the diversion plan as applicable for this project:
   1. Concrete
   2. Bricks
   3. Concrete masonry units (CMU)
   4. Asphalt
   5. Metals (e.g. banding, stud trim, ceiling grid, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, brass, bronze)

6. Clean dimensional wood
7. Carpet and pad
8. Drywall
9. Ceiling tiles
10. Cardboard, paper and packaging
11. Reuse items indicated on the Drawings and/or elsewhere in the Specification

E. All fluorescent lamps, HID lamps and mercury-containing thermostats removed from the site shall be recycled.

F. Recycling on the job, subject to the Commissioner's approval, is encouraged on the site itself, such as the crushing and reuse of removed sound concrete and stone. Include these categories in the Waste Management Plan.

1.6 REFERENCES, RESOURCES:

A. DDC encourages its contractors to seek information from websites and experts in salvage or recycling in order to minimize disposal costs. There are numerous opportunities to sell, salvage, or to donate materials and accrue tax benefits (which would accrue to the contractor); also there are outlets that will pick up, and in some cases buy recyclable materials. Examples of information resources are as follows:

1. DDC's Sustainable Design web site:
http://www.nyc.gov/html/ddc/html/design/sustainable_home.shtml This includes a manual on Construction and Demolition Waste Reduction and Recycling, a Sample Waste Management Plan and sample C&D Waste Management log. A standard Construction and Demolition Waste Management Log form is included at the end of this section.

2. Web Resources

(Information only; no warranty or endorsement is implied.)

www.wastematch.org Site of New York Waste Match, a materials exchange database and service

www.bignyc.org Site of Build It Green NYC, a non profit outlet for salvaged and surplus building materials

www.usgbc.org Site of the United States Green Building Council, with a description of the LEED certification process and requirements for C&D waste recycling

www.epa.gov/epawaste/index.htm Site of the U.S. Environmental Protection Agency that discusses construction and demolition waste issues, and links to other resources.

1.7 SUBMITTALS:

A. The Contractor shall be responsible for the development and implementation of a Waste Management Plan for the Project. The Contractor's subcontractors shall assist in the development of that Plan, and collect and deposit their waste and recyclable materials in accordance with the approved Plan.

B. DRAFT WASTE MANAGEMENT PLAN. Within fifteen (15) days after receipt of 'Notice to Proceed', or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Commissioner a Draft Waste Management Plan. Include separate sections for demolition and construction waste. The Plan shall demonstrate how the performance goals will be met, and contain the following:

1. List of materials targeted for reuse, salvage, or recycling, and names, addresses, and phone numbers of receiving facilities/companies that will be purchasing or accepting each material.
2. Description of onsite and/or offsite sorting methods for all materials to be removed from site.
3. If mixed construction and demolition waste is to be sorted off-site, provide a letter from the processor stating the average percentage of mixed construction and demolition waste they recycle.
4. Landfill information: Names of landfills where non-recyclable/reusable/salvageable waste will be disposed, and list of applicable tipping fees.
5. Materials handling procedures: A description of the means by which any recyclable, salvaged, or reused materials will be protected from contamination, and collected in a manner that will meet the requirements for acceptance by the designated recycling processors.
6. Transportation: A description of the means of transportation and destination for recycled materials.
7. Meetings: Description of regular meetings to be held to address waste management.
8. Sample spreadsheet and description of how the implementation of the plan will be documented on a monthly basis.

C. FINAL WASTE MANAGEMENT PLAN. Within fifteen (15) days of Commissioner's approval of the Draft Plan, the Contractor shall submit a Final Waste Management Plan.

D. PROGRESS REPORTS. The Contractor shall submit monthly a Waste Management Progress Report, containing the following information:

1. Project title, name of company completing report, and dates of period covered by the report
2. Report on the disposal of all jobsite waste. A DDC C&D Waste Management Log form is available on the DDC Sustainable Design website and included at the end of this section. For each shipment of material removed from the site, provide the following:
   a. Date and ticket number of removal
   b. Identity of material hauler
   c. Material Category
   d. Total quantity of waste, in tones/cubic yards, by type
   e. Quantity of waste salvaged, recycled and/or reused, by type
   f. Total quantity of waste diverted from landfill (recycled, salvaged, reused) as a percentage of total waste
   g. Recipient of each material type
3. Provide monthly and cumulative project totals of waste, quantity diverted, and percentage diverted.
4. Note that the unit of measure may be either tons or cubic yards, but must be consistent for all shipments and all materials throughout the project. Reports with inconsistent or mixed units will not be reviewed and will be returned for re-submission.
5. Include legible copies of on-site logs, weight tickets and receipts. Receipts shall be from charitable organizations, recycling and/or disposal site operators who can legally accept the materials for the purpose of reuse, recycling or disposal. Contractor shall save such original documents for the life of the project plus seven (7) years.

E. LEED Submittal: For LEED designated projects submit LEED Letter Template for Credit 2.2, signed by the Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.

F. Refrigerant Recovery. Submit Qualification data for Refrigerant recovery technician. Statement of refrigerant recovery, signed by the refrigerant recovery technician responsible for recovering refrigerant

stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.8 QUALITY ASSURANCE:

A. The Contractor shall designate a Waste Management Coordinator, to ensure compliance with this section. Coordinator shall be present at Project site full time for the duration of the project.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Waste management plans, documentation and implementation shall be discussed at the following meetings:

1. Pre-demolition kick-off meeting
2. Pre-construction kick-off meeting
3. Regular job-site meetings
4. Contractor toolbox meetings

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 WASTE PLAN IMPLEMENTATION:

A. The Contractor shall implement the Waste Management Plan, coordinate the Plan with all affected trades, and designate one individual as the Construction Waste Management Representative, who will be responsible for communicating the progress of the Plan with the Commissioner on a regular basis, and for assembling the required LEED documentation.

B. The Contractor shall be responsible for the provision of containers and the removal of all waste, non-returned surplus materials, and rubbish from the site in accordance with the approved Waste Management Plan. The Contractor shall oversee and document the results of the Plan. Monies received for salvaged materials shall remain with the Contractor, except the monies for those items specifically identified elsewhere in the specifications, or indicated on the drawings as belonging to others.

C. Responsibilities of Subcontractors: Each subcontractor shall be responsible for collecting its waste, non-returned surplus materials, and rubbish, in accordance with the Waste Management Plan.

D. Distribution. The Contractor shall distribute copies of the Waste Management Plan to each Subcontractor, Resident Engineer, Construction Manager, and Commissioner.

E. Instruction: The Contractor shall provide on-site instruction of proper waste management procedures to be used by all parties in appropriate stages of the Project.

F. Procedures. Conduct waste management operations to ensure minimum interference with site vegetation, roads, streets, walks and other adjacent occupied and used facilities.

1. Collect co-mingled waste and/or separate all recyclable waste in accordance with the Plan Specific areas on the Project site are to be designated, and appropriate containers and bins clearly marked with acceptable and unacceptable materials.
2. Inspect containers and bins for contamination and remove contaminated materials if found.

3. Comply with the General Conditions for controlling dust and dirt, environmental protection, and noise control.

3.2 ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS:

A. Demolition and salvage of additional items indicated in other sections of the Project Specifications require special attention as part of the overall 75 % diversion from landfill. Specific requirements for special attention are designated in other sections of the Project Specifications.

3.3 DISPOSAL:

A. General. Except for items or material to be salvaged, recycled or otherwise reused, remove waste material from the Project site and legally dispose of them in a manner acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning. Do not burn waste materials

C. Disposal. Transport waste materials off Project Site and legally dispose of them.

END OF SECTION 01 74 19

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT LOG

Project Name: _____
Project I.D.: _____

Contractor: _____
Prepared by: _____
For Month: _____

Haul Date	Ticket #	Hauling Company	*Material Category[2]	Material Quantity (tons or cubic yards)[1]				*Material Recipient
				*Total Weight	Excluded Material[3]	*Diverted Material[4]	*Landfilled Material	
				*Total		*Diverted	*Landfilled	
			Monthly Totals					
			% Diverted this Month*					
			Cumulative Totals					
			% Diverted to Date					

Notes:
1. Volume (cubic yards) may be used instead of weight if used for ALL amounts and ALL materials.
2. Includes concrete; bricks; concrete masonry units (CMU); asphalt; metals; clean dimensional wood; carpet and pad; drywall; ceiling tiles; cardboard, paper, and packaging; and any other reuse items indicated on the Drawings and/or elsewhere in the Specification.
3. Excluded material includes soil or land clearing debris.
4. Diverted material includes recycled and reused material diverted from landfill. Recycled material is reprocessed into new products. Reused material is reclaimed, salvaged or otherwise used in its original form, either on-site or off-site.

* These items must be listed in order to receive LEED credit.

NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT LOG

No Text

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes administrative and general procedural requirements for Closeout Procedures, including without limitation the following:

1. Definitions
2. Substantial Completion
3. Final Acceptance
4. Warranties
5. Final Cleaning
6. Repair of the Work

B. LEED: Refer to the Addendum to identify whether this project is designed to comply with a Certification Level according to the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS."

C. COMMISSIONING: Refer to the Addendum to identify whether this project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning shall be in accordance with ASHRAE and USGBC LEED- NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor shall cooperate with the commissioning agent and provide whatever assistance is required.

1.3 RELATED SECTIONS: include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 33 00 SUBMITTAL PROCEDURES
C. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
D. Section 01 78 39 CONTRACT RECORD DOCUMENTS
E. Section 01 79 00 DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or

combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Substantial Completion: shall mean the written determination by the Commissioner that the Work required under the Contract is substantially, but not entirely, complete.

D. Final Acceptance: shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.

1.5 SUBSTANTIAL COMPLETION:

A. Preliminary Procedures: Before requesting inspection to determine the date of Substantial Completion, the Contractor shall complete and supply all items required by the contract specifications, General Conditions, Addendum to the General Conditions, change orders or other directives from the Commissioner's representatives. The required items will include all contract requirements for substantial completion, including but not limited to items related to releases, regulatory approvals, warranties and guarantees, record documents, testing, demonstration and orientation, final clean up and repairs, and all specific checklist of items by the Resident Engineer. (See Attachment "A" at the end of this section for sample requirements for Substantial Completion).

B. Prepare and submit a list to the Resident Engineer of incomplete items, the value of incomplete construction, and reasons the work is not complete.

C. Inspection: The Contractor shall submit to the Resident Engineer a written request for inspection for Substantial Completion. Within ten (10) days of receipt of the request, the Resident Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. The Resident Engineer may request the services, as required, of the Design Consultant, Client Agency Representative and/or other entities having involvement with the Work to assist in the inspection of the Work .If the Resident Engineer makes a determination that the work is substantially complete and approves the Final Punch List and the date for Final Acceptance, he/she will so advise the Commissioner and recommend issuance of the Certificate of Substantial Completion. If the Resident Engineer determines that the work is not substantially complete, he/she will notify the Contractor of those items that must be completed or corrected before the Certificate of Substantial Completion will be issued.

1 Re-inspection: Contractor shall request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
2 Results of completed inspection will form the basis of requirements for Final Acceptance.

1.6 FINAL ACCEPTANCE:

A. Preliminary Procedures: Before requesting final inspection for Final Acceptance of the Work, the Contractor shall complete the following. (Note that the following are to be completed, submitted as appropriate, and approved by the Commissioner, as applicable, prior to the final inspection and are not to be submitted for approval or otherwise at the final inspection unless specifically indicated). List exceptions in the request.

1. Verify that all required submittals have been provided to the Commissioner including but not limited to the following:
   a. Manufacturer's cleaning instructions
   b. Posted instructions
   c. As-built Record Documents (Drawings, specifications, and product data) as described in Section 01 78 39, CONTRACT RECORD DOCUMENTS, incorporating any changes required by the Commissioner as a result of the review of the submission prior to the pre-final inspection.
   d. Operation and Maintenance Manuals, including Preventive Maintenance, Special Tools, Repair Requirements, Parts List, Spare Parts List, and Operating Instructions.

e. Completion of required Demonstration and Orientation, as applicable, of designated personnel in operation and maintenance of systems, sub-systems and equipment.
f. Applicable LEED Building submittals as described in Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS.
g. Construction progress photographs as described in Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION.

2. Submit a certified copy of the final approved Punch List of items to be completed or corrected. The certified copy of the Punch List shall state that each item has been completed or otherwise resolved for acceptance, and shall be endorsed and dated by the Contractor.
3. Submit pest-control final inspection report and survey as required in Section 01 50 00, TEMPORARY FACILITIES AND CONTROLS.
4. Submit record documents and similar final record information.
5. Deliver tools, spare parts, extra stock and similar items.
6. Complete final clean-up requirements including touch-up painting of marred surfaces.
7. Submit final meter readings for utilities, as applicable, a measured record of stored fuel, and similar data as of the date when the City took possession of and assumed responsibility for corresponding elements of the work.

B. Final Inspection: The Contractor shall submit to the Resident Engineer a written request for inspection for Final Acceptance of the Work. Within ten (10) days of receipt of the request, the Resident Engineer will either proceed with inspection or notify the Contractor of unfulfilled requirements. The Resident Engineer may request the services, as required, of the Design Consultant, Client Agency Representative and/or other entities having involvement with the Work to assist in the inspection of the Work. If the Resident Engineer finds that all items on the Final Approved Punch List are complete and no further work remains to be done, he/she will so advise the Commissioner and recommend the issuance of the determination of Final Acceptance. If the Resident Engineer determines that the work is not complete, he/she will notify the Contractor of those items that must be completed or corrected before the determination of Final Acceptance will be issued.

C. Final Acceptance: The Work will be accepted as final and complete as of the date of the Resident Engineer's inspection if, upon such inspection, the Resident Engineer finds that all items on the Punch List are complete and no further Work remains to be done. The Commissioner will then issue a written determination of Final Acceptance.

1.7 WARRANTIES:

A. The items of materials and/or equipment for which manufacturer warranties are required are listed in Schedule B of the Addendum. For each item of material and/or equipment listed in Schedule B, the Contractor shall obtain a written warranty from the manufacturer. Such warranty shall provide that the material or equipment is free from defects for the period set forth in Schedule B and will be replaced or repaired within such specified period. The contractor shall deliver all required warranties to the Commissioner.

B. Unless indicated otherwise Warranties are to take effect on the date of Substantial Completion.

C. Submittal Time: Submit written Warranties on request of the Commissioner for designated portions of the Work where commencement of Warranties other than date of Substantial Completion is indicated.

D. Partial Occupancy: Submit properly executed Warranties to the Commissioner within 15 days of completion of designated portions of the Work that are completed and occupied or used by the City.

E. Organize the Warranty documents into an orderly sequence based on the Project Specification Divisions and Section Numbers.

1. Bind Warranties in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES;" name and location of Project; Capitol Budget Project Number (FMS ID); and Contractor's and applicable subcontractor's name and address.
3. Provide heavy paper dividers with plastic-covered tabs for each separate Warranty. Mark tab to identify the product or installation.
4. Provide a typed description of each product or installation being warranted, including the name of the product, and the name, address, and telephone number of the Installer.

F. When warranted materials and/or equipment require operation and maintenance manuals, provide additional copies of each required Warranty in each required manual. Refer to Section 01 78 39, CONTRACT RECORD DOCUMENTS, for requirements of Operation and Maintenance Manuals.

PART II – PRODUCTS

2.1 MATERIALS:

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART III – EXECUTION

3.1 FINAL CLEANING:

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
   1. Complete the following cleaning operations, as applicable, before requesting inspection for Final Acceptance of the Work for entire Project or for a portion of Project:
      a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
      b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
      c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
      d. Remove tools, construction equipment, machinery, and surplus material from Project site.
      e. Remove snow and ice to provide safe access to building.
      f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
      g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
      h. Sweep concrete floors broom clean in unoccupied spaces.
      i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
q. Clean ducts, blowers, and coils if units were operated without filters during construction.
r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
s. Leave Project clean and ready for occupancy.
t. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests, as required in Section 01 50 00, TEMPORARY FACILITIES,SERVICES AND CONTROLS. Prepare and submit a Pest Control report to the Commissioner.

D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on City's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

3.2 REPAIR OF THE WORK:

A. Subject to the terms of the Contract the Contractor shall complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Contractor shall repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
   a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00

SECTION 01 77 00

ATTACHMENT 'A'

The following list is a general sample of Substantial Completion requirements, including but not limited to:

1. Prepare and submit a list to the Resident Engineer, of incomplete items, the value of incomplete construction, and reasons the work is not complete.
2. Obtain and submit any necessary releases enabling the City unrestricted use of the project and access to services and utilities.
3. Regulatory Approvals: Submit all required documentation from applicable Governing Authorities, including, but not limited to, Department of Buildings (DoB); Department of Transportation (DoT); Department of Environmental Protection (DEP); Fire Department (FDNY); etc. Documentation to include, but not limited to, the following:
   a. Building Permits, Applications and Sign-offs.
   b. Permits and Sign-off for construction fences; sidewalk bridges; scaffolds, cranes and derricks; utilities; etc.
   c. Certificates of Inspections and Sign-offs.
   d. Required Certificates and Use Permits.
   e. Certificate of Occupancy (C.O.), Temporary Certificate of Occupancy (T.C.O.) or Letter of Completion as applicable.
4. Submit specific warranties required by the specifications, final certifications, and similar documents.
5. Prepare and submit Record Documents as described in Section 01 78 39, CONTRACT RECORD DOCUMENTS, including but not limited to; approved documentation from Governing Authorities; as-built record drawings and specifications; product data; operation and maintenance manuals; Final Completion construction photographs; damage or settlement surveys; final property surveys; and similar final record information. The Resident Engineer will review the submission and provide appropriate comments. If comments are significant the initial submission will be returned to the Contractor for correction and re-submission incorporating the comments prior to the Final Inspection.
6. Record Waste Management Progress Report: Submit C&D Waste Management logs, with legible copies of weight tickets and receipts required in accordance with Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.
7. If applicable submit LEED Letter Template in accordance with the requirements of Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS.
8. Schedule applicable Demonstration and Orientation required in other Sections of the Project Specifications and as described in Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.
9. Deliver tools, spare parts, extra materials, and similar items to location designated by Resident Engineer. Label with manufacturer's name and model number where applicable.
10. Make final changeover of permanent locks and deliver keys to the Resident Engineer. Advise Commissioner of changeover in security provisions.
11. Complete startup testing of systems as applicable.
12. Submit approved test/adjust/balance records.
13. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements as directed by the Resident Engineer.
14. If applicable complete Commissioning requirements as defined in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS.
15. Complete final cleaning requirements, including touchup painting.
16. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

No Text

SECTION 01 78 39
CONTRACT RECORD DOCUMENTS

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes administrative and general procedural requirements for Contract Record Documents, including:
   1. As-built Contract Record Drawings.
   2. As-built marked-up copies of Record Specifications, addenda and Change Orders.
   3. As-built marked-up Product Data
   4. Record Samples
   5. Construction Record Photographs
   6. Operating and Maintenance Manuals
   7. Final Site Survey
   8. Guarantees and Warranties
   9. Waste Disposal Documentation
   10. LEED Materials and Matrix
   11. Miscellaneous Record Submittals

B. The Department of Design and Construction, at the start of construction (kick-off meeting), will furnish to the Contractor at no cost a complete set of Contract Drawings Mylars (reproducible) pertaining to the work to be performed under the Contract. It is the responsibility of the Contractor to modify the Contract Drawings to indicate all changes and corrections, if any, occurring in the work as actually installed. The Contractor is required to furnish all other Mylar (reproducible) drawings, if necessary, such as Addenda Drawings and Supplementary Drawings as may be necessary to indicate all work in detail as actually completed. All professional seals must be blocked out. Title box complete with project title and Design Consultants' names will remain.

C. Maintenance of Documents and Samples: The Contractor shall maintain, during the progress of the work, an accurate record of the work as actually installed, on Contract Record Drawings, on Mylar (reproducible), in ink. Store record documents and samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition. Make documents and samples available at all times for the Resident Engineer's inspections.

   The Contractor's attention is particularly directed to the necessity of keeping accurate records of all subsurface and concealed work, so that the Contract Record Drawings contain this information in exact detail and location. Contract Record Drawings shall also show all connections, valves, gates, switches, cut-outs and similar operating equipment.

   For projects designated to achieve a LEED rating the Contractor shall receive a copy of the project's LEED scorecard for the purpose of monitoring compliance with the target objectives and to facilitate coordination with the LEED Consultant. The Contractor shall receive periodic updates of this scorecard,

and is required to submit the final version of the Scorecard at Substantial Completion with other project Record Documents.

1.3 RELATED SECTIONS: include without limitation the following:

A.	Section 01 10 00	SUMMARY
B.	Section 01 32 00	CONSTRUCTION PROGRESS DOCUMENTATION
C.	Section 01 32 33	PHOTOGRAPHIC DOCUMENTATION
D.	Section 01 33 00	SUBMITTAL PROCEDURES
E.	Section 01 77 00	PROJECT CLOSEOUT PROCEDURES

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 SUBMITTALS:

A. As-Built Contract Record Drawings: Comply with the following:

1. Progress Submission: As directed by the Resident Engineer, submit progress As-Built Contract Record Drawings at the 50% Construction Completion stage.

2. Final Submission: Before substantial completion payment, the Contractor shall furnish to the Commissioner one (l) complete set of marked-up Mylar (reproducible) As-Built Contract Record Drawings, in ink indicating all of the work and locations as actually installed, plus one (1) set of paper prints which will be furnished to the sponsoring agency by DDC.

3. As-Built Contract Record Drawings shall be of the same size as that of the Contract Drawings, with a one (1) inch margin on three (3) sides and a two (2) inch margin on the left side for binding.

4. Each As-Built Contract Record Drawing shall bear the legend "AS-BUILT CONTRACT RECORD DRAWING" in heavy block lettering, one half (l/2) inch high, and contain the following data:

AS-BUILT CONTRACT RECORD DRAWING
Contractor's Name _____
Contractor's Address _____
Subcontractor's Name (where applicable) _____
Subcontractor's Address _____
Made by: Date _____
Checked by: Date _____

Commissioner's Representatives
(Resident Engineer) DDC
(Plumbing Inspector) DDC
(Heating & Ventilating Inspector) DDC
(Electrical Inspector) DDC

5. Record Drawing Title Sheet: The Contractor shall prepare a title sheet, the same size as the Contract Record Drawings, which shall contain the following:

   a. Heading:
      The City of New York
      Department of Design and Construction
      Division of Public Buildings
   b. Capital Budget Project Number (FMS ID)
   c. Name and Location of Project
   d. Contractor's Name and Address
   e. Subcontractor's Name and Address (where applicable)
   f.. Record of changes (a caption description of work affected, and the date and number of Change Order or other authorization)
   g.. List of Record Drawings

B. Record Specifications, Addenda and Change Order: Submit to the Commissioner two (2) copies each of marked-up Record Specifications, Addenda and Change Orders.

C. Record Product Data: Submit to the Commissioner two (2) sets of Record Product Data.

D. Record Construction Photographs: Submit to the Commissioner final as-built construction photographs and negatives of the completed work as described in Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION.

E. Operating and Maintenance Manuals:

1. Submit three (3) copies each of preliminary manuals to the Resident Engineer for review and approval. The Contractor shall make such corrections, changes and/or additions to the manual until deemed satisfactory by the Resident Engineer. Deliver three (3) copies of the final approved manuals to the Resident Engineer for distribution.

2. Commissioning: Comply with the requirements of Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS, as well as the requirements set forth in sections of the Project Specifications, for projects designated for Commissioning. Submit four (4) copies each of data designated to be included in the Commissioning Operation and Maintenance Manual to the Resident Engineer. The Resident Engineer will forward such data to the Commissioning Authority/Agent (CxA) for review and comment. The Contractor shall make such corrections, changes and/or additions to the data until deemed satisfactory and deliver four (4) copies of the final data to the Resident Engineer for use by the Commissioning Authority/Agent (CxA) to prepare the Commissioning Operation and Maintenance Manual.

   a. Non-Commissioning Data: All remaining data not designated for Commissioning and required as part of Maintenance and Operation Manual shall be prepared and assembled in accordance with the requirements of this section for Operating and Maintenance Manuals.

F. Final Site Survey: Submit Final Site Survey as described in Section 01 73 00, EXECUTION, in quantities requested by the Commissioner, signed and sealed by a Land Surveyor licensed in the State of New York.

G. Guarantees and Warranties.

H. Waste Disposal Documents and Miscellaneous Record Documents.

PART II – PRODUCTS

2.1 CONTRACT RECORD DRAWINGS:

A. Record Prints: The Contractor shall maintain one set of blue- or black-line white prints as applicable of the Contract Drawings and Shop Drawings. If applicable, the Record Contract Drawings and Shop Drawings shall incorporate the arrangement of the work based on the accepted Master Coordination Drawing(s) as described in Section 01 33 00, SUBMITTAL PROCEDURES.

1. Preparation: The Contractor shall mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
2. Change Orders: All changes from Contract Drawings shall be distinctly encircled and identified by Change Order number correlating to changes listed on the "Title Sheet." The Contractor shall show within the encircled areas the work as actually installed.

B. Content: Types of items requiring marking include, but are not limited to, the following:

1. Dimensional changes to Drawings.
2. Revisions to details shown on Drawings.
3. Depths of foundations below first floor.
4. Locations and depths of underground utilities.
5. Revisions to routing of piping and conduits.
6. Revisions to electrical circuitry.
7. Actual equipment locations.
8. Duct size and routing.
9. Locations of concealed internal utilities.
10. Changes made by Change Order
11. Changes made following Commissioner's written orders.
12. Details not on the original Contract Drawings.
13. Field records for variable and concealed conditions.
14. Record information on the Work that is shown only schematically.

C. Progress Record Mylar's (reproducible): As directed by the Resident Engineer at 50% construction completion, review marked-up Record Prints with the Resident Engineer and the Design Consulting. When directed by the Resident Engineer transfer progress mark-ups to a full set of Mylar's (reproducible) and submit one blue line or black line record copy to the Resident Engineer. The marked-up Mylar's (reproducible) shall be retained by the contractor for completion of mark-up and final submission.

D. Final Contract Record Mylar's (reproducible): Immediately before final inspection for Certificate of Substantial Completion, review marked-up Record Prints with the Resident Engineer and the Design Consulting. When authorized, complete mark-up of a full set of corrected Mylar's (reproducible) of the Contract Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to Resident Engineer for resolution.
3. Print the As-Built Contract Drawings and Shop Drawings for use as Record Transparencies as described in Sub-Section 1.5.

2.2 RECORD SPECIFICATIONS, ADDENDA AND CHANGE ORDERS:

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders and Record Drawings where applicable.
6. Upon completion of mark-up, submit two (2) complete copies of the marked-up Record Specifications to the Commissioner.

2.3 RECORD PRODUCT DATA:

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. If possible, a Change Order proposal should include resubmitting updated Product Data. This eliminates the need to mark up the previous submittal.
4. Note related Change Orders and Record Drawings where applicable.
5. Upon completion of mark-up submit to the Commissioner two (2) sets of the marked-up Record Product Data.
6. Where Record Product Data is required as part of Maintenance Manuals, submit marked-up Product Data as an insert in the manual instead of submittal as record Product Data.

2.4 RECORD SAMPLE SUBMITTAL:

A. Prior to the date of Substantial Completion, the Contractor shall meet with the Resident Engineer at the site to determine which of the Samples maintained during the construction period shall be transmitted to the Commissioner for record purposes.

B. Comply with the Resident Engineer's instructions for packaging, identification marking and delivery to DDC. Dispose of other samples as specified for disposal of surplus and waste material.

2.5 OPERATING AND MAINTENANCE MANUALS:

A. The Contractor shall provide preliminary and final versions of Operating and Maintenance Manuals required for those systems, equipment and materials listed in other Sections of the Project Specifications.

B. Format: Prepare and assemble Operation and Maintenance Manuals in heavy-duty, 3-ring, hardback loose leaf binders in the form of an instructional manual. All binders for each discipline shall be the same color. When multiple binders are used, correlate data into related consistent groupings. Binder front shall containing permanently attached labels displaying the following:

1. Heading:
   The City of New York
   Department of Design and Construction
   Division of Public Buildings
2. Capital Budget Project Number (FMS ID)
3. Name and Location of Project
4. Contractor's name and Address
5. Subcontractor's Name and Address (where applicable)
6. Dates of the work covered by the contents of the Project Manual.
7. Binder spine shall display Project Number (FMS ID) and date of completion.

C. Organization: Include a section in the directory for each of the following:

1. List of documents
2. List of systems
3. List of equipment
4. Table of contents

D. Arrange content by systems under Specification Section numbers and sequence of Table of Contents of the Project manual. Provide tabbed flyleaf for each separate product, equipment and/or system/subsystem with typed description of product and major component parts of equipment.

E. Safety warnings or cautions shall be visibly highlighted within each maintenance procedure. Use of such highlights shall be limited to only critical items and shall not be used in an excessive manner which would reduce their effectiveness.

F. For each product or system, list names, addresses and telephone numbers of Subcontractors and Suppliers, including local source of supplies and replacement parts. Vendors and Supplier listings are to include names, addresses and telephone numbers, including nearest field service telephone numbers.

G. Where contents of the manual include any manufacturer's catalog pages, clearly indicate the precise items and options included in the installation and delete all manufacturers' data regarding products not included in the installation.

H. All material within manuals shall be new. Copies used for prior submittals or used in construction shall not be used.

I. Submit preliminary and final manual editions to the Commissioner according to the approved progress schedule.

J. Manuals shall present all technical material to the greatest extent possible, with respect to text, tabular matter and illustrations. Illustrations shall preferably consist of line drawings. All applicable drawings shall be included. If available, color photograph prints may be included.

K. Preliminary manual editions shall be as technically complete as the final manual edition. All illustrations shall be in final forms.

L. Final manual editions shall be technically accurate and complete and shall represent all "as-built" systems, pieces of equipment, or materials, which have been accepted by the Commissioner. All illustrations, text and tabular material shall be in final form. All shop drawings shall be included as specified in individual Specification Sections.

M. Building products, applied materials, and finishes: Include product data, with catalog number, size, composition, and color texture designations. Where applicable, provide information for re-ordering custom manufactured products.

N. Instructions for care and maintenance: Include manufacturers' recommendations for cleaning agents and methods, and recommended schedule for cleaning and maintenance.

O. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical compositions, and details of installation. Provide recommendations for inspections, maintenance, and repair.

P. Additional Requirements: Specified in individual Specification Sections.

2.6 DEMONSTRATION AND ORIENTATION DVD:

A. Non-Commissioned Projects: The Contractor shall submit final version of applicable Demonstration and Training DVD recordings in compliance with Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.

2.7 GUARANTEES AND WARRANTIES:

A. SCHEDULE B – Requirements for guarantees and warranties for the Project are set forth in Schedule B, which is included as part of the Addendum.

B. FORM – For all guarantee requirements set forth in Schedule B, the Contractor shall provide a written guaranty, in the form set forth herein.

C. Submit fully executed and signed manufacturers' Warranties as listed in the Project Specifications and outlined in Schedule B of the Addendum. Refer to Section 01 77 00, CLOSEOUT PROCEDURES for submittal requirements.

GUARANTY

DDC PROJECT # _____

PROJECT DESCRIPTION _____

_____

CONTRACT # _____

SPECIFICATION SECTION # AND TITLE _____

_____

GUARANTY TO BE IN EFFECT FROM _____

TO _____

The Contractor hereby guarantees that the work specified under the above section of the aforesaid Contract will be free from defects of material and/or workmanship, for the period indicated above.

The Contractor also guarantees that it will promptly repair, restore, rebuild or replace whichever may be deemed necessary by the City, any or all defective material or workmanship of the aforementioned section, that may appear within the guaranty period and any finished work to which damage may occur because of such defects, to the satisfaction of the City and without any cost or expense to the City.

The Contractor hereby agrees to pay to the City the cost of the repairs or replacements should the City make the same because of the failure of the Contractor to do so.

Contractor: _____

By: _____
Signature of Partner or Corporate Officer

Print Name: _____

Subscribed and sworn to before me this
day of _____ , year _____

_____
Notary Public

2.8 WASTE DISPOSAL DOCUMENTATION:

A. Certify and deliver to the Commissioner all documentation including reports, receipts, certificates, records etc. for the collection, handling, storage, classification, testing, transportation, recycling and/or disposal of all Non-Hazardous Construction Waste as required by Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, and Hazardous Waste as required by other Project Specification Sections. Certify compliance with all applicable governing laws, codes, rules and regulations.

2.9 MISCELLANEOUS RECORD DOCUMENTS:

A. Refer to other Project Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Prior to Final Acceptance, complete miscellaneous records and place in good order, properly identified and bound or otherwise organized to allow for use and reference.

B. Submit three (3) copies of each document to the Commissioner or as otherwise directed by the Commissioner.

PART III – EXECUTION

3.1 RECORDING AND MAINTENANCE:

A. Recording: Maintain one copy of each submittal during the construction period for Contract Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Contract Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to the Contract Record Documents for the Resident Engineer's reference during normal working hours.

END OF SECTION 01 79 39

No Text

SECTION 01 79 00
DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 79 00

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes administrative and procedural requirements, when set forth in sections of the Project Specifications, for instructing facility's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Owner's Pre-Acceptance Orientation in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and Orientation videotapes. (Non-Commissioned Projects)

B. The Contractor shall provide the services of equipment manufacturers orientation specialists experienced in the type of equipment to be demonstrated.

C. Separate Orientation sessions shall be conducted for mechanical operations and maintenance personnel and for electronic and electrical maintenance personnel.

D. Commissioning: Refer to the Addendum to identify whether this project is to be Commissioned. For Commissioned projects the Contractor shall provide Demonstration and Orientation as described in this section and cooperate with the Commissioning Authority/Agent (CxA) to implement Commissioning requirements as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS.

1.3 RELATED SECTIONS: include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 33 00 SUBMITTAL PROCEDURES
C. Section 01 77 00 CLOSEOUT PROCEDURES
D. Section 01 78 39 CONTRACT RECORD DOCUMENTS
E. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS
F. Specific requirements for demonstration and training indicated in other sections of the Project Specifications

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 SUBMITTALS:

A. Instruction Program: Submit three (3) copies of outline of instructional program for demonstration and orientation, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each orientation module to the Commissioner for approval no less than thirty (30) days prior to the date the proposed orientation is to take place. Include learning objectives and outline for each orientation module.

1. At completion of training, submit three (3) complete training manual(s) and three (3) applicable DVD recording(s) to the Commissioner for the facility's and City's use.

B. Qualification Data: For facilitator, instructor and Videographer.

C. Attendance Record: For each orientation module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each orientation module, submit results and documentation of performance-based test.

E. Submit all final orientation material to the Resident Engineer a minimum of fourteen (14) days prior to the scheduled training.

F. Demonstration and Orientation Recordings:

1. Non-Commissioned Projects:

a. The Contractor shall submit to the Commissioner three (3) copies of Demonstration and Orientation DVD (Digital Video Disk) recordings within seven (7) days of end of each training module.

b. Identification: On each copy, provide an applied label with the following information:

1) Project Contract I.D. Number
2) Project Contract Name
3) Name of Contractor
4) Name of Subcontractor as applicable
5) Name of Design Consultant
6) Name of Construction Manager as applicable
7) Date recorded.
8) Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
9) Table of Contents including list of systems covered.

c. Transcript: Prepared on 8-1/2-by-11-inch paper, punched and bound in heavy-duty, 3-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding DVD recording. Include name of Project and date of recording on each page.

2. Commissioned Projects:

a. Demonstration and Orientation DVD recordings for Commissioned projects will be recorded by the Commissioning Authority/Agent (CxA) under separate contract with the City of New

York. The Contractor performing Demonstration and Orientation shall cooperate with the CxA in the recording of each Demonstration and Orientation module.

1.6 QUALITY ASSURANCE:

A. Facilitator Qualifications: A firm or individual experienced in orientation or educating maintenance personnel in an orientation program similar in content and extent to that indicated for this Project.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 40 00, QUALITY REQUIREMENTS, experienced in operation and maintenance procedures and orientation.

C. Videographer Qualifications: A professional Videographer who has experience with orientation and construction projects.

D. Pre-instruction Conference: Schedule with the Resident Engineer a conference at Project site to comply with requirements in Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION. Review methods and procedures related to demonstration and orientation including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.7 COORDINATION:

A. Coordinate instruction schedule with the Resident Engineer and facility's operations. Adjust schedule as required to minimize disrupting facility's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of orientation modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the Commissioner.

PART II – PRODUCTS

2.1 INSTRUCTION PROGRAM:

A. Program Structure: Develop an instruction program that includes individual orientation modules for each system and equipment not part of a system, as specified and required by individual Specification Sections.

B. Orientation Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
   a. System, subsystem, and equipment descriptions.
   b. Performance and design criteria if Contractor is delegated design responsibility.
   c. Operating standards.

d. Regulatory requirements.
e. Equipment function including auxiliary equipment and systems.
f. Operating characteristics.
g. Limiting conditions.
h. Performance curves.

2. Documentation: Review the following items in detail:
   a. Emergency manuals.
   b. Operations manuals.
   c. Maintenance manuals.
   d. Project Record Documents.
   e. Identification systems.
   f. Warranties

3. Emergencies: Include the following, as applicable:
   a. Instructions on meaning of warnings, trouble indications, and error messages.
   b. Instructions on stopping.
   c. Shutdown instructions for each type of emergency.
   d. Operating instructions for conditions outside of normal operating limits.
   e. Sequences for electric or electronic systems.
   f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:
   a. Startup procedures.
   b. Equipment or system break-in procedures.
   c. Routine and normal operating instructions.
   d. Regulation and control procedures.
   e. Control sequences.
   f. Safety procedures.
   g. Instructions on stopping.
   h. Normal shutdown instructions.
   i. Operating procedures for emergencies.
   j. Operating procedures for system, subsystem, or equipment failure.
   k. Seasonal and weekend operating instructions.
   l. Required sequences for electric or electronic systems.
   m. Special operating instructions and procedures.

5. Adjustments: Include the following:
   a. Alignments.
   b. Checking adjustments.
   c. Noise and vibration adjustments.
   d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:
   a. Diagnostic instructions.
   b. Test and inspection procedures.

7. Maintenance: Include the following:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning

e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.
h. Housekeeping practices

8. Repairs: Include the following:
   a. Diagnosis instructions.
   b. Repair instructions.
   c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of spare parts needed for operation and maintenance.

PART III – EXECUTION

3.1 INSTRUCTION:

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and the Resident Engineer for the number of participants, instruction times, and location.

B. The Contractor shall engage qualified instructors to instruct facility's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

C. Scheduling: Schedule instruction with the Resident Engineer at mutually agreed times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule orientation with the Resident Engineer with at least fourteen (14) days' advance notice.

D. Evaluation: At conclusion of each orientation module, assess and document each participant's mastery of module(s) by use of an oral a written or a demonstration performance-based test.

E. Cleanup: Collect and remove used and leftover educational materials from project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial orientation use.

3.2 DEMONSTRATION AND ORIENTATION RECORDINGS:

A. Non-Commissioned projects:
1. The Contractor shall engage a qualified commercial Videographer to record demonstration and orientation sessions. Record each orientation module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
2. At beginning of each orientation module, record each chart containing learning objective and lesson outline.
3. All recordings must be close captioned.
4. Recording Format: Provide high-quality DVD (Digital Video Disk) format.
5. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and orientation. Display continuous running time.
6. Narration: Describe scenes on the recording by audio narration by microphone while recording or by dubbing audio narration off-site after. Include description of items being viewed. Describe vantage point, indicating location, direction (by compass point), and elevation or story of construction.

7. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from opposite the corresponding narration segment.

B. Commissioned Projects:

Refer to the Addendum to determine if the project is to be Commissioned.

1. The Commissioning Authority/Agent (CxA) under separate contract with the City of New York will assess and comment on the adequacy of the Orientation Instruction sessions by reviewing the Orientation and Instruction program and agenda provided by each contractor. The provider of the Orientation program will videotape the sessions and provide a copy to the CxA for final review and comments. If necessary, Contractor shall edit the DVD recording per CxA comnents.

END OF SECTION 01 79 00

SECTION 01 81 13
SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 13

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. LEED BUILDING - GENERAL REQUIREMENTS:

The City of New York is committed to implementing good environmental practices and procedures which include achieving a LEED™ Green Building rating. Specific project requirements related to this goal are listed in the applicable paragraphs of this section of the General Conditions. The Contractor shall ensure that these requirements as defined in the sections below and in related sections of the Contract Documents, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the stated LEED BUILDING criteria.

B. This Section includes:

1. Definitions
2. LEED Provisions
3. LEED Building Submittals
4. LEED Building Submittal Requirements
5. LEED Action Plan

1.3 RELATED SECTIONS: Include without limitation the following:

A.	Section 01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
B.	Section 01 81 13.13	VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS
C.	Section 01 81 19	INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS
D.	Section 01 91 13	GENERAL COMMISSIONING REQUIREMENTS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Agrifiber Products: Products derived from recovered agricultural waste fiber from sources such as cereal straw, sugarcane bagasse, sunflower husk, walnut shells, coconut husks, and agricultural prunings, processed and mixed with resins to produce panels with characteristics similar to composite wood.

C. Composite Wood: Products composed of wood or plant particles or fibers bonded by a synthetic resin or binder to produce panels such as plywood, particleboard, and medium density fiberboard (MDF). Does not include hardboard, structural panels, glued laminated timber, prefabricated wood I-joists, or finger-jointed lumber.

D. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

E. Forest Stewardship Council (FSC) Certified Wood: Wood-based materials and products certified in accordance with the Forest Stewardship Council's principles and criteria.

F. LEED: The Leadership in Energy & Environmental Design rating system developed by the United States Green Building Council.

G. Rapidly Renewable Materials: Materials made from agricultural products that are typically harvested within a ten-year or shorter cycle. Rapidly renewable materials include products made from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, or wool.

H. Regionally Manufactured Materials: Materials that are manufactured within a radius of 500 miles from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.

I. Regionally Extracted, Harvested, or Recovered Materials: Materials which are extracted, harvested, or recovered and manufactured within a radius of 500 miles from the Project site.

J. Recycled Content: The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer).
   1. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.
   2. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.
   3. "Pre-consumer" may also be referred to as "post-industrial".

K. Solar Reflectance Index (SRI): A measure of a material's ability to reflect solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is equal to 0, and a standard white (reflectance 0.80, emittance of 0.90) is equal to 100.

L. Volatile Organic Compound (VOC): Any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) which vaporizes (becomes a gas) and participates in atmospheric photochemical reactions, as specified in Part 51.00 of Chapter 40 of the U.S. Code of Federal Regulations, at normal room temperatures. For the purposes of this specification, formaldehyde and acetaldehyde are considered to be VOCs.

1.5 LEED PROVISIONS:

A. Refer to the Addendum for the LEED rating to be achieved for this project. The provisions to achieve this LEED rating are integrated within the project construction documents and specifications. The Contractor is specifically directed to the "LEED BUILDING Performance Criteria" and "LEED BUILDING Submittals" sections within the contract specification. Additional LEED requirements are met through aspects of the project design, including material and equipment selections, which may not be specifically identified as LEED BUILDING requirements. Compliance with the requirements needed to obtain LEED prerequisites and credits will be used as one criterion to evaluate substitution requests.

1.6 LEED BUILDING SUBMITTALS:

A. Scope: LEED BUILDING submittals are required for all installed materials included in General Construction work. LEED BUILDING Submittals are only required for field-applied adhesives, sealants, paints and coatings included in Plumbing, Mechanical and Electrical work. Submit all required LEED BUILDING submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.

B. Applicability: The extent of the LEED BUILDING Submittals varies depending on the specification section. Applicable LEED BUILDING Submittals are listed under the "LEED BUILDING Submittals" heading in each specification section. The detailed requirements for the LEED BUILDING Submittals are defined in Item C below.

C. Detailed Requirements: Sub-Sections 1.6 C.1through 1.6 C.3 below defines the information and documents to be provided for each type of LEED BUILDING Submittal as identified in the LEED Submittal Requirements of each specification section:

1. ENVIRONMENTAL BUILDING MATERIALS CERTIFICATION FORM (EBMCF)[GHI]: Information to be supplied for this form (blank sample copy attached at end of this Section to be modified as appropriate to the project) shall include some or all of the following items, as identified in the LEED Submittal Requirements of each specification section:

   a. Cost breakdowns for the materials included in the contractor or sub-contractor's scope of work. Cost reporting shall include itemized material costs (excluding the contractor's labor, equipment, overhead and profit).
   b. The percentages (by weight) of post-consumer and/or post-industrial recycled content in the supplied product(s).
      1. For each product with recycled content, also indicate the total recycled content value (1/2 x pre-consumer percentage x product value + 1 x post-consumer percentage x product value = total recycled content value).
      2. See additional requirements for concrete below.
   c. Identification (Yes/No) of materials manufactured within 500 miles of the project site AND containing raw materials harvested or extracted within 500 miles of the project site.
      1) Indicate the percentage by weight, relative to the total weight of the product that meets these criteria.
      2) Indicate the point of harvest/extraction/recovery of regional raw materials, the point of final assembly of regional manufactured products, and the distance from each point to the project site.
   d. Volatile Organic Compound (VOC) content of all field-applied adhesives, sealants, paints, and coatings, listed in grams/liter or lbs./gallon, less water.
      1) For detailed requirements refer to Section 01 81 13.13 VOC LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS.
   e. The amount of "Forest Stewardship Council (FSC) Certified" wood products if used in the Project.
      1) Record only new FSC-certified wood products. Do not record reclaimed, salvaged, or recycled FSC-certified wood products.

2) Reclaimed, salvaged, or recycled FSC-certified wood may be recorded as post-consumer recycled content.

f. The amount of Rapidly Renewable materials if used in the Project.
   1) Indicate the type of rapidly renewable material used, and the percentage by weight, relative to the total weight of the product, that consists of rapidly renewable material.

g. The percentage (by weight), relative to the total weight of cementitious materials, of supplementary cementitious materials or pozzolans such as fly ash used in each concrete mix used in the Project.
   1) For each concrete mix, provide a complete breakdown of all components, by weight and by cost.

h. Identification (Yes/No) of composite wood or agrifiber products used in the project that are free of added urea-added formaldehyde resins.

i. Identification (Yes/No) of flooring products used in the project that have Carpet and Rug Institute (CRI) Green Label or Green Label Plus certification, or Resilient Floor Covering Institute FloorScore certification.
   1) Untreated solid wood flooring, and mineral-based flooring products such as tile, masonry, terrazzo, and cut stone that have no organic-based coatings or sealants, are excluded from this requirement.

j. The EBMCF shall record the above information only for those materials or products permanently installed in the project. The EBMCF shall record VOC content, composite and agrifiber products, and CRI or FloorScore ratings only for those materials or products permanently installed within the weather barrier of the LEED building.

2. EBMCF BACK-UP DOCUMENTATION: These documents are used to validate the information provided on the EBMCF (except cost data). For each material listed on the EBMCF, provide documentation to certify the material's LEED BUILDING attributes, as applicable:

   a. RECYCLED CONTENT: Provide published product literature or letter of certification on the manufacturer's letterhead certifying the amounts of post-consumer and/or post-industrial content.

   b. REGIONAL MANUFACTURING **AND** REGIONAL RAW MATERIALS (WITHIN 500 MILES): Provide published product literature or letter of certification on the manufacturer's letterhead indicating the city/state where the manufacturing plant is located, where each of the raw materials in the product were extracted, harvested or recovered and the distance in miles from the project site.
      1) If only some of the raw materials for a particular product or assembly originate within 500 miles of the project site, provide the percentage (by weight) that these materials comprise in the complete product.

   c. VOC CONTENT: Provide Material Safety Data Sheets (MSDS) certifying the Volatile Organic Compound (VOC) content of the adhesive, sealant, paint, or coating products. VOC content is to be reported in grams/liter or lbs./gallon, less water. If the MSDS does not show the product's VOC content, this information must be provided through other published product literature from the manufacturer, or stated in a letter of certification from the product manufacturer on the manufacturer's letterhead.

   d. RAPIDLY RENEWABLE MATERIALS: If used in the project, provide published literature or letter of certification on the manufacturer's letterhead certifying the percentage of each product that is rapidly renewable (by weight).

3. PRODUCT CUT SHEETS: Provide product cut sheets with the Contractor's or sub-contractor's stamp, confirming that the submitted products are the products installed in the Project.

4. CRI GREEN LABEL PLUS CERTIFICATION: For carpets and carpet cushions, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products comply with the "Green Label Plus" IAQ testing program of the Carpet and Rug Institute of Dalton, GA.

5. CERTIFICATION OF COMPOSITE WOOD OR AGRIFIBER RESINS: For all composite wood, engineered wood and agrifiber products (including plywood, particleboard, and medium density fiberboard), provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that that the products do not contain added urea-formaldehyde resins.

6. CERTIFICATION OF COMPOSITE WOOD OR AGRIFIBER LAMINATING ADHESIVES: For all laminating adhesives used with composite wood, engineered wood and agrifiber products (e.g., adhesives used to laminate wood veneers to an engineered wood substrate), provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the adhesive products do not contain urea-formaldehyde.

7. FSC-CERTIFIED WOOD:
   a. If used in the project, provide chain of custody documents and copies of invoices regarding wood products, including whether or not such wood product is FSC-certified.
   b. If used in the project, for assemblies, provide the percentage (by cost and by weight) of the assembly that is FSC-certified wood.
   c. If used in the project, for assemblies, provide published product literature or letter from the manufacturer(on the manufacturer's letterhead) verifying the percentage that is FSC-certified wood.

8. GREEN SEAL COMPLIANCE: Provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the following product types comply with the VOC limits and chemical component restrictions developed by the Green Seal organization of Washington, DC:
   a. Interior Architectural Paints and Coatings: refer to Green Seal standard GS-11 (1st edition, May 1993)
   b. Anti-corrosive and Anti-rust paints: refer to Green Seal standard GC-03 (2nd Edition, January 1997)
   c. Aerosol Adhesives: refer to Green Seal standard GS-36 (1st edition, October 2000)

9. HIGH ALBEDO PAVING AND WALKWAY MATERIALS: For paving and walkway materials made from concrete or brick provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying a minimum Solar Reflectance Index (SRI) value of 29. SRI values shall be calculated according to ASTM E 1980. Reflectance shall be measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance shall be measured according to ASTM E 408 or ASTM C 1371.

10. HIGH ALBEDO ROOFING MATERIALS: For exposed roofing membranes, pavers, and ballast products, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the following minimum Solar Reflectance Index (SRI) values:
    a. 78 for low-sloped roofing applications (slope ≤ 2:12)
    b. 29 for steep-sloped roofing applications (slope > 2:12)

    SRI values shall be calculated according to ASTM E 1980. Reflectance shall be measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance shall be measured according to ASTM E 408 or ASTM C 1371.
    Vegetated roof surfaces are exempt from the SRI criteria.

11. LOW MERCURY LAMPS: For all fluorescent, compact fluorescent, and HID lamps installed in the project, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying:
    a. The mercury content or content range per lamp in milligrams or picograms;
    b. The design light output per lamp (light at 40% of a lamp's useful life) in lumens; and
    c. The rated average life of the lamp in hours.

In addition, provide the total number of each lamp type installed in the project.

12. FLOORSCORE CERTIFICATION: For all hard surface flooring, including vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, and wall base, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products comply with the current FloorScore standard requirements.

13. CONCRETE: Provide concrete mix design for each mix, designated by a distinct identifying code or number and signed by a Professional Engineer licensed in the state in which the concrete manufacturer or supplier is located.

14. INTERIOR LIGHTING FIXTURES: For each lighting fixture type installed within the building's weather barrier, provide manufacturer's cut sheets indicating the following:

    a. Fixture power in watts.
    b. Initial lamp lumens.
    c. Photometric distribution data.
    d. Dimming capability, in range of percentages.

15. EXTERIOR LIGHTING FIXTURES: For each lighting fixture type installed on site, provide manufacturer's cut sheets indicating the following:

    a. Fixture power in watts.
    b. Initial lamp lumens.
    c. Photometric distribution data.
    d. Range of field adjustability, if any.
    e. Warranty of suitability for exterior use.

16. ALTERNATIVE TRANSPORTATION: Provide manufacturer's cut sheets and/or shop drawings for the following items installed on site:

    a. Bike racks, including total number of bicycle slots provided.
    b. Signage indicating parking spaces reserved for electric or low-emitting vehicles and for carpools/vanpools, including total number of signs.

17. WATER CONSERVING FIXTURES: For all water consuming plumbing fixtures and fittings, provide manufacturer's cut sheets showing maximum flow rates and/or flush rates.

18. ENERGY SAVING APPLIANCES: Provide manufacturer's cut sheets and published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the product's rating under the U.S. EPA/DOE Energy Star program, for all of the following:

    a. Appliances (i.e., refrigerators, dishwashers, microwave ovens, televisions, clothes washers, clothes dryers, chilled water dispensers).
    b. Office equipment (i.e., copy machines, fax machines, plotters/printers, scanners, binding and publishing equipment).
    c. Electronics (i.e., servers, desktop computers, computer monitor displays, laptop computers, network equipment).
    d. Commercial food service equipment

19. GLAZING: For glazing in any windows, doors, storefront and window wall systems, curtainwall systems, skylights, and partitions, provide manufacturer's cut sheets indicating the following:

    a. Glazed area.
    b. Visible light transmittance.
    c. Solar heat gain coefficient.
    d. Fenestration assembly u-factor.

20. VENTILATION: Provide manufacturer's cut sheets for the following:
    a. Carbon dioxide monitoring systems, if any, installed to measure outside air delivery.
    b. Air filters: for detailed requirements refer to Section 01 81 19 INDOOR AIR QUALITY REQUIREMENTS.
21. REFRIGERATION: For all refrigeration equipment, provide manufacturer's cut sheets indicating the following:
    a. Equipment type.
    b. Equipment life. Default values specified by the 2007 ASHRAE Applications Handbook will be used unless otherwise demonstrated by the manufacturer's guarantee and an equivalent long-term service contract.
    c. Refrigerant type.
    d. Refrigerant charge in pounds of refrigerant per ton of gross cooling capacity.
    e. Tested refrigerant leakage rate, in percent per year. A default rate of 2% will be used unless otherwise demonstrated by test data.
    f. Tested end-of-life refrigerant loss, in percent. A default rate of 10% will be used unless otherwise demonstrated by test data.

1.7 LEED BUILDING SUBMITTAL REQUIREMENTS:

A. The LEED BUILDING Submittal information shall be assembled into one package per contract specification section(s) (or per subcontractor), and submitted in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. Incomplete or inaccurate LEED BUILDING submittals may be used as the basis for the rejection of products or assemblies. Incomplete or inaccurate LEED BUILDING Submittals may be used as the basis for rejecting the submitted products or assemblies.

1.8 LEED ACTION PLANS:

A. Construction Waste Management Plan- Refer to Section 01 74 19, Construction Waste Management and Disposal for detailed submittal requirements.

B. Construction IAQ Management Plan- Refer to Section 01 81 19, Indoor Air Quality Requirements for LEED Buildings, for detailed submittal requirements.

C. Erosion and Sedimentation Control Plan:
    1. The Plan shall be in accordance with the New York State Department of Environmental Conservation (NYSDEC) or the 2003 EPA Construction General Permit, whichever is more stringent.
    2. The Plan shall be submitted in accordance with Section 01 33 00, SUBMITTAL PROCEEDURES.
    3. Detailed requirements: ESC Plan
        a. Include the Stormwater Pollution Prevention Plan, if required.
        b. Identify the party responsible for Plan monitoring and documentation. The party must be regularly on site.
        c. Describe all site work that will be implemented on the project.
        d. Provide site plan with location of ESC measures, including, but not limited to, stormwater quantity controls, stormwater quality controls, stabilized construction entrances, washdown areas, and inlet/catch basin protection.
        e. Describe the inspection and maintenance of the ESC measures. Provide a construction schedule indicating weekly site review.
        f. Describe reporting and documentation measures.
    4. Detailed requirements: ESC Measures

5. Submittal requirements: ESC Tracking Log
   a. Note date of major rain events, describe damage, describe any repairs or maintenance performed, and note responsible party.
   b. Note date and findings of weekly site review, describe any repairs or maintenance performed, and note responsible party.
   c. Submit monthly.
6. Implementation
   a. The Contractor shall implement the ESC Plan, coordinate the Plan with all affected trades, and designate one individual as the Erosion and Sedimentation Control Representative, who will be responsible for communicating the progress of the Plan with the Commissioner on a regular basis, and for assembling the required LEED documentation.
   b. The Contractor shall be responsible for the provision, maintenance, and repair of all ESC measures.
   c. Demonstration. The Contractor shall provide on-site instruction of proper construction practices required to prevent erosion and sedimentation.
   d. Meetings. Urgent or ongoing ESC issues shall be discussed at weekly on-site job meetings.

1.9 QUALITY ASSURANCE:

A. The Contractor shall implement all LEED Action Plans, coordinate the Plans and LEED Building Submittals with all affected trades, and designate one individual as the Sustainable Construction Representative at no additional cost to the City of New York, who will be responsible for communicating the progress of LEED activities with the Commissioner on a regular basis, and for assembling the required LEED documentation.

B. Responsibilities of Contractor's Subcontractors: The Contractor shall be responsible for his/her subcontractors complying with the LEED Action Plans and for providing required LEED documentation as required for the project.

C. Distribution and Compilation: The Contractor shall be responsible for distributing the EBMCF and any other forms or templates required for the subcontractors to record LEED documentation. The Contractor shall also be responsible for collecting and compiling EBMCF information into packages as described in Section 01 33 00 SUBMITTAL PROCEDURES.

D. Meetings: Sustainable design and construction issues shall be discussed at the following meetings:
   1. Demolition kick-off meeting
   2. Construction kick-off meeting
   3. Construction kick-off meeting for LEED (independent meeting)
   4. Weekly job-site progress and coordination meetings
   5. Closeout meeting

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 13

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

ENVIRONMENTAL BUILDING MATERIALS CERTIFICATION FORM

Contractor Name: _____
Contractor Contact: _____
Telephone Number: _____

Project Name: _____
Project I.D.: _____

Product/Manufacturer	Material Cost[1]	Recycled Content			Regional[4]			Rapidly Renewable[7]		VOC content[8]		Flooring[9]	Wood	
		Pre-Consumer (% by wt)[2]	Post-Consumer (% by wt)[3]	Total % (½ Pre + Post)	Location & Distance to Extraction[5]	Location & Distance to Manufacture[6]	Extracted & Manuf. (% by wt)	Material	% by wt	*VOC content listed	*VOC content allowed	*Green Label or FloorScore	*Added urea formaldehyde (Yes/No) [10]	FSC Certified[11] (% by wt)

[1] **Material Cost:** As it appears on the manufacturer's or distributor's invoice to the contractor or subcontractor. Does not include labor or equipment costs associated with installation.

[2] **Pre-Consumer Recycled Content:** Industrial/manufacturing waste material (e.g., fly-ash and synthetic gypsum, both waste products from coal burning electricity plants) diverted from landfill and incorporated into a finished product. Scrap raw materials that can be reused in the same manufacturing process from which they are recovered are not considered Pre-Consumer Recycled Content.

[3] **Post-Consumer Recycled Content:** Material or product that has served its intended consumer use (e.g., an empty plastic bottle) and has been diverted from landfill and incorporated into a finished product.

[4] **Regional:** Refers to a material/product that is BOTH extracted AND manufactured within 500 miles of the Project site. Record this information ONLY for materials/products meeting BOTH of these criteria.

[5] **Extraction:** Refers to the location from which the raw resources used in a building product are extracted, harvested, or recovered.

[6] **Manufacture:** Refers to the location of the final assembly of components into a building product that is furnished and installed by the Contractor.

[7] **Rapidly Renewable:** Refers to materials/products derived from agricultural products that are typically harvested within a ten-year or shorter cycle.

[8] **VOC Content:** The quantity of volatile organic compounds contained in adhesives, sealants. paints and architectural coatings. Reported in grams/liter or lbs/gallon, less water.

[9] **Flooring:** For carpet, indicate Carpet and Rug Institute (CRI) Green Label Plus certification. For carpet cushion, indicate CRI Green Label certification. For all flooring except unfinished/untreated wood and mineral-based flooring (tile, masonry, terrazzo, cut stone) without organic-based coatings or sealants, indicate Resilient Floor Covering Institute FloorScore rating. VOC limits for adhesives, sealants, etc. still apply.

[10] **Added Urea Formaldehyde:** Applies to composite wood and agrifiber products only (plywood, particleboard, MDF, OSB, wheatboard, strawboard). Resins or binders with added urea formaldehyde are prohibited.

[11] **FSC Certified:** Certification from the Forest Stewardship Council. This column is only applicable to wood products.

* Applies only to materials/products installed within the weather barrier.

Contractor Certification:

I, _____ a duly authorized representative of _____ (the Contractor) hereby certify that the material information contained herein is an accurate representation of the material qualifications to be provided by the Contractor as components of the final building construction. Furthermore, I understand that any change in such qualifications during the purchasing period will require prior written approval from the Commissioner.

Signature of Authorized Representative: _____ Date: _____

NO TEXT

SECTION 01 81 13.13
VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED BUILDINGS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 13.13

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. This Section includes requirements for volatile organic compound (VOC) content in adhesives, sealants, paints and coatings used for the project.

B. All sections in the Project Specifications with adhesives, sealant or sealant primer applications, paints and coatings shall follow all requirements of this section. In the event of any conflict or inconsistency between this section and the Specifications regarding adhesives, sealant or sealant applications, paints and coatings, the requirements set forth in this Section shall prevail.

C. This Section includes:

1. General Requirements
2. References
3. VOC Requirements for Interior Adhesives
4. VOC Requirements for Interior Sealants
5. VOC requirements for Interior Paints
6. VOC requirements for Interior Coatings
7. Submittals

1.3 RELATED SECTIONS: Include without limitation the following:

A. Section 01 10 00 SUMMARY
B. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
C. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
D. Section 01 33 00 SUBMITTAL PROCEDURES
E. Section 01 73 00 EXECUTION
F. Section 01 77 00 CLOSEOUT PROCEDURES
G. Section 01 78 39 CONTRACT RECORD DOCUMENTS
H. Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS
I. Section 01 81 19 INDOOR AIR QUALITY FOR LEED BUILDINGS

1.4 DEFINITIONS:

A. ADHESIVE: Any substance used to bond one surface to another by attachment. Includes adhesive primers and adhesive bonding primers.
   1. Aerosol Adhesive: Any adhesive packaged as an aerosol with a spray mechanism permanently housed in a non-refillable can designed for hand-held application without the need for ancillary equipment.

B. CARCINOGEN: A chemical listed as a known, probable, reasonably anticipated, or possible human

carcinogen by the International Agency for Research on Cancer (IARC) (Groups 1, 2A, and 2B), the National Toxicology Program (NTP) (Groups 1 and 2), the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) (weight-of-evidence classifications A, B1, B2, and C, carcinogenic, likely to be carcinogenic, and suggestive evidence of carcinogenicity or carcinogen potential), or the Occupational Safety and Health Administration (OSHA).

C. CLEAR WOOD FINISH: Clear/semi-transparent coating applied to wood substrates to provide a transparent or translucent solid film.
   1. Lacquer: Clear/semi-transparent coating formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and provide a solid, protective film.
   2. Sanding Sealer: A sanding sealer that also meets the definition of a lacquer.
   3. Varnish: Clear/semi-transparent coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. May contain small amounts of pigment.

D. COATING: Liquid, liquefiable, or mastic composition that is converted to a solid adherent film after application to a substrate as a thin layer; and is used for decorating, protecting, identifying or to serve some functional purpose such as the filling or concealing of surface irregularities or the modification of light and heat radiation characteristics; and is intended for on-site application to interior or exterior surfaces of buildings. Does not include stains, clear finishes, recycled latex paint, specialty (industrial, marine or automotive) coatings or paint sold in aerosol cans.

E. FLOOR COATING: Opaque coating applied to flooring. Excludes industrial maintenance coatings.

F. HAZARDOUS AIR POLLUTANT: Any compound listed by the U.S. EPA in the Clean Air Act Section 112(b)(1) as a hazardous air pollutant.

G. MUTAGEN: A chemical that meets the criteria for category 1, chemicals known to induce heritable mutations or to be regarding as if they induce heritable mutations in the germ cells of humans, under the Harmonized System for the Classification of Chemicals Which Cause Mutations in Germ Cells (United Nations Economic Commission for Europe, Globally Harmonized System of Classification and Labeling of Chemicals).

H. OZONE-DEPLETING COMPOUNDS: A compound with an ozone-depletion potential greater than 0.1 (CFC 11=1) according to the U.S. EPA list of Class I and Class II Ozone-Depleting Substances.

I. PAINT: A pigmented coating. For the purposes of this specification, paint primers are considered to be paints.
   1. Flat Coating or Paint: Has a gloss of less than 15 (using an 85-degree meter) or less than 5 (using a 60-degree meter).
   2. Non-Flat Coating or Paint: Has a gloss of greater than or equal to 15 (using an 85-degree meter) or greater than or equal to 5 (using a 60-degree meter).
   3. Non-Flat High-Gloss Coating or Paint: Has a gloss of greater than or equal to 70 (using a 60-degree meter).
   4. Anti-Corrosive / Rust Preventative Paint: Coating formulated and recommended for use in preventing the corrosion of ferrous metal substrates.

J. PRIMER: Coating that is formulated and recommended for one or more of the following purposes: to provide a firm bond between the substrate and a subsequent coating; to prevent a subsequent coating from being absorbed into the substrate; to prevent harm to a subsequent coating from materials in the substrate; or to provide a smooth surface for application of a subsequent coating.

K. REPRODUCTIVE TOXIN: A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq.).

L. SANDING SEALER: Clear/semi-transparent coating formulated to seal bare wood. Can be abraded to create a smooth surface for subsequent coatings. Does not include sanding sealers that are lacquers (see Clear Wood Finish above).

M. SEALANT: Any material with adhesive properties, formulated primarily to fill, seal, or waterproof gaps or joints

between surfaces. Includes sealant primers and caulks.

N. SHELLAC: Clear or pigmented coating formulated solely with the resinous secretions of the lac beetle, thinned with alcohol and formulated to dry by evaporation without chemical reaction. Excludes floor applications.

O. STAIN: Clear semi-transparent/opaque coating formulated to change the color but not conceal the grain pattern or texture of the substrate.

P. VOLATILE AROMATIC COMPOUND: Any hydrocarbon compound containing one or more 6-carbone benzene rings, and having an initial boiling point less than or equal to 280 degrees Celsius measured at standard conditions of temperature and pressure.

Q. VOLATILE ORGANIC COMPOUND: Any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) which vaporizes (becomes a gas) and participates in atmospheric photochemical reactions, as specified in Part 51.00 of Chapter 40 of the U.S. Code of Federal Regulations, at normal room temperatures. For the purposes of this specification, formaldehyde and acetaldehyde are considered to be VOCs.

R. WATERPROOFING SEALER: A coating that prevents the penetration of water into porous substrates.

1.5 GENERAL REQUIREMENTS:

A. The City of New York is committed to implementing good environmental practices and procedures which include achieving a LEED Green building rating. Specific project requirements related to this goal which may impact this area of work are listed in the applicable paragraphs of this specification section. The Contractor shall ensure that the requirements as defined in the sections below and in related sections of the Contract Documents, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the stated environmental goals.

1.6 REFERENCES:

A. Rule 1168 – "Adhesive and Sealant Applications", amended 7 January 2005): South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov

B. Rule 1113 - "Architectural Coatings", amended 9 July 2004: South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov

C. Green Seal Standard GS-11- "Paints", of Green Seal, Inc., Washington, DC, www.greenseal.org

D. Green Seal Standard GC-03- "Anti-Corrosive Paints", of Green Seal, Inc., Washington, DC, www.greenseal.org

1.6 VOC REQUIREMENTS FOR INTERIOR ADHESIVES, SEALANTS, PAINTS AND COATINGS:

A. GENERAL: Unless otherwise specified herein, the VOC content of all interior adhesives, sealants, paints and coatings (herein referred to as "products") shall not be in excess of **250 grams per liter.**

B. No product shall contain any ingredients that are carcinogens, mutagens, reproductive toxins, persistent bioacculmulative compounds, hazardous air pollutants, or ozone-depleting compounds. An exception shall be made for titanium dioxide and, for products that are pre-tinted by the manufacturer, carbon black, which shall be less than or equal to 1% by weight of the product.

C. No product shall contain the following:
   1. methylene chloride
   2. 1,1,1-trichloroethane
   3. benzene

4. toluene
5. ethylbenzene
6. vinyl chloride
7. naphthalene
8. 1,2-dichlorobenzene
9. di (2-ethylhexyl) phthalate
10. butyl benzyl phthalate
11. di-n-butyl phthalate
12. di-n-octyl phthalate
13. diethyl phthalate
14. dimethyl phthalate
15. isophorone
16. antimony
17. cadmium
18. hexavalent chromium
19. lead
20. mercury
21. formaldehyde
22. methyl ethyl ketone
23. methyl isobutyl ketone
24. acrolein
25. acrylonitrile

D. No product shall contain more than 1.0% by weight of sum total of volatile aromatic compounds.

1.8 VOC REQUIREMENTS FOR INTERIOR ADHESIVES:

A. The volatile organic compound (VOC) content of adhesives, adhesive bonding primers, or adhesive primers used in this project shall not exceed the limits defined in Rule 1168 – "Adhesive and Sealant Applications" of the South Coast Air Quality Management District (SCAQMD), of the State of California.

B. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.

C. For specified building construction related applications, the allowable VOC content is as follows:

1. Architectural Applications:

a.	Indoor carpet adhesive	50
b.	Carpet pad adhesive	50
c.	Wood flooring adhesive	100
d.	Rubber floor adhesive	60
e.	Subfloor adhesive	50
f.	Ceramic tile adhesive	65
g.	VCT and asphalt tile adhesive	50
h.	Drywall and panel adhesive	50
i.	Cove base adhesive	50
j.	Multipurpose construction adhesive	70
k.	Structural glazing adhesive	100

2. Specialty Applications:

a.	PVC welding	510
b.	CPVC welding	490
c.	ABS welding	325
d.	Plastic cement welding	250

e.	Adhesive primer for plastic	550
f.	Contact Adhesive	80
g.	Special Purpose Contact Adhesive	250
h.	Structural Wood Member Adhesive	140
i.	Sheet Applied Rubber Lining Operations	850
j.	Top and Trim Adhesive	250

3. Substrate Specific Applications:

a.	Metal to metal	30
b.	Plastic foams	50
c.	Porous material (except wood)	50
d.	Wood	30
e.	Fiberglass	80

4. Aerosol Adhesives:

a.	General purpose mist spray	65% VOC's by weight
b.	General purpose web spray	55% VOC's by weight
c.	Special purpose aerosol adhesives (all types)	70% VOC's by weight

1.9 VOC REQUIREMENTS FOR INTERIOR SEALANTS:

A. The volatile organic compound (VOC) content of sealants, or sealant primers used in this project shall not exceed the limits defined in Rule 1168 – "Adhesive and Sealant Applications" of the South Coast Air Quality Management District (SCAQMD), of the State of California.

B. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.

1. Sealants:

a.	Architectural	250
b.	Non-membrane roof	300
c.	Roadway	250
d.	Single-ply roof membrane	450
e.	Other	420

2. Sealant Primer:

a.	Architectural – Nonporous	250
b.	Architectural – Porous	775
c.	Other	750

1.10 VOC REQUIREMENTS FOR INTERIOR PAINTS:

A. Paints and Primers: Paints and primers used in non-specialized interior applications (i.e., for wallboard, plaster, wood, metal doors and frames, etc.) shall meet the VOC limitations of the Green Seal Paint Standard GS-11, of Green Seal, Inc., Washington, DC. Product-specific environmental requirements are as follows:

5. Volatile Organic Compounds:
   a. The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24.

   Interior Paints and Primers:
   Non-flat: 150 g/l
   Flat: 50 g/l
   The calculation of VOC shall exclude water and tinting color added at the point of sale.

B. Anti- Corrosive and Anti-Rust Paints: Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates shall meet the VOC limitations of the Green Seal Paint Standard GC-03, of Green Seal, Inc., Washington, DC. Product-specific environmental requirements are as follows:
   1. Volatile Organic Compounds:
      a. The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24.
      Anti-Corrosive and Anti-Rust Paints: 250 g/l

      The calculation of VOC shall exclude water and tinting color added at the point of sale.

1.11 VOC REQUIREMENTS FOR INTERIOR COATINGS:

A. Clear wood finishes, floor coatings, stains, sealers, and shellacs applied to the interior shall meet the VOC limitations defined in Rule 1113, "Architectural Coatings" of SCAQMD, of the State of California. The VOC limits defined by SCAQMD, based on 7/9/04 amendments, are as follows. VOC limits are defined in grams per liter, less water and less exempt compounds.

1.	Clear Wood Finishes:	
	a. Varnish	350
	b. Sanding Sealers	350
	c. Lacquer	550
2.	Shellac:	
	a. Clear	730
	b. Pigmented	550
3.	Stains	250
4.	Floor Coatings	100
5.	Waterproofing Sealers	250
6.	Sanding Sealers	275
7.	Other Sealers	200

The calculation of VOC shall exclude water and tinting color added at the point of sale.

1.12 SUBMITTALS:

A. Submit Material Safety Data Sheets, for all applicable products in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. Applicable products include, but are not limited to adhesives, sealants, carpets, paints and coatings. Material Safety Data Sheets shall indicate the Volatile Organic Compound (VOC) limits of products submitted. (If an MSDS does not include a product's VOC limits, then product data sheets, manufacturer literature, or a letter of certification from the manufacturer can be submitted in addition to the MSDS to indicate the VOC limits).

B. Submit Environmental Building Materials Certification Form (EBMCF) as referenced in Section 01 81 13 SUSTAINABLE REQUIREMENTS FOR LEED BUILDINGS: For each field-applied adhesive, sealant, paint, and coating product, provide the VOC requirement, as provided in this Specification, for the relevant material category indicated on the documentation noted above.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 13.13

SECTION 01 81 19
INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 19

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 CONSTRUCTION IAQ MANAGEMENT GOALS FOR THE PROJECT:

A. The City of New York has determined that this Project shall minimize the detrimental impacts on Indoor Air Quality (IAQ) resulting from construction activities. Factors that contaminate indoor air, such as dust entering HVAC systems and ductwork, improper storage of materials on-site, poor housekeeping, shall be minimized.

1.3 RELATED SECTIONS:

A. All sections of the Specifications related to interior construction, MEP systems, and items affecting indoor air quality.

B. Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS

C. Section 01 81 13.13, VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS.

D. Division 9 (of the Specifications): Finishes.

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products, including solvents in paints, coatings, adhesives and sealants, wood preservatives, composite wood binder, and foam insulations. Not all VOC's are harmful, but many of those contained within building products contribute to the formation of smog and may irritate building occupants by their smell and/or health impact.

D. Materials that act as "sinks" for VOC contamination: Absorptive materials, typically dry and soft materials (such as textiles, carpeting, acoustical ceiling tiles and gypsum board) that readily absorb VOC's emitted by "source" materials and release them over a prolonged period of time.

E. Materials that act as "sources" for VOC contamination: Products with high VOC contents that emit VOC's either rapidly during application and curing (typically "wet" products, such as paints, sealants, adhesives, caulks and sealers) or over a prolonged period (typically "dry" products such as flooring coverings with plasticizers and engineered wood with formaldehyde).

1.5 REFERENCES, RESOURCES:

A. "IAQ Guidelines for Occupied Buildings Under Construction", First Edition, November 1995, The Sheet Metal and Air Conditioner Contractors National Association (SMACNA). (703) 803-2980, www.smacna.org.

B. ANSI/ASHRAE 52.2-1999, "Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size", www.ashrae.org

1.6 LEED BUILDING GENERAL REQUIREMENTS:

A. Implement practices and procedures as necessary to meet the project's environmental performance goals as set forth in the specific requirements of this section. Specific project goals that may impact this area of work include: use of recycled-content materials; use of low-emitting materials; construction waste recycling; and the implementation of a construction indoor air quality management plan. Ensure that the requirements related to these goals, as defined in this Section, are implemented to the fullest extent. Substitutions or other changes to the work shall not be allowed if such changes compromise the stated LEED BUILDING Performance Criteria.

1.7 CONSTRUCTION IAQ MANAGEMENT PLAN :

A. The Contractor shall prepare a Construction IAQ Management Plan in coordination with each subcontractor and submit the IAQ Management Plan to the Commissioner for approval in accordance with Section 01 33 00, SUBMITTAL PROCDEURES. The Construction IAQ Management Plan shall meet the following criteria:

1. Construction activities shall be planned to meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Contractors' Association (SMACNA) "IAQ Guidelines for Occupied Buildings under Construction", First Edition, 1995.
2. Absorptive materials shall be protected from moisture damage when stored on-site and after installation.
3. If air handlers are to be used during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 must be used at each return air grill, as determined by ASHRAE 52.2-1999.
4. Filtration media shall be replaced immediately prior to occupancy. Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2-1999 if the project is pursuing Indoor Air Quality Credit 5: Indoor Chemical Pollutant Source Control.
5. A "Sequence of Finish Installation Plan" shall be developed, highlighting measures to reduce the absorption of VOCs by materials that act as "sinks".
6. Upon approval of the Plan by the Commissioner, it shall be implemented by the Contractor through the duration of the construction process, and documented in accordance with the Submittal Requirements of Sub-Section 1.8 herein.

B. Further description of the Construction IAQ Management Plan requirements is as follows:

1. SMACNA Guidelines: Chapter 3 of the referenced "IAQ Guidelines for Occupied Buildings Under Construction", outline IAQ measures in five categories as listed below. The Construction IAQ Management Plan shall be organized in accordance with the SMACNA format, and shall address measures to be implemented in each of the five categories (including subsections). All subsections shall be listed in the Plan; items that are not applicable for this project should be listed as such.
   a. HVAC Protection
      1) Protect air handling and distribution equipment and air supply and return ducting during construction.
      2) All ductwork arriving on site will be sealed with plastic sheeting and stored on pallets or dunnage until installed.
      3) Cover and protect all exposed air inlets and outlets, openings, grilles, ducts, plenums, etc. to prevent water, moisture, dust and other contaminant intrusion.
      4) Apply protection immediately after ducting.
      5) Protect ducting runs at the end of day's work.
      6) Inspect temporary filtration weekly and replace as required to maintain the proper ventilation rates in the building.
   b. Source Control
      1) Protect stored on-site or installed absorptive or porous materials.
      2) Do not use wet or damaged porous materials in the building.
      3) Recover, isolate, and ventilate containers housing toxic materials and materials with VOC levels above the limits for interior adhesives, sealants, paints, and coatings described in these Specifications.
      4) Exhaust fumes from idling vehicles and gasoline fueled tools through use of funnels or temporary piping.
      5) Containers housing toxic materials and materials with VOC levels above the limits for interior adhesives, sealants, paints, and coatings described in these Specifications, shall be closed when not in use.
   c. Pathway Interruption
      1) Depressurize work areas to contain dust and odors.
      2) Pressurize occupied spaces to prevent intrusion of dust and odors.
      3) Erect barriers to contain construction areas.
      4) Relocate pollutant sources.
      5) Temporarily seal the building and provide 100% outside air for ventilation.
   d. Housekeeping
      1) Store materials on elevated platforms under cover, in a designated dry, clean location, prior to unpacking for installation.
      2) If materials are not stored in an enclosed location, cover tops and sides of material with waterproof sheeting, securely tied.
      3) Institute cleaning activities to remove contaminants from the building prior to occupancy. Clean all coils, air filters, and ductwork prior to performing testing, adjusting, and balancing of HVAC systems.
      4) Sweep the work area on a daily basis. Use an efficient and effective dust collecting method such as damp cloth, wet mop, or vacuum with particulate filters. Activities which produce high levels of dust shall be cleaned up immediately upon completion.
      5) Spills or excess applications of products containing solvents, or with VOC levels above the limits for interior adhesives, sealants, paints, and coatings described in these Specifications, must be removed immediately.
      6) Dust all walls prior to application of finishes.
      7) Vacuum all stud tracks prior to application of insulation.
      8) Materials which become contaminated through direct exposure to moisture from

precipitation, plumbing leaks, or condensation shall be replaced by the Contractor.

e. Scheduling
   1) Phase construction such that absorptive materials are installed only in areas that are weathertight.
   2) Schedule activities that utilize "sources" of VOC contamination to take place prior to installing high absorbent materials that will act as "sinks" for contaminants.
   3) Review of the appropriate components of the Construction IAQ Management Plan shall be a regular action topic at weekly site coordination meetings. Implementation of the Plan shall be documented in the meeting minutes.

2. Protection of Materials from Moisture Damage: As part of the "Housekeeping" section of the Construction IAQ Management Plan, measures to prevent installed materials or material stored on-site from moisture damage shall be described. This section should also describe measures to be taken if moisture damage does occur to absorptive materials during the course of construction.

3. Replacement of Filtration Media: Under the "HVAC Protection" section of the Construction IAQ Management Plan, a description of the filtration media in all ventilation equipment shall be provided. The description shall include replacement criteria for filtration media during construction, and confirmation of filtration media replacement for all equipment immediately prior to occupancy.

4. Sequence of Finish Installation for Materials: Where feasible, absorptive materials shall be installed after the installation of materials or finishes which have high short-term emissions of VOC's, formaldehyde, particulates, or other air-borne compounds. Absorptive materials include, but are not limited to: carpets; acoustical ceiling panels; fabric wall coverings; insulations (exposed to the airstream); upholstered furnishings; and other woven, fibrous or porous materials. Materials with high short-term emissions include, but are not limited to: adhesives, sealants and glazing compounds (specifically those with petrochemical vehicles or carriers); paints, wood preservatives and finishes; control and/or expansion joint fillers; hard finishes requiring adhesive installation; gypsum board (with associated finish processes and products); and composite or engineered wood products with formaldehyde binders.

5. Develop and implement an Indoor Air Quality (IAQ) Management Plan for the pre-occupancy phase as follows:

   OPTION 1 — Flush-Out

   • After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total air volume of 14,000 cu.ft. of outdoor air per sq.ft. of floor area while maintaining an internal temperature of at least 60 degrees F and relative humidity no higher than 60%.

   OR

   • If occupancy is desired prior to completion of the flush-out, the space may be occupied following delivery of a minimum of 3,500 cu.ft. of outdoor air per sq.ft. of floor area to the space. Once a space is occupied, it shall be ventilated at a minimum rate of 0.30 cfm/sq.ft. of outside air or the design minimum outside air rate determined in EQ Prerequisite 1, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14,000 cu.ft./sq.ft. of outside air has been delivered to the space.

   OR

OPTION 2 — Air Testing

• Conduct baseline IAQ testing, after construction ends and prior to occupancy, using testing protocols consistent with the United States Environmental Protection Agency Compendium of Methods for the Determination of Air Pollutants in Indoor Air and as additionally detailed in the LEED-NC Reference Guide.

• Demonstrate that the contaminant maximum concentrations listed below are not exceeded.

CONTAMINANT	MAXIMUM CONCENTRATION
Formaldehyde	27 parts per billion
Particulates (PM10)	50 micrograms per cubic meter
Total Volatile Organic Compounds (TVOC)	500 micrograms per cubic meter
* 4-Phenylcyclohexene (4-PCH)	6.5 micrograms per cubic meter
Carbon Monoxide (CO)	9 part per million and no greater than 2 parts per million above outdoor levels
* This test is only required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing material are installed as part of the base building systems.	

• For each sampling point where the maximum concentration limits are exceeded, conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting non-complying building areas, take samples from the same locations as in the first test.

• The air sample testing shall be conducted as follows:

a. All measurements shall be conducted prior to occupancy, but during normal occupied hours and with the building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing.

b. The building shall have all interior finishes installed, including but not limited to millwork, doors, paint, carpet and acoustic tiles. Non-fixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.

c. The number of sampling locations will vary depending upon the size of the building and number of ventilation systems. For each portion of the building served by a separate ventilation system, the number of sampling points shall not be less than one per 25,000 sq.ft., or for each contiguous floor area, whichever is larger, and include areas with the least ventilation and greatest presumed source strength.

d. Air samples shall be collected between 3 feet and 6 feet from the floor to represent the breathing zone of occupants, and over a minimum 4-hour period.

6. Implementation and Coordination: Implement the Construction IAQ Management Plan, and coordinate the Plan with all affected trades. Designate one individual as the Construction IAQ Representative at no additional cost to the City of New York, who will be responsible for communicating the progress of the Plan with the Commissioner on a regular basis, and for assembling the required LEED documentation. Include provisions in the Construction IAQ Management Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.

a. Distribution: The Contractor shall distribute copies of the Construction IAQ Management Plan in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.

b. Instruction: The Contractor shall provide on-site instruction of appropriate site management to all Contractor's Subcontractors.

c. Monitoring: The Construction IAQ Representative shall monitor the implementation of the Construction IAQ Management Plan.

1.8 SUBMITTALS:

Submit the following LEED-required records and documents in accordance with Section 01 33 00, SUBMITTAL PROCEDURES and Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS.

A. A copy of the Construction IAQ Management Plan as defined in Sub-Section 1.07 herein.

B. Product cut-sheets for all filtration media used during construction and installed immediately prior to occupancy, with MERV values highlighted. Cut sheets shall be submitted with the Contactor's or Subcontractor's 'approved' stamp as confirmation that the products are the products installed on the project.

C. Provide the Commissioner with a minimum of 18 photographs as required under the provision for Special Photographs, in accordance with Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION, comprised of at least six photographs taken on three different occasions during construction. The photographs shall document the implementation of the Construction IAQ Management Plan throughout the course of the project construction. Examples include photographs of ductwork sealing and protection, temporary ventilation measures, and conditions of on-site materials storage (to prevent moisture damage). Photographs shall include integral date stamping, and shall be submitted with brief descriptions of the Construction IAQ Management Plan measure documented, or be referenced to project meeting minutes or similar project documents which reference to the Construction IAQ Management Plan measure documented.

D. A copy of the project's TAQ Testing report if applicable.

1.9 QUALITY ASSURANCE:

A. The Contractor shall be responsible for preparing and implementing the Construction IAQ Management Plan and shall coordinate and incorporate the work of its subcontractors in the IAQ Management Plan.

B. Responsibility of Subcontractors: Subcontractors for this project shall be responsible to cooperate with the Contractor in the preparation and implementation of the Construction IAQ Management Plan.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 19

SECTION 01 91 13
GENERAL COMMISSIONING REQUIREMENTS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 91 13

PART I – GENERAL

1.1 RELATED DOCUMENTS:

A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

B. OPR and BoD documentation are included by reference for information only.

C. The Commissioning Plan, prepared by the Commissioning Agent (CxA) under separate contract with the City of New York, contains requirements that apply to this section.

1.2 SUMMARY:

A. This Section includes general requirements that apply to implementation of Commissioning without regard to systems, subsystems, and equipment being commissioned.

B. This Section includes:
1. Definitions
2. Commissioning Team
3. City's Responsibilities
4. Each Contractor's Responsibilities
5. Commissioning Authority's/Agent's (CxA) Responsibilities
6. Commissioning Documentation
7. Submittals
8. Coordination

1.3 RELATED SECTIONS: Include without limitation the following:

A. "HVAC Commissioning Requirements" indicated in other sections of the project specifications for specific requirements for commissioning HVAC systems.

B. This project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning shall be in accordance with ASHRAE and USGBC LEED procedures, and specific commissioning requirements of the Project Specifications, whichever is more stringent. The Contractor shall cooperate with the CxA and provide whatever assistance is required.

C. Related Sections include without limitation the following:
1. Section 01 10 00 SUMMARY
2. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
3. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
4. Section 01 78 39 CONTRACT RECORD DOCUMENTS
5. Section 01 79 00 DEMONSTRATION AND OWNERS PRE-ACCEPTANCE ORIENTATION
6. Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS

1.4 DEFINITIONS:

A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

B. Design Consultant: "Design Consultant" shall mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

C. Commissioner: The Commissioner of the Department of Design and Construction of the City of New York, his/her successors, or duly authorized representative(s).

D. BoD: Basis of Design: A document, prepared by the Consultant Architect/Engineer, that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

E. Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.

F. CxA: Commissioning Agent (Aka Commissioning Authority) under separate contract with the City of New York to provide Commissioning Services for this project.

G. OPR: Owner's (City of New York) Project Requirements: A document, prepared by the Consulting Architect/Engineer) that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

H. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.

I. TAB: Testing, Adjusting, and Balancing.

1.5 COMMISSIONING TEAM:

A. Members Appointed by the Contractor and its Subcontractors: Individuals, each having authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated actions. The commissioning team shall consist of, but not be limited to, representatives of the Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.

B. Members Appointed by the City:

1. Commissioning Authority/Agent (CxA): The designated person, company, or entity under separate contract with the City that plans, schedules, and coordinates the commissioning team to implement the commissioning process.
2. Representatives of the facility user and operation and maintenance personnel.
3. Consultant Architect/Engineer and other concerned entities.

1.6 CITY'S RESPONSIBILITIES:

A. Provide the OPR documentation to the Commissioning Agent (CxA) for use in developing the commissioning plan; systems manual; operation and maintenance training plan; and testing plans and checklists.

B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.

C. Provide the BoD documents, prepared by the Consulting Architect/Engineer and approved by the Commissioner, to the Commissioning Agent (CxA) for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

1.7 CONTRACTOR'S RESPONSIBILITIES:

A. The Contractor shall provide utility services required for the commissioning process.

B. As a member of the Commissioning Team, the Contractor and subcontractor(s) shall assign representatives with expertise and authority to act on behalf of the Contractor and its subcontractor(s) and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in scheduled construction-phase coordination and commissioning team meetings.
2. Integrate and coordinate commissioning process activities with the construction schedule.
3. Review and accept commissioning process test procedures provided by the CxA.
4. Review and accept construction checklists provided by the CxA.
5. Perform testing required in the Commissioning Schedule as per the Commissioning Process test procedures provided by the CxA.
6. Complete installation checklists as Work is completed and return to CxA through the Resident Engineer.
7. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
8. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
9. Submit As-Built documents, operation and maintenance manuals for systems and subsystems, and equipment in accordance with Section 01 78 39, CONTRACT RECORD DOCUMENTS.
10. Provide orientation sessions for operation and maintenance personnel (sessions will be video recorded by the CxA) in accordance with Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.

1.8 COMMISSIONING AGENT'S (CxA) RESPONSIBILITIES:

A. Organize and lead the commissioning team.

B. Prepare a construction-phase commissioning plan. Collaborate through the Resident Engineer with each Contractor and with subcontractors to develop test and inspection procedures. Include design changes and coordinate commissioning activities with the overall Project schedule. Identify commissioning team member responsibilities, by name, firm, and trade specialty, for performance of each commissioning task.

C. Review and comment in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, on submittals from the Contractor for compliance with the OPR, BoD, Contract Documents, and construction-phase commissioning plan. Review and comment on performance expectations of systems and equipment and interface between systems relating to the OPR and BoD.

D. Coordinate with the Resident Engineer to convene commissioning team meetings for the purpose of coordination, communication, and conflict resolution; discuss progress of the commissioning processes. Responsibilities include arranging for facilities, preparing agenda and attendance lists, and notifying participants. The Commissioning Agent CxA will prepare and distribute minutes to commissioning team members and attendees within three workdays of the commissioning meeting.

E. At the beginning of the construction phase, coordinate with the Resident Engineer's kick-off meeting schedule to conduct an initial construction-phase coordination meeting for the purpose of reviewing the commissioning activities and establishing tentative schedules for operation and maintenance submittals, operation and maintenance training sessions, TAB Work, and Project completion.

F. Observe and inspect construction. Report progress and deficiencies to the Commissioner. In addition to compliance with the OPR, BoD, and Contract Documents, inspect systems and equipment installation for adequate accessibility required for component maintenance replacement and repair.

G. Prepare Project-specific test and inspection procedures and checklists.

H. Coordinate with the Resident Engineer to schedule, direct, witness, and document tests, inspections, and systems startup.

I. Compile test data, inspection reports, and certificates and include them in the systems manual and commissioning report.

J. Certify date of acceptance and startup for each item of equipment for start of warranty periods.

K. Review and comment on operation and maintenance documentation and systems manual outline for compliance with the OPR, BoD, and Contract Documents. Operation and maintenance documentation requirements are specified in other sections of the project specifications and described in Section 01 78 39, CONTRACT RECORD DOCUMENTS.

L. Record and edit demonstration and orientation sessions on DVD.

M. Prepare commissioning reports.

N. Assemble the final commissioning documentation, including the commissioning report and Systems Manual.

1.9 COMMISSIONING DOCUMENTATION:

The Contractor shall assist the Commissioning Agent (CxA) in the development and compiling of the following Commissioning Documentation:

A. Index of Commissioning Documents: The Commissioning Agent (CxA) will prepare an index including the storage location of each document.

B. OPR: A written document prepared by the Commissioning Agent (CxA) that details the functional requirements of the Project and expectations of how it will be used and operated. This document includes the Project and design goals, measurable performance criteria, budgets, schedules, success criteria, and supporting information.

C. BoD Document: A document prepared by the Consulting Architect/Engineer that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that explain the designed systems.

D. Commissioning Plan: A document prepared by the Commissioning Agent (CxA) that outlines the schedule, allocation of resources, and documentation requirements of the commissioning process.

E. Test Checklists: The Commissioning Agent (CxA) will develop test checklists for each system, subsystem, or equipment including interfaces and interlocks, and include a separate entry, with space for comments, for each item to be tested. The CxA will prepare separate checklists for each mode of operation and provide space to indicate whether the mode under test responded as required. Space will be provided for testing personnel to sign off on each checklist. Specific checklist content requirements are specified in other sections of the project specifications.

F. Inspection Checklists will be signed by the Contractor, Subcontractor(s), Installer(s), and CxA certifying that systems, subsystems, equipment, and associated controls are ready for testing.

G. Test and Inspection Reports: The Commissioning Agent (CxA) will record test data, observations, and measurements on test checklists. Photographs, forms, and other means appropriate for the application will be included with data. CxA shall compile test and inspection reports and test and inspection certificates and include them in systems manual and commissioning report.

H. Corrective Action Documents: The Commissioning Agent (CxA) will document corrective action taken for systems and equipment that fail tests and include required modifications to systems and equipment and revisions to test procedures, if any. The Contractor shall retest systems and equipment requiring corrective action. The CxA will document retest results.

I. Issues Log: The Commissioning Agent (CxA) will prepare and maintain an issues log that describes design, installation, and performance issues that are at variance with the OPR, BoD, and Contract Documents. The log will identify and track issues as they are encountered, documenting the status of unresolved and resolved issues.

1. Commissioning Report: The Commissioning Agent (CxA) will document results of the commissioning process including unresolved issues and performance of systems, subsystems, and equipment. The commissioning report will indicate whether systems, subsystems, and equipment have been completed and are performing according to the OPR, BoD, and Contract Documents.

J. Systems Manual: The Commissioning Agent (CxA) will gather required information and compile systems manual as specified in other sections of the project specifications and described in Section 01 78 39, CONTRACT RECORD DOCUMENTS..

1.10 SUBMITTALS:

A. Commissioning Plan Pre-final Submittal: The Commissioning Agent (CxA) will submit six (6) copies of the pre-final commissioning plan to the Commissioner for review and distribution.

B. Commissioning Plan Final Submittal: The Commissioning Agent (CxA) will submit six (6) hard copies and electronically formatted information of the final commissioning plan to the Commissioner. The final submittal will address previous review comments.

C. Test and Inspection Reports: CxA will submit test and inspection reports.

D. Corrective Action Documents: CxA will submit corrective action documents.

1.11 COORDINATION:

A. Coordinating Meetings: The Commissioning Agent (CxA) will coordinate with the Resident Engineer's regularly scheduled construction progress meetings to conduct coordination meetings of the commissioning team to review progress on the commissioning plan, to discuss scheduling conflicts, and to discuss upcoming commissioning process activities.

B. Pre-testing Meetings: The Commissioning Agent (CxA) will coordinate with the Resident Engineer to conduct pretest meetings of the commissioning team to review startup reports, pretest inspection results, testing procedures, testing personnel and instrumentation requirements, and manufacturers' authorized service representative services for each system, subsystem, equipment, and component to be tested.

C. Testing Coordination: The Commissioning Agent (CxA) will coordinate with the Resident Engineer the sequence of testing activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Coordinate schedule times with the Resident Engineer for tests, inspections, obtaining samples, and similar activities.

D. Manufacturers' Field Services: The Commissioning Agent (CxA) will coordinate services of manufacturers' field services.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 OPERATION & MAINTENANCE MANUALS

A. General
   1. The CxA shall review the Operation & Maintenance manuals provided by the Contractor or subcontractors for completeness of the document. The review process shall verify that Operation & Maintenance instructions meet specifications and are included for all commissioned equipment furnished by the Contractor.
   2. Published literature shall be specifically oriented to the provided equipment, indicating required operation and maintenance procedures, parts lists, assembly / disassembly diagrams and related information.
   3. The Contractor shall incorporate the standard technical literature into system specific formats for this facility as designed and as actually installed. The resulting Operation & Maintenance information shall be system specific, concise, to the point and tailored specifically to this facility. The CxA shall review these documents as necessary for final corrections by the Contractor.

B. The Operation & Maintenance Manual review and coordination efforts shall be completed prior to Owner orientation sessions, as these documents are to be utilized in the training sessions.

C. System Operations Manual
   1. The CxA shall prepare and deliver these documents with inputs from other agencies. The contractors will confirm the proper documents are onsite and readily available. Typically, the manual includes the following:
      a. Commissioned systems single line diagrams (Mechanical, Electrical, Plumbing, and Building Management System (BMS) subcontractors).
      b. As built sequences of operations, control drawings and original set points (Design Consultant and BMS subcontractor)
      c. Operating instructions for integrated building systems (mechanical and BMS subcontractors).
      d. Recommended schedule of maintenance requirements and frequency (subcontractors).
      e. Recommended schedule for calibrating sensors and actuators (BMS subcontractor)

3.2 DEMONSTRATION AND INSTRUCTION

A. The Contractor shall schedule and coordinate instruction sessions for the facility's staff for each commissioned system. Demonstrations shall be held per Contract Documents, along with the appropriate schematics, handouts and visual / audio training aids onsite with equipment.

B. The equipment vendors shall provide instruction on the specifics of each major equipment item including philosophy, troubleshooting and repair techniques.

C. For additional prescription pertinent to instruction, refer to other specific divisions for demonstration and instruction requirements.

3.3 WARRANTY REVIEW / SEASONAL TESTING

A. The CxA will return upon the start of the new season (cooling or heating) after project completion to conduct performance tests that could not be performed due to ambient conditions. The seasonal testing will only be performed if unsuitable loads / conditions were unavailable during the performance testing stages (in other words; the requirement for testing is warranted).

B. If agreed upon by facility, Seasonal Testing can also be used for the Warranty Review. During which the CxA will interview the occupants, maintenance staff, review the operation of the building, provide recommendations for installation and operational problems and document warranty and operational issues in the issues database.

3.4 RECORD DRAWINGS

A. The CxA shall review the as built contract documents to verify incorporation of both design changes and as built construction details. Discrepancies noted shall be corrected by the appropriate party.

END OF SECTION 01 91 13

NO TEXT

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS

ADDENDUM TO THE GENERAL CONDITIONS FOR SINGLE CONTRACT PROJECTS

The General Conditions are hereby amended in accordance with the terms and conditions set forth in this Addendum.

I. PROJECT DESCRIPTION

FMS #: HWBARUCH

PROJECT NAME: Reconstruction of East 25th Street Plaza
Between Lexington Avenue and 3rd Avenue
At Baruch College

PROJECT DESCRIPTION:

This Project consists of the reconstruction of East 25th Street Plaza at Baruch College. The portion of Project HWBARUCH which is described in **Section BVM11** consists of the rehabilitation of the Baruch College vault, including but not limited to the demolition of existing stone walls and paving at street level, construction of concrete topping slab, flagpole foundations, stone walls, structural rehabilitation of the vault's steel framing structure, steel fireproofing, vault waterproofing, and associated plumbing.

PROJECT LOCATION: East 25th Street between Lexington Avenue and 3rd Avenue
BOROUGH: Manhattan
CITY OF NEW YORK
ZIP CODE: 10010
COMMUNITY BOARD #: 6

LANDMARK STATUS:

N/A

DESIGNATED LANDMARK STRUCTURE OR SITE: NO
If this is a Designated Landmark Structure or Site, Section 01 3591, Historic Treatment Procedures applies to this project.
LANDMARK QUALITY STRUCTURE: NO
If this is a Landmark Quality Structure, Section 01 3591, Historic Treatment Procedures applies to this project.

II. LEED GREEN BUILDING REQUIREMENTS

Not Used

III. COMMISSIONING REQUIREMENTS

Not Used

IV. PROJECT MANAGEMENT

[X] DDC shall publicly bid and enter into all contracts for the Project. DDC shall manage the Project using its own personnel.

[ ] DDC shall publicly bid and enter into all contracts for the Project. A Construction Management firm (the "CM") hired by DDC shall manage the Project. The Contractor is advised that the CM shall serve as the representative of the Commissioner at the site and shall, subject to review by the Commissioner, be responsible for the inspection, management, coordination and administration of the required construction work, as delineated in the article of the Standard Construction Contract entitled "The Resident Engineer".

V. CONTRACTS FOR THE PROJECT

The Project consists of a single contract, the Contract for General Construction Work. The Contractor for General Construction Work is responsible for the performance of all required work for the Project as set forth in the Contract Documents (General Conditions, Drawings and Specifications), including all responsibilities and obligations assigned to separate Contractors for the following subdivisions of the work: Plumbing Work, HVAC Work, and Electrical Work. All responsibilities and obligations in the Contract Documents assigned to separate Contractors for such subdivisions of the work are the responsibility of the Contractor for General Construction Work.

VI. SCHEDULES

The Contractor is advised that Schedules A through F are attached to, and incorporated as part of, this Addendum to the General Conditions. These schedules contain important information that is specific to this Project. The Contractor is advised to carefully review these schedules.

VII. APPLICABILITY OF SECTIONS/SUB-SECTIONS AND AMENDED SUB-SECTIONS

The Contractor is advised that various Sections/Sub-Sections in the General Conditions may not apply to this Project or may apply as amended. Such Sections/Sub-Sections advise the Contractor to "Refer to the Addendum for the applicability of this Section/Sub-Section." Such Sections/Sub-Sections are set forth below. A check mark indicates whether the Section/Sub-Section (1) applies to the Project, (2) does not apply to the Project, or (3) applies to the Project as amended. If no box is checked, the Section/Sub-Section, as set forth in the General Conditions, applies to the Project. Amended Sections/Sub-Sections, if any, are set forth following this list of Sections.

Section	Sub-Section	Sub-Section	Applies	Does not Apply	Applies as Amended
01 1000	1.4 (B)	Scope and Intent / LEED		x	
	1.4(C)	Scope and Intent / Commissioning		x	
01 1000	1.10 (D)	Mobilization Payment		x	
01 3233		Photographic Documentation		x	
01 3300	1.7 (A-D)	LEED Submittals		x	
01 3503		General Mechanical Requirements		x	
01 3506	3.2 (A-B)	Electrical Conduit System Including Boxes (Pull, Junction and Outlet)		x	
	3.3 (A-E)	Electrical Wiring Devices		x	
	3.4 (A-I)	Electrical Conductors and Terminations		x	
	3.5 (A-B)	Circuit Protective Devices		x	
	3.6 (A-J)	Distribution Centers		x	
	3.7 (A-I)	Motors		x	
	3.8 (A-I)	Motor Control Equipment		x	
01 3591		Historic Treatment Procedures		x	
01 5000	3.2 (A)	Temporary Water Facilities / Temporary Water		x	
	3.2 (B)	Temporary Water Facilities / Temporary Water – Work in Existing Facilities		x	
	3.3 (B)	Temporary Sanitary Facilities / Self-Contained Toilet Units		x	
	3.3 (C)	Temporary Sanitary Facilities / Existing Toilets		x	
	3.4 (B) 1	Temporary Power, Lighting, and Site Lighting / Connection to Utility Lines		x	

Section	Sub-Section	Sub-Section	Applies	Does not Apply	Applies as Amended
01 5000	3.4 (B) 2	Temporary Power, Lighting, and Site Lighting / Connection to Existing Electrical Power Service		x	
	3.4 (B) 3	Temporary Power, Lighting, and Site Lighting / Electrical Generator Power Service		x	
	3.4 (D)	Temporary Power, Lighting, and Site Lighting / Temporary Lighting		x	
	3.4 (E)	Temporary Power, Lighting, and Site Lighting / Site Security Lighting (for New Construction Only)		x	
	3.5 (A-J)	Temporary Heat		x	
	3.8 (A)	DDC Field Office / Office Space in Existing Building		x	
	3.8 (B)	DDC Field Office / DDC Field Office Trailer		x	
	3.8 (B-3a)	DDC Field Office / DDC Managed Field Office Trailer		x	
	3.8 (B-3b)	DDC Field Office / CM Managed Field Office Trailer		x	
	3.8 (D)	DDC Field Office / Additional Equipment for the DDC Field Office		x	
	3.13(A-D)	Work Fence Enclosure		x	
	3.17(B)	Project Rendering		x	
	3.18 (A-C)	Security Guards / Fire Guards on Site		x	
01 5411	3.1 (A-J)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Up To and Including 15 Stories		x	
	3.2 (A-M)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Over 15 Stories		x	
	3.3 (A-E)	Temporary Use, Operation and Maintenance of Elevators During Construction for Existing Buildings	x		
01 7300	3.3 (A-I)	Surveys	x		
	3.4 (A-B)	Borings		x	
	3.12 (A-D)	Sleeves and Hangers	x		
	3.13 (A)	Sleeve and Penetration Drawings	x		
	3.15 (A)	Location of Partitions		x	
01 7419	1.5 (C)	Waste Management Performance Requirements / LEED Certification		x	
01 7900		Demonstration and Owner's Pre-Acceptance Orientation	x		
01 8113		Sustainable Design Requirements for LEED Buildings		x	
01 8113.13		VOC Limits for Adhesives, Sealants, Paints and Coatings for LEED Buildings		x	
01 8119		Indoor Air Quality Requirements for LEED Buildings		x	
01 9113		General Commissioning Requirements		x	

AMENDED SECTIONS/SUB-SECTIONS

SECTION 01 3200, SUBSECTION 1.2, ADD to the end of this subsection: All schedules shall be coordinated with the overall contract schedule.

SECTION 01 1000, SUBSECTION 1.1 , ADD to the end of this subsection: C. The general conditions and the addendum shall apply only to the work covered by specification SECTION BVM11, in Volume 4 of 4 of this contract.

ADDITIONAL SECTIONS/SUB-SECTIONS

NOT USED

VIII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

NOT USED

IX. REVISIONS: SPECIFICATIONS AND CONTRACT DRAWINGS

The Specifications and the Contract Drawings for the Project are revised in accordance with the provisions set forth below.

(1) Owner: Wherever the term "Owner" is used in the Specifications and/or the Contract Drawings, such term shall mean the City of New York.

(2) Other Entities: In the event any entity other than the City of New York is referred to or named as the "Owner" in the Specifications and/or the Contract Drawings, the name of such other entity is deemed deleted and replaced with the "City of New York".

(3) Architect / Engineer: Wherever the words "Architect", "Engineer", "Architect / Engineer" or "Architect and/or Engineer" are used in the Specifications and/or the Contract Drawings, such words are deemed deleted and replaced with the word "Commissioner".

(4) Products / Manufacturers: Wherever the Specifications and/or the Contract Drawings require the contractor to provide a particular product (i.e., material and/or equipment) from a designated manufacturer and/or vendor, the term "or approved equal" is deemed inserted, even if only one product and/or manufacturer is specified, except as otherwise provided below.

(a) Proprietary Items: If the Bid Booklet contains a Notice which identifies a particular product from a designated manufacturer as a "Proprietary Item", the Contractor shall be required to provide such specified product. In such case, no substitution or "approved equal" will be permitted.

(5) Special Experience Requirements: Special Experience Requirements for the Project, if any, are set forth in the Bid Booklet. Special Experience Requirements may apply to contractors, subcontractors, installers, manufacturers and/or suppliers. If the Specifications and/or the Contract Drawings contain any Special Experience Requirement that is not set forth in the Bid Booklet, such Special Experience Requirement is deemed deleted, except as otherwise provided below.

(a) Any Special Experience Requirement that provides that the entity performing the work or supplying the material must have more than three (3) years of experience, is revised to provide that the entity performing the work or supplying the material must have three (3) years of experience, except as described in paragraph (b) below.

(b) Any Special Experience Requirement that pertains to the abatement of hazardous materials shall not be subject to the deletion and/or revision set forth above. Such Special Experience Requirement shall remain in full force and effect.

(c) Any Special Experience Requirement that provides that the entity performing the work must be licensed, authorized, certified, approved by or acceptable to the manufacturer, is deemed deleted and replaced with the requirement that such entity must be properly trained for the specified work.

(d) Any Special Experience Requirement that provides that the individual workers performing the work must be licensed, authorized, certified, approved by or acceptable to the manufacturer, is deemed deleted and replaced with the requirement that such individual workers must be properly trained for the specified work.

(6) Alternate Bids: If the agency is requesting the submission of Alternate Bids, a Notice regarding such Alternate Bids is set forth in the Bid Booklet. In the event of any conflict or inconsistency between (1) the Notice regarding Alternate Bids set forth in the Bid Booklet and (2) a provision in the Specifications and/or the Contract Drawings regarding Alternate Bids, the Notice set forth in the Bid Booklet shall prevail. If the agency is not requesting the submission of Alternate Bids, as indicated by the absence of a Notice in the Bid Booklet, and the Specifications and/or the Contract Drawings contain any provision regarding Alternate Bids, such provision is deemed deleted.

(7) Contractor Retained Engineer: If the Specifications and/or the Contract Drawings require the Contractor to retain an Engineer to provide engineering services for the Project, the following sentence is deemed inserted: "Such Engineer must be a Professional Engineer, licensed in the State of New York."

(8) LEED Related Provisions: If the Specifications and/or the Contract Drawings require the Contractor to purchase FSC certified wood, rapidly renewable materials, or materials within 500 miles, such provisions are deemed deleted and replaced with the requirement that if the contractor has purchased FSC certified wood, rapidly renewable materials, or materials within 500 miles, the contractor shall submit such forms or documentation as may be required by the City in order for the USGBC to certify that the Project qualifies for the related LEED credit(s).

(9) Guarantees: Requirements for Guarantees and Maintenance are set forth in Schedule B, which is included in the Addendum to the General Conditions. In the event of any conflict or inconsistency between (1) a guarantee and/or maintenance requirement set forth in the Specifications and/or the Contract Drawings and (2) a guarantee and/or maintenance requirement set forth in Schedule B, the guarantee and/or maintenance requirement set forth in Schedule B shall prevail.

(10) Warranties: Requirements for Warranties are set forth in Schedule B, which is included in the Addendum to the General Conditions.

(a) In the event of any conflict or inconsistency between (1) a warranty requirement set forth in the Specifications and/or the Contract Drawings and (2) a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall prevail.

(b) In the event a warranty requirement set forth in the Specifications and/or the Contract Drawings is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications and/or the Contract Drawings, shall remain in full force and effect.

(c) In the event a warranty requirement for a particular item of material or equipment is omitted from Schedule B, as well as from the Specifications or the Contract Drawings, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.

(11) Exculpatory Provisions: In the event the Specifications and/or the Contract Drawings contain any provision whereby the consultant and/or any of its officers, employees or agents, including subconsultants, is absolved of responsibility for any act or omission, such provision is deemed deleted.

(12) Insurance: Provisions regarding insurance coverage the Contractor is required to provide are set forth in Article 22 of the City of New York Standard Construction Contract and Schedule A, which is included in the Volume 3 of the contract documents. In the event the Specifications and/or the Contract Drawings contain any provision regarding insurance requirements, such provision is deemed deleted.

(13) Indemnification: Provisions regarding indemnification are set forth in Articles 7, 12, 22 and 57 of the City of New York Standard Construction Contract. In the event the Specifications and/or the Contract Drawings contain any provision regarding indemnification, such provision is deemed deleted.

(14) Dispute Resolution: Provisions regarding dispute resolution are set forth in Article 27 of the City of New York Standard Construction Contract. In the event the Specifications and/or the Contract Drawings contain any provision regarding dispute resolution, such provision is deemed deleted.

(15) Payment to Other Entities: In the event the Specifications and/or the Contract Drawings contain any provision which requires the Contractor to make payments to an entity other than a subcontractor and/or supplier providing services and/or material for the project, such provision is deemed deleted.

(16) General Conditions: In the event of any conflict or inconsistency between (1) the Specifications and/or the Contract Drawings and (2) the General Conditions, the General Conditions shall prevail.

(17) Standard Construction Contract: In the event of any conflict or inconsistency between (1) the Specifications and/or the Contract Drawings and (2) the City of New York Standard Construction Contract, the City of New York Standard Construction Contract shall prevail.

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

NOT USED. The bidder is advised the Schedule A for this Contract is located in Volume 3 of the Contract Documents.

SCHEDULE B

Guarantees and Warranties

(Reference: Section 01 7839, Article 2.7 of the DDC Standard General Conditions)

GUARANTY FROM CONTRACTOR

(1) Contractor's Guaranty Obligation: The Contractor shall promptly repair, replace, restore or rebuild, as the Commissioner may determine, any finished Work in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of Substantial Completion (or use and occupancy in accordance with the Contract), except for the areas of Work set forth below:

- Roofing, Waterproofing, and Joint Sealant Work. For these types of work, the guarantee period shall be (2) two years.

- Trees and/or Plant Material. For trees and/or plant material furnished and installed, the guarantee period shall be (2) two years. During the guarantee period, the Contractor shall provide all maintenance services set forth in the Specifications.

(2) Guaranty Period: The obligation of the Contractor, and its Surety under the Performance Bond, is limited to the period(s) of time specified above.

(3) Other Provisions Deemed Deleted: In the event the Specifications and/or the Contract Drawings contain any provisions regarding guaranty requirements, such provisions are deemed deleted and replaced with the guaranty requirements set forth in this Schedule B.

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WARRANTY FROM MANUFACTURER

(1) Contractor's Obligation to Provide Warranties: The items of material and/or equipment for which manufacturer warranties are required are listed below. For each item of material and/or equipment listed below, the Contractor shall obtain a written warranty from the manufacturer. Such warranty shall provide that the material or equipment is free from defects for the period set forth below and will be replaced or repaired within such specified period. The Contractor shall deliver all required warranties to the Commissioner.

(2) Required Warranties:

Specification Number	Material or Equipment	Warranty Period
071325	Self-Adhering Sheet Waterproofing	5 years
079200	Joint Sealants	5 years

(3) Application: The obligations under the warranty for the periods specified above shall apply only to the manufacturer of the material or equipment, and not to the Contractor or its Surety; provided, however, the Contractor retains responsibility for obtaining all required warranties from the manufacturers and delivering the same to the Commissioner.

(4) Other Provisions: The warranty requirements set forth in this Schedule B are also included in the Specifications.

(a) In the event of any conflict between a warranty requirement set forth in the Specifications and a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall take precedence.

(b) In the event a warranty requirement set forth in the Specifications is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications, shall remain in full force and effect

(c) In the event a warranty requirement for a particular item of material or equipment is omitted from both Schedule B and the Specifications, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.

(d) In the event a warranty requirement is provided for a particular item of material or equipment, and such requirement specifies a warranty period that is longer than that which is actually provided by any of the specified manufacturers, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by any of the specified manufacturers, unless otherwise directed in writing by the Commissioner.

(e) Unless indicated otherwise Warranties are to take effect on the date of Substantial Completion.

SCHEDULE C

Contract Drawings

(Reference: Section 01 1000, Article 1.5 (A) of the DDC Standard General Conditions)

NOT USED. The bidder is advised that the drawing list is located in Volume 1 of the Contract Documents.

SCHEDULE D

No Text

SCHEDULE E

Separation of Trades

NOT USED FOR SINGLE CONTRACTS

SCHEDULE F

Submittals Schedule

(Reference: Section 01 3300 Article 1.5 (C) of the General Conditions)

The Schedule set forth below lists all submittal requirements for the Contract. In the event of any conflict between the Specifications and this Schedule F, Schedule F shall take precedence; provided, however, in the event of an omission from Schedule F (i.e., Schedule F omits either a reference to or information concerning a submittal requirement which is set forth in the Specifications), such omission from Schedule F shall have no effect and the Contractor's submittal obligation, as set forth in the Specifications, shall remain in full force and effect.

CONSULTANT: Mathews Nielsen Landscape Architects, P.C. DATE:

TELEPHONE NUMBER: 212-431-3609
DDC PROJECT MANAGER:
TELEPHONE NUMBER:

APPROVED: _____
(DDC RESIDENT ENGINEER/CPM)

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:							CONTRACT #: **Contract 1 – GENERAL CONSTRUCTION** TRADE: SHOP DRAWING LOG SHEET #								
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL			SUB. DATE	REQ'D DEL.	FABRIC. TIME	SUBMISSIONS								
			SHOP DWG.	SAMPLE	CAT. CUTS				REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
01 3526	Safety and Health Program	X															
01 3526	Contractor's Safety Plan	X															
01 3591	Historic Treatment Plan	X															
01 5000	Site Plan		X														
01 5000	Reports	X															
01 5423	NYC DOB Scaffold & Sidewalk Shed Permits	X	X														

01 5423	Site Logistics/Site Safety Plan	X															
01 5423	Scaffold & Shed Installation Drawings		X														
01 7419	Waste Management Plan	X															
01 7900	Instruction Program for Demonstration & Orientation	X															
01 7900	Qualification Data	X															
01 8113.13	MSDS			X	X												
01 8119	IAQ Management Plan	X															
01 8119	Product Cut Sheets				X												
01 8119	IAQ Management Plan Photographs	X															
03 3000	Cast-In-Place Concrete	x	x		x												
04 2200	Concrete Unit Masonry	x	x		x												
05 1200	Structural Steel Framing	x	x		x												
05 3100	Steel Decking	x	x		x												
07 1325	Self-Adhering Sheet Waterproofing	x		x	x												
07 8100	Applied Fireproofing	x		x	x												
07 9200	Joint Sealants	x		x													

22 0529	Hangers and Supports For Plumbing Pipings	x			x												
22 1000	Plumbing Piping	X			x												
22 2000	Plumbing Specialties	x			x												
26 0500	Common Work Results for Electrical	x	x		x												

(NO TEXT ON THIS PAGE)

SECTION BVM11
BARUCH COLLEGE VERTICAL CAMPUS BUILDING VAULT MODIFICATIONS

BVM11. 1 DESCRIPTION

A. Work Included: The Work of this Section includes, but is not limited to the following:

1. Waterproofing membrane system at the existing vault, tie-in to existing building wall waterproofing membrane, associated flashing, waterproofing accessories (such as drainage mat), insulation, joint sealants, sheet metal flashing, per contract drawings.
2. Structural strengthening of vault roof steel framing, concrete topping slab, monumental step structure, flagpole seatwall structure, bollard anchoring, fire proofing of modified steel framing, per contract drawings.
3. Plumbing system removal and capping of existing plaza drains in the vault roof, new plaza drain in the vault roof, new planter drains in the monumental steps planters, all associated plumbing connections to tie-in to existing building plumbing, per contract drawings.

B. The work included in subsection above shall meet the requirements of the DDC Standard General Conditions, Addendum and all specification sections listed in the table of contents, herein Volume 4 of 4 of this contract.

BVM11. 2 MATERIALS

A. Provide all materials, equipment, and incidental items, including, but not limited to: mock-ups, accessories, protection of adjacent construction, engineering services, design fees necessary to complete the Work as indicated in the contract documents.

BVM11. 3 METHODS

A. Provide all labor and incidental items to complete the Work as indicated in contract documents.
B. Details and notations on drawings are intended to indicate typical conditions and requirements. All variations and field conditions are not necessarily indicated on drawings. Prior to start of work, the contractor shall examine all existing conditions and new requirements, identify where minor variations are necessary to properly complete the work, and execute same at no extra cost to Baruch College. During the construction period, the Engineer may furnish supplementary drawings, details, dimensions, clarification sketches, or instructions as deemed necessary by the Engineer. The furnishing of such data shall not be grounds for a claim for extra compensation to the contractor.
C. The drawings show principal areas where work must be accomplished under this contract. Incidental work may also be necessary in areas not shown on the drawings due to changes affecting existing mechanical, electrical, plumbing, or other systems. Such incidental work is also a part of this contract. Inspect those areas, and ascertain work needed, and do that work in accordance with the contract requirements, at no additional cost.
D. Means and methods of completing the work are the sole responsibility of the contractor.
E. Contractor to maintain a watertight condition during demolition and all construction activities.

BVM11. 4 REQUIRED INSPECTIONS

A. The following special inspections are required.
    a. Structural Steel – BC 1704.3.1
    b. Cast-in-Place Concrete – BC 1704.4
    c. Masonry – BC 1704.5
    d. Sprayed Fire-Resistant Materials – BC 1704.11
    e. Concrete Design Mix – BC 1905.3, BC 1913.10
    f. Concrete Sampling and Testing – BC 1905.6, BC 1913.10
B. The following progress inspections are required.
    a. Energy Code Compliance Inspections – BC 110.3.5
    b. Final * 28-116.2.4.2, BC 110.5, Directive 14 of 1975, and 1 RCNY § 101-10

BVM11. 5 MEASUREMENT

A. The quantity to be measured for payment hereunder shall be the number of square feet for Item No. BVM11-WP Waterproofing for all work as described per the contract drawings.
B. The quantity to be measured for payment hereunder shall be lump sum for each Item No. BVM11-ST Structural and Item No. BVM11-PL Plumbing for all work as described per the contract drawings.

BVM11. 6 PRICE TO COVER

A. The contract price for Baruch College Vertical Campus Building Vault shall cover the cost of all labor, materials, equipment, insurance, general conditions, overhead and incidental expenses necessary to complete the work in accordance with the Contract Drawings, the specifications and directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
BVM11-WP	WATERPROOFING	S.F.
BVM11-ST	STRUCTURAL	LUMP SUM
BVM11-PL	PLUMBING	LUMP SUM

SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

012200.1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including other Specification Sections, apply to this Section.

012200.1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

012200.1.3 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 012200.1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Engineerreserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Baruch College's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 2. Specification. Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - EXECUTION

012200.2.1 SCHEDULE OF UNIT PRICES

A. Unit Price 1: Waterproofing

1. Description: Complete waterproofing assembly including all associated materials such as insulation, drainage mat, and flashing materials. Refer to Section 071325 "Self-Adhering Sheet Waterproofing Low Temperature" and all related waterproofing components as described in the Contract Documents.
2. Unit of Measurement: Square Foot

B. Unit Price No. 3: Plumbing

1. Description: Plumbing system removal and capping of existing plaza drains in the vault roof, new plaza drain in the vault roof, new planter drains in the monumental steps planters, all associated plumbing connections to tie-in to existing building plumbing, and all related plumbing components as described in the Contract Documents.
2. Unit of Measurement: Lump Sum

C. Unit Price No. 4: Structural

1. Description: Structural strengthening of vault roof steel framing, concrete topping slab, monumental step structure, flagpole seatwall structure, bollard anchoring, fire proofing of modified steel framing, and all related structural work and components as described in the Contract Documents.
2. Unit of Measurement: Lump Sum

SECTION 024119 – SELECTIVE DEMOLITION

PART 1 - GENERAL

024119.1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected site elements.

024119.1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Baruch College.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

024119.1.3 FIELD CONDITIONS

A. Baruch College will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Baruch College's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Baruch College as far as practical.

C. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Baruch College before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer. and Baruch College.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

024119.1.4 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

024119.2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

024119.3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

D. Survey of Existing Conditions: Record existing conditions by use of measured drawings preconstruction photographs preconstruction videotapes and templates.

024119.3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

1. Comply with requirements for existing services/systems interruptions specified in Contract Documents.

024119.3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Contract Documents.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

024119.3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
5. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Protect items from damage during transport and storage.
3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable,

protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

024119.3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Baruch College's property, remove demolished materials from Project site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials site and legally dispose of them.

024119.3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

033000.1.1 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

033000.1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

033000.1.3 INFORMATIONAL SUBMITTALS

A. Material certificates.

B. Material test reports.

033000.1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Testing Agency Qualifications: A Registered Special Inspection Agency with the New York City Department of Buildings.

C. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

D. Concrete Testing Service: Baruch College shall engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

PART 2 - PRODUCTS

033000.2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

033000.2.2 STEEL REINFORCEMENT

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 50 percent.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

1. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 1064.

D. Deformed-Steel Welded Wire Reinforcement: ASTM A 1064.

E. Epoxy-Coated Welded Wire Reinforcement: ASTM A 884/A 884M, Class A coated, Type 1

F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice.

033000.2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type II:

B. Normal-Weight Aggregates: ASTM C 33, graded.

1. Maximum Coarse-Aggregate Size: 3/4 inch, nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94/C 94M and potable.

033000.2.4 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

033000.2.5 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

033000.2.6 CONCRETE MIXTURES

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

B. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing or high-range water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

C. Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 3000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.45.

3. Slump Limit: 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

033000.2.7 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

033000.2.8 CONCRETE MIXING

B. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

033000.3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Chamfer exterior corners and edges of permanently exposed concrete.

033000.3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

033000.3.3 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

033000.3.4 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

033000.3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

C. Cold-Weather Placement: Comply with ACI 306.1.

D. Hot-Weather Placement: Comply with ACI 301.

033000.3.6 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces.

033000.3.7 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.

1. Apply scratch finish to surfaces to receive concrete floor toppings and to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces where indicated.
2. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.-long straightedge resting on two high spots and placed anywhere on the surface does not exceed1/8 inch.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where required by finish materials. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

033000.3.8 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

    a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound

manufacturer[unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project].

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

033000.3.9 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

033000.3.10 FIELD QUALITY CONTROL

A. Testing and Inspecting: Engineer will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

042200.1.1 SUMMARY

A. Section Includes:

1. Concrete masonry units (CMU's).
2. Steel reinforcing bars.

042200.1.2 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engineer will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

1. Concrete Masonry Unit Test: For each type of unit required, according to ASTM C 140 for compressive strength.
2. Mortar Test (Property Specification): For each mix required, according to ASTM C 109/C 109M for compressive strength.
3. Mortar Test (Property Specification): For each mix required, according to ASTM C 780 for compressive strength.
4. Grout Test (Compressive Strength): For each mix required, according to ASTM C 1019.

042200.1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For reinforcing steel. Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."

042200.1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of product indicated. For masonry units include data on material properties.

B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 231 or ASTM C 1019 for air content.
2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

042200.1.5 QUALITY ASSURANCE

A. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

042200.1.6 PROJECT CONDITIONS

A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

042200.2.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

042200.2.2 CONCRETE MASONRY UNITS

A. Regional Materials: CMUs shall be manufactured within 500 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

B. Shapes: Provide shapes indicated and for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

C. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 psi.
2. Density Classification: Normal weight.

0442200.2.3 MASONRY LINTELS

A. General: Provide one of the following:

B. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout.

042200.2.4 MORTAR AND GROUT MATERIALS

A. Regional Materials: Aggregate for mortar and grout, cement, and lime shall be extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

B. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

C. Hydrated Lime: ASTM C 207, Type S.

D. Portland Cement-Lime Mix: Packaged blend of 18ortland cement and hydrated lime containing no other ingredients.

E. Masonry Cement: ASTM C 91.

F. Mortar Cement: ASTM C 1329.

G. Aggregate for Mortar: ASTM C 144.

1. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
2. White-Mortar Aggregates: Natural white sand or crushed white stone.
3. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

H. Aggregate for Grout: ASTM C 404.

I. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Products: Subject to compliance with requirements, provide one of the following, or approved equivalent:

a. Euclid Chemical Company (The); Accelguard 80.
b. Grace Construction Products, W. R. Grace & Co. - Conn.; Morset.
c. Sonneborn Products, BASF Aktiengesellschaft; Trimix-NCA.

J. Water: Potable.

042200.2.5 REINFORCEMENT

A. Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

B. Epoxy coating; ASTM A775.

C. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.

1. Walls: Hot-dip galvanized, carbon steel.

2. Wire Size for Side Rods: 0.148-inch diameter.
3. Wire Size for Cross Rods: 0.148-inch diameter.
4. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
5. Provide in lengths of not less than 10 feet with prefabricated corner and tee units.

042200.2.6 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

2. Use masonry cement mortar unless otherwise indicated.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.

1. For reinforced masonry, use Type S.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C 476,3 for specified 28-day compressive strength indicated, but not less than 3000 psi.
3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

042200.3.1 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet), or 1/2 inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

042200.3.2 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

C. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

E. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

042200.3.3 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

E. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

042200.3.4 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Space reinforcement not more than 8 inches at corners.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

042200.3.5 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:

1. Anchor masonry with anchors embedded in masonry joints and attached to structure.
2. Space anchors as indicated, but not more than 24 inches o.c. vertically and 32 inches o.c. horizontally.

042200.3.6 FLASHING

A. General: Install embedded flashing in masonry at lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

042200.3.7 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.

2. Limit height of vertical grout pours to not more than 48 inches.

042200.3.8 FIELD QUALITY CONTROL

A. Testing and Inspecting: Engineer will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.

B. Inspections: special inspections according to the "New York City Building Code."

1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
3. Place grout only after inspectors have verified proportions of site-prepared grout.

C. Testing Prior to Construction: One set of tests.

D. Testing Frequency: One set of tests for each 1000 sq. ft. of wall area or portion thereof.

E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.

F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.

G. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.

H. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

042200.3.9 REPAIRING, POINTING, AND CLEANING

A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
2. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

051200.1.1 SUMMARY

A. Section Includes:

1. Structural steel.
2. Grout.

051200.1.2 DEFINITIONS

B. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

051200.1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

051200.1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Show fabrication of structural-steel components.

051200.1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Welding certificates.

C. Mill test reports for structural steel, including chemical and physical properties.

D. Source quality-control reports.

E. Field quality-control reports.

051200.1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU.

B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.

C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

D. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.
2. AISC 360.
3. RCSC's "Specification for Structural Joints Using High Strength Bolts."

PART 2 - PRODUCTS

051200.2.1 PERFORMANCE REQUIREMENTS

A. Connections: Provide details of connections required by the Contract Documents as indicated on the drawings.

051200.2.2 STRUCTURAL-STEEL MATERIALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Plate and Bar: ASTM A 572/A 572M, Grade 50.

C. Welding Electrodes: Comply with AWS requirements.

051200.2.3 BOLTS, CONNECTORS, AND ANCHORS

A. Post installed anchor bolts shall be stainless steel type 304 anchors

0512200.2.4 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

0512200.2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

B. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

0512200.2.6 SHOP CONNECTIONS

A. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

0512200.2.7 SOURCE QUALITY CONTROL

A. Testing Agency: Engineer will engage a qualified testing agency to perform shop tests and inspections.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Welded Connections: Visually inspect shop-welded connections according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
3. Ultrasonic Inspection: ASTM E 164.
4. Radiographic Inspection: ASTM E 94.

C. Prepare test and inspection reports.

PART 3 - EXECUTION

0512200.3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

0512200.3.2 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Baseplates Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of baseplate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.

4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

C. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

0512200.3.3 FIELD CONNECTIONS

A. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs where required, back gouge, and grind steel smooth.
3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," for mill material.

0512200.3.4 FIELD QUALITY CONTROL

A. Special Inspections: Engineer will engage a qualified special inspector to perform the following special inspections:

1. Verify weld materials and inspect welds.

B. Testing Agency: Engineer will engage a qualified testing agency to perform tests and inspections.

C. Welded Connections: Visually inspect field welds according to AWS D1.1/D1.1M.

1. In addition to visual inspection, test and inspect field welds according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

    a. Liquid Penetrant Inspection: ASTM E 165.
    b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
    c. Ultrasonic Inspection: ASTM E 164.
    d. Radiographic Inspection: ASTM E 94.

SECTION 053100 - STEEL DECKING

PART 1 - GENERAL

053100.1.1 SUMMARY

A. Section Includes:
   1. Composite floor deck.

053100.1.2 ACTION SUBMITTALS

A. Product Data: For each type of deck, accessory, and product indicated.

B. Shop Drawings:

1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

053100.1.3 INFORMATIONAL SUBMITTALS

A. Welding certificates.

B. Product certificates.

C. Evaluation reports.

D. Field quality-control reports.

053100.1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.

B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

053100.1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

053100.2.1 PERFORMANCE REQUIREMENTS

A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

B. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

C. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

053100.2.2 COMPOSITE FLOOR DECK

A. Manufacturers: Subject to compliance with requirements provide products by the following, or approved equivalent:

1. ASC Profiles, Inc.; a Blue Scope Steel company.
2. Canam United States; Canam Group Inc.
3. CMC Joist & Deck.
4. Consolidated Systems, Inc.; Metal Dek Group.
5. Cordeck.
6. DACS, Inc.
7. Epic Metals Corporation.
8. Marlyn Steel Decks, Inc.
9. New Millennium Building Systems, LLC.
10. Nucor Corp.; Vulcraft Group.
11. Roof Deck, Inc.
12. Verco Manufacturing Co.
13. Wheeling Corrugating Company; Div. of Wheeling-Pittsburgh Steel Corporation.

B. Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 31, with the minimum section properties indicated, and with the following:

1. Galvanized-Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33, G60 zinc coating.
2. Profile Depth: 1-1/2 inches.
3. Design Uncoated-Steel Thickness: 0.0358 inch.

053100.2.3 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Flat Sump Plates: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. For drains, cut holes in the field.

G. Galvanizing Repair Paint: SSPC-Paint 20 or MIL-P-21035B, with dry film containing a minimum of 94 percent zinc dust by weight.

H. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

053100.3.1 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.

B. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

C. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

D. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

E. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

F. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

G. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

H. Pour Stops and Girder Fillers: Weld steel-sheet pour stops and girder fillers to supporting structure according to SDI recommendations unless otherwise indicated.

I. Floor-Deck Closures: Weld steel-sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck.

053100.3.2 PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

SECTION 071325 – SELF-ADHERING SHEET WATEPROOFING

PART 1 — GENERAL

071325.1.1 RELATED DOCUMENTS

A. All of the Contract Documents, including General and Supplementary Conditions and Division 1 General Requirements, apply to the work of this section.

071325.1.2 SUMMARY

A. The work of this section includes, but is not limited to, the following:
   1. Rubberized asphalt sheet membrane waterproofing
   2. Prefabricated drainage composite
   3. Protection board

B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
   1. Section 033000 – Cast-In-Place Concrete
   2. Section 076000 – Sheet Metal Flashing
   3. Section 079200 – Joint Sealants

071325.1.3 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. American Society for Testing and Materials (ASTM)

   C 836 Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course

   D 412 Standard Test Methods for Rubber Properties in Tension

   D 570 Standard Test Method for Water Absorption of Plastics

   D 882 Standard Test Methods for Tensile Properties of Thin Plastic Sheeting

   D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

   D 1876 Standard Test Method for Peel Release of Adhesives (T-Peel)

   D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

   D 3767 Standard Practice for Rubber - Measurements of Dimensions

   D 5385 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes

   E 96 Standard Test Methods for Water Vapor Transmission of Materials

   E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

071325.1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations. Include certification of data indicating VOC (Volatile Organic Compound) content of all components of waterproofing system.

B. Samples: Submit representative samples of the following for approval:

1. Sheet membrane
2. Protection board
3. Prefabricated drainage composite

071325.1.5 QUALITY ASSURANCE

A. Manufacturer: Sheet membrane waterproofing shall be manufactured and marketed by a firm with a minimum of 20 years experience in the production and sales of self-adhesive sheet membrane waterproofing. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past 5 years.

B. Installer: A firm which has at least 3 years experience in work of the type required by this section.

C. Materials: For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.

D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

071325.1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer's instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.

1. Do not double-stack pallets of membrane on the job site. Provide cover on top and all sides, allowing for adequate ventilation.
2. Protect mastic and adhesive from moisture and potential sources of ignition.
3. Store drainage composite or protection board flat and off the ground. Provide cover on top and all sides.

B. Sequence deliveries to avoid delays, but minimize on-site storage.

071325.1.7 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

071325.1.8 WARRANTY

A. Sheet Membrane Waterproofing: Provide written 5 year material warranty issued by the membrane manufacturer upon completion of the work.

PART 2 — PRODUCTS

071325.2.1 MATERIALS

A. Sheet Membrane Waterproofing: Bituthene® 3000/Low Temperature Membrane by Grace Construction Products; a self-adhesive, cold-applied composite sheet consisting of a thickness of 1.4 mm (0.056 in.) of rubberized asphalt and 0.1 mm (0.004 in.) of cross-laminated, high density polyethylene film, or approved equivalent. Provide rubberized asphalt membrane covered with a release sheet, which is removed during installation. No special adhesive or heat shall be required to form laps.

A list of distributors is as follows, or approved equivalent:

1. Allied Building Products
2. Kenseal
3. Extech

B. Sheet Membrane Waterproofing

PHYSICAL PROPERTIES FOR BITUTHENE 3000/LOW TEMPERATURE MEMBRANE:

Property	Test Method	Typical Value
Color		Dark gray-black
Thickness	ASTM D 3767 Method A	1.5 mm (0.060 in.) nominal
Flexibility, 180° bend over 25 mm (1 in.) mandrel at -43°C (-45°F)	ASTM D 1970	Unaffected
Tensile Strength, Membrane Die C	ASTM D 412 Modified[1]	2240 kPa (325 lbs/in.^{2}) minimum
Tensile Strength, Film	ASTM D 882 Modified[1]	34.5 MPa (5,000 lbs/in.^{2}) minimum
Elongation, Ultimate Failure of Rubberized Asphalt	ASTM D 412 Modified[1]	300% minimum
Crack Cycling at -32°C (-25°F), 100 Cycles	ASTM C 836	Unaffected
Lap Adhesion at Minimum	ASTM D 1876 Modified[2]	700 N/m (4 lbs/in.) –

Application Temperature		Bituthene 3000 880 N/m (5 lbs/in.) – Low Temp
Peel Strength	ASTM D 903 Modified[3]	1576 N/m (9 lbs/in.)
Puncture Resistance, Membrane	ASTM E 154	222 N (50 lbs) minimum
Resistance to Hydrostatic Head	ASTM D 5385	60 m (200 ft) of water
Permeance	ASTM E 96, Section 12 – Water Method	2.9 ng/m^{2}sPa (0.05 perms) maximum
Water Absorption	ASTM D 570	0.1% maximum

Footnotes:

1. *The test is run at a rate of 50 mm (2 in.) per minute.*
2. *The test is conducted 15 minutes after the lap is formed and run at a rate of 50 mm (2 in.) per minute at -4°C (25°F).*
3. *The 180° peel strength is run at a rate of 300 mm (12 in.) per minute.*

C. Prefabricated Drainage Composite: (Hydroduct® 660 & Hydroduct® 550 at planters) Drainage Composite by Grace Construction Products, or approved equavilent. Drainage Composite shall be designed to promote positive drainage while serving as a protection course.

A list of distributors is as follows, or approved equivalent:

1. Allied Building Products
2. Kenseal
3. Extech

D. Protection Board:

1. Expanded Polystyrene Protection Board: 25 mm (1 in.) thick for vertical applications with the following characteristics. Adhere to waterproofing membrane with Bituthene Protection Board Adhesive.

   Normal Density: 16 kg/m^3 (1.0 lb/ft^3)

   Thermal Conductivity, K factor: 0.24 at 5°C (40°F), 0.26 at 24°C (75°F)

   Thermal Resistance, R-Value: 4 per 25 mm (1 in.) of thickness.

2. Asphalt Hardboard: A premolded semi-rigid protection board consisting of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

E. Waterstop: Adcor™ ES hydrophilic non-bentonite waterstop by Grace Construction Products for non-moving concrete construction joints, or approved equivalent.

A list of distributors is as follows, or approved equivalent:

1. Allied Building Products
2. Kenseal
3. Extech

F. Miscellaneous Materials: Surface conditioner, mastic, liquid membrane, tape and accessories specified or acceptable to manufacturer of sheet membrane waterproofing.

PART 3 — EXECUTION

071325.3.1 EXAMINATION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

071325.3.2 PREPARATION OF SUBSTRATES

A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing.

B. Cast-In-Place Concrete Substrates:

1. Do not proceed with installation until concrete has properly cured and dried (minimum 7 days for normal structural concrete and minimum 14 days for lightweight structural concrete).
2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
3. Repair bugholes over 13 mm (0.5 in.) in length and 6 mm (0.25 in.) deep and finish flush with surrounding surface.
4. Remove scaling to sound, unaffected concrete and repair exposed area.
5. Grind irregular construction joints to suitable flush surface.

C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.

D. Wood Substrates: Apply waterproofing membrane over securely fastened sound surface. All joints and fasteners shall be flush to create a smooth surface.

E. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

071325.3.3 INSTALLATION

A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:

1. Apply primer at rate recommended by manufacturer. Recoat areas not waterproofed if contaminated by dust. Mask and protect adjoining exposed finish surfaces to protect those surfaces from excessive application of primer.

2. Delay application of membrane until primer is completely dry. Dry time will vary with weather conditions.
3. Seal daily terminations with troweled bead of mastic.
4. Apply protection board and related materials in accordance with manufacturer's recommendations.

071325.3.4 CLEANING AND PROTECTION

A. Remove any masking materials after installation. Clean any stains on materials which would be exposed in the completed work.

B. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.

SECTION 076000 – SHEET METAL FLASHING

PART 1 - GENERAL

076000.1.1 SUMMARY

A. This Section includes the following:

1. Aluminum flashing.

2. Field fabricating (including bending, cutting, soldering, etc.), if required, of stainless steel flashing.

3. Stainless steel flashing elsewhere, where metal flashing is indicated on drawings.

4. Separation of contacting surfaces of dissimilar metals.

076000.1.2 SUBMITTALS

A. Shop Drawings: Submit, showing all materials, finishes, fastenings, joint details, fabrication, construction and relation to adjoining construction.

B. Samples: Submit 12" x 12" samples of flashing materials and finishes.

076000.1.3 WARRANTY

A. The Contractor shall warrant that all Metal Flashing Work executed under this Section will be free from defects in materials and workmanship for a period of ten (10) years from date of acceptance of the Project, and he shall remedy any defects in the Metal Flashing Work.

076000.1.4 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation, and to protect the installed work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the City.

PART 2 - PRODUCTS

076000.2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, those listed below.

076000.2.2 MATERIALS

A. Aluminum Flashing: ASTM B-209, 0.032" thick with mill finish.

B. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

1. Finish: No. 2D (dull, cold rolled).

C. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type non-corrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

076000.2.3 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
3. Blind Fasteners: Stainless-steel rivets.

C. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

D. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain water tight.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

076000.2.4 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

1. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

D. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.

F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, non-corrosive metal.

1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" and FMG Loss Prevention Data Sheet 1-49 for application but not less than thickness of metal being secured.

PART 3 - EXECUTION

076000.3.1 INSPECTION

A. Examine the areas and conditions where sheet metal work is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

076000.3.2 METAL FLASHING INSTALLATION

A. Reference Standard: Conform to the requirements of 5th Edition of the Sheet Metal and Air Conditioning Contractors Associations (SMACNAS) Architectural Sheet Metal Manual.

B. General: Fabricate and install metal flashing work in accordance with details and specifications of above Reference Standard, with manufacturer's instructions, and as herein specified, to provide a watertight installation. Apply metal flashing to smooth, even, sound, clean, dry surfaces free from defects. Make provisions to allow for expansion and contraction of metal flashing work. Wherever practicable, shop form all metal flashing work and deliver ready for installation. Form metal flashing work accurately to required profiles, with flat surfaces, straight edges and corners, free from defects. Fold exposed metal edges back not less than 1/2" and form drip.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.

E. Nailing: Confine to sheets twelve (12) inches or less in width. Confine nailing to one edge only, locate nails where concealed. Use No. 12 x 1" long flat headed, annular threaded, Type 302 stainless steel nails for nailing to wood blocking; use one (1) inch long masonry nails for nailing to concrete. Space nails four (4) inches o.c. maximum.

F. Cleating: Use cleats where sheets are more than twelve (12) inches in width. Space cleats approximately twelve (12) inches o.c. Cleats two (2) inches wide by three (3) inches long, of the same material and weight as the metal flashing being installed. Secure one end of the cleat with two (2) nails and fold edge back over the nail heads. Lock other end into seam or into folded edge of metal flashing sheets. Pre-tin cleats for soldered seams.

G. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within

joints.

H. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.

1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
2. Aluminum: Use aluminum or stainless-steel fasteners.
3. Copper. Use copper, hardware bronze, or stainless-steel fasteners.
4. Stainless Steel: Use stainless-steel fasteners.

I. Seal joints with elastomeric sealant as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient tempera- tures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
2. Prepare joints and apply sealants to comply with requirements in Section "Joint Sealants."

J. Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

K. Separation of Dissimilar Materials: Back paint surfaces of metal flashing in contact with dissimilar metals or with concrete or masonry with bituminous paint.

1. Coat side of stainless-steel and lead sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlment.
3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.
4. Bituminous coating shall not be in contact with PVC membrane.

076000.3.3 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

SECTION 078100 – APPLIED FIREPROOFING

PART 1 - GENERAL

078100.1.1 SUMMARY

A. Section includes sprayed fire-resistive materials (SFRM).

078100.1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at the project site.

078100.1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

078100.1.4 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Evaluation reports.

C. Field quality-control reports.

078100.1.5 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual certified, licensed, or otherwise qualified by fireproofing manufacturer as experienced and with sufficient trained staff to install manufacturer's products according to specified requirements.

PART 2 - PRODUCTS

078100.2.1 MATERIALS, GENERAL

A. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions. Provide fire-resistance rating to meet or exceed that of the existing fireproofing or a fire-resistance rating of 2-hours, whichever is greater.

B. Fire-Resistance Design: Indicated on Drawings, tested according to ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Steel members are to be considered unrestrained unless specifically noted otherwise.

C. VOC Content: Products shall comply with VOC content limits of authorities having jurisdiction:

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Primers, Sealers, and Undercoaters: 200 g/L.
4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.

D. Low-Emitting Materials: Fireproofing used within the weatherproofing system shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Asbestos: Provide products containing no detectable asbestos.

078100.2.2 SPRAYED FIRE-RESISTIVE MATERIALS

A. SFRM: Manufacturer's standard, factory-mixed, lightweight, dry formulation, complying with indicated fire-resistance design, and mixed with water at Project site to form a slurry or mortar before conveyance and application or conveyed in a dry state and mixed with atomized water at place of application.

1. Products: Subject to compliance with requirements, provide a product that is compatible with the existing fireproofing:
   a. Grace Construction Products; W.R. Grace & Co. -- Conn; Grace Construction Products; Monokote MK-6 Series, Grace Construction Products.
   b. Approved Equivalent

2. Application: Designated for interior use by a qualified testing agency acceptable to authorities having jurisdiction.
3. Bond Strength: Minimum 150-lbf/sq. ft. cohesive and adhesive strength based on field testing according to ASTM E 736.
4. Density: Not less than 15 lb/cu. ft. as specified in the approved fire-resistance design, according to ASTM E 605.
5. Thickness: As required for 2-hour fire-resistance design, measured according to requirements of fire-resistance design or ASTM E 605, whichever is thicker, but not less than 0.375 inch.
6. Combustion Characteristics: ASTM E 136.
7. Surface-Burning Characteristics: Flame-spread and smoke-developed indexes of 10 or less according to ASTM E 84.
8. Compressive Strength: Minimum 10 lbf/sq. in. according to ASTM E 761.
9. Corrosion Resistance: No evidence of corrosion according to ASTM E 937.
10. Deflection: No cracking, spalling, or delamination according to ASTM E 759.
11. Effect of Impact on Bonding: No cracking, spalling, or delamination according to ASTM E 760.
12. Air Erosion: Maximum weight loss of 0.025 g/sq. ft. in 24 hours according to ASTM E 859.

13. Fungal Resistance: Treat products with manufacturer's standard antimicrobial formulation to result in no growth on specimens per ASTM G 21 or rating of 10 according to ASTM D 3274 when tested according to ASTM D 3273.

078100.2.3 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

B. Substrate Primers: Primers approved by fireproofing manufacturer.

C. Bonding Agent: Product approved by fireproofing manufacturer

D. Topcoat: Suitable for application over applied fireproofing; of type recommended in writing by fireproofing manufacturer for each fire-resistance design.

PART 3 - EXECUTION

078100.3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrates and other conditions affecting performance of the Work and according to each fire-resistance design.

B. Determine by field examination the material properties of the existing fireproofing.

078100.3.2 PREPARATION

A. Cover other work subject to damage from fallout or overspray of fireproofing materials during application.

B. Thoroughly clean substrate to ensure proper bond in accordance with written recommendations by fireproofing manufacturer.

C. Prime substrates where included in fire-resistance design and where recommended in writing by fireproofing manufacturer unless compatible shop primer has been applied and is in satisfactory condition to receive fireproofing.

078100.3.3 APPLICATION

A. Construct fireproofing assemblies that are identical to fire-resistance design indicated and products as specified, tested, and substantiated by test reports; for thickness, primers, sealers, topcoats, and other materials and procedures affecting fireproofing work.

B. Comply with fireproofing manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to mix, convey, and apply fireproofing as a patch; as applicable to particular conditions of installation and as required to achieve fire-resistance ratings indicated.

C. Spray apply fireproofing to maximum extent possible. Following the spraying operation in each area, complete the coverage by trowel application or other placement method recommended in writing by fireproofing manufacturer.

D. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

078100.3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Test and inspect as required by the NYC BC, 1704.11.

B. Fireproofing will be considered defective if it does not pass tests and inspections.

1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.

C. Prepare test and inspection reports.

078100.3.5 CLEANING AND REPAIRING

A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.

B. Repair fireproofing damaged by other work before concealing it with other construction.

C. Repair fireproofing by reapplying it using same method as original installation or using manufacturer's recommended trowel-applied product.

079200 - JOINT SEALANTS

PART 1 GENERAL

079200.1.1 SUMMARY

A. Section Includes:
1. Urethane joint sealants.

079200.1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

079200.1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Preconstruction laboratory test reports.

C. Preconstruction field-adhesion-test reports.

D. Field-adhesion-test reports.

E. Sample warranties.

079200.1.3 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

079200.1.4 PRECONSTRUCTION TESTING

A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Adhesion Testing: Use ASTM C 794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Compatibility Testing: Use ASTM C 1087 to determine sealant compatibility when in contact with glazing and gasket materials.
3. Stain Testing: Use ASTM C 1248 to determine stain potential of sealant when in contact with concrete substrates.

B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

079200.1.5 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS

079200.2.1 JOINT SEALANTS, GENERAL

A. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following:

1. Architectural sealants shall have a VOC content of 250 g/L or less.
2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.
3. Sealants and sealant primers for nonporous substrates shall have a VOC content of 775 g/L or less.

B. Low-Emitting Interior Sealants: Sealants and sealant primers shall comply with the testing and product requirements of the California Department of Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

079200.2.2 URETHANE JOINT SEALANTS

A. Urethane, S, NS, 100/50, T, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Uses T and NT.

1. Pecora Corporation
2. Sonneborn
3. Sika

079200.2.3 JOINT-SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

1. BASF Corporation
2. Nomaco
3. Denver Foam

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

079200.2.4 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 EXECUTION

079200.3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove laitance and form-release agents from concrete.
2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

079200.3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

079200.3.3 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in horizontal surfaces.

1. Joint Locations:

a. Isolation and contraction joints in cast-in-place concrete slabs.
b. Joints between different materials listed above.

2. Joint Sealant: Urethane.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

SECTION 220529 – HANGERS AND SUPPORTS FOR PLUMBING PIPING

PART 1 GENERAL

220529.1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

220529.1.2 SECTION INCLUDES

A. Pipe hangers, supports, clamps, and associated anchors.

B. Sleeves and seals for plumbing system.

C. Flashing and sealing equipment and plumbing systems.

220529.1.3 PRODUCT SUPPLIED BUT NOT INSTALLED UNDER THIS SECTION

A. Section 03 30 00 - Cast-In-Place Concrete: Furnish hanger and support inserts and sleeves for placement into formwork.

220529.1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Submittal requirements.

B. Indicate hanger and support framing and attachment methods.

PART 2 PRODUCTS

220529.2.1 MANUFACTURERS

A. Elcen Metal Products Company

B. Grinnell Company, Incorporated

C. Modern Hanger Corporation

D. P.H.D. Manufacturing, Incorporated

E. Or Approved Equivalent

220529.2.2 INSERTS AND CLAMPS

A. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection

with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

B. Size inserts to suit threaded hanger rods.

C. Beam Clamps: Fixed or adjustable type.

220529.2.3 PIPE HANGERS AND SUPPORTS - GENERAL

A. Hangers for Pipe Sizes 1/2 to 1-1/2 Inches: Adjustable wrought steel ring or clevis.

B. Hangers for Pipe Sizes 2 to 6 Inches: Adjustable wrought steel clevis.

D. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.

E. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp, adjustable cast iron roll for hot pipe sizes 6 inches and over.

F. Vertical Support: Steel riser clamp. Provide copper-plated support or formed plastic coated for copper piping.

G. Design hangers to impede disengagement by movement of supported pipe.

H. Provide copper-plated hangers and supports for copper piping or provide galvanized steel insulation protection shields between hanger or support and piping insulation. Where compressive strength of insulation is exceeded, rest pipe on hanger (copper-plated hangers for copper pipe) with insulation installed over hanger.

I. Shields for Insulated Strom Water Piping 2-1/2 Inches and Larger: Hard block non-conducting saddles in 90 degree segments, 12-inch minimum length, block thickness same as insulation thickness.

220529.2.4 PIPE HANGERS AND SUPPORTS – ACCEPTABLE PRODUCTS

A. Expansion loops may be substituted in lieu of expansion joints.

220529.2.5 CONNECTIONS

A. Provide flexible pipe connections suitable to connect to adjoining piping as specified for pipe joints. Use pipe sized units.

220529.2.6 SWING JOINTS

A. Where lines under the building or at other locations where stress may be put on line due to settlement, install swing joints. Install swing joints so that when settlement occurs, joints shall tighten.

PART 3 EXECUTION

220529.3.1 INSTALLATION

A. Accomplish structural work and provide equipment required to control expansion and contraction of piping, loops, pipe offsets, and swing joints, and provide corrugated bellows type expansion joints where required.

B. Install flexible connectors at right angles to displacement. Install one end immediately adjacent to isolated equipment and anchor other end.

C. Fabricated anchors and guides may be used only if approved.

D. Rigidly anchor pipe to building structure where necessary. Install guides so that movement takes place along axis of pipe only.

SECTION 221000 – PLUMBING PIPING

PART 1 GENERAL

221000.1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

221000.1.2 SECTION INCLUDES

A. Pipe and pipe fittings.

B. Storm Water piping system.

C. Testing.

D. Disinfection.

221000.1.3 REFERENCES

A. American Society of Mechanical Engineers:

1. ASME B16.3 - Malleable Iron Threaded Fittings Class 150 NS 300.

2. ASME B16.18 - Cast Bronze Solder Fittings.

3. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV.

4. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.

B. ATSM International

1. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc-Coated, Welded and Seamless.

2. ASTM A74 - Cast Iron Soil Pipe and Fittings.

3. ASTM A120 - Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized), Welded and Seamless, for Ordinary Uses.

4. ASTM B306 - Copper Drainage Tube (DWV).

5. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.

C. Cast Iron Soil Pipe Institute:

1. CISPI 301-12 - Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Water and Vent Piping Applications.

2. CISPI 310-12 - Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Appurtenances.

D. Local Gas Company - Applicable Standards.

E. State and Local Municipal Building Code: Plumbing Code, current edition and amendments.

221000.1.4 SUBMITTALS

A. Submittal Procedures: Submittal requirements.

B. Product Data: Submit data on pipe materials, pipe fittings, valves, and accessories, including manufacturer installation instructions and recommended procedures.

221000.1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, handle, and protect products to site.

B. Deliver products to site in manufacturer's original package and containers unopened, undamaged with labels intact and legible.

C. Store materials off ground on platforms with protective covering.

D. Handle materials so as not to soil, mark or damage finishes.

PART 2 PRODUCTS

221000.2.1 STORMWATER PIPING, ABOVE GRADE

A. Cast Iron Pipe: ASTM A74 service weight. Fittings: Cast iron. Joints: Hub-and-spigot, CISPI HSN compression type with ASTM C564 neoprene gaskets.

B. Cast Iron Pipe: CISPI 301, hubless, service weight. Fittings: Cast iron. Joints: ASTM C564/CISPI 310 gasket and clamp system as hereinafter specified.

221000.2.2 FLANGES, UNIONS AND COUPLINGS

A. Pipe Size 2 Inches and Under: 150 PSIG malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.

B. Pipe Size Over 2 Inches: 150 PSIG forged steel slip-on flanges for ferrous piping; bronze flanges for copper piping; neoprene gaskets for gas service; 1/16-inch thick preformed neoprene.

C. Dielectric Connections: Clear flow Dielectric Waterway Fittings with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

Manufacturers:

1. Victaulic
2. Watts
3. Wilkins
4. Or Approved Equivalent

D. Couplings for gasketed and clamp cast iron hubless pipe shall be "Heavyweight" FM compliant, ASTM C564; 28 gauge, 80 inch-lbs service coupling, orange shield coupling. Clamps shall be made of 24 gauge, Type 304 stainless steel with clamps tightened to manufacturer's recommended torque

(minimum 80 inch pounds of torque). Coupling gaskets shall be made of neoprene conforming to ASTM C564 and shall interlock with the housing assembly to make a slip-free joint.

Manufacturers:

1. Clamp-All Corporation, Billerica, MA
2. Husky Technologies, Inc., Cororna, CA - - Husky SD4000
3. Mission Heavyweight, Corona, CA
4. Or Approved Equivalent

PART 3 EXECUTION

221000.3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

221000.3.2 INSTALLATION

A. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

B. Route piping in orderly manner and maintain gradient.

C. Install piping to conserve building space and not interfere with use of space.

D. Group piping whenever practical at common elevations.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Slope water piping and arrange to drain at low points.

G. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

H. Prepare pipe, fittings, supports, and accessories not prefinished, ready for finish painting.

I. Establish invert elevations; slopes for drainage shall be 1/4 inch per foot unless specifically noted otherwise; maintain gradients.

J. Install bell and spigot pipe with bell end upstream.

K. Slopes for soil, waste, and drain lines shall be laid to an even grade of not less than 1/4 inch to the foot on the main run, unless noted otherwise or as required by local codes. Lay branches with 1/4 inch fall to the foot unless specifically noted otherwise. No soil, waste, or drain pipe smaller than 3-inches shall be installed underground unless specifically indicated otherwise. Pitch lines greater than 1/4 inch per foot, where required by local codes.

L. Construct a complete sanitary and storm sewer system, generally as indicated on the Contract Drawings. Approximate elevations and grades of major lines are indicated on the Contract Drawings. Contractor shall field check all such information before proceeding with the Work.

221000.3.3 APPLICATION

A. Use grooved mechanical couplings and fasteners only in accessible locations.

B. Install unions downstream of valves and at equipment or apparatus connections.

221000.3.4 BUILDING DRAINAGE SYSTEM RODDING

A. After all fixtures and specialties are setrod entire storm and sanitary drainage system by using all cleanouts, to ensure no foreign material is present in the drain lines.

221000.3.5 TESTING

A. Test all systems in their entirety or in sections. Perform tests before insulating, backfilling, or in any way concealing the piping system.

B. Test piping of the entire drainage and venting system in the presence of the Plumbing Inspector by application of the water test as follows: If such test is applied to the entire system, all openings, in the piping shall be tightly closed, except the highest openings above the roof, and the entire system shall be filled with water to the point of overflow. If the system is tested in sections, each section shall be tightly plugged except the highest opening of the section under test, and each section shall be completely filled with water. No section shall be tested with less than 10 foot of the next succeeding section so that no joint or pipe in the building shall have been submitted to a test of less than a 10 feet head of water. In lieu of the water test, the plumbing inspector may require an air test, to consist of not less than five pounds per square inch of pressure in the system. In either of the above tests, plumbing system shall sustain a constant water level or air pressure per square inch for a period of not less than fifteen minutes. If either of the above tests reveals defective materials or workmanship, same shall be replaced or corrected and tests, as provided in this section, shall be repeated. A rough-in test shall be required before any piping of the Plumbing System is concealed or fixtures set.

C. Sanitary drainage, vent and fixture system final test after all fixtures are installed, test entire vent and sewer system using peppermint, fill all traps with water, introduce two ounces of oil or peppermint into each stack. Close all stacks and line openings for not less than 30 minutes. Test for detection of odor of peppermint at any point on the system. If test reveals leakage of peppermint, repair and retest the systems.

SECTION 222000 – PLUMBING SPECIALTIES

PART 1 GENERAL

222000.1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

222000.1.2 SECTION INCLUDES

A. Roof drains

B. Area drains

C. Cleanouts

222000.1.3 REFERENCES

A. American National Standards Institute:

1. ANSI A112.21.1 - Floor Drains.
2. ANSI A112.21.2 - Roof Drains.

222000.1.4 QUALITY ASSURANCE

A. Manufacturer: For each product specified, provide components by same manufacturer throughout where possible.

222000.1.5 SUBMITTALS

A. Submittal Procedures: Submittal requirements.

B. Include component sizes, rough-in requirements, service sizes, and finishes.

PART 2 PRODUCTS

222000.2.2 MANUFACTURERS - AREA DRAINS

A. Zurn Industries

B. J.R. Smith

C. Wade

D. Or Approved Equivalent

222000.2.3 DRAINS

A. FD-1: ANSI A112.21.1; lacquered cast iron body promenade deck drain with heel-proof grate, stainless steel perforated dome and filter fabric; Similar to Figure no. 1419 "J.R. Smith", or approved equivalent.

B. FD-2: ANSI A112.21.1; lacquered cast iron body with stainless steel mesh screen and filter fabric; Similar to Figure no. 2675 as manufactured by "J.R. Smith", or approved equivalent.

C. Provide vandal-proof grates, screws with all drains

222000.2.3 MANUFACTURERS - CLEANOUTS

A. Zurn Industries

B. J.R. Smith

C. Wade

D. Or Approved Equivalent

222000.2.4 CLEANOUTS (CO)

A. Exterior to Grade: Round cast iron access frame and non-skid cover; Similar to Model no. Z-1460-15 as manufactured by Zurn Industries, or approved equivalent.

B. Interior Carpeted Floor Areas: Lacquered cast iron, two-piece body, heavy-duty nickel-bronze round cover with carpet retainer; Similar to Model no. 1ZN-1400-14 as manufactured by Zurn Industries, or approved equivalent.

C. Interior Concrete Floor Areas: Lacquered cast iron, two-piece body, heavy-duty nickel-bronze square scoriated cover; Similar to Model no. ZN-1410-3 as manufactured by Zurn Industries, or approved equivalent.

D. Interior Finished Wall Areas: Line type with lacquered cast iron body and round cadmium plated cast iron plug. Round stainless steel access cover secured with vandal screw; Similar to Model no. Z-1440-1 as manufactured by Zurn Industries, or approved equivalent.

E. Interior Unfinished Accessible Areas: Caulked or threaded type. Provide bolted stack cleanouts on vertical rainwater leaders.

F. Provide vandal-proof screws with all cleanouts.

PART 3 EXECUTION

222000.3.1 PREPARATION

A. Coordinate cutting and forming of roof and floor construction to receive drains at required invert elevations.

222000.3.2 INSTALLATION AND APPLICATION - GENERAL

A. Install specialties in accord with manufacturer's instructions to permit intended performance.

B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.

C. Encase exterior cleanouts in concrete flush with grade.

222000.3.3 INSTALLATION - ROOF DRAINS

A. Locate roof drains at low points on the roof as generally indicated on the Contract Drawings. Exact locations and low points shall be determined at the jobsite and coordinated with the other Contractor[s] to clear structural steel and provide for proper roof drainage in accord with manufacturer's directions.

B. Roof drains shall be furnished and installed by this Contractor.

C. Install expansion joints on vertical lines of rainwater conductors.

D. Provide access panels to other Contractor(s) for installation where vertical expansion joints will be inaccessible for checking and servicing.

222000.3.4 INSTALLATION - FLOOR DRAINS

A. Install drains in locations as indicated on the Contract Drawings.

B. Drains in all areas above ground floor and where otherwise required, shall be complete with clamping collars and seepage pans. Furnish and install neoprene flashing in the floor slab at each floor drain.

C. Drains located on ground floor levels or slab on grade shall include a clamping collar.

D. Install drains in accord with manufacturer's directions.

E. Provide interior floor drains, funnel drains and floor sinks with cast iron deep seal "P" traps and trap primers supplied from nearest fixture's cold water supply.

F. Install running traps where shown or required.

222000.3.5 INSTALLATION - CLEANOUTS

A. Install cleanouts at the base of all soil, waste, drain and rainwater conductor stacks at ends of all horizontal runs of storm, drain, waste and soil lines as herein specified.

B. Provide caulked or threaded type cleanout to finish floor or wall surface.

C. Cleanout plugs in traps and all other locations shall be of same material as the piping in which it is installed.

D. Cleanouts shall be full-size on lines up to and including 4 inches. Lines over 4 inches in diameter shall be provided with 4 inch cleanouts.

E. Extend exterior cleanouts to grade with cast iron pipe and fit with factory made cleanout fittings. Extensions to grade shall be made with 45 degree fittings. Cleanouts at unpaved areas shall be set in concrete slab 16-inch square x 6-inch thick.

F. Install floor cleanouts in rooms with carpeting beneath the carpeting, flush with floor construction. Carpeting will be cut by the carpet installer, to provide access to the cleanouts. Contractor shall apply adhesive to the carpet cut-out section to adhere it to the cleanout access cover.

G. Extend screw from cleanout cover through carpet cut-out for future reference location to aid in fastening the carpet section to the cleanout cover. Contractor shall notify the other Contractor(s) of the exact locations of the cleanouts.

H. Lubricate cleanout plugs with mixture of graphite and linseed oil. Prior to building turnover, remove plugs, re-lubricate, and reinstall using only enough force to ensure a permanent leak-proof joint.

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 4 OF 4

PROJECT ID: HWBARUCH

RECONSTRUCTION OF
EAST 25TH STREET PLAZA

BETWEEN LEXINGTON AND 3RD AVENUE
AT BARUCH COLLEGE
INCLUDING SEWER, WATERMAIN, STREET LIGHTING, AND TRAFFIC SIGNAL WORK

Together With All Work Incidental Thereto

BOROUGH OF MANHATTAN
CITY OF NEW YORK

_____
Contractor.

_____

Dated _____, **20**____

_____