

## **Dolinar, Sarah (DSNY)**

---

**From:** Arakhan, Samsudeen K (DEC) <samsudeen.arakhan@dec.ny.gov>  
**Sent:** Friday, March 13, 2015 14:44  
**To:** Dolinar, Sarah (DSNY); Menz, Donald  
**Cc:** Brezner, Kenneth B. (DEC); Cuervo, Juan (DDC); Arnold, Vaughan (DSNY); Kallman, Holly (DSNY); Balarezo, Michael; Bogatyrev, Viktor; Lovaglio, Steven; McEntee, Chris (cmcentee@greeley-hansen.com)  
**Subject:** RE: SW Brooklyn MTS - Delineation Plan for Supplemental Testing of Lead:

The proposed hazardous waste delineation plan for grids WC-51, WC-52 and WC-56 is hereby approved.

Sam



Samsudeen K. Arakhan, P.E. | Regional Solid Materials Engineer  
New York State Department of Environmental Conservation  
47-40 21st Street Long Island City, NY 11101  
☎: 718.482-4894 | 📠: 718.482-6391  
[website](#) | [directions](#) | [email](#) |

---

**From:** Dolinar, Sarah [<mailto:sdolinar@dsny.nyc.gov>]  
**Sent:** Friday, March 13, 2015 10:56 AM  
**To:** 'Menz, Donald'; Arakhan, Samsudeen K (DEC)  
**Cc:** Brezner, Kenneth B. (DEC); Cuervo, Juan (DDC); [varnold@dsny.nyc.gov](mailto:varnold@dsny.nyc.gov); Kallman, Holly; Balarezo, Michael; Bogatyrev, Viktor; Lovaglio, Steven; McEntee, Chris ([cmcentee@greeley-hansen.com](mailto:cmcentee@greeley-hansen.com))  
**Subject:** RE: SW Brooklyn MTS - Delineation Plan for Supplemental Testing of Lead:

I approve.

Sarah J. Dolinar  
Solid Waste Management Dir., Environmental Review  
NYC Department of Sanitation  
44 Beaver Street, 12th Floor  
New York, NY 10004  
Tel.: 212-437-4508  
Fax: 212-269-0788  
[sdolinar@dsny.nyc.gov](mailto:sdolinar@dsny.nyc.gov)

---

**From:** Menz, Donald [<mailto:Menzd@liro.com>]  
**Sent:** Friday, March 13, 2015 10:30 AM  
**To:** Arakhan, Samsudeen K (DEC)  
**Cc:** Brezner, Kenneth B. (DEC); Cuervo, Juan (DDC); Dolinar, Sarah; Arnold, Vaughan; Kallman, Holly; Balarezo, Michael; Bogatyrev, Viktor; Lovaglio, Steven; McEntee, Chris ([cmcentee@greeley-hansen.com](mailto:cmcentee@greeley-hansen.com))  
**Subject:** SW Brooklyn MTS - Delineation Plan for Supplemental Testing of Lead:

Sam:

Attached for your review and acceptance is a proposed delineation plan for defining the limits of elevated levels of lead in three grids at SW Brooklyn. A partial copy of our earlier transmission of the overall Soil Test results is included for reference.

If you have any questions, please do not hesitate to contact us.

Thanks.

Don

**Donald Menz, P.E.**

Project Manager



Program/Construction Managers | Engineers | Architects  
111 Broadway, Suite 501 | New York, New York | 10006  
917-983-5607 [Field] | 973-715-7537 [M]  
212-563-0280 [NY Office] | 212-563-1841 [NYO Fax] | [www.liro.com](http://www.liro.com)



March 13, 2015

Mr. Samsudeen K. Arakhan, P.E.  
Regional Solid Materials Engineer  
New York State Dept. of Environmental Conservation  
47-40 21<sup>st</sup> Street  
Long Island City, New York 11101

**URS/LiRo JV Letter: 057**

Re: SW Brooklyn Marine Transfer Station (Block 6943 Lot Part of 30)

Subject: Proposed Delineation Plan for Supplemental Borings, Tests of Soil for Lead

Dear Mr. Arakhan:

Reference is made to our Letter No. 053 dated March 3, 2015, which transmitted to the NYS DEC a Summary Field Sampling Report and the respective test data for each of the 57 in-situ samples taken on the SW Brooklyn Marine Transfer Site. Summarizing briefly, three of the 57 site grids have elevated levels of lead. All three samples are adjacent to each other at the water's end of Bay 41st Street. The Sampling Report recommends additional sampling to delineate the limits of the lead contamination.

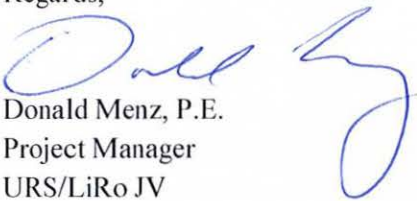
Pursuant to the referenced letter above, please find attached a Hazardous Lead Delineation Plan for the three (3) grids in question (WC-51, WC-52, and WC-56). The attached plan, prepared by Impact Environmental and dated 03/10/2015, proposes additional geoprobe borings to essentially be taken at offsets of both 5 feet and 10 feet in four directions extending radially from each of the three original boring locations. The terminal depths of the boring locations for the proposed supplemental composite WC samples will be consistent, respectively, with the excavation depths for each the original geoprobe borings. Testing of the supplemental soil samples will be analyzed for total lead and TCLP lead only.

If the laboratory analytical results of the supplemental composite waste characterization soil samples indicate TCLP lead exceedances, a new, extended perimeter for the areas of the three (3) grids will be established and tested.

We request your review and acceptance of this plan in order for us to move forward with its implementation in the field.

If you require any additional information, please do not hesitate to contact us.

Regards,

  
Donald Menz, P.E.  
Project Manager  
URS/LiRo JV

Attachments:

1. Impact Environmental Hazardous Lead Delineation Plan dated March 10, 2015.
2. Copy of URS-LiRo JV letter No. 053 to the NYS DEC dated March 03, 2015.
3. Partial Copy of Impact Environmental Field Sampling Summary Report issued February 18, 2015.

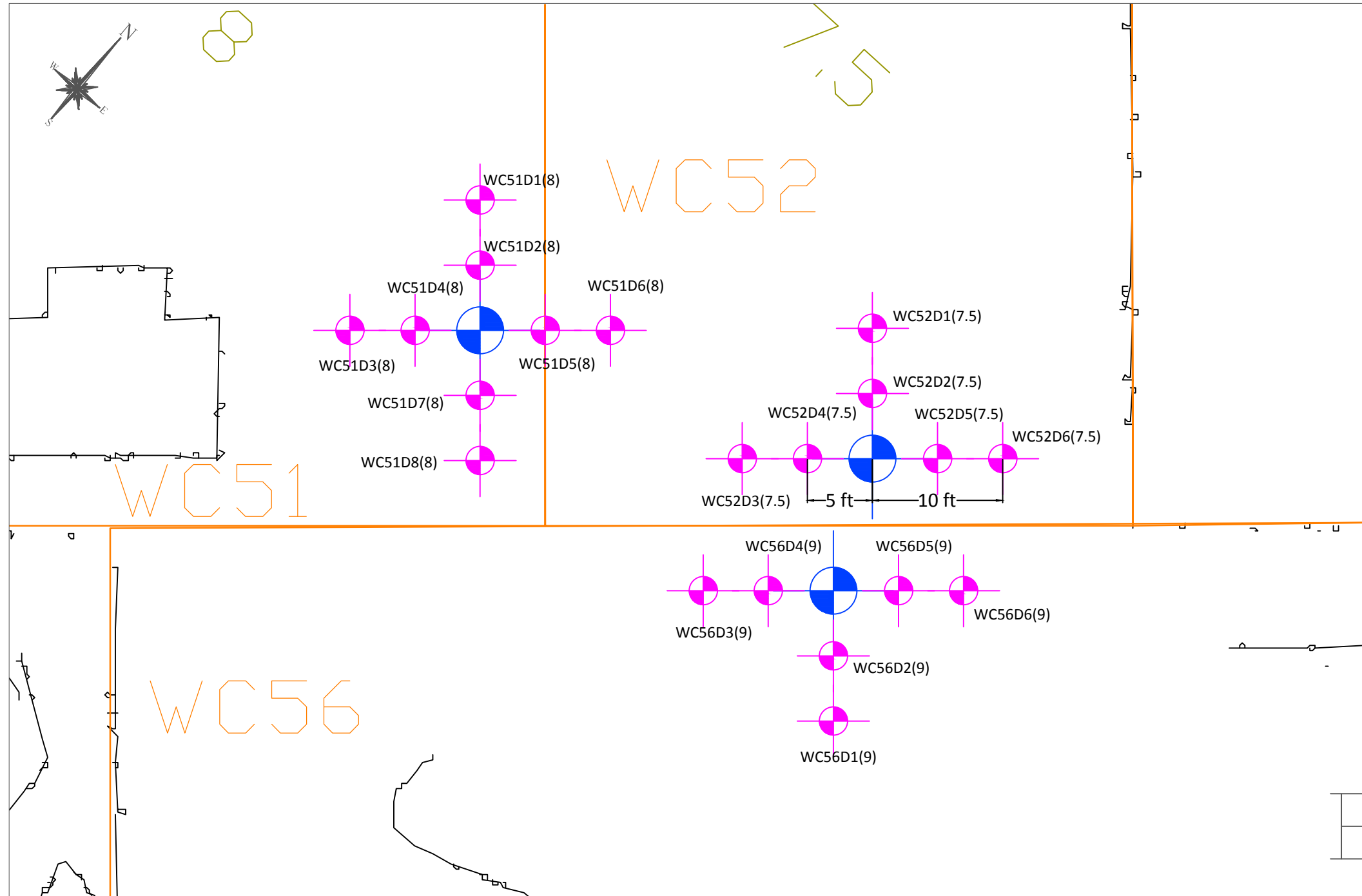
Cc:

K. Brezner – NYS DEC

J. Cuervo, - DDC

S. Dolinar, V. Arnold, H. Kallman – DSNY

M. Balarezo, V. Bogatyrev - URS/LiRo



Hazardous Lead Delineation Plan

Sample ID	Offset from Original Boring Location	Testing
WC51D1	10 ft	Hold*
WC51D2	5 ft	Total & TCLP Pb**
WC51D3	10 ft	Hold
WC51D4	5 ft	Total & TCLP Pb
WC51D5	5 ft	Total & TCLP Pb
WC51D6	10 ft	Hold
WC51D7	5 ft	Total & TCLP Pb
WC51D8	10 ft	Hold
WC52D1	10 ft	Hold
WC52D2	5 ft	Total & TCLP Pb
WC52D3	10 ft	Hold
WC52D4	5 ft	Total & TCLP Pb
WC52D5	5 ft	Total & TCLP Pb
WC52D6	10 ft	Hold
WC56D1	10 ft	Hold
WC56D2	5 ft	Total & TCLP Pb
WC56D3	10 ft	Hold
WC56D4	5 ft	Total & TCLP Pb
WC56D5	5 ft	Total & TCLP Pb
WC56D6	10 ft	Hold

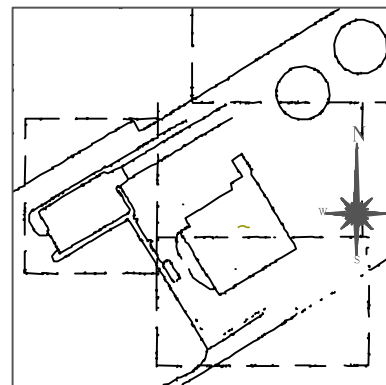
Total # of borings to construct/samples to collect: 20  
 Total # of samples to be tested immediately: 10  
 Total # of samples to be held: 10  
 \*: Sample to be held by the laboratory till determination made based on testing results of other samples.  
 \*\*: EPA Method 3050/3015, 6010C

Legend

- Approximate Soil Boring Location
- Waste Characterization Grid
- Excavation Depth
- Proposed Delineation Sample Location (with proposed boring depth ft below grade)

Notes:

1. Base map: Sample Location Map, prepared by Impact Environmental, dated 02/18/2015.
2. All borings will be constructed by a Geoprobe or equivalent drilling equipment.
3. All samples will be collected from the depth interval corresponding to the depths of the waste characterization samples that exhibit hazardous characteristics.



TITLE: Hazardous Lead Delineation Plan

Southwest Brooklyn Marine Transfer Station

1824 Shore Parkway Brooklyn, New York

DRAWN BY: XY  
 CHECKED BY: RP  
 DATE: 03/10/2015  
 SCALE:

PROJECT # 7336  
 FIGURE # 10

**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
 BOHEMIA, NEW YORK 11716  
 TEL (631) 269-8800 FAX (631) 269-1599





March 03, 2015

Mr. Samsudeen K. Arakhan, P.E.  
Regional Solid Materials Engineer  
New York State Dept. of Environmental Conservation  
47-40 21<sup>st</sup> Street  
Long Island City, New York 11101

**URS/LiRo JV Letter: 053**

Re: SW Brooklyn Marine Transfer Station (Block 6943 Lot Part of 30)

Subject: Southwest Submittal #02105-002-001 In-Situ Field Sampling Summary Report.

Dear Mr. Arakhan:

Attached for your review and approval is a Summary Field Sampling Report as well as a CD of both the Summary Report and the respective test data for each of the 57 grid samples taken on the SW Brooklyn Marine Transfer Site.

Summarizing briefly, three of the 57 site grids have lead levels that warrant the classification of the soil material in these areas as hazardous. They are all next to each other at the water's end of Bay 41st Street. The report recommends additional sampling to delineate the limits of the lead contamination.

Also attached is a brief review by the Certified Industrial Hygienist for the Project, Louis Berger, of the raw data from the three specific soil samples. The review offers Berger's opinion on the level of protection that it considers to be appropriate for working in these areas.

Please note that the subject Summary Report was structured to address the needs of the General Contractor with respect to the excavation and proper disposal of soil materials off site. The Contractor has no intent to re-use any of the existing material on site nor does the Contract language permit re-use of excavated materials. Accordingly, the Report presently does not compare soil test results against either Residential Protection Levels or Groundwater Protection Levels as your Office had requested as part of our February 10, 2015 discussion at your office. It does, however, compare soil test results against Restricted Residential Protection Levels.

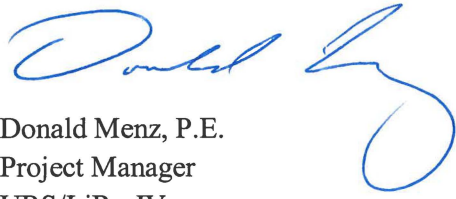
If the DEC still requires a comparison of the soil test results against Residential and Groundwater protection levels even though the Contractor does not intent to re-use any of the existing soil, then please advise and we will pursue this amendment of the report with the Contractor.

In the meantime, your immediate attention is requested to the soil test results at hand. The Contractor intends to begin removal and disposal of existing material. In addition, we are looking for direction from the DEC with regard to necessary additional testing and the handling of material in Grid Sectors WC51, WC52 and WC56 as a result of elevated lead levels.



Your immediate attention is appreciated.

Regards,



Donald Menz, P.E.  
Project Manager  
URS/LiRo JV

Attachments:

1. Impact Environmental Field Sampling Summary Report issued February 18, 2015.
2. L. Berger review of field sampling results for 3 grids, dated February 20, 2015.
3. Electronic CD with Field Test Results for 57 Grid samples at SW Brooklyn MTS site.

Cc:

K. Brezner – NYS DEC

J. Cuervo, - DDC w/Att. Nos. 01 and 02 only.

S. Dolinar, V. Arnold, H. Kallman – DSNY w/Att. Nos. 01 and 02 only.

M. Balarezo, V. Bogatyrev - URS/LiRo

## SOUTHWEST BROOKLYN MARINE TRANSFER STATION PRISMATIC DEVELOPMENT CORPORATION SUBMITTAL COVER SHEET

<b>Project Name:</b> SOUTHWEST BROOKLYN MARINE TRANSFER STATION			
Contract No. 1: GENERAL CONSTRUCTION WORK			
Contractor's Name: PRISMATIC DEVELOPMENT CORPORATION			
Date: Thursday, February 19, 2015			
Item: <b>In-Situ Soil Field Sampling Summary Report</b>			
Specifications: In-situ Soil Analysis			
Section: 02105			
Page No.: 7-8			
Para. No.: 1.05.A.3			
Contract Drawing No.: C-007.00			
Location: Site			
Submittal No.:		02105	002
Review Cycle No.:		001	
Shop Drawing Reference No.:			
Source company name: Impact Environmental			
Approved By: Mike Cortese			

**PDC Notes for Reviewer:**



## Field Sampling Summary Report

*Project:*

*Southwest Brooklyn Marine Transfer Station  
Brooklyn, NY*


Submitted To:

**Prismatic Development Corp.**  
400 Bay 41st Street  
Brooklyn, NY 11214

Submitted By:

**Impact Environmental Consulting, Inc.**  
170 Keyland Court  
Bohemia, NY 11716

Document Control:

Issue Date	Version No.	Approved By	Signature
February 18, 2015	1.0	Richard Parrish, P.G.	



**TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>4</b>
1.1	Purpose .....	4
1.2	Scope .....	4
1.3	Project Description .....	4
<b>2.0</b>	<b>BACKGROUND.....</b>	<b>6</b>
2.1	Description of Site .....	6
2.2	Description of Regulated Materials.....	6
2.3	Previous Findings .....	6
<b>3.0</b>	<b>FIELD INVESTIGATION .....</b>	<b>8</b>
3.1	Field Procedures.....	8
3.2	Sample Procurement.....	8
3.3	Sample Laboratory Analysis.....	9
<b>4.0</b>	<b>OBSERVATIONS AND RESULTS.....</b>	<b>10</b>
4.1	Subsurface Observations.....	10
4.2	Analytical Results.....	10
<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>16</b>

## **LIST OF FIGURES, TABLES, AND APPENDICES**

### **FIGURES:**

Figure 1:	Site Location Map
Figure 2:	Sample Location Map
Figure 3:	Summary of Exceedances over Part 375 Unrestricted Use SCOs
Figure 4:	Summary of Exceedances over Part 375 Restricted Residential SCOs
Figure 5:	Summary of Exceedances over NJ RDCSRS
Figure 6:	Summary of Exceedances over NJ NRDCSRS
Figure 7:	Summary of Exceedances over PADEP Clean Fill Standard
Figure 8:	Summary of Exceedances over PADEP Regulated Fill Standard
Figure 9:	Summary of Exceedances over EPA RCRA TCLP Limits

### **TABLES:**

Table 1:	Sample Results in Comparison with Part 375 Unrestricted Use SCOs
Table 2:	Sample Results in Comparison with Part 375 Restricted Residential SCOs
Table 3:	Sample Results in Comparison with NJ RDCSRS
Table 4:	Sample Results in Comparison with NJ NRDCSRS
Table 5:	Sample Results in Comparison with PADEP Clean Fill Standard
Table 6:	Sample Results in Comparison with PADEP Regulated Fill Standard
Table 7:	TCLP & Miscellaneous Results in Comparison with EPA RCRA Limits

### **APPENDICES**

Appendix A:	Environmental Boring Logs
Appendix B:	Daily Project Summary Quality Control Reports
Appendix C:	Laboratory Analytical Reports

## **1.0 INTRODUCTION**

### **1.1 Purpose**

This Field Sampling Summary Report (FSSR) was prepared for Prismatic Development Corp (Prismatic), with respect to the Southwest Brooklyn Marine Transfer Station Building Construction Project (project) at 1824 Shore Parkway, Brooklyn, New York (site; see **Figure 1: Site Location Map**). The Site currently contains subsurface structural remnants of a solid waste incinerator plant and associated parking areas and driveways on a 172,080 square foot irregular shaped lot. The Project involves the construction of a new land-based waste transfer station structure and associated parking areas and driveways.

The FSSR presents data collected from the waste characterization investigation activity performed during January 26, January 28 through January 30, and February 2 through February 5, 2015. The investigation included the construction of 57 environmental borings and the collection of 57 sets of waste characterization samples and 6 sets of duplicate samples for the purpose of providing data to support handling and off-site disposal of excavated overburden materials (materials) generated from the planned excavation and earthwork for the project outlined in the New York City Department of Design and Construction (DDC) Addendum to the General Conditions Specifications for Furnishing All Labor and Materials Necessary and Required for Southwest Brooklyn Marine Transfer Station – Building Construction Contract No.1 (Contract). The characterization investigation results will be used to determine how the materials are to be managed for recycling or off-site disposal and/or beneficial reuse as solid waste.

### **1.2 Scope**

The scope of this document was based upon industry standard sampling and analysis protocols, regulatory agency guidance criteria and regulations, and targeted disposal site acceptance criteria provided in the Field Sampling Plan prepared by Impact Environmental Consulting, Inc. (“Impact Environmental”) dated February 4, 2015 (FSP).

### **1.3 Project Description**

The Site is located at Gravesend Bay, at the southern terminus of 25<sup>th</sup> Avenue and west of Shore Parkway, in the borough of Brooklyn. The Site is a peninsula of reclaimed land that was created by filling behind cofferdams. It was used as an incineration plant for solid waste. The Project involves the redevelopment of the Site into a marine waste transfer station. The Project requires excavation of approximately sixty percent of the southwestern portion of the Site; a 172,080 square feet area that is bordered between Bay 41<sup>st</sup> Street and 25<sup>th</sup> Avenue. The total volume of surplus materials to be removed from the site is estimated to be between 20,000 to 25,000 cubic yards.

#### **1.4 Document Control**

This FSSR is subject to review and approval by a variety of entities working on behalf of the DDC. The document is labeled with a two digit coding that can range from 1.0 to 9.9. As iterations of revisions are made to the document prior to approval by the DDC the code will increase by 1.00. When a final version has been approved by the DDC that version will be marked "FINAL". In that the Project involves many dynamic operational and administrative procedures, subsequent revisions to the "FINAL" version may be required. Where revisions are approved and notice sent, the version number will change by intervals of 1/10th (from .1 to .9). The revision notice will provide replacement pages for pages in the previous version and a replacement cover sheet showing the new version code and the date of the revision approval. The cover will include a full list of all previous version codes and approval dates. All tables and figures referenced herein are provided at the end of the body of this document.

## **2.0 BACKGROUND**

### **2.1 Description of Site**

The Project area is located at Gravesend Bay, at the southern terminus of 25<sup>th</sup> Avenue and west of Shore Parkway, in the borough of Brooklyn. The Site is located on a peninsula of reclaimed land that was created by filling behind cofferdams. It was used as an incineration plant for solid waste as a part of the former Southwest Brooklyn Solid Waste Marine Transfer Station.

### **2.2 Description of Regulated Materials**

Reportedly (2004), the portions of the subsurface of the Site that will be disturbed during the planned excavation activities contains “uncontrolled fill” that includes soil (sand and gravel) mixed with anthropogenic material and material fragments of concrete, brick, gravel, cinder blocks, wood, ash, and /or slag, with some vegetation on the surface. 6 NYCRR Part 375, defines such soil-like material in New York State as “Historic Fill”. The nature and concentrations of contamination reported to exist in this fill is consistent with “Historic Fill” detected throughout New York State.

As some of the most economically viable options for the off-site disposal of Historic Fill are at facilities located within the States of New Jersey and Pennsylvania, the materials will be further described relative to New Jersey and Pennsylvania codes, rules and regulations where final disposition is likely. In New Jersey, some or all of the Historic Fill may qualify as an industrial waste (ID-27) due to the presence of slag (pursuant to NJAC 7:26E-1.8, *Historic Fill* in New Jersey specifically cannot contain slag). In Pennsylvania Historic Fill may qualify as either a Regulated Fill or Residual Waste due to the presence of slag. Determinations with respect to its proper classification will be based on testing that is performed consistent with the Pennsylvania Department of Environmental Protection (PADEP) Management of Fill Policy (MFP).

### **2.3 Previous Findings**

Previous environmental and geotechnical sampling and analysis performed in 2004, reported that the Site is contaminated with concentrations of volatile organic compounds (VOCs),

semivolatile organic compounds (SVOCs) and inorganic metal analytes. With respect to environmental sampling 16 soil samples were secured from 8 borings constructed within the Project footprint. In 12 of the 16 samples, these contaminants were detected at concentrations above the NYSDEC soil action guidelines that would prompt removal. However, none of the samples exhibited characteristics of a hazardous waste for toxicity, reactivity, ignitability or corrosivity. More details of this investigation are included in the FSP prepared by Impact Environmental dated February 4, 2015.



### **3.0 FIELD INVESTIGATION**

The field sampling activities were performed by Impact Environmental. A third party laboratory, Phoenix Environmental Laboratories, Inc., was utilized to perform the analysis of the samples, and to prepare certified test reports. All site-work was performed in accordance with the FSP prepared by Impact Environmental dated February 4, 2015.

#### **3.1 Field Procedures**

Environmental borings were completed using a van-mounted Geoprobe® 6600. Impact Environmental completed one borings in each of 57 waste characterization grids for a total of 57 borings, identified as WC1 through WC57 (**Figure 2: Sample Location Map**). Borings were advanced to depths of planned excavation.

Samples were collected continuously from each boring to the final depth. Samples were collected into 2-inch diameter, 5-foot long macro-core sample barrels with new, dedicated acetate liners. Samples retrieved from each boring were screened for visual, olfactory, and instrumental evidence of anthropogenic impacts. Instrument screening for the presence of volatile organic compounds (VOCs) was performed with a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp.

#### **3.2 Sample Procurement**

Waste characterization samples were collected according to the FSP. A total of 63 sets of grab and composite samples (including 6 sets of duplicate samples) were collected for 57 waste characterization grids. This is equivalent to an average sampling frequency of 1 sample set per 500 cubic yards. For each set of samples, one grab sample was collected from the depth interval exhibiting greatest visual, olfactory, and instrumental evidence of anthropogenic impacts, if observed. This grab sample was collected using the EPA SW846 Method 5035A and was designated for VOCs analysis. Four more grab samples were then collected from other randomly determined depth intervals and were mixed with the remaining of the first grab sample to make up a 5-point composite sample. The composite sample was designated for the remaining of the planned analysis.

### 3.3 Sample Laboratory Analysis

As described in the FSP, grab samples from each sample set were analyzed for VOCs by Environmental Protection Agency (EPA) Method 8260. Composite samples were analyzed for the following as required by the contract:

- Total Semi-Volatile Organic Compounds - USEPA Test Method 8270
- Total Poly Chlorinated Biphenols – USEPA Test Method 8082
- Total Organochloride Pesticides – USEPA Test Method 8081
- Total Herbicides – USEPA Test Methods 8151
- Total Metals – USEPA Test Method 6010
- Total Cyanide – USEPA Test Method 9012A
- Total Hexavalent Chromium – USEPA Test Method 7196A/3060A
- Total Petroleum Hydrocarbons (GRO & DRO - to C44) – USEPA Test Method 8015M
- TCLP Leachable Extraction – USEPA Method 1311
  - Leachable Metals from extraction (8 RCRA + Cu, Ni and Zn) – USEPA Method 6010
- TCLP Semi Volatile Organic Compounds – USEPA Test Method
- TCLP Herbicides – USEPA Test Methods 8151
- TCLP Volatile Organic Compounds – USEPA Test Method 8260
- Total Sulfur – ASTM D129 or equivalent
- Total Volatile Organic Compounds – USEPA Test Method 8260
- Ignitability Characteristic – USEPA Test Method 1010A
- Reactivity Characteristic – SW846 Chapter 7.3
- Corrosivity Characteristic – USEPA Test Method 9045C

## 4.0 OBSERVATIONS AND RESULTS

### 4.1 Subsurface Observations

The majority of the site surface is unpaved, with the exception of existing roadways, which was covered by approximately 6 to 12 inch thick asphalt pavement.

The site surface is generally underlain by a historic fill layer consisting of brown-to-dark medium-to-coarse sand with some brick, concrete, coal ash, gravel and wood to depths of approximately 3 to 7 feet below grade (ft bg). The historic fill layer is underlain by a second, distinct native fill layer consisting of predominantly sand.

No staining or odor was observed. Coal ash was observed at a number of boring locations. Boring logs are provided in **Appendix A**.

### 4.2 Analytical Results

Laboratory analytical results were compared to 6 NYCRR Part 375 Unrestricted Use and Restricted Residential Soil Cleanup Objectives (SCOs), New Jersey Residential and Non-Residential Direct Contact Soil Remediation Standards (NJ RDCSRS and NRDCSRS), PADEP Clean and Regulated Fill Standards, and EPA RCRA Limits. Analytical results are summarized below. A summary of the laboratory analytical results is provided in **Tables 1** through **Table 7** and **Figure 3** through **Figure 9**. Complete laboratory analytical reports are provided in **Appendix C**.

#### Analytical Results Compared with New York Part 375 Unrestricted Use SCOs

Laboratory analytical results indicate that samples outlined below contain one or more VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs) and/or metals at concentrations exceeding 6 NYCRR Part 375 Unrestricted Use SCOs:

WC 1 1-2	WC 8 COMP	WC 24 1-2	WC 38 COMP	WC 46 2-3	WC 52 2-3 COMP
WC 1 COMP	WC 9 2-3	WC 24 COMP	WC 39 2-3	WC 46 COMP	WC 53 6-7 GRAB
WC 2 2-3	WC 9 COMP	WC 25 1-2	WC 39 COMP	WC 47 2-3	WC 53 COMP

WC 2 COMP	WC 10 1-2	WC 25 COMP	WC 40 1-2	WC 47 COMP	WC 54 3-4 GRAB
WC 4 1-2	WC 10 COMP	WC 29 2-3	WC 40 COMP	WC 48 2-3	WC 54 COMP
WC 4 COMP	WC 15 2-3	WC 29 COMP	WC 41 1-2	WC 48 COMP	WC 55 2-3
WC 5 1-2	WC 15 COMP	DUP WC 29 2-3	WC 41 COMP	WC 49 1-2	WC 55 COMP
WC 5 COMP	WC 16 1-2	DUP WC 29 COMP	WC 42 1-2	WC 49 COMP	WC 56 4-5 GRAB
WC 6 1-2	WC 16 COMP	WC 35 1-2	WC 42 COMP	WC 50 2-3	WC 56 COMP
WC 6 COMP	WC 17 1-2	WC 35 COMP	WC 44 1-2	WC 50 COMP	WC 57 2-3
DUP WC6 1-2	WC 17 COMP	WC 36 2-3	WC 44 COMP	WC 51 2-3	WC 57 COMP
DUP WC6 COMP	WC 20 1-2	WC 36 COMP	WC 45 2-3	WC 51 COMP	
WC 7 1-2	WC 20 COMP	WC 37 4-5	WC 45 COMP	DUP WC 51 2-3	
WC 7 COMP	WC 23 1-2	WC 37 COMP	DUP WC 45 2-3	DUP WC 51 COMP	
WC 8 1-2	WC 23 COMP	WC 38 1-2	DUP WC 45 COMP	WC 52 2-3 GRAB	

The distribution of the analytes that exceeded 6 NYCRR Part 375 Unrestricted Use SCOs is outlined below:

- VOC exceedances including Benzene, Methylene Chloride and Total Xylenes were reported for 3 samples. Methylene Chloride was detected at 130 ppm for WC 57 2-3, and is considered as a laboratory contaminant.
- SVOC exceedances including Benzo-a-Anthracene, Benzo-a-Pyrene, Benzo-b-Fluoranthene, Benzo-k-Fluoranthene, Chrysene and/or Indeno(1,2,3-cd)Pyrene were reported for 10 samples.
- Pesticide exceedances including 4,4-DDD, 4,4-DDE, 4,4-DDT and/or Aldrin were reported for 3 samples.
- Total PCB exceedances were reported for 3 samples.
- Metal exceedances including Barium, Cadmium, Chromium (hexavalent and/or trivalent), Copper, Lead, Mercury, Nickel, Silver and/or Zinc were reported for 40 samples.

Analytical Results Compared with New York Part 375 Restricted Residential SCOs

Laboratory analytical results indicate that samples outlined below contain one or more SVOCs and/or metals at concentrations exceeding 6 NYCRR Part 375 Restricted Residential SCOs:

WC 2 2-3	WC 25 1-2	WC 39 2-3	WC 48 2-3	DUP WC 51 2-3
----------	-----------	-----------	-----------	---------------

WC 2 COMP	WC 25 COMP	WC 39 COMP	WC 48 COMP	DUP WC 51 COMP
WC 8 1-2	WC 29 2-3	WC 41 1-2	WC 50 2-3	WC 52 2-3 GRAB
WC 8 COMP	WC 29 COMP	WC 41 COMP	WC 50 COMP	WC 52 2-3 COMP
WC 24 1-2	DUP WC 29 2-3	WC 44 1-2	WC 51 2-3	WC 54 3-4 GRAB
WC 24 COMP	DUP WC 29 COMP	WC 44 COMP	WC 51 COMP	WC 54 COMP

The distribution of the analytes that exceeded 6 NYCRR Part 375 Restricted Residential SCOs is outlined below:

- SVOC exceedances including Benzo-a-Anthracene, Benzo-a-Pyrene, Benzo-b-Fluoranthene, Benzo-k-Fluoranthene, Chrysene and/or Indeno(1,2,3-cd)Pyrene were reported 10 samples;
- Metal exceedances including Barium, Cadmium, Chromium (trivalent), Copper, Lead, Mercury and/or Nickel for 8 samples.

Analytical Results Compared with NJ RDCSRS

Laboratory analytical results indicate that samples outlined below contain one or more SVOCs, PCBs and/or metals at concentrations exceeding NJ RDCSRS:

WC 2 2-3	WC 10 COMP	WC 25 1-2	WC 36 COMP	DUP WC 45 2-3	WC 51 COMP
WC 2 COMP	WC 12 1-2	WC 25 COMP	WC 38 1-2	DUP WC 45 COMP	DUP WC 51 2-3
WC 5 1-2	WC 12 COMP	WC 26 2-3	WC 38 COMP	WC 47 2-3	DUP WC 51 COMP
WC 5 COMP	WC 15 2-3	WC 26 COMP	WC 39 2-3	WC 47 COMP	WC 52 2-3 GRAB
WC 6 1-2	WC 15 COMP	WC 29 2-3	WC 39 COMP	WC 48 2-3	WC 52 2-3 COMP
WC 6 COMP	WC 16 1-2	WC 29 COMP	WC 41 1-2	WC 48 COMP	WC 53 6-7 GRAB
DUP WC6 1-2	WC 16 COMP	DUP WC 29 2-3	WC 41 COMP	WC 49 1-2	WC 53 COMP
DUP WC6 COMP	WC 23 1-2	DUP WC 29 COMP	WC 44 1-2	WC 49 COMP	WC 56 4-5 GRAB
WC 8 1-2	WC 23 COMP	WC 35 1-2	WC 44 COMP	WC 50 2-3	WC 56 COMP
WC 8 COMP	WC 24 1-2	WC 35 COMP	WC 45 2-3	WC 50 COMP	
WC 10 1-2	WC 24 COMP	WC 36 2-3	WC 45 COMP	WC 51 2-3	

The distribution of the analytes that exceeded NJ RDCSRS is outlined below:

- SVOC exceedances including Benzo-a-Anthracene, Benzo-a-Pyrene, Benzo-b-Fluoranthene, Benzo-k-Fluoranthene and/or Indeno(1,2,3-cd)Pyrene were reported for 28 samples;
- Total PCB exceedances were reported for 3 samples.
- Metal exceedances including Lead were reported for 5 samples.

Analytical Results Compared with NJ NRDCSRS

Laboratory analytical results indicate that samples outlined below contain one or more SVOCs and/or metals at concentrations exceeding NJ NRDCSRS:

WC 2 2-3	WC 10 COMP	WC 25 1-2	WC 36 COMP	WC 47 2-3	DUP WC 51 COMP
WC 2 COMP	WC 12 1-2	WC 25 COMP	WC 39 2-3	WC 47 COMP	WC 52 2-3 GRAB
WC 5 1-2	WC 12 COMP	WC 26 2-3	WC 39 COMP	WC 48 2-3	WC 52 2-3 COMP
WC 5 COMP	WC 15 2-3	WC 26 COMP	WC 41 1-2	WC 48 COMP	WC 53 6-7 GRAB
WC 6 1-2	WC 15 COMP	WC 29 2-3	WC 41 COMP	WC 49 1-2	WC 53 COMP
WC 6 COMP	WC 16 1-2	WC 29 COMP	WC 44 1-2	WC 49 COMP	WC 56 4-5 GRAB
DUP WC6 1-2	WC 16 COMP	DUP WC 29 2-3	WC 44 COMP	WC 50 2-3	WC 56 COMP
DUP WC6 COMP	WC 23 1-2	DUP WC 29 COMP	WC 45 2-3	WC 50 COMP	
WC 8 1-2	WC 23 COMP	WC 35 1-2	WC 45 COMP	WC 51 2-3	
WC 8 COMP	WC 24 1-2	WC 35 COMP	DUP WC 45 2-3	WC 51 COMP	
WC 10 1-2	WC 24 COMP	WC 36 2-3	DUP WC 45 COMP	DUP WC 51 2-3	

The distribution of the analytes that exceeded NJ NRDCSRS is outlined below:

- SVOC exceedances including Benzo-a-Anthracene, Benzo-a-Pyrene, Benzo-b-Fluoranthene, Benzo-k-Fluoranthene, Dibenzo-a,h-Anthracene and/or Indeno(1,2,3-cd)Pyrene were reported for 27 samples;
- Metal exceedances including Lead were reported for 1 sample.

Analytical Results Compared with Pennsylvania Clean Fill Standard

Laboratory analytical results indicate that samples collected from the depth intervals of the waste characterization zones outlined below contain one or more VOCs, SVOCs and/or metals at concentrations exceeding Pennsylvania Clean Fill Standard:

WC 2 2-3	WC 7 1-2	DUP WC 29 2-3	WC 41 1-2	WC 51 2-3	WC 52 2-3 GRAB
WC 2 COMP	WC 7 COMP	DUP WC 29 COMP	WC 41 COMP	WC 51 COMP	WC 52 2-3 COMP
WC 6 1-2	WC 29 2-3	WC 39 2-3	WC 48 2-3	DUP WC 51 2-3	WC 56 4-5 GRAB
WC 6 COMP	WC 29 COMP	WC 39 COMP	WC 48 COMP	DUP WC 51 COMP	WC 56 COMP

The distribution of the analytes that exceeded Pennsylvania Clean Fill Standard is outlined below:

- VOC exceedances including Methylene Chloride were reported for 1 sample. Methylene Chloride was detected at 130 ppm for WC 57 2-3, and is considered as a laboratory contaminant.
- SVOC exceedances including Benzo-a-Pyrene were reported for 1 sample.
- Metal exceedances including Cobalt, copper and Lead were reported for 8 samples.

Analytical Results Compared with Pennsylvania Regulated Fill Standard

Laboratory analytical results indicate that samples outlined below contain one or more VOCs and/or metals at concentrations exceeding Pennsylvania Regulated Fill Standard:

WC 2 2-3	DUP WC 29 COMP	WC 52 2-3 GRAB
WC 2 COMP	WC 51 2-3	WC 52 2-3 COMP
WC 29 2-3	WC 51 COMP	WC 56 4-5 GRAB
WC 29 COMP	DUP WC 51 2-3	WC 56 COMP
DUP WC 29 2-3	DUP WC 51 COMP	

The distribution of the analytes that exceeded Pennsylvania Regulated Fill Standard is outlined below:

- VOC exceedances including Methylene Chloride were reported for 1 sample. Methylene Chloride was detected at 130 ppm for WC 57 2-3, and is considered as a laboratory contaminant.
- Metal exceedances including Cobalt and Lead were reported for 3 samples.

Analytical Results Compared with EPA RCRA TCLP Standard



Laboratory analytical results indicate that outlined below contain TCLP lead at concentrations exceeding EPA RCRA TCLP Standard:

WC 52 2-3 COMP	WC 56 COMP	DUP WC 51 COMP
----------------	------------	----------------

The TCLP lead concentrations of the above samples exceed the maximum concentration for the toxicity characteristic (5.0 mg/L); therefore, material represented by sample COMP-A-0-3 must be managed as a RCRA characteristic hazardous waste. In addition, hazardous lead delineation sampling is recommended for proper delineation of the extent of hazardous waste and evaluation of construction costs related to disposal of the materials.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

RCRA (40 CFR 260) characteristic hazardous waste material was identified in WC51, WC52 and WC56 during the investigation. For the remaining portion of the materials, the placement of non-indigenous or non-native materials at depths up to 7 ft bg on the property to raise topographic elevation that was contaminated prior to emplacement, but that does not rise to the level of constituting a hazardous waste, and includes ash, demolition debris and etc., and generally contains poly aromatic hydrocarbons, elevated metals and organic compounds above the 6 NYCRR Part 375 Unrestricted Use SCOs, classifies the material as Historic Fill pursuant to 6 NYCRR Part 375. Materials of the native fill layer generally contains poly aromatic hydrocarbons, elevated metals and organic compounds above the 6 NYCRR Part 375 Unrestricted Use SCOs and therefore qualify as a regulated solid waste per 6 NYCRR Part 360 and Part 375.

If the material is to be disposed of at a New York State facility, said facility would require a Part 360 solid waste permit. This includes Subtitle D landfills or interimly accepted at Industrial Waste transfer station. Alternate means of beneficial reuse could be available with a successful Beneficial Use Determination (BUD) petition to the New York State Department of Environmental Conservation.

If the material is to be disposed of at a New Jersey facility, some of the material qualifies as an historic fill due to the presence of ash and/or other non-indigenous or non-native materials, generally containing poly aromatic hydrocarbons, elevated metals and organic at concentrations above NJ RDCSRS and/or NJ NRDCSRS. Consequently, beneficial reuse and/or disposal of such materials on any property will require authorization and/or permit issued by the NJ Department of Environmental Protection (DEP). Alternate means of beneficial reuse could be available with a successful petition to the NJDEP.

If the fill material is to be disposed of at a Pennsylvania facility, the material qualifies as Clean Fill or Regulated Fill, depending on the exceedances over corresponding standard and/or presence of ash. The presence of ash is consistent with the definition of Regulated Fill and can therefore be beneficially utilized with a general permit for Regulated Fill. The fill material is

suitable for disposal or potentially beneficial reuse at active Subtitle D landfills or interimly accepted at Industrial Waste transfer stations. Alternate means of beneficial reuse could be available with a successful petition to the PADEP.

Development activities at the site are required to be performed in accordance with applicable authorizations issued by regulatory agencies and/or Construction Health and Safety Plan (CHASP) approved by regulatory agencies.

# FIGURES



SOURCE:  
 THE NARROWS QUADRANGLE, N.Y.-N.J., USGS 7.5 MINUTE SERIES  
 (TOPOGRAPHIC), DATED 1998.  
 CONEY ISLAND QUADRANGLE, N.J.-N.Y., USGS 7.5 MINUTE SERIES  
 (TOPOGRAPHIC), DATED 1966, PHOTOREVISED 1979.



**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
 BOHEMIA, NEW YORK 11716  
 TEL (631) 269-8800 FAX (631) 269-1599

1560 BROADWAY, SUITE 1024  
 NEW YORK, NEW YORK 10036  
 TEL (212) 201-7905 FAX (212) 201-7906

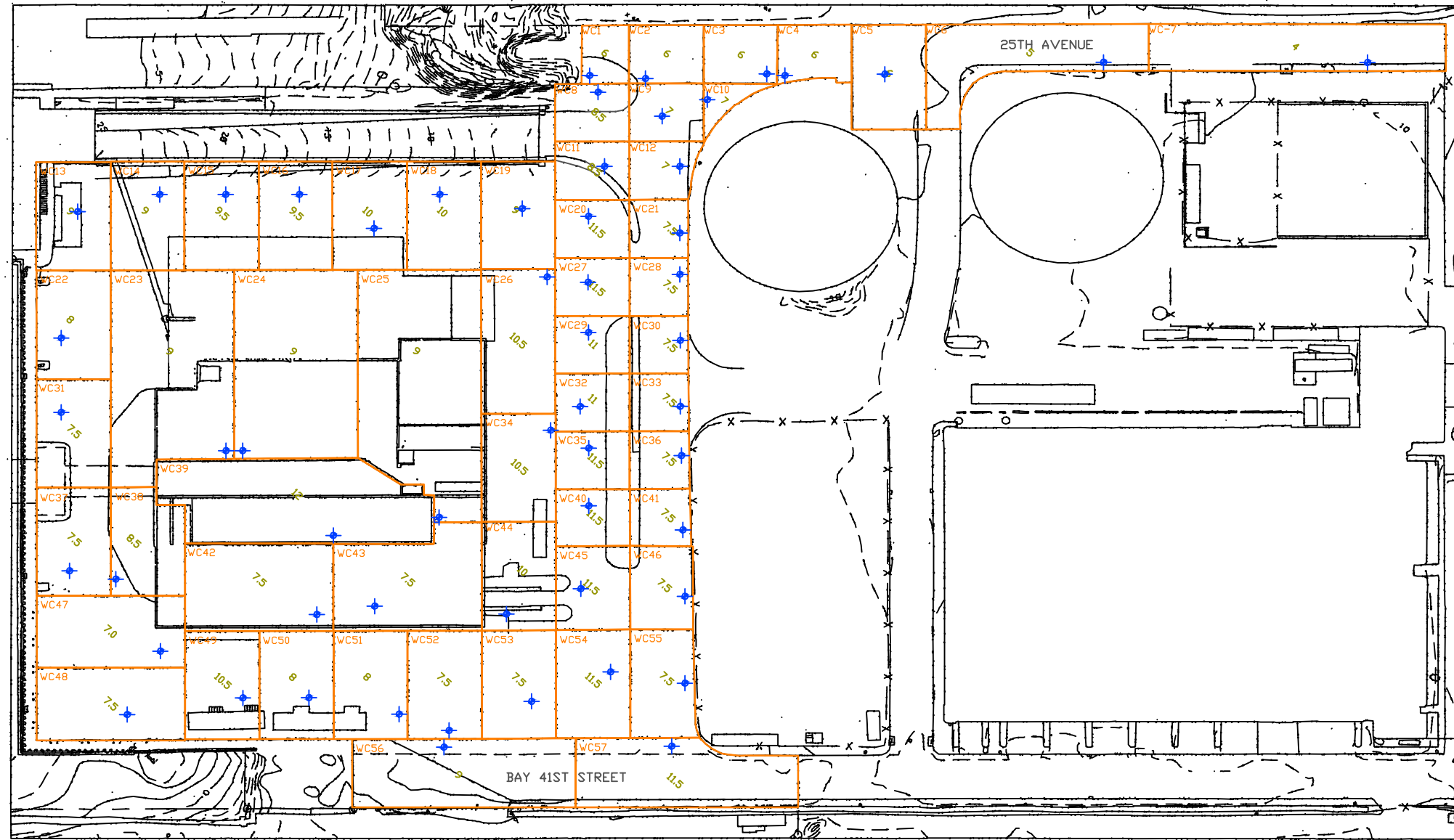
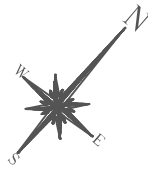
TITLE: **SITE LOCATION MAP**

PROJECT # **7336**




FIGURE # **1**

□□□□ Shore □arkway  
 Brooklyn□ew □ork

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

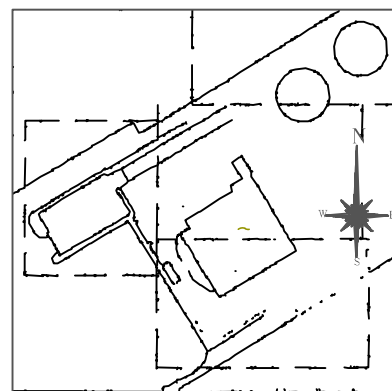


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.



TITLE:

Sample Location Map

Southwest Brooklyn  
Marine Transfer Station

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

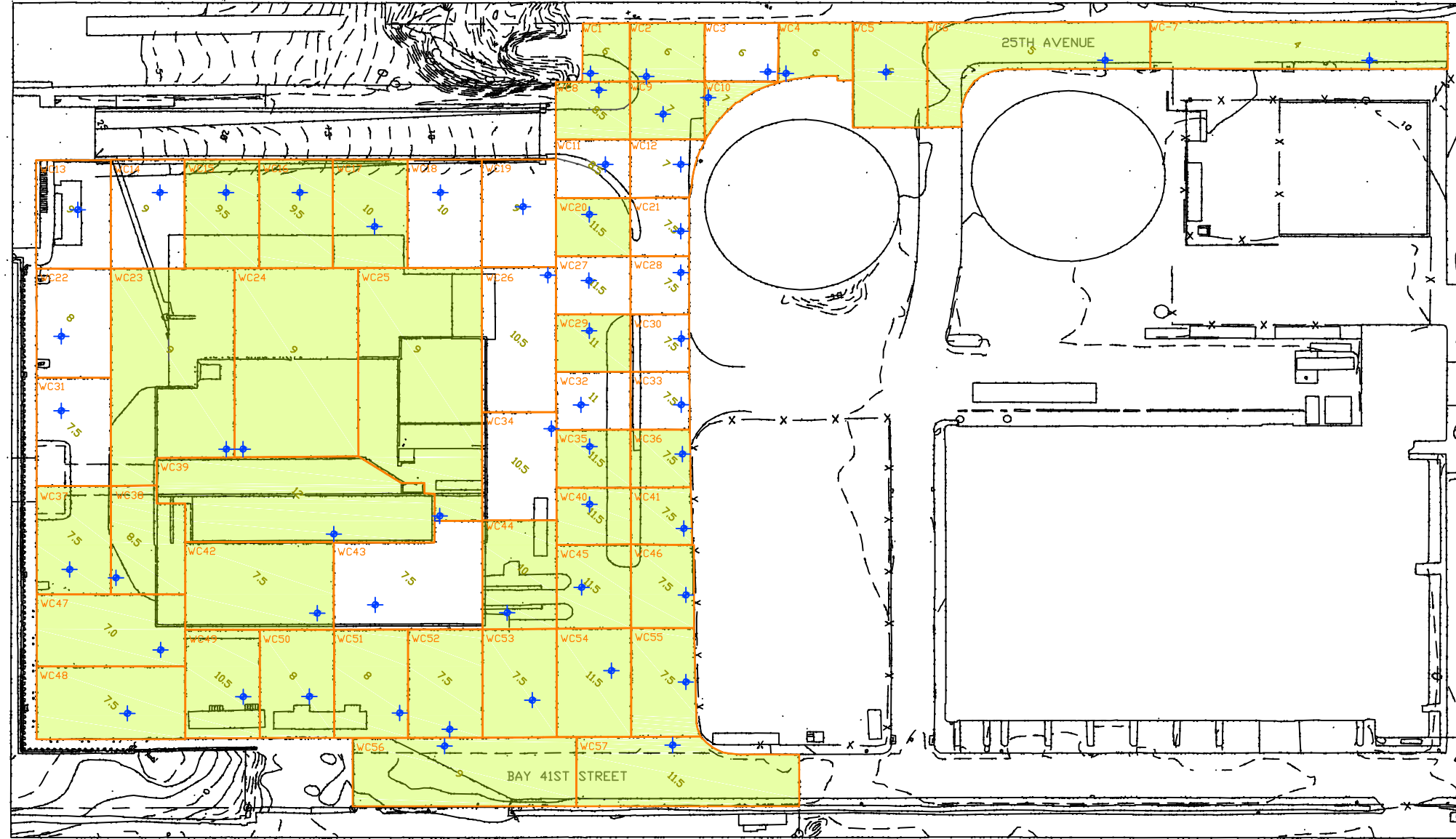
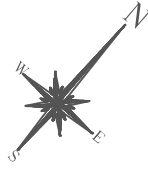
PROJECT #	7336
FIGURE #	2

**IMPACT ENVIRONMENTAL**





170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599





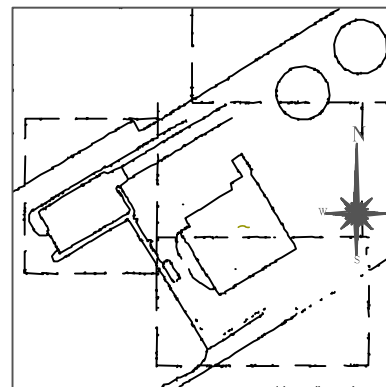


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over Part 375 Unrestricted Use SCOs

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.



**TITLE:** Summary of Exceedances over Part 375 Unrestricted Use SCOs

*Southwest Brooklyn Marine Transfer Station*

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

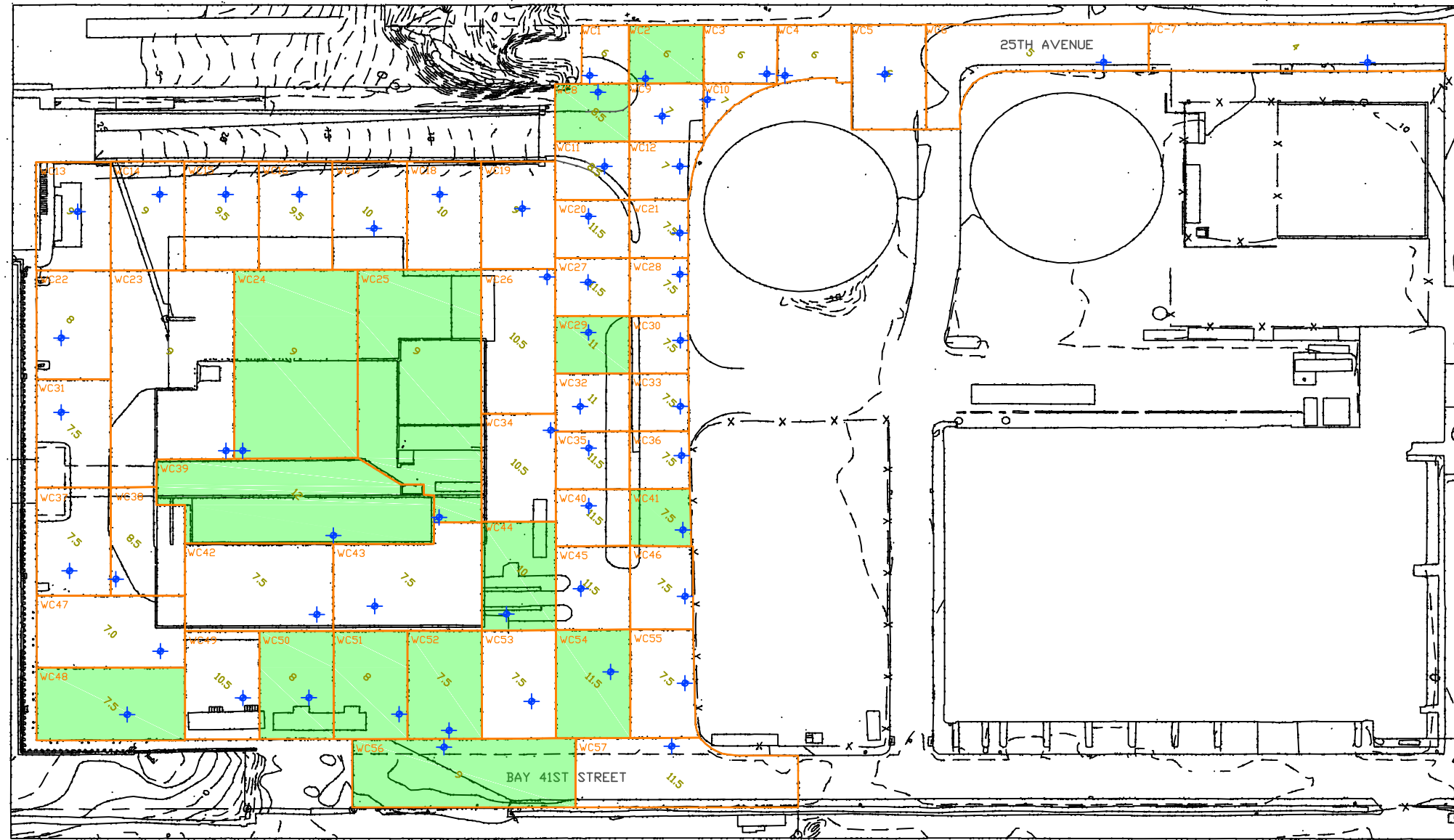
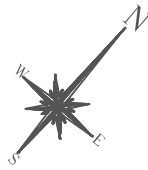
<b>PROJECT #</b>	<b>7336</b>
<b>FIGURE #</b>	<b>3</b>

**IMPACT ENVIRONMENTAL**





170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599





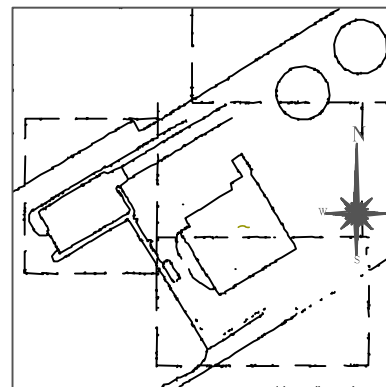


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over Part 375 Restricted Residential SCOs

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.



**TITLE:** Summary of Exceedances  
over Part 375 Restricted  
Residential SCOs

*Southwest Brooklyn  
Marine Transfer Station*

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

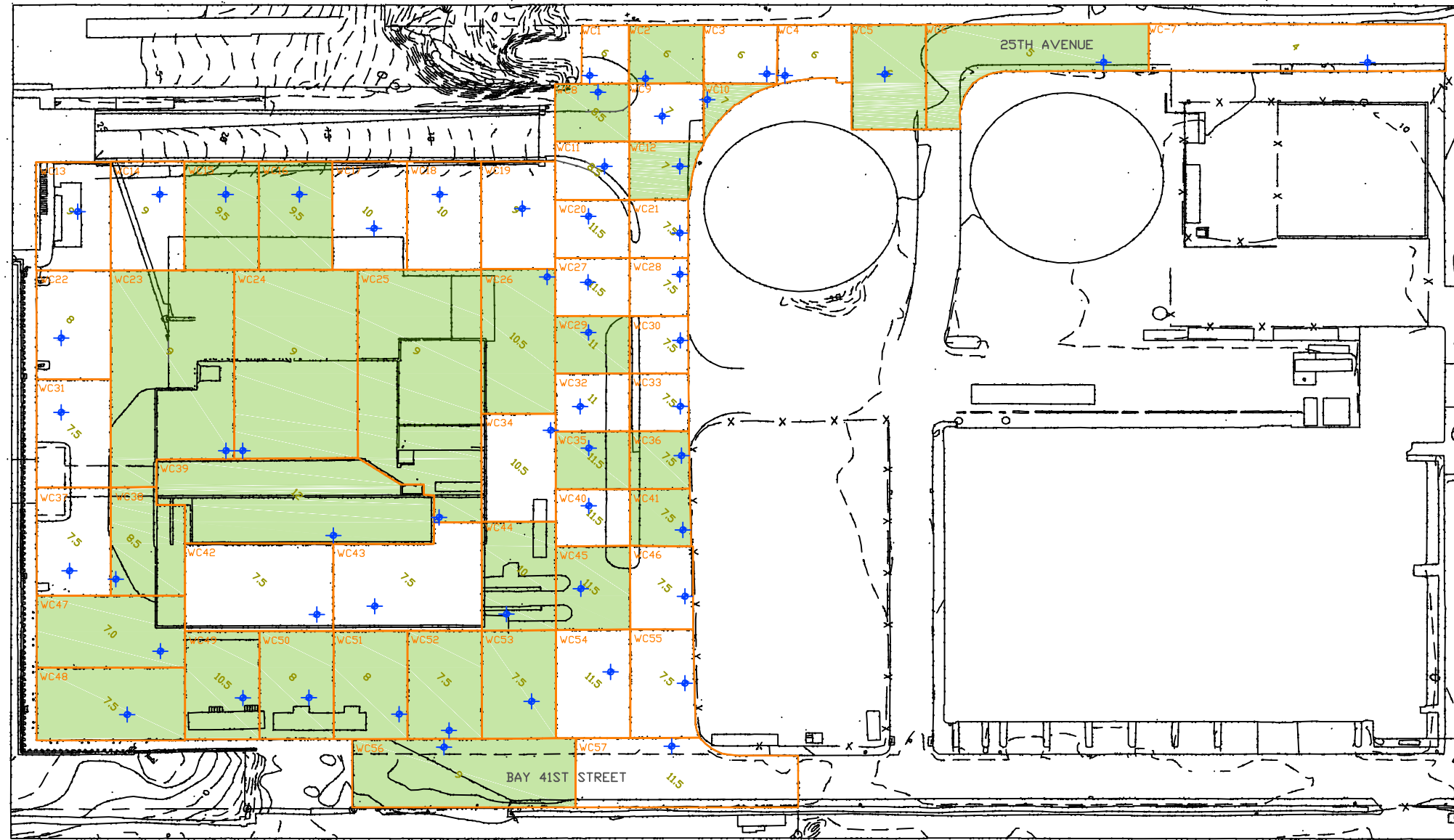
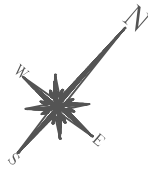
**PROJECT #** 7336

**FIGURE #** 4





**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599



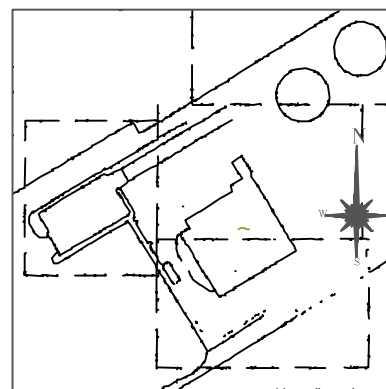


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over NJ RDCRS

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.



**TITLE:**

Summary of Exceedances  
over NJ RDCRS

*Southwest Brooklyn  
Marine Transfer Station*

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

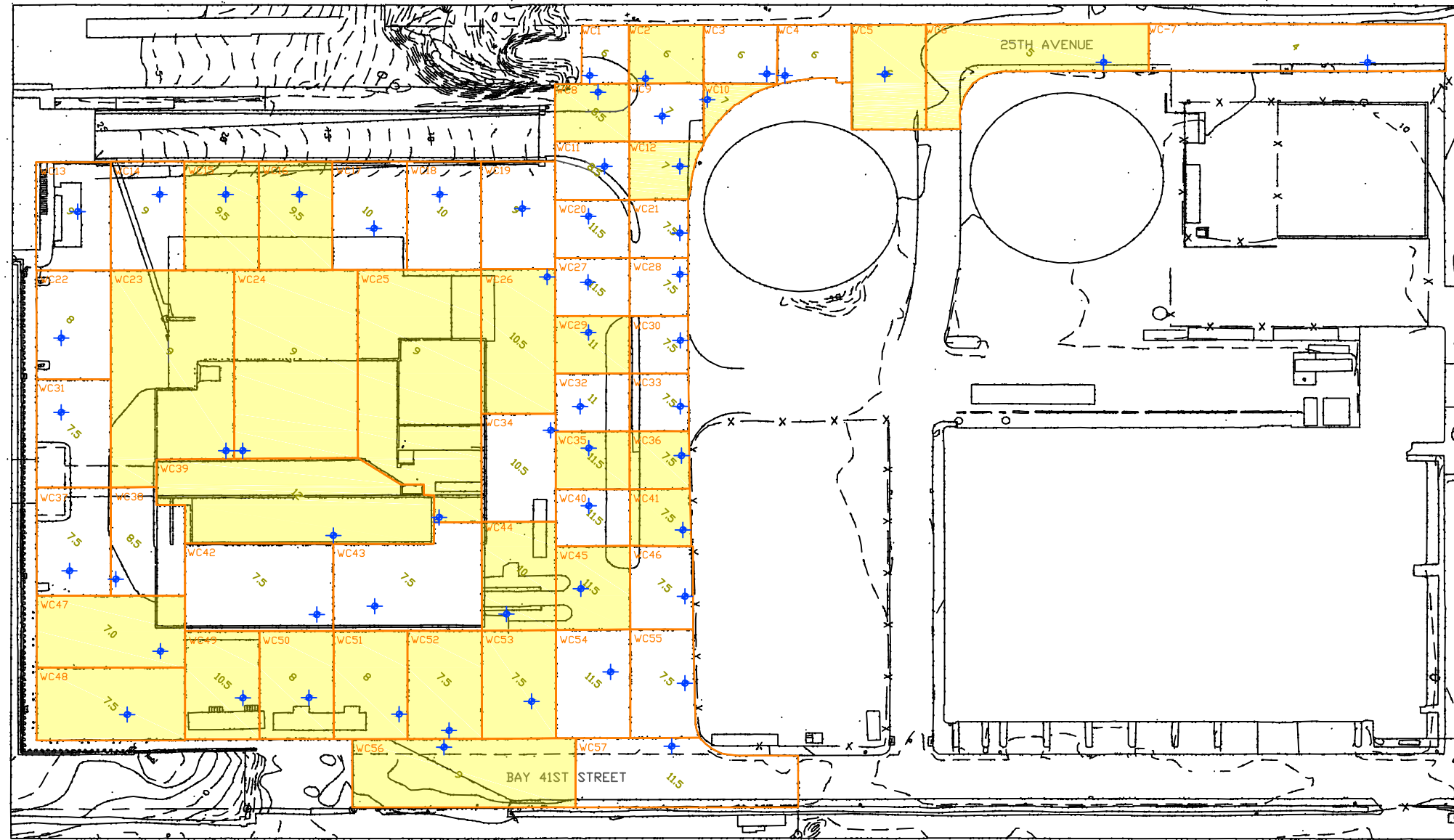
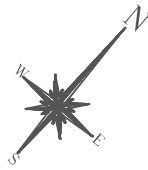
PROJECT # 7336

FIGURE # 5





**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599



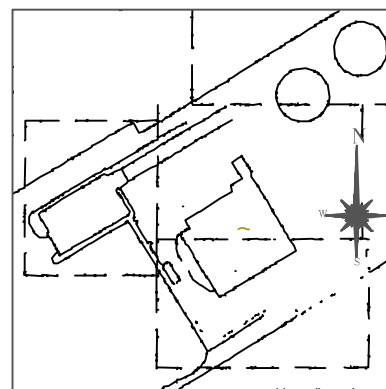


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over NJ NRDCRS

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.



TITLE:  
Summary of Exceedances  
over NJ NRDCRS

*Southwest Brooklyn  
Marine Transfer Station*

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

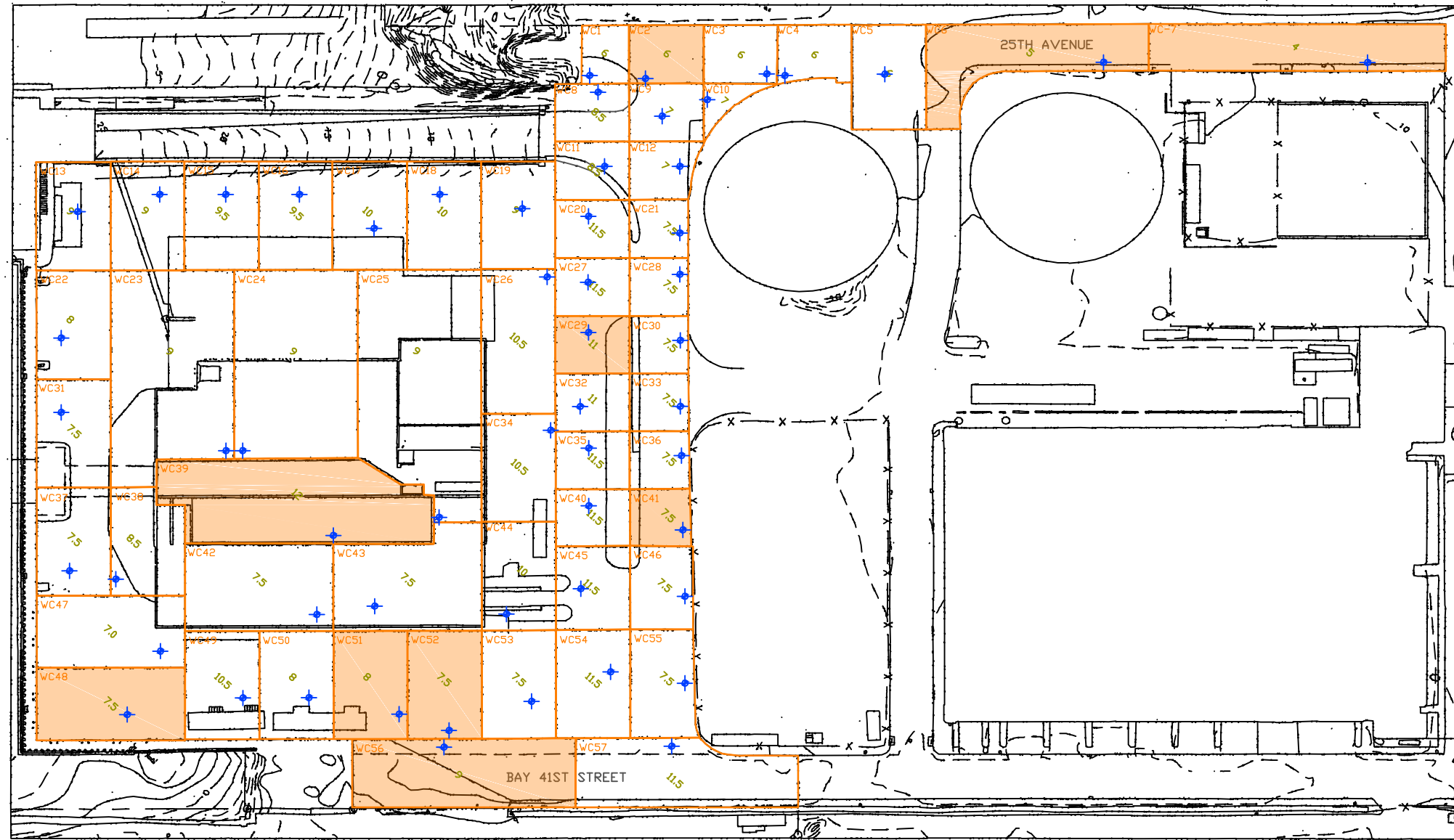
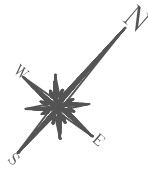
PROJECT # 7336

FIGURE # 6





**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599



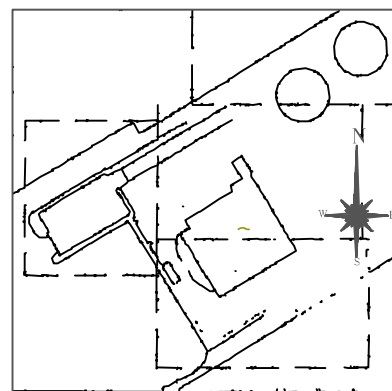


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over PADEP Clean Fill Standard

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.
2. Exceedance of Methylene Chloride is considered as a result of laboratory contamination and therefore is not counted as exceedance over PADEP Clean Fill Standard.



TITLE: Summary of Exceedances over PADEP Clean Fill Standard

Southwest Brooklyn Marine Transfer Station

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

PROJECT # 7336

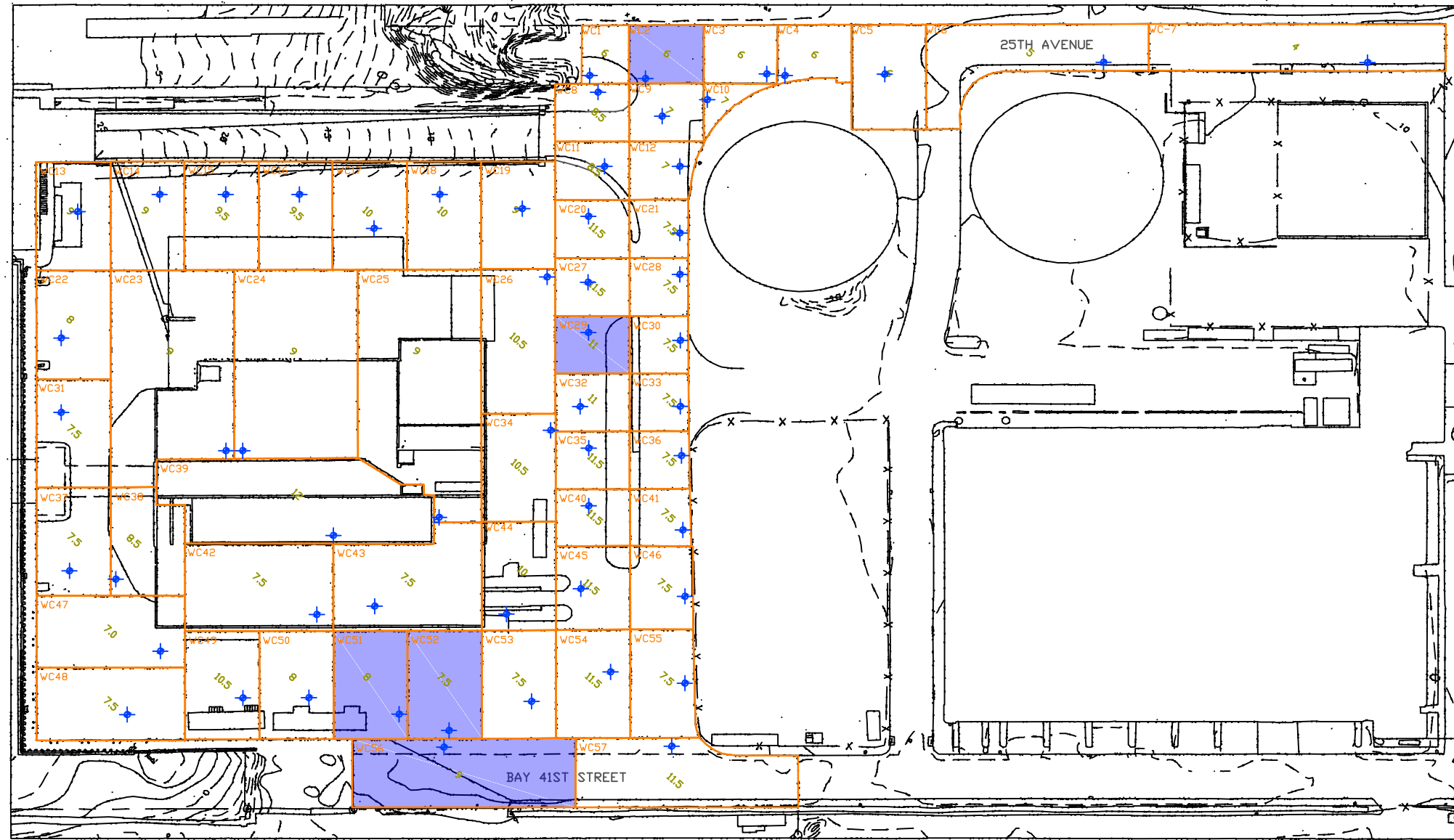
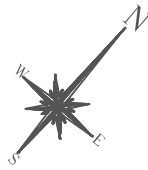
FIGURE # 7

**IMPACT ENVIRONMENTAL**





170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599





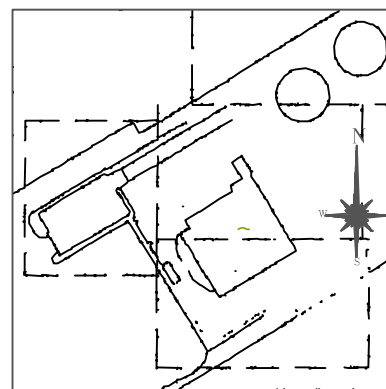


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over PADEP Regulated Fill Standard

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.
2. Exceedance of Methylene Chloride is considered as a result of laboratory contamination and therefore is not counted as exceedance over PADEP Clean Fill Standard.



**TITLE:** Summary of Exceedances over PADEP Regulated Fill Standard

*Southwest Brooklyn Marine Transfer Station*

1824 Shore Parkway  
Brooklyn, New York

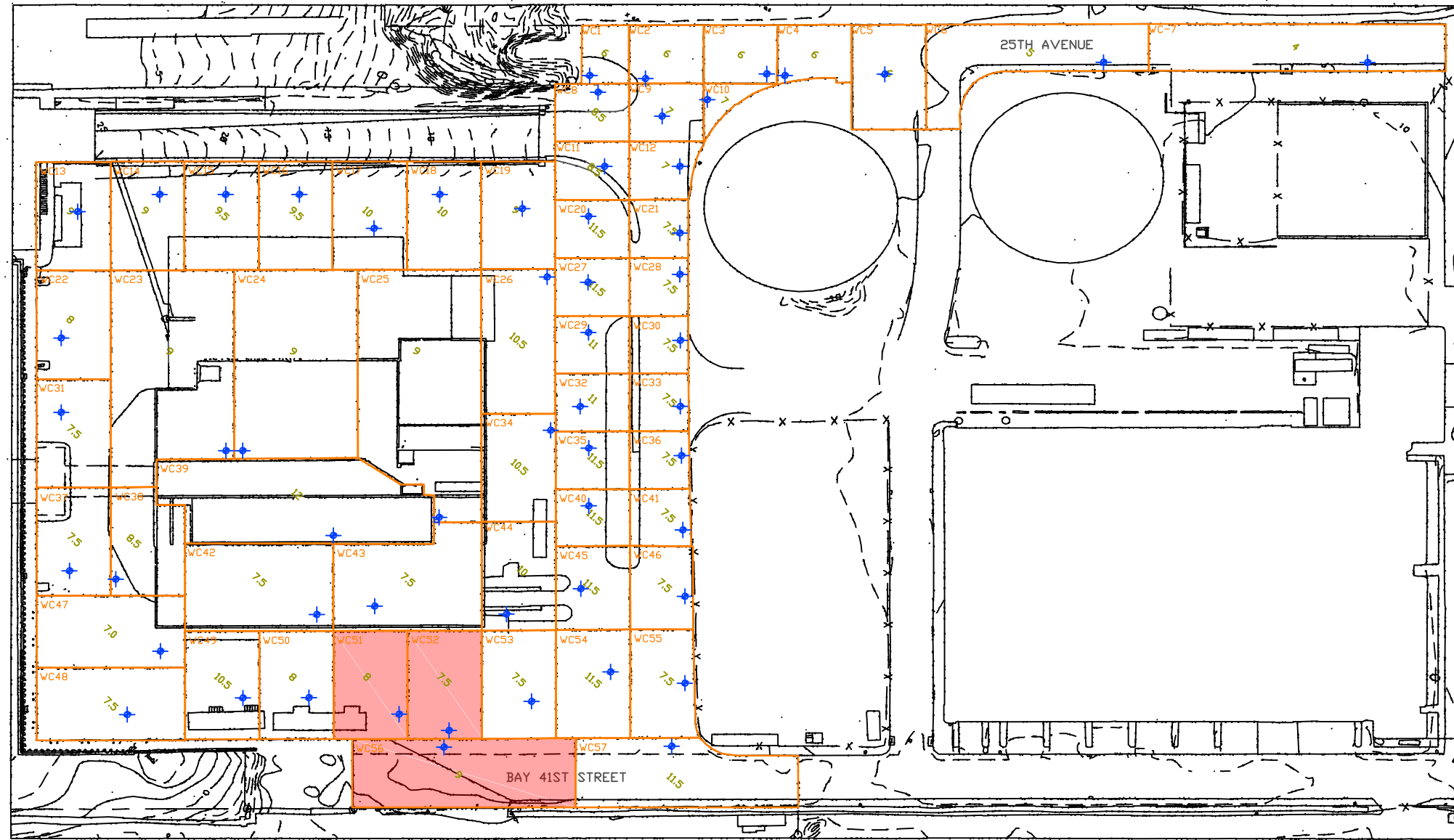
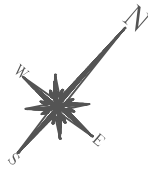
DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

<b>PROJECT #</b>	<b>7336</b>
<b>FIGURE #</b>	<b>8</b>





**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599



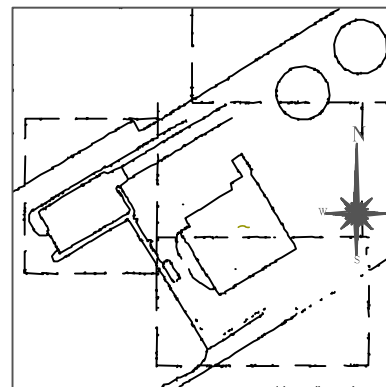


**Legend**

-  Approximate Soil Boring Location
-  Waste Characterization Grid
-  Excavation Depth
-  Grid with exceedances over EPA RCRA TCLP Limits

**Notes:**

1. Base map: C-007.00, Contract 2, Civil, Soil Sampling Plan, prepared by Greeley and Hansen, dated June 2012.



TITLE:  
Summary of Exceedances  
over EPA RCRA TCLP Limits

Southwest Brooklyn  
Marine Transfer Station

1824 Shore Parkway  
Brooklyn, New York

DRAWN BY:	XY
CHECKED BY:	RP
DATE:	02/18/2015
SCALE:	

PROJECT #	7336
FIGURE #	9

**IMPACT ENVIRONMENTAL**

170 KEYLAND COURT  
BOHEMIA, NEW YORK 11716  
TEL (631) 269-8800 FAX (631) 269-1599





February 20, 2015

Mr. Donald Menz, P.E.  
Project Manager  
The LiRo Group  
111 Broadway, Suite 501  
New York, New York 10006

**RE: Review of In-Situ Soil Field Sampling Summary Report**

Dear Mr. Menz,

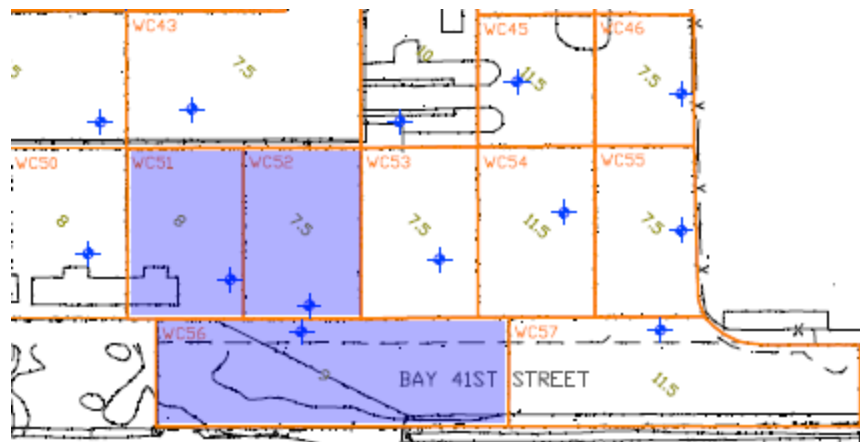
At your request, Louis Berger has reviewed the In-Situ Soil Field Sampling Summary Report prepared by Impact Environmental dated February 18, 2015. Specifically, you had asked about the applicability of the OSHA standards based upon a review of the sampling results.

**Background**

At the end of January and early February of 2015, Impact Environmental was at the Brooklyn Southwest Marine Transfer Station project (herein, referred to as the “Site”) and collected 57 samples for waste characterization purposes. Samples were collected in a grid pattern for the areas where excavation will take place.

**Results Discussion**

Sample results indicate that three (3) composite samples/grids contained RCRA (40 CFR 260) characteristic hazardous waste material: WC51, WC52, and WC56. The sample locations are grids as seen below in an excerpt of the Figure 2 map provided in the report. The remainder of the samples/grids does not contain any hazardous wastes to 7 feet below surface grade.



The maximum soil concentration of lead found at the Site was 566 mg/kg or 0.0566 %. Using the maximum soil concentration of lead, it is possible to calculate the amount of airborne particulate necessary to reach a particular OSHA permissible exposure limit (PEL) or “action level” (AL) using the formula below:

$$X = \frac{\text{PEL or AL}}{\text{Max. \% of contaminant}}$$

where x = airborne particulate level needed to reach PEL or AL

In this case, below are the calculations that show what particulate levels would need to be reached for a full 8-hour shift to reach the OSHA PEL and AL, respectively, for lead:

$$X = \frac{50 \mu\text{g}/\text{m}^3 \text{ (8-hr. PEL)}}{0.0566}$$

$$X = 883.39 \mu\text{g}/\text{m}^3 \text{ (8-hr. PEL)}$$

$$X = \frac{30 \mu\text{g}/\text{m}^3 \text{ (8-hr. AL)}}{0.0566}$$

$$X = 530.04 \mu\text{g}/\text{m}^3 \text{ (8-hr. AL)}$$

Looking at the particulate levels needed to reach the OSHA AL or PEL for lead, in combination with perimeter monitoring particulate levels to date and dust control measures required at the Site, it is a fair assumption that there is a not reasonable possibility that lead particulate exposures to site workers involved in excavation or soil disturbance could exceed either the OSHA limits for lead.

### Conclusions and Recommendations

The OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1926.65 does not apply to operations at the Site as it is not recognized as an uncontrolled hazardous waste site by any governmental body nor have cleanup operations been required by a governmental body. Additionally, the scope of the OSHA HAZWOPER standard would not apply if it can be demonstrated that the operations at the Site do not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards.

The OSHA Lead in Construction standard, 29 CFR 1926.62 does apply to operations where lead contamination exists. The standard allows for the use of objective data, as described in the Results discussion above, as the basis for an initial determination to demonstrate that a particular product or material containing lead or a specific process, operation or activity involving lead cannot result in employee exposure to lead at or above the action level during processing, use, or handling. **However exposure monitoring is required to confirm that employee exposures are below the AL.** So long as employee exposures are determined to be below the AL, the only other requirement would be that workers receive lead awareness training in accordance with the standard.

Although it has been assumed that worker exposures to lead at the Site will be below the AL, there are long term liability issues to consider, such as site workers coming back years



after working at the Site claiming they were “exposed” and suing all parties involved. Given the litigious nature/culture that has emerged over recent years, Louis Berger recommends a conservative approach whereby workers are required to wear personal protective equipment even though exposure to lead is highly unlikely. Additionally, documenting exposures to both workers and the public through air monitoring is another protective measure that can be taken. With that thought process in mind, Louis Berger offers the following recommendations:

- All workers who have **direct contact** with soils in any of the three (3) grids where hazardous waste was identified by the Impact Environmental field sampling should meet the following requirements:
  - ◇ Lead awareness training
  - ◇ Personal exposure monitoring for lead (for each job classification) performed by an industrial hygienist
  - ◇ Minimum PPE:
    - Disposable outer suit;
    - Disposable inner gloves;
    - Disposable outer boots; and
    - N-95 particulate respirator.
  - ◇ Upon leaving Work Area:
    - Remove disposable PPE; and
    - Wash hands/face before eating, drinking or smoking.
- All workers who do not have direct contact with soils, but who contact the surface in any of the three (3) grids where hazardous waste was identified by the Impact Environmental field sampling should meet the following requirement:
  - ◇ Lead awareness training.
  - ◇ Standard PPE (hardhat, safety glasses, steel-toed boots, reflective vest)
- Conduct perimeter monitoring for lead to document exposures/emissions during all soil disturbance activities in three (3) grids where hazardous waste was identified.
- The Activity Hazard analyses for site operations should be updated to reflect this information and requirements.

Feel free to contact me at 212-612-7943 with any questions.

Sincerely,

Joseph L. Sbarra, CIH

Joseph L. Sbarra, CIH  
Certified Industrial Hygienist

cc: M. Balarezo (URS/LiRo JV)  
C. Napolitano (Louis Berger)  
A. Port (Louis Berger)