IN-SITU CHEMICAL OXIDATION SUMMARY REPORT – JUNE 2018 THROUGH MARCH 2021

PASS & SEYMOUR SITE
45 SEA CLIFF AVENUE
GLEN COVE, NEW YORK
SITE#: 130053A

Prepared For:

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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1.0 INTRODUCTION

This document summarizes the in-situ chemical oxidation (ISCO) activities conducted at the Pass & Seymour property located at 45 Sea Cliff Avenue, Glen Cove, NY. The property is currently registered in the New York State Department of Environmental Conservation (NYSDEC) state superfund program as a class 2 site (site no. 130053A).

The site consists of four buildings on an approximately seven-acre parcel situated in a mixed commercial/industrial area. A site map is provided as Figure 1. Across the site groundwater occurs at approximately 10-25 feet below grade, with groundwater flow bearing generally to the northeast[1].

As directed by the NYSDEC, ISCO remedial activities focus on the tetrachloroethylene (PCE) impacted soil in the vicinity of Building 7 where PCE concentrations exceed commercial use soil cleanup objectives[2] (SCOs). This report summarizes all ISCO activities conducted June 2018 through March 2021 and processes all data collected.

1.1 ISCO PILOT TEST

ISCO pilot test activities were conducted in September-October 2015, with post-injection soil sampling conducted in January 2016. The pilot test work plan was developed using the site characterization data as provided in the 2012 Remedial Action Work Plan (RAWP) as prepared by HRP Engineering P.C. (HRP).

Two injection events (Phase 1 & Phase 2) were conducted in two consecutive applications, spaced approximately four weeks apart, wherein an approximately 6,000 gallons of injectate (10,250 lbs of PersulfOx[3] at 18% b/w solution) was delivered to the subsurface per injection phase. The oxidant was delivered using the Kinetically Adjustable Porespace Dilation Injection Delivery System (KAPSDIDS), developed by Badger Solutions, LLC.

Results from the January 2016 soil sampling activities suggested that the ISCO pilot activities effected a response consisting of contaminant destruction as well as contaminant desorption from the soil matrix.

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[1] HRP Associates, Inc. *Evaluation of the AS/SVE Interim Remedial Measure, Pass & Seymour, 45 Sea Cliff Ave, Glen Cove, NY*. (Jan. 20, 2012).

[2] New York Environment Laws and Regulations Codified Rules and Regulations (Title 6, Chapter IV, Subchapter B, Subpart 375-6, Remedial Soil Cleanup Objectives)

[3] Manufactured by REGENISIS, PersulfOx is an all-in-one catalyzed sodium persulfate that possesses built-in activation: alkaline activation (pH >11 when mixed with water) followed by silica-based, surface mediated oxidation that initiates once the alkaline environment becomes limiting. PersulfOx is formulated to form a heterogeneous catalyst (amorphous silica) within the aqueous medium under treatment if the pH drops into the circumneutral range (pH between 6.5 and 7.5). The silica catalyst can facilitate surface mediated oxidation by sequestering dissolved organic contaminants and further provide an environment to activate the persulfate (Wilson, Scott, et al. CATALYZED PERSULFATE Advancing In Situ Chemical Oxidation (ISCO) Technology, REGENESIS White Paper, (http://regenesis.com/technical/persulfox-catalyzed-persulfate-white-paper/).

ISCO pilot test activities are summarized in the April 26, 2016, *Pilot Test Summary Report & Proposed In-Situ Chemical Oxidation Work Plan.* ISCO pilot test injection point locations, soil boring locations, and posted soil analytical data are included here for reference as Figures 2-4.

2.0 CONTINUED DELINEATION

2.1 SOIL SAMPLING

Soil sampling activities conducted in 2016 as part of the pilot test revealed the need for additional delineation of soil contamination. In order to further delineate the horizontal and vertical extent of the soil contamination, EAR installed six temporary soil borings (SB-5 through SB-10) via direct-push drilling technology[4] in June 2018. The soil boring locations are illustrated in Figure 5.

Samples were collected using the Geoprobe sampling device to drive sampling tubes to a predetermined depth. At each boring location, soil sampling began at approximately 20 feet below grade surface (BGS) and continued to 40 feet BGS in discrete 5-foot intervals. Each sample was screened with a photo-ionization detector (PID) by an onsite geologist. From each 5-foot interval, the 2.5-foot subinterval exhibiting the highest PID reading was retained for laboratory analysis. Upon completion of sampling activities at each borehole, the boreholes were backfilled with a bentonite-cement grout mixture installed via tremie method, and surfaces were restored to match existing conditions. Boring logs are included as Appendix A.

A total of 26 soil samples were submitted to NYSDEC standby contracted laboratory (Eurofins Test America) for analysis of volatile organic compounds (VOCs) via EPA Method 8260. Samples were collected via EPA Method 5035A compliant means (Terra Core sampling kit) and submitted for a standard 10-day turnaround time with NYSDEC ASP Category A deliverables requested.

Analytical results are summarized in Table 1. Analytical data for PCE is posted to a site map in Figure 5.

2.2 GROUNDWATER SAMPLING

In order to evaluate baseline groundwater conditions and monitor ISCO performance, EAR installed three monitoring wells (MW-5, MW-6, MW-7) while onsite conducting the above referenced soil sampling activities. The monitoring wells were installed via direct-push technology immediately following soil sampling activities at the selected locations. Well locations are illustrated in Figure 6.

The wells were constructed of one-inch diameter sch. 40 PVC extending to 30 feet below grade surface and screened from 15 ft BGS to 30 ft BGS with sch. 40, 10-slot PVC screen[5]. At each well, a two-foot bentonite seal was installed from 1-foot to 3-feet BGS. Each well was secured with a PVC dome cap and bolt-down steel manhole cover installed flush to grade. Well logs are included in Appendix A.

Groundwater sampling at the above three monitoring wells was conducted on July 5, 2018. Wells MW-1s through MW-4S were not sampled as they were either inaccessible or found dry. Samples were collected utilizing a peristaltic pump and HDPE tubing. A new length of HDPE tubing was utilized at each well. Prior to sample collection, depth-to-water and total well depths were gauged to the nearest 0.01 foot and recorded. Each monitoring well was purged of at least one standing well volume then screened for pH, temperature, and

[4] Drilling services were provided by Aarco Environmental Services Corp. (Lindenhurst, NY) using a Geoprobe 6610 drill rig.

[5] Groundwater occurs at approximately 20-23 feet BGS in the treatment area.

conductivity until stabilization was reached. Dissolved oxygen concentrations, and oxidation reduction potential (ORP) were recorded as well. Purge water generated during the sampling activities was containerized in one 55-gallon drum and staged onsite.

Groundwater samples were placed into the appropriate sample containers provided by the laboratory and immediately placed in a cooler with ice to maintain a temperature of 4 degrees Celsius. A total of 4 water samples (including 1 blind duplicate and 1 field blank) were submitted to an NYSDEC standby contracted laboratory (ALS Environmental) for analysis of VOC's via EPA Method 8260. All samples were submitted for standard 10-day turn around with Category B deliverables requested.

Analytical results are summarized in Table 2 and are compared to the TOGS 1.1.1 Class GA water quality standards and/or guidance values. Field screening results are provided in Table 3. A relative percent difference analysis between the blind duplicate samples and parent sample is summarized in Table 4. Laboratory analytical reports are included as Appendix B.

3.0 IN-SITU CHEMICAL OXIDATION

ISCO activities were conducted in August and October 2020. The two injection events (Phase 3 and Phase 4) were conducted in two consecutive applications spaced approximately eight weeks apart. Phase 3 was conducted August 13-17 and Phase 4 was conducted October 13-15. During each phase approximately 6,000 gallons of chemical oxidant solution was injected via two injection point locations (IPL-3 & IPL-4).

3.1 CHEMICAL OXIDANT

The oxidant was mixed onsite by EAR using potable water to generate an approximately 18% PersulfOx solution. A total of 6,000 gallons of solution containing 10,250 lbs of PersulfOx was mixed and injected during each ISCO phase. A specialized mixing tank, with secondary containment, was used to store and circulate the oxidant solution. The oxidant solution was prepared daily in batches, as warranted for the day's injection activities.

3.2 INJECTION PROCEDURES

The oxidant was delivered using the Kinetically Adjustable Pore Space Dilation Injection Delivery System (KAPSDIDS). KAPSDIDS has the ability to effect diffusion limited pore spaces with in-situ pore space mixing that enhance contact of remedial materials. The system utilizes proprietary hardware and injection techniques to provide enhanced injectate delivery, subsurface distribution, and contact. Given the observed lithology described in HRP Engineering's (HRP) Remedial Action Work Plan (RAWP), and based on EAR's prior experience with KAPSDIDS, the minimum anticipated radius of contact potential (ROCP) was estimated as 20 feet with a vertical mixing potential of four feet (two feet above & two feet below the injection nozzle array). Aside from reducing the total number of injection locations and injection depths to meet remediation goals, the core achievement of this technology is the distribution and physical contact between treatment solution and impacted media, resulting in increased remedial effectiveness.

For each application, the oxidant was delivered at two IPLs (IPL-3 & IPL-4). The IPLs were selected based on drill rig accessibility and were positioned to provide delivery to, and ROCP overlap through, the soils exhibiting PCE concentrations exceeding commercial SCOs. The injection nozzle was deployed to the desired injection depths using a direct-push device[6]. A three-port nozzle was utilized to provide 270-degree coverage at each injection point. IPLs are illustrated in Figure 7. Injectate volumes and depths are summarized in Tables 5 and 6.

Rinsate accumulated during the daily injection process was injected into the subsurface in the same manner as the oxidant solution. Rinsate injection was conducted at the end of each mix batch to eliminate solids build up in the mix tank and hoses. Following injection operations at each IPL for each application, the boreholes were pressure grouted with a bentonite-cement mix and the surface restored to match existing conditions.

[6] Drilling services were provided by EAR using a Geoprobe 7720 drill rig.

3.3 RADIUS OF CONTACT POTENTIAL

During the Phase 3 injection activities, EAR conducted field screening for persulfate at monitoring wells MW-5, MW-6, and MW-7 in order to evaluate the radius of contact potential (ROCP). Grab samples were collected using an HDPE bailer and screened in the field via colorimetric analysis[7].

The following tables summarize Persulfate Screening results during the Phase 3 Injections:

	Well	Linear Distance from Injection Point (ft)	Persulfate (ppm)
8/14/20 Screening During Injections at IPL-3	MW-6	8.0	>700
	MW-5	22.0	56-70
8/17/20 Screening During Injections at IPL-4	MW-7	29.4	5.6

[7] CHEMetrics CHEMets R-7870 self-filling ampoules

4.0 POST-ISCO SOIL & GROUNDWATER SAMPLING

4.1 GROUNDWATER SAMPLING

Groundwater sampling was conducted approximately 6-8 weeks following each injection phase (Phase 3 & Phase 4) on October 6, 2020, and December 10, 2020. During each groundwater sampling event, samples were collected at MW-5, MW-6, and MW-7. Samples were not collected at MW-1S through MW-4S as these locations were inaccessible.

Samples were collected utilizing a peristaltic pump and HDPE tubing. A new length of HDPE tubing was utilized at each well. Due to the presence or potential presence of residual persulfate, a water quality meter was not used. Prior to sampling, each well was purged of approximately 3 well volumes and screened in the field for residual persulfate using a test kit (CHEMetrics CHEMets R7870)[8]. Purge water generated during the sampling activities was containerized in one 55-gallon drum and staged onsite.

Groundwater samples were placed into the appropriate sample containers provided by the laboratory and immediately placed in a cooler with ice to maintain a temperature of 4 degrees Celsius. A total of 8 water samples (including 2 blind duplicates) were submitted to an NYSDEC standby contracted laboratory (Test America, Inc.) for analysis of VOC's via EPA Method 8260. All samples were submitted for standard 10-day turn around with Category B deliverables requested.

Analytical results and persulfate screening results are summarized in Table 7, and are compared to the TOGS 1.1.1 Class GA water quality standards and guidance values. A relative percent difference analysis between the blind duplicate samples and parent sample is summarized in Table 8. Tetrachloroethene concentrations over time are summarized in Table 9. Laboratory analytical reports are included as Appendix B.

4.2 SOIL SAMPLING

Post-ISCO soil sampling was conducted following a minimum of 8-10 weeks after the Phase 4 injection event on April 21-22, 2021, at five boring locations (SB-1 through SB-5) using direct-push drilling technology[9]. SB-1 through SB-5 represent locations that were previously sampled in 2016-2018. For this soil sampling event, these locations were revisited for comparative purposes with borings advanced in close proximity to the original boreholes. The boring locations are illustrated in Figure 8.

Samples were collected using the Geoprobe sampling device to drive sampling tubes to a predetermined depth, as described in Section 2.0, however, samples were collected in discrete four-foot intervals. Upon completion of sampling activities at each borehole, the boreholes were backfilled with a bentonite-cement grout mixture installed via tremie method, and surfaces were restored to match existing conditions. At each boring location, soil sampling began at approximately 20 feet BGS and continued to 40 feet BGS. Each sample was logged for lithology and screened with a PID for total VOC concentrations by an onsite geologist. Soil observations are summarized in Table 10. Boring logs are provided as Appendix A.

[8] Water quality parameters and depth to water were not measured due to the potential for damage to instruments from residual persulfate.

[9] Drilling services were provided by EAR using a Geoprobe 7720 drill rig.

A total of 20 soil samples were submitted to NYSDEC standby contracted laboratory (Eurofins Test America) for analysis of volatile organic compounds (VOCs) via EPA Method 8260. Samples were collected via EPA Method 5035A compliant means (Terra Core sampling kit) and submitted for a standard 10-day turnaround time with NYSDEC ASP Category A deliverables requested.

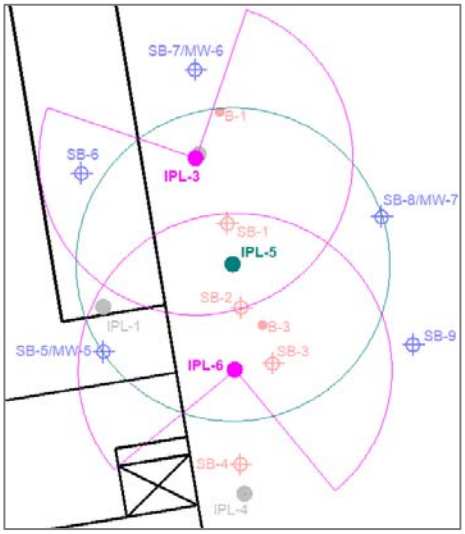
Analytical results are summarized in Table 11. Table 12 provides a comparison of soil analytical data for tetrachloroethene between 2016 and 2021. Analytical data for PCE is posted to a site map in Figure 8. Laboratory analytical reports are included in Appendix B.

5.0 CONTINUED IN-SITU CHEMICAL OXIDATION

EAR has refined the ISCO design plan based on current subsurface conditions and collaboration with REGENESIS to target residual PCE concentrations in soil identified at SB-1 and SB-2 using PersulfOx. As directed by the NYSDEC, the soil cleanup objective for this project is 150 mg/kg of PCE in soil to meet Commercial Use as defined in Division of Environmental Remediation, 6 NYCRR Part 375 Environmental Remediation Program, Subpart 375-6 Soil Cleanup Objectives, November 2006.

5.1 CHEMICAL APPLICATION DESIGN PLAN

Based on the productivity of previous ISCO phases, EAR proposes to continue the use Badger to facilitate the chemical injection. REGENESIS provided chemical oxidant mass recommendations to address residual (Post Phase 4 ISCO) PCE concentrations in soil. EAR adjusted the design plan for Badger application. Approximately 23,700 lbs of PersulfOx are proposed to be applied over four applications (Phases 5, 6, 7, and 8) as follows:



2011 Soil Boring Location
2016 Soil Boring Location
2018 Soil Boring Location
2015 Phase 1 & 2 ISCO Injection Location (IPL1&2)
2020 Phase 3 & 4 ISCO Injection Location (IPL3&4)
Proposed Phase 5 & 7 ISCO Injection Location*
Proposed Phase 6 & 8 ISCO Injection Location*
*15-ft ROCP assumed

	Phases 5 & 7 ISCO	Phases 6 & 8 ISCO
Mass of PersulfOx (lbs) per Phase	4,132.5	8,265.0
Volume of Mixture (gallons) per Phase	2,205.0	4,410.0
Concentration of Mixture (%)	19.85	19.85
Number of Injection Locations	1	2
Number of Injection Depths per Point	5	5
Mass of PersulfOx (lbs) per Injection Depth	826.5	826.5
Volume of Mixture (gallons) per Injection Depth	441	441

The injection tooling will be installed using a track-mounted, direct push probe device to the deepest desired injection depth. A 360◦ nozzle will be deployed at IPL-5 during Phases 5 and 7 ISCO and 270◦ nozzles will be used to direct the chemical amendment from IPL-3 and IPL-6 to the target treatment zone during Phases 6 and 8 ISCO. The purpose of alternating the injection locations between ISCO phases is to address the soil contamination from multiple angles and to increase contact of oxidant with contaminant. As observed during field activities and given the proposed volume, the anticipated ROCP is approximately 15 feet from the injection point. Proposed injection locations with ROCP and targeted treatment areas (SB-1 and SB-2) are illustrated above. A scaled map of the proposed injection locations is included as Figure 9.

Post Phase 4 ISCO soil sampling indicated residual PCE concentrations above the specified soil criteria from 20 to 28 feet BGS at SB-1 and from 32-36 feet bg at SB-2. The distance between SB-1 and SB-2 is 8.2 feet. Since the ROCP of the three proposed injection locations is anticipated to reach both SB-1 and SB-2, five depths per injection location are proposed. The vertical mixing potential (VMP) of each injection depth is estimated as 5 feet (2.5 feet above and 2.5 below the injection depth). To increase the concentration of oxidant to impacted soil, the design plan includes shorter vertical spacing between injection depths nearest the

targeted treatment zones. To further increase contact of oxidant with contaminant, injection depths of subsequent ISCO phases will be offset by 1-foot. Figures 10 & 11 provide infographics showing completed ISCO phases, soil sampling/analytical laboratory results near the proposed treatment area, and proposed injection depths. Transects are identified in Figure 12.

The oxidant will be mixed onsite with water supplied by a nearby hydrant to maintain the desired solution. A specialized tank will store and maintain the mixture. The mixture will be pumped at the desired flow rate (approximately 25-30 gallons per minute). Rinsate accumulated during the daily injection process will be injected into the subsurface in the same manner as the oxidant mixture. The rinsate injection will be conducted at the end of each mix batch. Following the rinsate injection and removal of tooling, the borehole will be backfilled with gravel and the surface will be restored with asphalt patch.

Should surfacing of injection solution occur, mix volumes, injection depth, and/or injection location may be modified in the field accordingly. To maximize onsite time, EAR will utilize temporary fencing to construct an equipment staging area, such that heavy equipment can be left onsite overnight. Based on previous ISCO phases, EAR anticipates completing the mixing and injecting an average of 2,000 gallons per day.

TABLES

Pass & Seymour
45 Sea Cliff Avenue
Glen Cove, NY
NYSDEC Site No. 130053A

Soil Analytical Results (ug/Kg)
TestAmerica, Inc.
Methods: SW8260C

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Location	Depth (ft Below Grade)	Date Collected	Time Collected	Moisture %	Tetrachloroethene	Trichloroethylene	1,1,1 Trichloroethane	Acetone	Carbon Disulfide	Chloroform	m + p Xylene	Methyl Acetate	Methyl Ethyl Ketone	Methylene Chloride	o-Xylene	Total BTEX
SB-5_22.5-25	**22.5-25.0**	**6/12/2018**	**1:55 PM**	**16.3**	**2,000**	<35	<35	<180	<35	**25 J**	<35	<180	<180	<35	<35	<175
SB-5_25-27.5	**25.0-27.5**	**6/12/2018**	**2:00 PM**	**17.8**	**360**	**0.19 J**	**0.31 J**	**36**	<0.95	**1.5**	<0.95	<4.8	**4.20 J**	<0.95	<0.95	<4.75
SB-5_30-32.5	**30.0-32.5**	**6/12/2018**	**2:50 PM**	**18.9**	**1,900**	<41	<41	<210	<41	<41	<41	<210	<210	<41	<41	<205
SB-5_37.5-40	**37.5-40.5**	**6/12/2018**	**2:55 PM**	**17.7**	**290,000**	<980	<980	<4900	<980	<980	<980	<4900	<4900	<980	<980	<4900
SB-5_42.5-45	**42.5-45.0**	**6/12/2018**	**3:30 PM**	**13.4**	**170**	<0.83	<0.83	**5.3**	<0.83	<0.83	<0.83	<4.2	<4.2	<0.83	<0.83	<4.15
SB-5_45-50	**45.0-50.0**	**6/13/2018**	**8:35 AM**	**13.9**	**400**	**0.15 J**	<0.9	**70**	<0.9	<0.9	**0.55 J**	<4.5	**7.1**	<0.9	**0.27 J**	**0.82 J**
SB-6_20-22.5	**20.0-22.5**	**6/12/2018**	**12:45 PM**	**14.7**	**2,500**	<49	<49	<240	<49	<49	<49	<240	<240	<49	<49	<245
SB-6_25-27.5	**25.0-27.5**	**6/12/2018**	**12:50 PM**	**5.8**	**4,900**	**85**	<41	<210	<41	<41	<41	**38 J**	<210	<41	<41	<205
SB-6_32.5-35	**32.5-35.0**	**6/12/2018**	**1:00 PM**	**14.6**	**46**	<0.82	<0.82	**5.9**	**0.30 J**	<0.82	**0.23 J**	<4.1	<4.1	**0.20 BJ**	**0.13 J**	**0.36 J**
SB-6_37.5-40	**37.5-40.0**	**6/12/2018**	**1:05 PM**	**11.3**	**350**	<0.83	<0.83	**19**	<0.83	<0.83	**0.27 J**	<4.2	**2.40 J**	<0.83	**0.15 J**	**0.42 J**
SB-7_22.5-25	**22.5-25.0**	**6/14/2018**	**10:12 AM**	**21.9**	**50**	<0.94	<0.94	**42**	<0.94	<0.94	**0.20 J**	<4.7	**5.2**	**0.78 BJ**	**0.09 J**	**0.29 J**
SB-7_25-27.5	**25.0-27.5**	**6/14/2018**	**10:27 AM**	**15.8**	**2.9**	<0.84	<0.84	**5.9**	<0.84	<0.84	**0.18 J**	<4.2	<4.2	**0.9**	<0.84	**0.18**
SB-7_32.5-35	**32.5-35.0**	**6/14/2018**	**10:44 AM**	**10.1**	**1.3**	<0.73	<0.73	**13**	<0.73	<0.73	<0.73	<3.7	**2.20 J**	**0.26 BJ**	<0.73	<3.65
SB-7_37.5-40	**37.5-40.0**	**6/14/2018**	**11:01 AM**	**13.1**	**0.64 J**	<0.7	<0.7	**3 J**	<0.7	<0.7	<0.7	<3.5	<3.5	**0.51 BJ**	<0.7	<3.5
SB-8_20-22.5	**20.0-22.5**	**6/13/2018**	**3:20 PM**	**11.2**	**87**	<0.46	<0.46	**7.4**	<0.46	**0.52**	**0.12 J**	<2.3	**1.20 J**	<0.46	**0.08 J**	**0.20 J**
SB-8_25-27.5	**25.0-27.5**	**6/13/2018**	**3:25 PM**	**19.8**	**30**	<0.86	<0.86	**28**	<0.86	<0.86	**0.18 J**	<4.3	**4.5**	<0.86	**0.11 J**	**0.29 J**
SB-8_30-35	**30.0-35.5**	**6/13/2018**	**3:50 PM**	**18.5**	**7.3**	<0.78	<0.78	**4**	<0.78	<0.78	**0.18 J**	<3.9	<3.9	<0.78	**0.09 J**	**0.27 J**
SB-8_35-40	**35.0-40.0**	**6/13/2018**	**4:00 PM**	**13.5**	**2.5**	<0.9	<0.9	<4.5	<0.9	<0.9	**0.21 J**	<4.5	<4.5	<0.9	**0.09 J**	**0.30 J**
SB-9_20-22.5	**20.0-22.5**	**6/13/2018**	**12:20 PM**	**15.6**	**400**	**0.28 J**	**0.37 J**	**15**	<0.97	**3.4**	**0.40 J**	<4.8	<4.8	<0.97	**0.20 J**	**0.60 J**
SB-9_25-27.5	**25.0-27.5**	**6/13/2018**	**12:25 PM**	**21.8**	**23**	<0.62	<0.62	**8.1**	<0.62	<0.62	**0.13 J**	<3.1	<3.1	<0.62	**0.09 J**	**0.22 J**
SB-9_30-32.5	**30.0-32.5**	**6/13/2018**	**12:50 PM**	**12.4**	**3.3**	<0.72	<0.72	**7.1**	<0.72	<0.72	**0.19 J**	<3.6	<3.6	<0.72	**0.12 J**	**0.31 J**
SB-9_37.5-40	**37.5-40.0**	**6/13/2018**	**12:55 PM**	**12.4**	**0.35 J**	<0.75	<0.75	**3 J**	<0.75	<0.75	**0.22 J**	<3.8	<3.8	**0.21 J**	<0.75	**0.22**
SB-10_22.5-25	**22.5-25.0**	**6/13/2018**	**9:45 AM**	**0.2**	**5,700**	<38	<38	<190	<38	<38	<38	<190	<190	<38	<38	<190
SB-10_25-27.5	**25.0-27.5**	**6/13/2018**	**9:50 AM**	**40.2**	**8,500**	<57	<57	<280	<57	<57	<57	<280	<280	<57	<57	<285
SB-10_32.5-35	**32.5-35.0**	**6/13/2018**	**11:00 AM**	**13.5**	**280**	<0.76	<0.76	<3.8	<0.76	<0.76	**0.19 J**	<3.8	<3.8	**0.26 J**	**0.09 J**	**0.28 J**
SB-10_35-40	**35.0-40.0**	**6/13/2018**	**11:05 AM**	**21.6**	**1,900**	<31	<31	<150	<31	<31	<31	<150	<150	<31	<31	<155
6 NYCRR 375-6.8: Commercial					**150,000**	**200,000**	**500,000**	**500,000**	n/a	**350,000**	n/a	n/a	**500,000**	**500,000**	n/a	n/a
6 NYCRR 375-6.8: Industrial					**300,000**	**400,000**	**1,000,000**	**1,000,000**	n/a	**700,000**	n/a	n/a	**1,000,000**	**1,000,000**	n/a	n/a
6 NYCRR 375-6.8: Unrestricted					**1,300**	**470**	**680**	**50**	n/a	**370**	n/a	n/a	**120**	**50**	n/a	n/a

J - Indicates an estimated concentration below laboratory reporting limits
The chemicals listed below were reported below the laboratory reporting limits:

1,1 Dichloroethane	1,3 Dichlorobenzene	c 1,3 Dichloropropene	Dichlorodifluoromethane	Vinyl Chloride
1,1 Dichloroethene	1,4 Dichlorobenzene	Carbon Tetrachloride	Ethylbenzene	
1,1,2 Trichloroethane	1,4-Dioxane	Chlorobenzene	Freon 113	
1,1,2,2 Tetrachloroethane	2-Hexanone	Chloroethane	Isopropylbenzene	
1,2 Dibromoethane	4-Methyl-2-Pentanone	Chloromethane	MTBE	
1,2 Dichlorobenzene	Benzene	cis-1,2-Dichloroethene	Styrene	
1,2 Dichloroethane	Bromochloromethane	Cyclohexane	t 1,3 Dichloropropene	
1,2 Dichloropropane	Bromodichloromethane	Cyclohexane, methyl-	Toluene	
1,2,3 Trichlorobenzene	Bromoform	Dibromochloromethane	trans-1,2-Dichloroethene	
1,2,4 Trichlorobenzene	Bromomethane	Dibromochloropropane	Trichlorofluoromethane	

Pass & Seymour
45 Sea Cliff Avenue
Glen Cove, NY
NYSDEC Site No. 130053A

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Groundwater Analytical Results (ug/L)
ALS Environmental
Methods: 8260C, SW8260C

Location	Date Collected	Time Collected	Tetrachloroethene	Trichloroethylene	Chloroform	Total VOCs
MW-5	7/5/2018	11:22 AM	**7,500**	<10	**33 J**	**7,533**
MW-6	7/5/2018	12:40 PM	**610**	**1.10 J**	<1.4	**611.1**
MW-7	7/5/2018	12:20 PM	**2,300**	<2	<2.8	**2,300**
NYSDEC TOGS 1.1.1 Class GA Standard			**5**	**5**	**7**	**n/a**

J - Indicates an estimate value below laboratory reporting limits
The chemicals listed below were reported below the LRL:

1,1 Dichloroethane	Benzene	Isopropylbenzene
1,1 Dichloroethene	Bromochloromethane	m + p Xylene
1,1,1 Trichloroethane	Bromodichloromethane	Methyl acetate
1,1,2 Trichloroethane	Bromoform	Methyl Ethyl Ketone
1,1,2,2 Tetrachloroethane	Bromomethane	Methylene Chloride
1,2 Dibromoethane	c 1,3 Dichloropropene	MTBE
1,2 Dichlorobenzene	Carbon Disulfide	n Butylbenzene
1,2 Dichloroethane	Carbon Tetrachloride	n Propylbenzene
1,2 Dichloropropane	Chlorobenzene	o-Xylene
1,2,3 Trichlorobenzene	Chloroethane	p Isopropyltoluene
1,2,4 Trichlorobenzene	Chloromethane	s Butylbenzene
1,2,4 Trimethylbenzene	cis-1,2-Dichloroethene	Styrene
1,3 Dichlorobenzene	Cyclohexane	t 1,3 Dichloropropene
1,3,5 Trimethylbenzene	Cyclohexane, methyl-	t Butylbenzene
1,4 Dichlorobenzene	Dibromochloromethane	trans-1,2-Dichloroethene
1,4-Dioxane	Dibromochloropropane	Trichlorofluoromethane
2-Hexanone	Dichlorodifluoromethane	Trichlorotrifluoroethane
4-Methyl-2-Pentanone	Ethylbenzene	Toluene
Acetone	Freon 113	Vinyl Chloride

Pass & Seymour
45 Sea Cliff Avenue
Glen Cove, NY
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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Groundwater Analytical Results
EAR Field Screening

Location	Date Collected	Total Well Depth *ft BGS*	Depth to Water *ft BGS*	Dissolved Oxygen *mg/L*	Temperature *°C*	pH -	ORP (Oxidation Reduction Potential) *mV*	Conductivity *us/cm*
MW-5	7/5/2018	30.95	23.05	**6.27**	**13.20**	**5.81**	**116.4**	**540**
MW-6	7/5/2018	28.14	22.73	**7.60**	**12.50**	**5.23**	**189.9**	**210**
MW-7	7/5/2018	27.52	22.67	**7.93**	**12.41**	**5.71**	**168.1**	**255**

Pass & Seymour
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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

July 2018 Groundwater Analytical Results (ug/L)
Blind Duplicate Relative Percent Difference Analysis

	Original Sample	Blind Duplicate	Relative Percent Difference
Sample	MW-6	MW-X	
Date Collected	7/5/2018	7/5/2018	
1,1 Dichloroethane	<1	<1	0.0%
1,1 Dichloroethene	<1.40	<1.40	0.0%
1,1,1 Trichloroethane	<1.30	<1.30	0.0%
1,1,2 Trichloroethane	<1.30	<1.30	0.0%
1,1,2,2 Tetrachloroethane	<1	<1	0.0%
1,2 Dibromoethane	<1	<1	0.0%
1,2 Dichlorobenzene	<1	<1	0.0%
1,2 Dichloroethane	<1	<1	0.0%
1,2 Dichloropropane	<1.10	<1.10	0.0%
1,2,3 Trichlorobenzene	<3.50	<3.50	0.0%
1,2,4 Trichlorobenzene	<2.50	<2.50	0.0%
1,2,4 Trimethylbenzene	<1	<1	0.0%
1,3 Dichlorobenzene	<1	<1	0.0%
1,3,5 Trimethylbenzene	<1	<1	0.0%
1,4 Dichlorobenzene	<1.20	<1.20	0.0%
1,4-Dioxane	<26	<26	0.0%
2-Hexanone	<1.70	<1.70	0.0%
4-Methyl-2-Pentanone	<1.50	<1.50	0.0%
Acetone	<11	<11	0.0%
Benzene	<1	<1	0.0%
Bromochloromethane	<1.70	<1.70	0.0%
Bromodichloromethane	<1.60	<1.60	0.0%
Bromoform	<1.80	<1.80	0.0%
Bromomethane	<3.50	<3.50	0.0%
c 1,3 Dichloropropene	<1.50	<1.50	0.0%
Carbon Disulfide	<1.60	<1.60	0.0%
Carbon Tetrachloride	<1.70	<1.70	0.0%
Chlorobenzene	<1	<1	0.0%
Chloroethane	<1.20	<1.20	0.0%
Chloroform	<1.40	<1.40	0.0%
Chloromethane	<1.40	<1.40	0.0%
cis-1,2-Dichloroethene	<1.30	<1.30	0.0%

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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

July 2018 Groundwater Analytical Results (ug/L)
Blind Duplicate Relative Percent Difference Analysis

	Original Sample	Blind Duplicate	Relative Percent Difference
Sample	MW-6	MW-X	
Date Collected	7/5/2018	7/5/2018	
Cyclohexane	<1.60	<1.60	0.0%
Cyclohexane, methyl-	<1.80	<1.80	0.0%
Dibromochloromethane	<1	<1	0.0%
Dibromochloropropane	<2.30	<2.30	0.0%
Dichlorodifluoromethane	<2.20	<2.20	0.0%
Ethylbenzene	<1	<1	0.0%
Isopropylbenzene	<1	<1	0.0%
M,P-Xylene	<1.10	<1.10	0.0%
Methyl acetate	<1.70	<1.70	0.0%
Methyl Ethyl Ketone	<3.90	<3.90	0.0%
Methylene Chloride	<2.40	<2.40	0.0%
n Butylbenzene	<1.20	<1.20	0.0%
n Propylbenzene	<1	<1	0.0%
o-Xylene	<1	<1	0.0%
p Isopropyltoluene	<1	<1	0.0%
s Butylbenzene	<1	<1	0.0%
Styrene	<1	<1	0.0%
t 1,3 Dichloropropene	<1.50	<1.50	0.0%
t Butylbenzene	<1	<1	0.0%
t butylmethylether	<1.10	<1.10	0.0%
Tetrachloroethene	**610**	**570**	**6.8%**
Toluene	<1	<1	0.0%
Total BTEX	<4	<4	0.0%
trans-1,2-Dichloroethene	<1.30	<1.30	0.0%
Trichloroethylene	**1.10 J**	<1	n/a
Trichlorofluoromethane	<1.40	<1.40	0.0%
Trichlorotrifluoroethane	<1	<1	0.0%
Vinyl Chloride	<1.10	<1.10	0.0%

J - Indicates an estimated value below laboratory reporting limits
n/a - not applicable

Site ID: **DEC-GLENCOVE45**
Address: **Pass & Seymour**
45 Sea Cliff Avenue
Glen Cove, NY
Site No. 130053A

Table 5

Phase 3 ISCO Injection Summary

Chemical: **17.8-18.6% Persulfate (PersulfOx)**

Date	IPL	Depth below water table(ft)	Depth (ft bg)	Gallons tank	Total Gallons tank	Gallons per day	Nozzle Direction / Degrees	Daylighting	Notes
08/13/20	IPL-3	17	37	550	1,200	1,800	S-SE 270°	No	IPL-3@37 feet bg was intentionally stopped after 550 gallons were injected due to lighting in the area.
		13	33	650				No	
		8	28	600	600			No	
8/14/2020	IPL-3	4.5	25	600	1,200	2,400	S-SE 270°	No	
		0.5	21	600				No	
	IPL-4	17.5	38	600	1,200		N-NE 270◦	No	
		13.5	34	600				No	
8/17/2020	IPL-4	9.5	30	600	1,200	1,800	N-NE 270◦	No	
		5.5	26	600				No	
		1.5	22	600	600			No	

Total Gallons **6,000**

Site ID: DEC-GLENCOVE45
Address: Pass & Seymour
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Site No. 130053A

Phase 4 ISCO Injection Summary

Chemical: **17.8-18.6% Persulfate (PersulfOx)**

Date	IPL	Depth below water table(ft)	Depth (ft bg)	Gallons tank	Total Gallons tank	Gallons per day	Nozzle Direction / Degrees	Daylighting	Notes
10/13/2020	3	20.5	41	600	1,200	1,200	S-SE 270°	no	
		15.5	36	600					
10/14/2020	3	11.5	32	600	1,200	2,400	S-SE 270°	no	Backpressure encountered at IPL-3 at 27ft bg due to a clogged nozzle requiring removal and cleaning. With a 600 gallon mix in the tank, moved to IPL 4 to coordinate drilling time with mixing time for subsequent depths.
	4	17.5	38	600			N-NE 270°		
		14.5	35	600	1,200				
		10.5	31	600					
10/15/2020	4	6.5	27	600	1,200	2,400	S-SE 270°	no	
		2.5	23	600					
	3	6.5	27	600	1,200		N-NE 270°		
		2.5	23	600					

Total Gallons **6,000**

Pass & Seymour
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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

2020 Groundwater Analytical Results (ug/L)
Eurofins TestAmerica, Inc., EAR Field Screening
Methods: SW8260

POST Phase 3

Location	Date Collected	Time Collected	Tetrachloroethene	Chloroform	Chloromethane	Trichloroethylene	Total VOCs	Residual Persulfate (ppm)
MW-5	10/6/2020	11:55 AM	**27,000**	**97 J**	<100	<100	**27,097**	**56**
MW-6	10/6/2020	11:22 AM	**710**	**0.81 J**	**0.9 J**	**1.4 J**	**713**	**2.1**
MW-7	10/6/2020	10:48 AM	**1,800**	**2.9 J**	<5	**2.5 J**	**1,805**	**1.4**

POST Phase 4

Location	Date Collected	Time Collected	Tetrachloroethene	Chloroform	Chloromethane	Trichloroethylene	Total VOCs	Residual Persulfate (ppm)
MW-5	12/10/2020	10:34 AM	**25,000**	**65 J**	<100	<100	**25,065**	**49**
MW-6	12/10/2020	9:54 AM	**280**	<1	**0.54 J**	**0.54 J**	**281**	0.0
MW-7	12/10/2020	9:22 AM	**740**	<2	<2	**0.95 J**	**741**	0.0

NYSDEC TOGS 1.1.1 Class GA Standard	**5**	**7**	**5**	**5**	**n/a**	**n/a**

J - Indicates an estimated value below laboratory reporting limits.
The chemicals listed below were reported below the LRL:

1,1 Dichloroethane	1,4-Dioxane	Chloroethane	Methylene Chloride
1,1 Dichloroethene	2-Hexanone	cis-1,2-Dichloroethene	MTBE
1,1,1 Trichloroethane	4-Methyl-2-Pentanone	Cyclohexane	o-Xylene
1,1,2 Trichloroethane	Acetone	Cyclohexane, methyl-	Styrene
1,1,2,2 Tetrachloroethane	Benzene	Dibromochloromethane	t 1,3 Dichloropropene
1,2 Dibromoethane	Bromochloromethane	Dibromochloropropane	Toluene
1,2 Dichlorobenzene	Bromodichloromethane	Dichlorodifluoromethane	Total BTEX
1,2 Dichloroethane	Bromoform	Ethylbenzene	trans-1,2-Dichloroethene
1,2 Dichloropropane	Bromomethane	Freon 113	Trichlorofluoromethane
1,2,3 Trichlorobenzene	c 1,3 Dichloropropene	Isopropylbenzene	Vinyl Chloride
1,2,4 Trichlorobenzene	Carbon Disulfide	m + p Xylene	
1,3 Dichlorobenzene	Carbon Tetrachloride	Methyl acetate	
1,4 Dichlorobenzene	Chlorobenzene	Methyl Ethyl Ketone	

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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Oct. - Dec. 2020 Groundwater Analytical Results (ug/L)
Blind Duplicate Relative Percent Difference Analysis

	original sample	blind duplicate	Relative	original sample	blind duplicate	Relative
Sample	MW-6	MW-X	Percent	MW-6	MW-X	Percent
Date Collected	10/6/2020	10/6/2020	Difference	12/10/2020	12/10/2020	Difference
1,1 Dichloroethane	<2	<2	0.0%	<1	<1	0.0%
1,1 Dichloroethene	<2	<2	0.0%	<1	<1	0.0%
1,1,1 Trichloroethane	<2	<2	0.0%	<1	<1	0.0%
1,1,2 Trichloroethane	<2	<2	0.0%	<1	<1	0.0%
1,1,2,2 Tetrachloroethane	<2	<2	0.0%	<1	<1	0.0%
1,2 Dibromoethane	<2	<2	0.0%	<1	<1	0.0%
1,2 Dichlorobenzene	<2	<2	0.0%	<1	<1	0.0%
1,2 Dichloroethane	<2	<2	0.0%	<1	<1	0.0%
1,2 Dichloropropane	<2	<2	0.0%	<1	<1	0.0%
1,2,3 Trichlorobenzene	<2	<2	0.0%	<1	<1	0.0%
1,2,4 Trichlorobenzene	<2	<2	0.0%	<1	<1	0.0%
1,3 Dichlorobenzene	<2	<2	0.0%	<1	<1	0.0%
1,4 Dichlorobenzene	<2	<2	0.0%	<1	<1	0.0%
1,4-Dioxane	<100	<100	0.0%	<50	<50	0.0%
2-Hexanone	<10	<10	0.0%	<5	<5	0.0%
4-Methyl-2-Pentanone	<10	<10	0.0%	<5	<5	0.0%
Acetone	<10	<10	0.0%	<5	<5	0.0%
Benzene	<2	<2	0.0%	<1	<1	0.0%
Bromochloromethane	<2	<2	0.0%	<1	<1	0.0%
Bromodichloromethane	<2	<2	0.0%	<1	<1	0.0%
Bromoform	<2	<2	0.0%	<1	<1	0.0%
Bromomethane	<2	<2	0.0%	<1	<1	0.0%
c 1,3 Dichloropropene	<2	<2	0.0%	<1	<1	0.0%
Carbon Disulfide	<2	<2	0.0%	<1	<1	0.0%
Carbon Tetrachloride	<2	<2	0.0%	<1	<1	0.0%
Chlorobenzene	<2	<2	0.0%	<1	<1	0.0%
Chloroethane	<2	<2	0.0%	<1	<1	0.0%
Chloroform	**0.81 J**	**0.75 J**	n/a	<1	**1.6**	**200%**
Chloromethane	**0.90 J**	<2	n/a	**0.54 J**	<1	n/a
cis-1,2-Dichloroethene	<2	<2	0.0%	<1	<1	0.0%
Cyclohexane	<2	<2	0.0%	<1	<1	0.0%
Cyclohexane, methyl-	<2	<2	0.0%	<1	<1	0.0%
Dibromochloromethane	<2	<2	0.0%	<1	<1	0.0%
Dibromochloropropane	<2	<2	0.0%	<1	<1	0.0%

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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Oct. - Dec. 2020 Groundwater Analytical Results (ug/L)
Blind Duplicate Relative Percent Difference Analysis

Sample	original sample	blind duplicate	Relative Percent Difference	original sample	blind duplicate	Relative Percent Difference
	MW-6	MW-X		MW-6	MW-X	
Date Collected	10/6/2020	10/6/2020		12/10/2020	12/10/2020	
Dichlorodifluoromethane	<2	<2	0.0%	<1	<1	0.0%
Ethylbenzene	<2	<2	0.0%	<1	<1	0.0%
Freon 113	<2	<2	0.0%	<1	<1	0.0%
Isopropylbenzene	<2	<2	0.0%	<1	<1	0.0%
m + p Xylene	<2	<2	0.0%	<1	<1	0.0%
Methyl acetate	<10	<10	0.0%	<5	<5	0.0%
Methyl Ethyl Ketone	<10	<10	0.0%	<5	<5	0.0%
Methylene Chloride	<2	<2	0.0%	<1	<1	0.0%
o-Xylene	<2	<2	0.0%	<1	<1	0.0%
Styrene	<2	<2	0.0%	<1	<1	0.0%
t 1,3 Dichloropropene	<2	<2	0.0%	<1	<1	0.0%
t butylmethylether	<2	<2	0.0%	<1	<1	0.0%
Tetrachloroethene	**710**	**610**	**15.2%**	**280**	**240**	**15.4%**
Toluene	<2	<2	0.0%	<1	<1	0.0%
Total BTEX	<10	<10	0.0%	<5	<5	0.0%
trans-1,2-Dichloroethene	<2	<2	0.0%	<1	<1	0.0%
Trichloroethylene	**1.40 J**	**1.10 J**	n/a	**0.54 J**	**0.68 J**	n/a
Trichlorofluoromethane	<2	<2	0.0%	<1	<1	0.0%
Vinyl Chloride	<2	<2	0.0%	<1	<1	0.0%

Notes:

J - Indicates an estimated value below laboratory reporting limits

n/a - Not applicable

Pass & Seymour
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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Groundwater Analytical Results - Tetrachloroethene (ug/L) Over Time
ALS Environmental Laboratory, Eurofins TestAmerica, Inc.
Methods: SW8260

	Tetrachloroethene		
Location	7/5/2018	10/6/2020	12/10/2020
MW-5	**7,500**	**27,000**	**25,000**
MW-6	**610**	**710**	**280**
MW-7	**2,300**	**1,800**	**740**

Pass & Seymour
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Glen Cove, NY
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ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Summary of Post-ISCO Soil Observations (April 2021)
EAR Field Screening

Borehole ID	Date Collected	Sample Interval (feet bgs)	Percent Recovery	Screening Interval (feet bgs)	Headspace Reading TVOC* (ppm)	Sample Observations
SB-1	4/22/2021	20-24	56	20-24	4387.0	Brown sand, wet, no odor
		24-28	48	24-28	3472.0	Brown sand, wet, no odor
		28-32	48	28-32	118.0	Brown/tan sand, wet, no odor
		32-36	25	32-36	32.6	brown sand, cobble, wet, no odor
		36-40	44	36-40	93.7	brown/tan sand, wet, no odor
SB-2	4/22/2021	20-24	48	20-24	52.2	brown sand, wet, no odor
		24-28	38	24-28	138.0	brown sand, wet, no odor
		28-32	30	28-32	0.0	brown/tan sand, wet, no odor
		32-36	28	32-36	17.5	brown sand, wet, no odor
		36-40	38	36-40	7.4	brown/dark brown sand, wet, no odor
SB-3	4/21/2021	20-24	46	20-24	19.7	brown sand, wet, no odor
		24-28	50	24-28	10.8	brown sand, wet, no odor
		28-32	43	28-32	3.9	brown sand, wet, no odor
		32-36	28	32-36	17.5	brown sand, wet, no odor
		36-40	35	36-40	7.7	brown sand, wet, no odor
SB-4	4/21/2021	20-24	49	20-24	33.9	brown sand, wet, no odor
		24-28	48	24-28	5.1	tan sand, wet, no odor
		28-32	51	28-32	26.0	Brown/tan sand, wet, no odor
		32-36	55	32-36	100.3	Brown sand, wet, no odor
		36-40	45	36-40	28.1	tan sand, wet, no odor
SB-5	4/22/2021	20-24	41	20-24	142.0	Brown sand, wet, no odor
		24-28	33	24-28	82.0	Brown sand, wet, no odor
		28-32	41	28-32	38.4	Brown/tan sand, wet, no odor
		32-36	33	32-36	7.0	Brown sand, wet, no odor
		36-40	45	36-40	447.0	Brown sand, wet, no odor

Notes:
- soil samples submitted to Test America for analysis via EPA Methods 8260
* TVOC - total volatile organic compounds (measured via PID)

Pass & Seymour
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Glen Cove, NY
NYSDEC Site No. 130053A

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Post ISCO Soil Analytical Results - April 2021 (ug/Kg)
TestAmerica, Inc.
Methods: SW8260

Location	Depth (ft BGS)	Date Collected	Time Collected	Percent Moisture	Acetone	Chloroform	Methyl Ethyl Ketone	Tetrachloroethene	Toluene	Total BTEX
SB-1	20-24	4/22/2021	10:32 AM	**18.8**	<120,000	<23,000	<120,000	**7,100,000**	<23,000	<115,000
	24-28	4/22/2021	10:44 AM	**16.3**	<920,000	<180,000	<920,000	**37,000,000**	**76000 J**	**76,000**
	28-32	4/22/2021	10:52 AM	**11.8**	<400	<80	<400	**9,700**	<80	<400
	36-40	4/22/2021	11:31 AM	**10.7**	<380	<77	<380	**16,000**	<77	<385
SB-2	20-24	4/22/2021	8:28 AM	**16.2**	<550	<110	**240 J**	**1,100**	<110	<550
	24-28	4/22/2021	8:40 AM	**15.5**	<470	<94	<470	**15,000**	<94	<470
	32-36	4/22/2021	9:24 AM	**12**	<4,100	<820	<4,100	**160,000**	<820	<4,100
	36-40	4/22/2021	9:40 AM	**11**	<490	<98	<490	**1,300**	<98	<490
SB-3	20-24	4/21/2021	1:15 PM	**23.1**	<5.50	**3.3**	<4.60	**330**	<0.91	<4.55
	24-28	4/21/2021	1:24 PM	**20.2**	<5.20	**1.6**	<4.30	**170**	<0.87	<4.35
	32-36	4/21/2021	2:05 PM	**13.9**	**5.6**	<0.75	<3.80	**290**	<0.75	<3.75
	36-40	4/21/2021	2:26 PM	**8.6**	**5.9**	<0.69	<3.50	**50**	<0.69	<3.45
SB-4	20-24	4/21/2021	10:59 AM	**18.5**	<5.60	<0.93	<4.70	**60**	<0.93	<4.65
	28-32	4/21/2021	11:29 AM	**10.8**	<4.90	<0.81	<4.10	**200**	<0.81	<4.05
	32-36	4/21/2021	11:45 AM	**10.8**	<4.40	<0.74	<3.70	**640**	<0.74	<3.70
	36-40	4/21/2021	12:16 PM	**11.1**	<390	<78	<390	**1,400**	<78	<390
SB-5	20-24	4/22/2021	1:18 PM	**13**	<440	<88	<440	**4,000**	<88	<440
	24-28	4/22/2021	1:30 PM	**23.2**	<540	<110	<540	**2,100**	<110	<550
	28-32	4/22/2021	2:08 PM	**11.6**	<400	<81	<400	**710**	<81	<405
	36-40	4/22/2021	2:40 PM	**10.6**	<1,600	<310	<1,600	**97,000**	<310	<1,550

6 NYCRR 375-6.8 Commercial	n/a	**500,000**	**350,000**	**500,000**	**150,000**	**500,000**	n/a
6 NYCRR 375-6.8 Industrial	n/a	**1,000,000**	**700,000**	**1,000,000**	**300,000**	**1,000,000**	n/a
6 NYCRR 375-6.8 Unrestricted	n/a	**50**	**370**	**120**	**1,300**	**700**	n/a

J - Indicates an estimated value below laboratory reporting limits.
The chemicals listed below were reported below the LRL:

1,1 Dichloroethane	1,3 Dichlorobenzene	Carbon Disulfide	Ethylbenzene	Trichloroethylene
1,1 Dichloroethene	1,4 Dichlorobenzene	Carbon Tetrachloride	Freon 113	Trichlorofluoromethane
1,1,1 Trichloroethar	1,4-Dioxane	Chlorobenzene	Isopropylbenzene	Vinyl Chloride
1,1,2 Trichloroethar	2-Hexanone	Chloroethane	m + p Xylene	
1,1,2,2 Tetrachloroe	4-Methyl-2-Pentanone	Chloromethane	Methyl acetate	
1,2 Dibromoethane	Benzene	cis-1,2-Dichloroethene	Methylene Chloride	
1,2 Dichlorobenzen	Bromochloromethane	Cyclohexane	MTBE	
1,2 Dichloroethane	Bromodichloromethane	Cyclohexane, methyl-	o-Xylene	
1,2 Dichloropropan	Bromoform	Dibromochloromethane	Styrene	
1,2,3 Trichlorobenz	Bromomethane	Dibromochloropropane	t 1,3 Dichloropropene	
1,2,4 Trichlorobenz	c 1,3 Dichloropropene	Dichlorodifluoromethane	trans-1,2-Dichloroethene	

Pass & Seymour
45 Sea Cliff Aevnue
Glen Cove, NY
Spill # 130053A

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Analytical Tetrachloroethene Comparison
TestAmerica, Inc.
Methods: SW8260, SW8260C

	Jan. 2016		Apr. 2021	
Location	ft BGS	Tetrachloroethene (ug/Kg)	Tetrachloroethene (ug/Kg)	ft BGS
SB-1	20-25	**3,100,000**	**7,100,000**	20-24
	25-30	**2,700,000**	**37,000,000**	24-28
	30-35	**40,000**	**9,700**	28-32
	35-40	**1,500**	**16,000**	36-40

	Jan. 2016		Apr. 2021	
Location	ft BGS	Tetrachloroethene (ug/Kg)	Tetrachloroethene (ug/Kg)	ft BGS
SB-2	20-25	**7,000**	**1,100**	20-24
	25-30	**4,700**	**15,000**	24-28
	30-35	**210,000**	**160,000**	32-36
	35-40	**770**	**1,300**	36-40

	Jan. 2016		Apr. 2021	
Location	ft BGS	Tetrachloroethene (ug/Kg)	Tetrachloroethene (ug/Kg)	ft BGS
SB-3	20-25	**280**	**330**	20-24
	25-30	**8.6**	**170**	24-28
	30-35	**4**	**290**	32-36
	35-40	**17**	**50**	36-40

	Jan. 2016		Apr. 2021	
Location	ft BGS	Tetrachloroethene (ug/Kg)	Tetrachloroethene (ug/Kg)	ft BGS
SB-4	20-25	**160**	**60**	20-24
	25-30	**210**	**200**	28-32
	30-35	**37,000**	**640**	32-36
	35-40	**75**	**1,400**	36-40

	Jun. 2018		Apr. 2021	
Location	ft BGS	Tetrachloroethene (ug/Kg)	Tetrachloroethene (ug/Kg)	ft BGS
SB-5	22.5-25	**2,000**	**4,000**	20-24
	25-27.5	**360**	**2,100**	24-28
	30-32.5	**1,900**	**710**	28-32
	37.5-40	**290,000**	**97,000**	36-40
	42.5-45	**170**	-	-
	45-50	**400**	-	-

FIGURES

0 200

SCALE IN FEET

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Figure 1

Site Map

Pass & Seymour
45 Sea Cliff Avenue
Glen Cove, NY
Site No. 130053A

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Figure 2: ISCO Pilot Injection Point Locations

IPL-1

IPL-2

PCE	1,000-10,000 ug/Kg
PCE	10,000-100,000 ug/Kg
PCE	100,000-1,000,000 ug/Kg
PCE	>1,000,000 ug/Kg

Segment Direction

Injection Point location with 20 foot Radius of Contact Potential

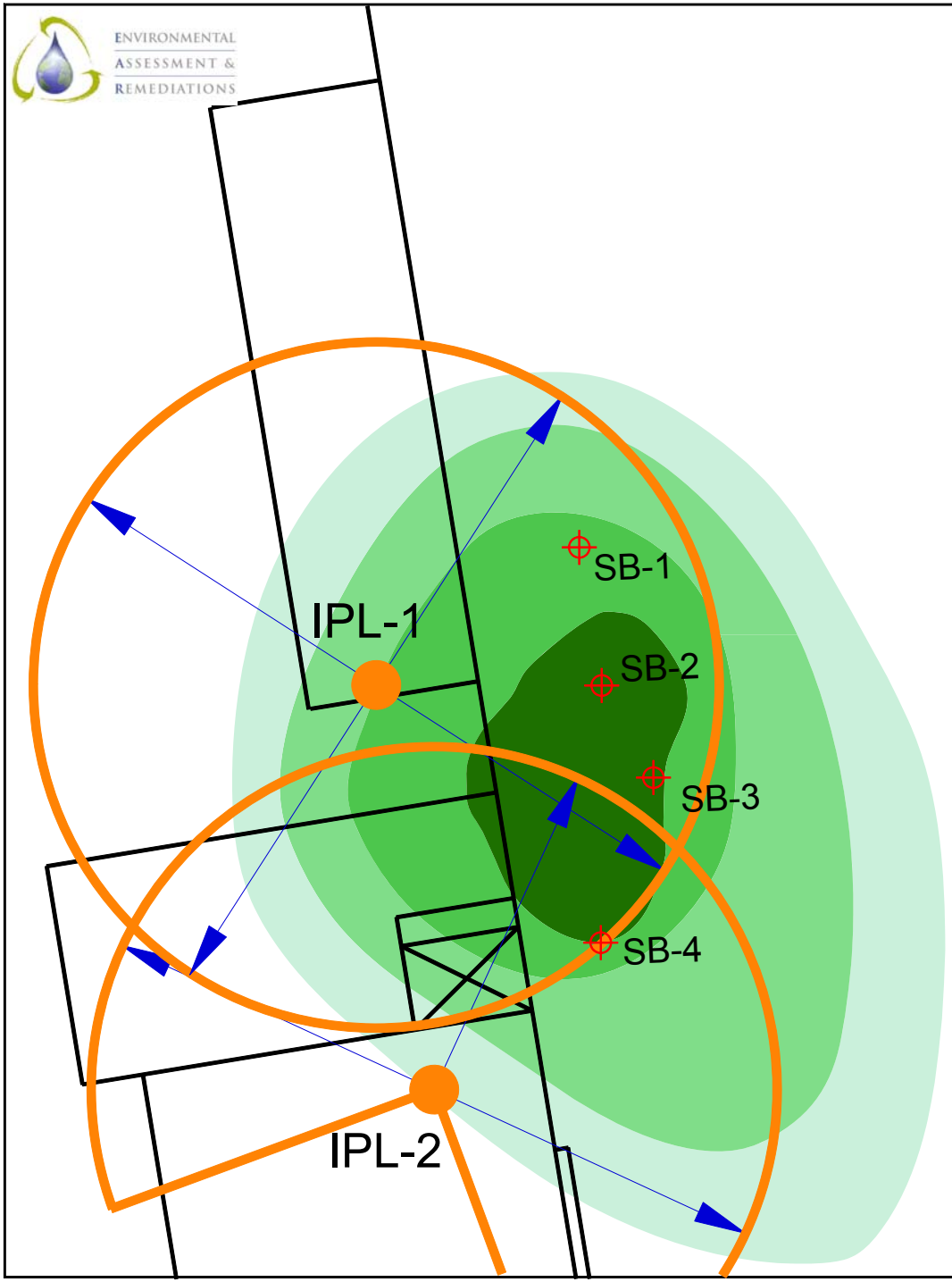
Adapted from Figure 3 presented in August 2012 Remedial Action Work Plan prepared by HRP Engineering, P.C.

0 10

scale in feet

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Figure 3: ISCO Pilot Soil Boring Locations



PCE	1,000-10,000 ug/Kg
PCE	10,000-100,000 ug/Kg
PCE	100,000-1,000,000 ug/Kg
PCE	>1,000,000 ug/Kg

January 2016 Soil Sampling Location

Segment Direction

Injection Point location with 20 foot Radius of Contact Potential

Adapted from Figure 3 presented in August 2012 Remedial Action Work Plan prepared by HRP Engineering, P.C.

0 10

scale in feet

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

SB-1

Depth (ft BGS)	PCE (ug/Kg)
20-25'	3,100,000
25-30'	2,700,000
30-35'	40,000
35-40'	1,500

SB-2

Depth (ft BGS)	PCE (ug/Kg)
20-25'	7,000
25-30'	4,700
30-35'	210,000
35-40'	770

SB-3

Depth (ft BGS)	PCE (ug/Kg)
20-25'	280
25-30'	8.6
30-35'	4.0
35-40'	17

SB-4

Depth (ft BGS)	PCE (ug/Kg)
20-25'	160
25-30'	210
30-35'	37,000
35-40'	75

SB-1

SB-2

SB-3

SB-4

Figure 4: Post Map Jan. 2016 Soil Analytical Results

Test America, Inc, EPA Method 8260

January 2016 Soil Sampling Location

Adapted from Figure 3 presented in August 2012 Remedial Action Work Plan prepared by HRP Engineering, P.C.

0 10

scale in feet

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

SB-6

Depth (ft BGS)	PCE (ug/Kg)
20-22.5	2,500
25-27.5	4,900
32.5-35	46
37.5-40	350

SB-6

SB-10

Depth (ft BGS)	PCE (ug/Kg)
22.5-25	5,700
25-27.5	8,500
32.5-35	280
35-40	1,900

SB-10

SB-5/MW-5

SB-7

Depth (ft BGS)	PCE (ug/Kg)
22.5-25	50
25-27.5	2.9
32.5-35	1.3
37.5-40	0.64 J

SB-7/MW-6

SB-8

Depth (ft BGS)	PCE (ug/Kg)
20-22.5	87
25-27.5	30
30-35	7.3
35-40	2.5

SB-8/MW-7

SB-5

Depth (ft BGS)	PCE (ug/Kg)
22.5-25	2,000
25-27.5	360
30-32.5	1,900
37.5-40	290,000
42.5-45	170
45-50	400

SB-9

SB-9

Depth (ft BGS)	PCE (ug/Kg)
20-22.5	400
25-27.5	23
30-32.5	3.3
37.5-40	0.35 J

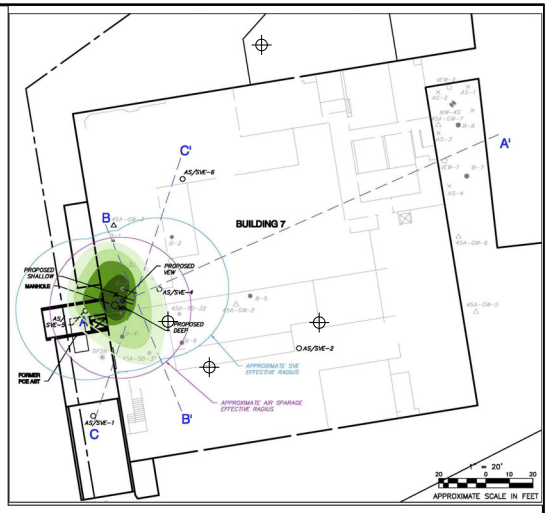


Figure 5: Post Map June 2018 Soil Analytical Results

Test America Inc.

2018 Soil Boring Location

0 10

scale in feet

Drawing adapted from Figure 3 presented in August 2012 RemedialAction Work Plan prepared by HRP Engineering, P.C.

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

SB-7/MW-6

SB-8/MW-7

SB-5/MW-5

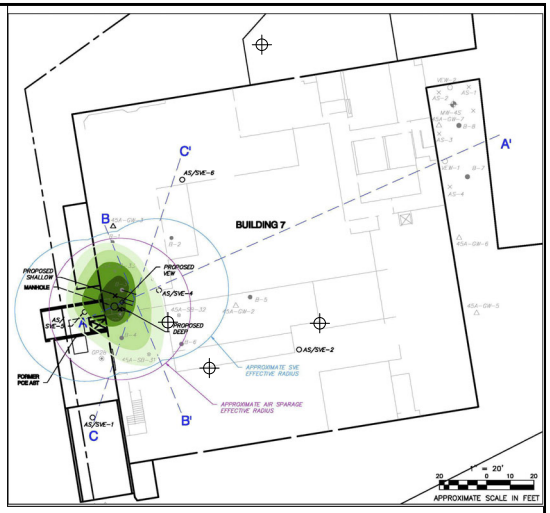


Figure 6: Monitoring Well Locations

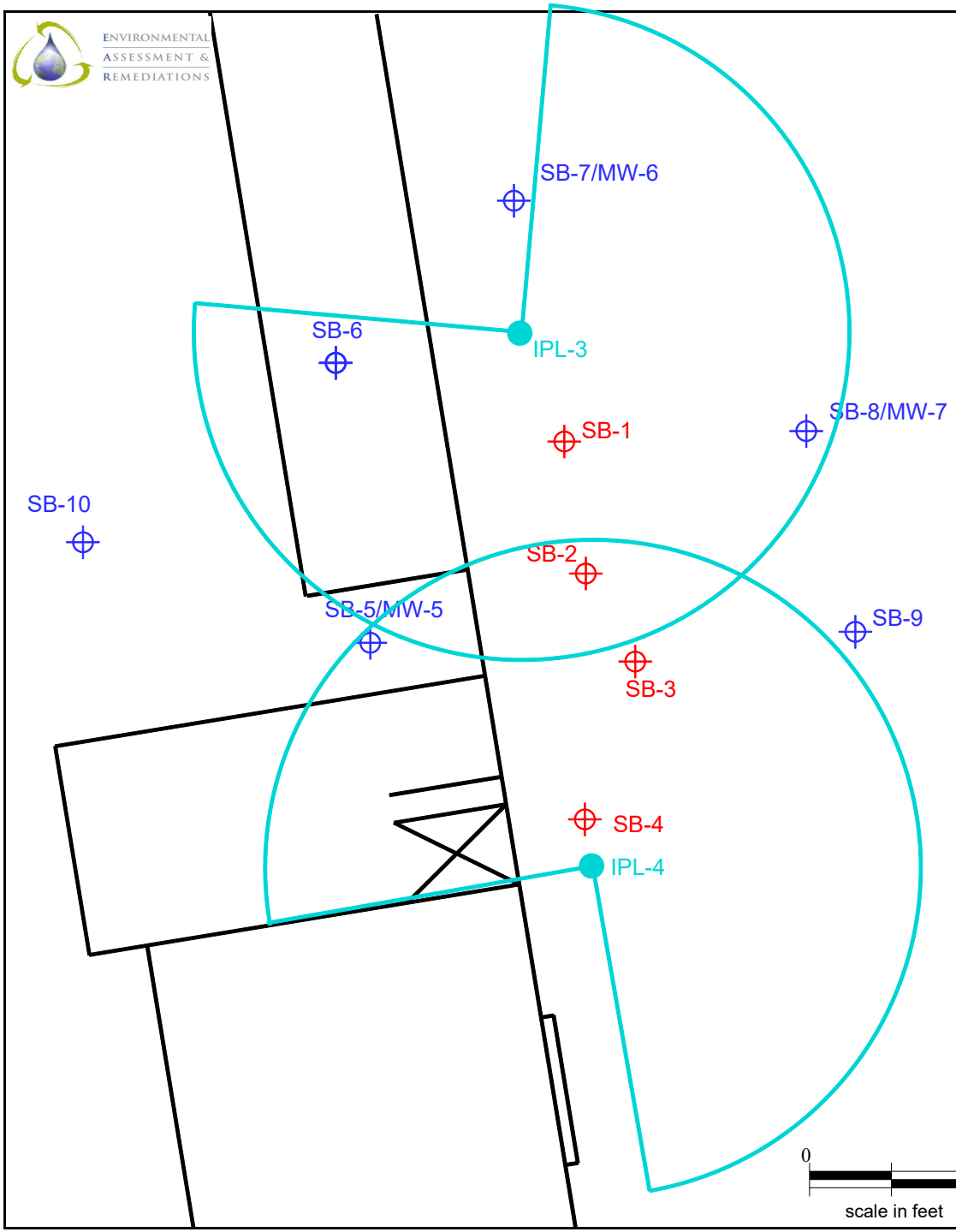
Monitoring Well Location

0 10

scale in feet

Drawing adapted from Figure 3 presented in August 2012 RemedialAction Work Plan prepared by HRP Engineering, P.C.

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS



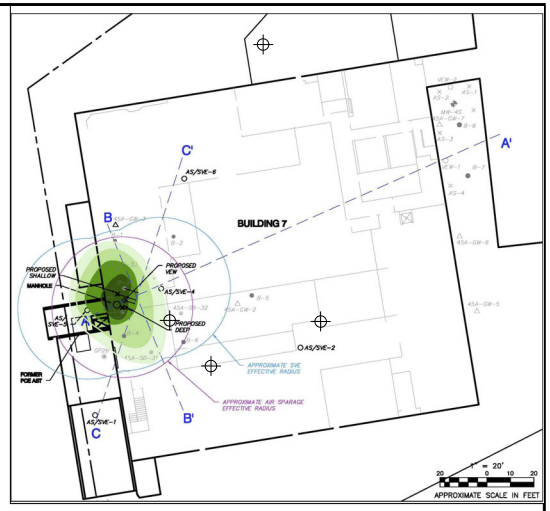


Figure 7: Injection Point Locations (Phases 3 & 4)

w/ Anticipated Radii of Contact Potential

2016 Soil Boring Location

2018 Soil Boring Location

Drawing adapted from Figure 3 presented in August 2012 RemedialAction Work Plan prepared by HRP Engineering, P.C.

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

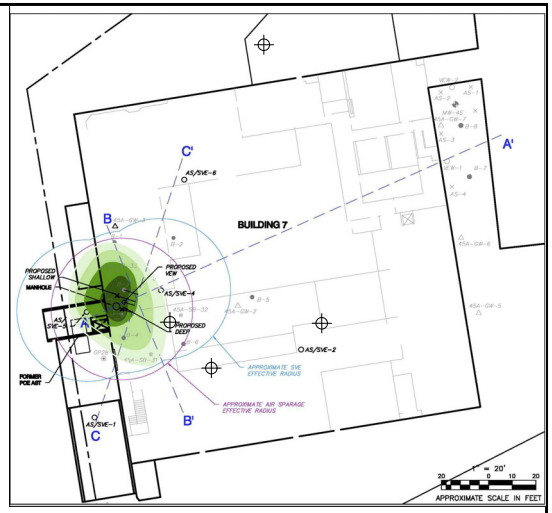


Figure 8: Post Map April 2021 Soil Analytical Results

Eurofins Test America

SB-1

Depth (ft BGS)	PCE (ug/Kg)
20-24	7,100,000
24-28	37,000,000
28-32	9,700
36-40	16,000

SB-2

Depth (ft BGS)	PCE (ug/Kg)
20-24	1,100
24-28	15,000
32-36	160,000
36-40	1,300

SB-3

Depth (ft BGS)	PCE (ug/Kg)
20-24	330
24-28	170
32-36	290
36-40	50

SB-4

Depth (ft BGS)	PCE (ug/Kg)
20-24	60
28-32	200
32-36	640
36-40	1,400

SB-5

Depth (ft BGS)	PCE (ug/Kg)
20-24	4,000
24-28	2,100
28-32	710
36-40	97,000

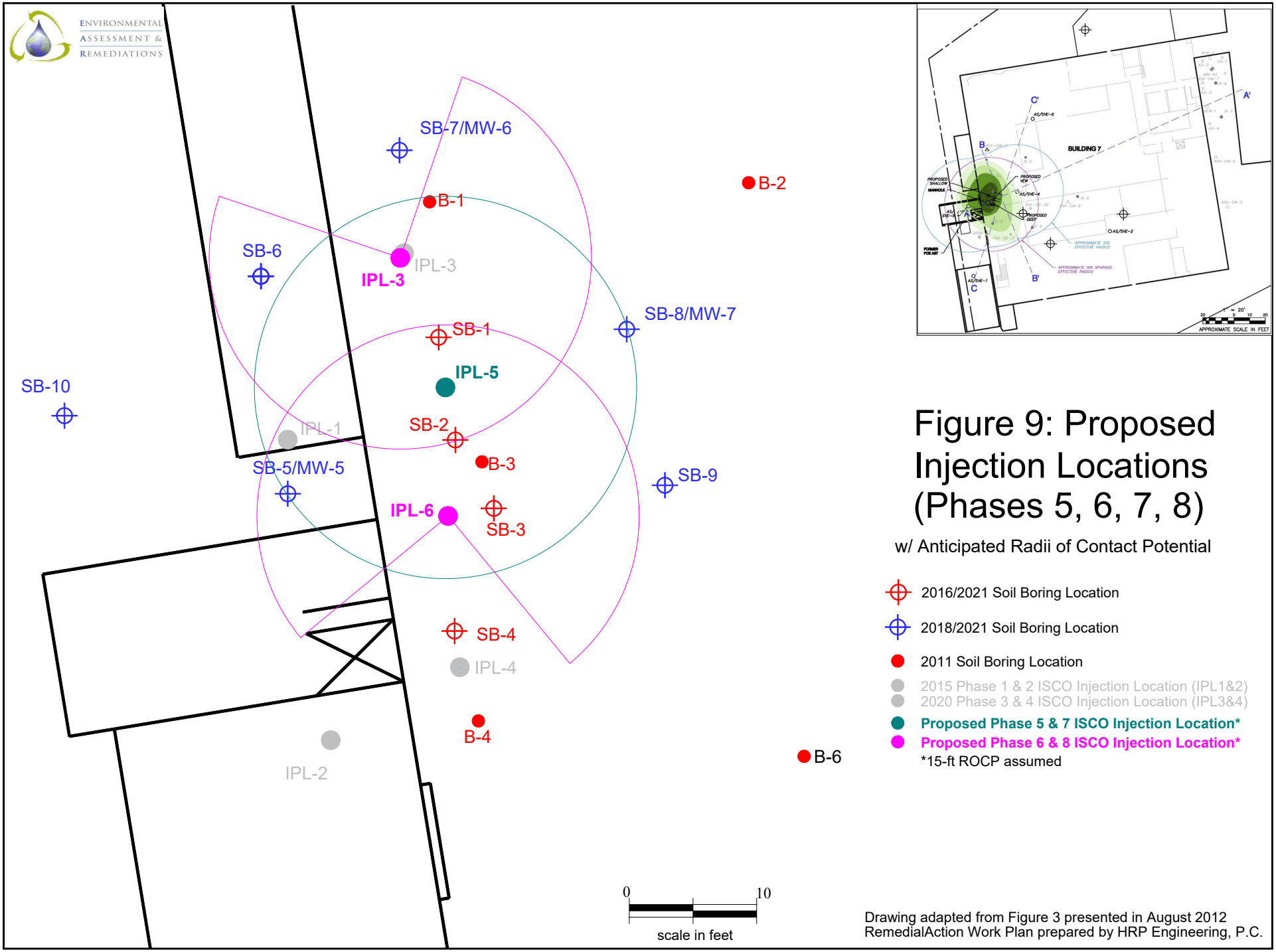
SB-1 SB-2 SB-3 SB-4 SB-5

2021 Soil Boring Location

0 10

scale in feet

Drawing adapted from Figure 3 presented in August 2012 RemedialAction Work Plan prepared by HRP Engineering, P.C.


ENVIRONMENTAL ASSESSMENT & REMEDIATIONS
SB-7/MW-6
B-1
B-2
SB-6
IPL-3
IPL-3
SB-8/MW-7
SB-1
IPL-5
SB-10
IPL-1
SB-2
B-3
SB-5/MW-5
SB-9
IPL-6
SB-3
SB-4
IPL-4
B-4
B-6
IPL-2
0
10
scale in feet
Figure 9: Proposed Injection Locations (Phases 5, 6, 7, 8)
w/ Anticipated Radii of Contact Potential
2016/2021 Soil Boring Location
2018/2021 Soil Boring Location
2011 Soil Boring Location
2015 Phase 1 & 2 ISCO Injection Location (IPL1&2)
2020 Phase 3 & 4 ISCO Injection Location (IPL3&4)
Proposed Phase 5 & 7 ISCO Injection Location*
Proposed Phase 6 & 8 ISCO Injection Location*
*15-ft ROCP assumed
Drawing adapted from Figure 3 presented in August 2012
RemedialAction Work Plan prepared by HRP Engineering, P.C.

Pass & Seymour
45 Sea Cliff Avenue
Glen Cove, NY
NYSDEC Site No. 130053A

Figure 10: Transect A-A' Infographic

PCE Analytical Data (mg/Kg) by Depth
w/ Prior and Proposed Injection
Volumes by Depth

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Depth Below Grade (ft)	SB-5/MW-5		IPL-1		SB-6	IPL-6		SB-2		IPL-5		B-3	IPL-3	IPL-3		SB-1		SB-7/MW-6	B-1	SB-8/MW-7
	2018	2021	2015		2018	2021		2016	2021	2021		2011	2020	2021		2016	2021	2018	2011	2018
	Post Phase 2	Post Phase 4	Phase 1		Delineation	Proposed		Post Phase 2	Post Phase 4	Proposed		Pre ISCO	Phase 2	Proposed		Post Phase 2	Post Phase 4	Delineation	Pre ISCO	Delineation
20				600 gal@20'		21ft				22ft			600 gal@21'							
21			600 gal@22'		2.5		22ft	7.0	1.1		23ft				23ft					0.1
22		4.0												600 gal@23'		3,100	7,100		0.1	
23				600 gal@24'																
24	2.0					25ft				25ft		2,200	600 gal@25'					0.1		
25		2.1	600 gal@26'				26ft		15		26ft				26 ft					
26				600 gal@28'	4.9			4.7						600 gal@27'		2,700	37,000	0.0		0.0
27	0.4									28ft			600 gal@28'		29ft					
28						29ft	30ft				29ft									
29		0.7	600 gal@30'						9.7						28ft					
30																				
31	1.9			600 gal@32'	0.1	32ft	33ft	210		31ft	32ft		600 gal@32'		32ft	40		0.0	0.07	0.0
32			600 gal@34'						160								16			
33															31ft					
34						35ft				34ft	35ft		650 gal@33'							
35				600 gal@36'			36ft							600 gal@36'	36ft					
36			600 gal@38'					0.8	1.3			11	550 gal@37'			1.5		0.0		0.0
37		97			0.4															
38														600 gal@41'						
39	290																			
40																				
41	0.2																			
42																				
43																				

- Pilot Test Phase 1 ISCO; PersulfOx
- Pilot Test Phase 2 ISCO; PersulfOx
- PCE concentrations above Commercial SCOs (>150 mg/kg)
- PCE concentrations above Industrial SCOs (>300 mg/kg)
- Phase 3 ISCO; PersulfOx
- Phase 4 ISCO; PersulfOx
- Proposed Phase 5 ISCO; PersulfOx
- Proposed Phase 6 ISCO; PersulfOx
- Proposed Phase 7 ISCO; PersulfOx
- Proposed Phase 8 ISCO; PersulfOx

Values with a unit of mg/kg are PCE from reported laboratory analytical data
Sample intervals outlined in red exceed Commercial Use Clean Up Objectives

Pass & Seymour
45 Sea Cliff Avenue
Glen Cove, NY
NYSDEC Site No. 130053A

Figure 11: Transect B-B' Infographic

PCE Analytical Data (mg/Kg) by Depth
w/ Prior and Proposed Injection
Volumes by Depth

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Depth Below Grade (ft)	SB-5/MW-5		IPL-2		IPL-4		SB-4		IPL-6		SB-2		B-4	B-3	SB-3		SB-9
	2018	2021	2015		2020		2016	2021	2021		2016	2021	2011	2011	2016	2021	2018
	Delineation	Post Phase 4	Phase 1		Phase 2		Post Phase 2	Post Phase 4	Proposed		Post Phase 2	Post Phase 4	Pre ISCO	Pre ISCO	Post Phase 2	Post Phase 4	Delineation
20			600 gal@21'						21ft								
21					600 gal@22'					22ft							
22		4.0		600 gal@23'		600 gal@23'	0.2	0.1			7.0	1.1			0.3	0.3	0.4
23			600 gal@24'														
24	2.0								25ft					2,200			
25		2.1		600 gal@26'	600 gal@26'			ns		26ft		15				0.2	
26			250 gal			600 gal@27'											
27	0.4			600 gal@26'	600 gal@26'		0.2				4.7				0.0		0.0
28			350 gal@28						29ft								
29		0.7		600 gal@30'	600 gal@30'	600 gal@31'		0.2		30ft			50				
30																	
31	1.9		600 gal@32'	600 gal@30'	600 gal@30'		37		32ft		210				0.0		0.0
32						600 gal@35'		0.6		33ft		160				0.3	
33				600 gal@34'	600 gal@34'				35ft						0.0		
34										36ft							
35			600 gal@36'														
36				600 gal@38'	600 gal@38'	600 gal@38'	0.1	1.4			0.8	1.3		11	0.0	0.1	0.0
37		97															
38																	
39	290												0.2				
40																	
41	0.2																
42																	
43																	

- Pilot Test Phase 1 ISCO; PersulfOx
- Pilot Test Phase 2 ISCO; PersulfOx
- PCE concentrations above Commercial SCOs (>150 mg/kg)
- PCE concentrations above Industrial SCOs (>300 mg/kg)
- Phase 3 ISCO; PersulfOx
- Phase 4 ISCO; PersulfOx
- Proposed Phase 5 ISCO; PersulfOx
- Proposed Phase 6 ISCO; PersulfOx
- Proposed Phase 7 ISCO; PersulfOx
- Proposed Phase 8 ISCO; PersulfOx

Values with a unit of mg/kg are PCE from reported laboratory analytical data
Sample intervals outlined in red exceed Commercial Use Clean Up Objectives

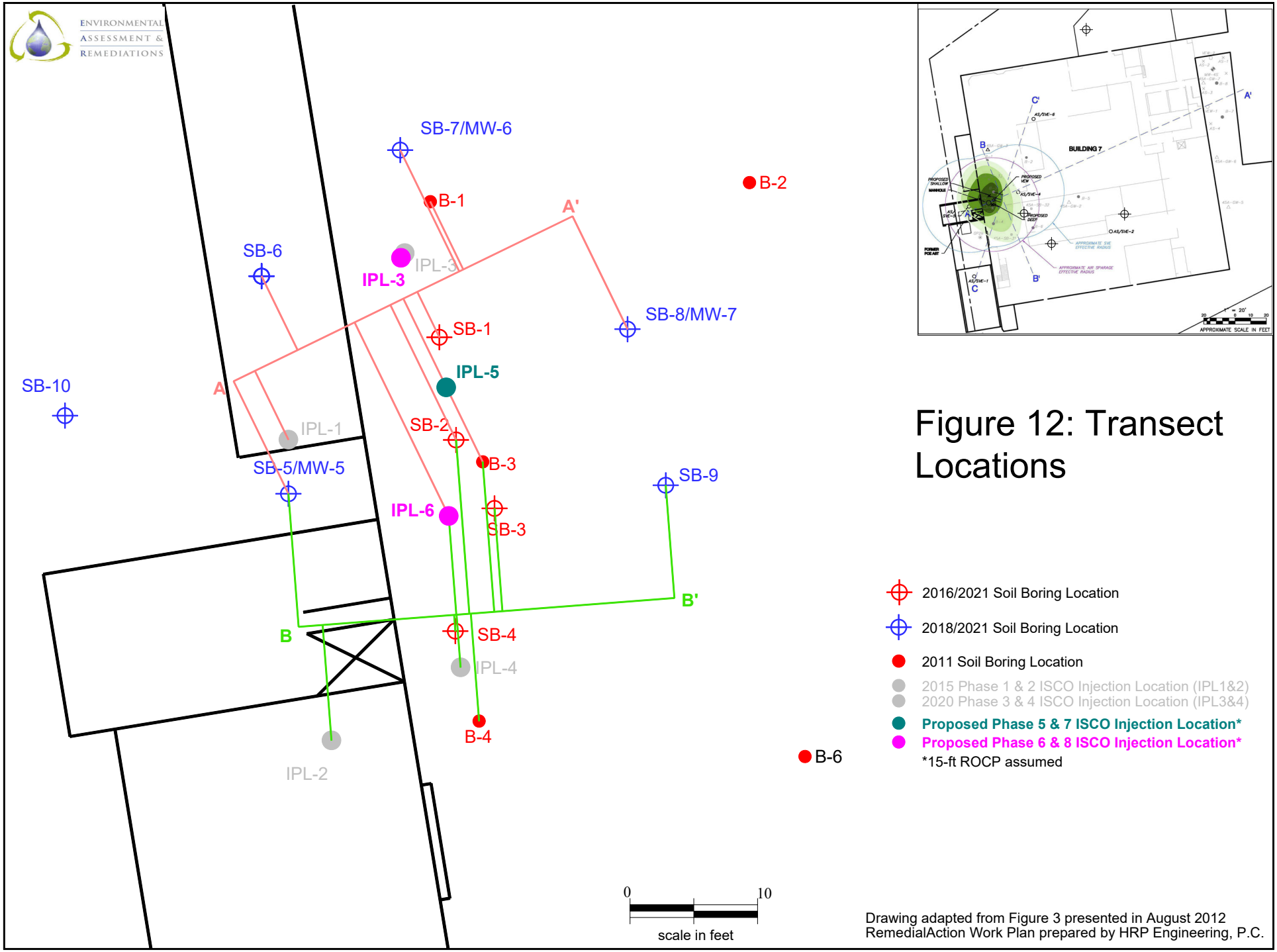


Figure 12: Transect Locations

APPENDIX A: BORING/WELL LOGS

225 Atlantic Avenue
Patchogue, NY 11772
Office: 631.447.6400
Fax: 631.447.6497
Toll-Free: 1.888.EAR.6789
E-mail: info@enviro-asmnt.com
www.Enviro-Asmnt.com

Installation Date 6/13/2018

DRILLING LOG - Monitoring Well Installation

DRILLING DETAILS

PROJECT/SITE NAME: DEC- GlenCove45
SITE ADDRESS: Pass & Seymour
45 Sea Cliff Ave
Glen Cove, NY
SITE ID NUMBER: 130053A
WELL ID: SB-5/MW-5
DRILLING METHOD: Direct Push (6610 GeoProbe)
DRILLING COMPANY: AARCO
HEAD DRILLER: D. Pacheco
LOGGED BY: T. Vicale
BOREHOLE DIAMETER: 3"
SAMPLE METHOD: Macro Core (MC)
DEPTH-TO-WATER: 22.62
TOTAL WELL DEPTH: 31'

WELL CONSTRUCTION

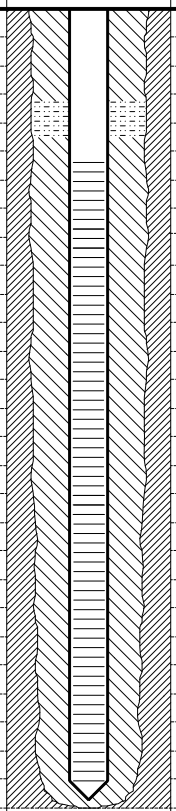
CASING
Type PVC Diameter 1" Length 15'

SCREEN
Type PVC Diameter 1" Slot 10 Length 15'

GRAVEL PACK: Well Gravel
CASING SEAL: Bentonite (0.5'-2.5' bg.)
SECURITY: 5" Steel Boltdown Manhole Cover
1" Locking J-plug
FINISH: 1.5' x 1.5' Concrete Pad
COMMENTS: 7.5' East of building wall
17' from SB-10
16.5' from SB-6

Soil Lithology/Field Observations

Depth Below Grade	Depth	Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
	0'-20'	Direct Push, no lithology logged				
	20'-25'	Direct Push, no lithology logged	MC	20'-22.5'	17.3 ppm	
			MC	22.5'-25'	196 ppm	
	25'-30'	Direct Push, no lithology logged	MC	25'-27.5'	110.5 ppm	
			MC	27.5'-30'	17.4 ppm	
	30'-35'	Direct Push, no lithology logged	MC	30'-32.5'	147.5 ppm	
			MC	32.5'-35'	85.8 ppm	
	35'-40'	Direct Push, no lithology logged	MC	35'-37.5'	2430 ppm	
			MC	37.5'-40'	6669 ppm	
	40'-45'	Direct Push, no lithology logged	MC	40'-42.5'	46.9 ppm	
			MC	42.5'-45'	119.6 ppm	
	45'-50'	Direct Push, no lithology logged	MC	45'-47.5'	180.6 ppm	
			MC	47.5'-50'	56.6 ppm	
TWD 31'						



Backfill/Gravel  Bentonite 

225 Atlantic Avenue
Patchogue, New York 11772
Tel (631) 447-6400
Fax (631) 447-6497
Email Info@Enviro-Asmnt.com
www.Enviro-Asmnt.com

Installation Date 6/12/2018

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GlenCove45
SITE ADDRESS	Pass & Seymour
	45 Sea Cliff Ave
	Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-6
PURPOSE	Investigation
DRILLING METHOD	Direct Push (6610 GeoProbe)
DRILLING COMPANY	AARCO
HEAD DRILLER	D. Pacheco
LOGGED BY	T. Vicale
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	Macro Core (MC)
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Macro-Core 2" internal diameter, 5' length

GROUNDWATER SAMPLING
Type: No groundwater samples were collected

BACKFILL	Cemeent/ Bentonite mix via tremie method
FINISH	na
COMMENTS	16.5' North from MW-5
	15.5' NE from SB-10

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged	-	-	-	-
20'-25'	Direct Push, no lithology logged	MC	20'-22.5'	96.5 ppm	
		MC	22.5-25'	49.5 ppm	
25'-30'	Direct Push, no lithology logged	MC	25'-27.5'	78.8 ppm	
		MC	27.5'-30'	1.0 ppm	
30-35'	Direct Push, no lithology logged	MC	30'-32.5'	1.0 ppm	
		MC	32.5'-35'	12.6 ppm	
35'-40'	Direct Push, no lithology logged	MC	35'-37.5'	106.1 ppm	
		MC	37.5'-40'	123.9 ppm	

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

225 Atlantic Avenue
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Installation Date 6/14/2018

DRILLING LOG - Monitoring Well Installation

DRILLING DETAILS

PROJECT/SITE NAME: DEC- GlenCove45
SITE ADDRESS: Pass & Seymour
45 Sea Cliff Ave
Glen Cove, NY
SITE ID NUMBER: 130053A
WELL ID: SB-7/MW-6
DRILLING METHOD: Direct Push (6610 GeoProbe)
DRILLING COMPANY: AARCO
HEAD DRILLER: D. Pacheco
LOGGED BY: J. Lohan
BOREHOLE DIAMETER: 3"
SAMPLE METHOD: Macro Core (MC)
DEPTH-TO-WATER: 23'
TOTAL WELL DEPTH: 28'

WELL CONSTRUCTION

CASING
Type PVC Diameter 1" Length 15'

SCREEN
Type PVC Diameter 1" Slot 10 Length 15'

GRAVEL PACK: Well Gravel (2.5' - 30' bg.)
CASING SEAL: Bentonite (0.5'-2.5' bg.)
SECURITY: 5" Steel Boltdown Manhole Cover
1" Locking J-plug
FINISH: 1.5' x 1.5' Concrete Pad
COMMENTS: 15' from SB-11
11' West of wall corner
16' North of SB-8/MW-7

Depth Below Grade	Well Design	Soil Lithology/Field Observations					
		Depth	Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
		0'-20'	Direct Push, no lithology logged				
		20'-25'	Direct Push, no lithology logged	MC	20'-22.5'	2.5 ppm	
				MC	22.5'-25'	3.0 ppm	
		25'-30'	Direct Push, no lithology logged	MC	25'-27.5'	0.3 ppm	
				MC	27.5'-30'	0.2 ppm	
		30'-35'	Direct Push, no lithology logged	MC	30'-32.5'	0.1 ppm	
				MC	32.5'-35'	0.4 ppm	
		35'-40'	Direct Push, no lithology logged	MC	35'-37.5'	0.3 ppm	
				MC	37.5'-40'	0.7 ppm	
TWD 30'	NOT TO SCALE						

Backfill/Gravel Bentonite

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Installation Date 6/14/2018

DRILLING LOG - Monitoring Well Installation

DRILLING DETAILS

PROJECT/SITE NAME: DEC- GlenCove45
SITE ADDRESS: Pass & Seymour
45 Sea Cliff Ave
Glen Cove, NY
SITE ID NUMBER: 130053A
WELL ID: SB-8/MW-7
DRILLING METHOD: Direct Push (6610 GeoProbe)
DRILLING COMPANY: AARCO
HEAD DRILLER: D. Pacheco
LOGGED BY: T. Vicale
BOREHOLE DIAMETER: 3"
SAMPLE METHOD: Macro Core (MC)
DEPTH-TO-WATER: 23'
TOTAL WELL DEPTH: 28'

WELL CONSTRUCTION

CASING
Type PVC Diameter 1" Length 15'

SCREEN
Type PVC Diameter 1" Slot 10 Length 15'

GRAVEL PACK: Well Gravel (2.5' - 30' bg.)
CASING SEAL: Bentonite (0.5'-2.5' bg.)
SECURITY: 5" Steel Boltdown Manhole Cover
1" Locking J-plug
FINISH: 1.5' x 1.5' Concrete Pad
COMMENTS: 15.6' from SB-12
15' from SB-9
35' from South Wall Corner

Depth Below Grade	Well Design	Soil Lithology/Field Observations						
		Depth	Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
		0'-20'	Direct Push, no lithology logged				
		20'-25'	Direct Push, no lithology logged	MC	20'-22.5'	122.0 ppm	
				MC	22.5'-25'	114.9 ppm	
		25'-30'	Direct Push, no lithology logged	MC	25'-27.5'	2.4 ppm	
				MC	27.5'-30'	0.6 ppm	
		30'-35'	Direct Push, no lithology logged	MC	30'-35'	1.5 ppm	
			- Difficult removal of sleeve, partial recovery				
		35'-40'	Direct Push, no lithology logged	MC	35'-40'	0.8 ppm	
			- Difficult removal of sleeve, partial recovery				
TWD 30'	NOT TO SCALE						

Backfill/Gravel Bentonite

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Installation Date 6/13/2018

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GlenCove45
SITE ADDRESS	Pass & Seymour
	45 Sea Cliff Ave
	Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-9
PURPOSE	Investigation
DRILLING METHOD	Direct Push (6610 GeoProbe)
DRILLING COMPANY	AARCO
HEAD DRILLER	D. Pacheco
LOGGED BY	T. Vicale
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	Macro Core (MC)
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Macro-Core 2" internal diameter, 5' length

GROUNDWATER SAMPLING
Type: No groundwater samples were collected

BACKFILL	Cement/ Bentonite mix via tremie method
FINISH	na
COMMENTS	22.5' from West building wall
	20.5' from South building wall
	15' South of MW-7

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged	-	-	-	-
20'-25'	Direct Push, no lithology logged	MC	20'-22.5'	53.9 ppm	
		MC	22.5-25'	31.8 ppm	
25'-30'	Direct Push, no lithology logged	MC	25'-27.5'	1.0ppm	
		MC	27.5'-30'	0.4 ppm	
30-35'	Direct Push, no lithology logged	MC	30'-32.5'	1.0 ppm	
		MC	32.5'-35'	0.6 ppm	
35'-40'	Direct Push, no lithology logged	MC	35'-37.5''	0.3 ppm	
		MC	37.5'-40	0.5 ppm	

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

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Installation Date 6/13/2018

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GlenCove45
SITE ADDRESS	Pass & Seymour
	45 Sea Cliff Ave
	Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-10
PURPOSE	Investigation
DRILLING METHOD	Direct Push (6610 GeoProbe)
DRILLING COMPANY	AARCO
HEAD DRILLER	D. Pacheco
LOGGED BY	T. Vicale
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	Macro Core (MC)
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Macro-Core 2" internal diameter, 5' length

GROUNDWATER SAMPLING
Type: No groundwater samples were collected

BACKFILL	Cement/ Bentonite mix via tremie method
FINISH	na
COMMENTS	19.5' to East wall of building
	15.5' to SB-6
	17' to MW-5

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged	-	-	-	-
20'-25'	Direct Push, no lithology logged	MC	20'-22.5'	347.9 ppm	
		MC	22.5-25'	763.0 ppm	
25'-30'	Direct Push, no lithology logged	MC	25'-27.5'	143.5 ppm	
		MC	27.5'-30'	8.4 ppm	
30-35'	Direct Push, no lithology logged	MC	30'-32.5'	4.0 ppm	
		MC	32.5'-35'	7.9 ppm	
35'-40'	Direct Push, no lithology logged	MC	35'-40'	80.8 ppm	
	- Difficult to remove sleeve, partial recovery				

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

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Installation Date 04/22/2021

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GLENCOVE45
SITE ADDRESS	Pass & Seymour 45 Sea Cliff Ave Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-1
PURPOSE	Investigation
DRILLING METHOD	Direct push (GeoProbe 7822DT)
DRILLING COMPANY	Environmental Assessment & Remediations
HEAD DRILLER	E. Lucero
LOGGED BY	J. Lohan
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	~22'
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Geoprobe® Macro Core (MC) Liners and Stop-Pin System. Sample collected from 20'-24', 24'-28, 28'-32', & 36'-40' submitted for laboratory analysis

GROUNDWATER SAMPLING
Type: NA

BACKFILL	Bentonite Grout
FINISH	Bentonite Grout
COMMENTS	SB-1 is located 28.75' N of northern side of the entryway doorframe, 6.85' E of western wall, and 62.75' S of northern wall of building 7.

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged.	-	-	-	-
20'-24'	2.25' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	20'-24'	4,387ppm	56
24'-28'	1.90' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	24'-28'	3,472ppm	48
28'-32'	0.70' Brown medium sand, little fine sand, little coarse sand, trace fine gravel; wet.	MC	28'-32'	118ppm	48
	1.20' Tan silty medium sand, little fine sand; wet.				
32'-36'	0.80' Brown medium sand, little fine sand, little coarse sand, trace fine gravel; wet.	MC	32'-36'	32.6ppn	25
	0.20' Cobble.				
36'-40'	1.40' Brown silty medium sand, little fine sand, little coarse sand, trace fine grave; wet.	MC	36'-40'	93.7ppm	44
	0.35' Tan medium sand, some fine sand, little coarse sand; wet.				

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

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Installation Date 04/22/2021

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GLENCOVE45
SITE ADDRESS	Pass & Seymour 45 Sea Cliff Ave Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-2
PURPOSE	Investigation
DRILLING METHOD	Direct push (GeoProbe 7822DT)
DRILLING COMPANY	Environmental Assessment & Remediations
HEAD DRILLER	E. Lucero
LOGGED BY	J. Lohan
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	~22'
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Geoprobe® Macro Core (MC) Liners and Stop-Pin System. Sample collected from 20'-24', 24'-28, 32'-36', & 36'-40' submitted for laboratory analysis

GROUNDWATER SAMPLING
Type: NA

BACKFILL	Bentonite Grout
FINISH	Bentonite Grout
COMMENTS	SB-2 is located 20.15' N of northern side of the entryway doorframe, 6.9' E of western wall, and 71.25' S of northern wall of building 7.

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged.	-	-	-	-
20'-24'	1.90' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	20'-24'	52.2ppm	48
24'-28'	1.50' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	24'-28'	138ppm	38
28'-32'	0.65' Brown coarse sand, little fine sand, little medium sand, trace fine gravel;wet.	MC	28'-32'	0.0ppm	30
	0.55' Tan silty medium sand, trace fine sand, trace coarse sand; wet.				
32'-36'	1.35' Brown silty medium sand, little fine sand, trace coarse sand, trace fine gravel; wet.	MC	32'-36'	17.5ppm	28
	0.55' Brown coarse sand, little fine sand, little medium sand, trace fine gravel; wet.				
36'-40'	1.50' Brown to dark brown coarse sand, little fine sand, little medium sand, trace fine gravel; wet.	MC	36'-40'	7.4ppm	38

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

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Installation Date 04/21/2021

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GLENCOVE45
SITE ADDRESS	Pass & Seymour 45 Sea Cliff Ave Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-3
PURPOSE	Investigation
DRILLING METHOD	Direct push (GeoProbe 7822DT)
DRILLING COMPANY	Environmental Assessment & Remediations
HEAD DRILLER	E. Lucero
LOGGED BY	J. Lohan
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	~22'
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Geoprobe® Macro Core (MC) Liners and Stop-Pin System. Sample collected from 20'-24', 24'-28, 32'-36', & 36'-40' submitted for laboratory analysis

GROUNDWATER SAMPLING
Type: NA

BACKFILL	Bentonite Grout
FINISH	Bentonite Grout
COMMENTS	SB-3 is located 13.65' N of northern side of the entryway doorframe, 9.15' E of western wall, and 78.4' S of northern wall of building 7.

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged.	-	-	-	-
20'-24'	1.00' Brown medium sand, little fine sand, trace coarse sand; wet.	MC	20'-24'	19.7ppm	46
	0.85' Brown silty fine sand, little medium sand; wet.				
24'-28'	2.00' Brown silty medium sand, litttle fine sand, trace coarse sand; wet.	MC	24'-28'	10.8ppm	50
28'-32'	1.70' Brown silty medium sand, litttle fine sand, trace coarse sand; wet.	MC	28'-32'	3.9ppm	43
32'-36'	0.60' Brown coarse sand, some medium sand, little fine sand; wet.	MC	32'-36'	17.5ppm	28
	1.50' Brown coarse sand, some medium sand, little fine sand, trace fine gravel; wet.				
36'-40'	0.70' Brown coarse sand, some medium sand, little fine sand, trace fine gravel; wet.	MC	36'-40'	7.7ppm	35
	0.70' Brown coarse sand, some medium sand, little fine sand, little fine gravel; wet.				

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

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Installation Date 04/21/2021

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GLENCOVE45
SITE ADDRESS	Pass & Seymour 45 Sea Cliff Ave Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-4
PURPOSE	Investigation
DRILLING METHOD	Direct push (GeoProbe 7822DT)
DRILLING COMPANY	Clearwater Drilling Inc.
HEAD DRILLER	E. Lucero
LOGGED BY	J. Lohan
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	~22'
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Geoprobe® Macro Core (MC) Liners and Stop-Pin System. Sample collected from 20'-24', 28'-32, 32'-36', & 36'-40' submitted for laboratory analysis

GROUNDWATER SAMPLING
Type: NA

BACKFILL	Bentonite Grout
FINISH	Bentonite Grout
COMMENTS	SB-4 is located 5.4' N of northern side of the Entryway doorframe, 5.2' E of western wall, and 87' S of northern wall of building 7.

Depth Below Grade	Soil Lithology/Field Observations Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged.	-	-	-	-
20'-24'	0.15' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	20'-24'	33.9ppm	49
	0.20' Brown silty fine sand, trace medium sand, trace coarse sand; wet.				
	0.40' Brown silty medium sand, little fine sand, trace coarse sand; wet.				
	0.10' Brown silty fine sand, trace medium sand, trace coarse sand; wet.				
	0.30' Brown silty medium sand, little fine sand, trace coarse sand; wet.				
	0.80' Brown silty fine sand, trace medium sand, trace coarse sand; wet.				
24'-28'	1.90' Tan silty fine medium sand, little fine sand, trace coarse sand; wet.	MC	24'-28'	5.1ppm	48
28'-32'	0.25' Brown silty fine medium sand, little fine sand, trace coarse sand; wet.	MC	28'-32'	26.0ppm	51
	0.75' Brown coarse sand, little medium sand, trace fine sand, trace fine gravel; wet.				
	0.20' Tan silty medium sand, trace fine sand, trace coarse sand, trace fine gravel; wet.				
	0.45' weathered rock.				
	0.40' Tan silty medium sand, trace fine sand, trace coarse sand, trace fine gravel; wet.				
32'-36'	2.20' Brown medium sand, little fine sand, trace silt, trace coarse sand; wet.	MC	32'-36'	100.3ppm	55
36'-40'	0.40' Tan medium sand, little fine sand, little coarse sand; wet.	MC	36'-40'	28.1	45
	0.20' Tan silty fine sand, little medium sand; wet.				
	1.20' Tan coarse sand, little medium sand; wet.				

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

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Installation Date 04/22/2021

DRILLING LOG - Temporary Borehole Installation

DRILLING DETAILS

PROJECT/SITE NAME	DEC-GLENCOVE45
SITE ADDRESS	Pass & Seymour 45 Sea Cliff Ave Glen Cove, NY
SITE ID NUMBER	130053A
BORING I.D.	SB-5
PURPOSE	Investigation
DRILLING METHOD	Direct push (GeoProbe 7822DT)
DRILLING COMPANY	Environmental Assessment & Remediations
HEAD DRILLER	E. Lucero
LOGGED BY	J. Lohan
BOREHOLE DIAMETER	3"
DEPTH-TO-WATER	~22'
TOTAL BORING DEPTH	40'

SOIL SAMPLING
Type: Geoprobe® Macro Core (MC) Liners and Stop-Pin System. Sample collected from 20'-24', 24'-28, 28'-32', & 36'-40' submitted for laboratory analysis

GROUNDWATER SAMPLING
Type: NA

BACKFILL	Bentonite Grout
FINISH	Bentonite Grout
COMMENTS	SB-5 is located 8.1' W of W wall of building 7, 4.15' N of S edge of concrete platform, & 5.30' E of W curb of concrete platform.

Depth Below Grade	Soil Lithology/Field Observations: Description/Classification	Sample Type	Screening Interval	PID Reading	Percent Recovery
0'-20'	Direct Push, no lithology logged.	-	-	-	-
20'-24'	1.65' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	20'-24'	142ppm	41
24'-28'	1.30' Brown silty medium sand, little fine sand, trace coarse sand; wet.	MC	24'-28'	82.0ppm	33
28'-32'	0.55' Brown coarse sand, little fine sand, little medium sand, trace fine gravel; wet. 1.10' Brown to tan silty medium sand, little fine sand; wet.	MC	28'-32'	38.4ppm	41
32'-36'	1.30' Brown silty medium sand, little coarse sand, trace fine sand, trace fine gravel; wet.	MC	32'-36'	7.0ppn	33
36'-40'	1.80' Brown silty medium sand, little fine sand, trace coarse sand, trace fine gravel; wet.	MC	36'-40'	447ppm	45

"Trace", 1 - 10% "Some", 20 - 30%
"Little", 10 - 20% "And", 30 - 50%

APPENDIX B: LABORATORY ANALYTICAL REPORTS

Provided Under Separate Cover Due to File Size