GROUNDWATER CONSTRUCTION COMPLETION REPORT

HARBOR VIEW SQUARE
68 WEST FIRST STREET
OSWEGO, NEW YORK
NYS BCP SITE NO. C738040

Prepared for:

HARBOR VIEW SQUARE, LLC

Prepared by:

D&B ENGINEERS AND ARCHITECTS, DPC

Certified by:

JEFFREY R. HOLT, P.E.

DECEMBER 2021
REV. 1 - APRIL 2022

GROUNDWATER CONSTRUCTION COMPLETION REPORT
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

List of Figures

List of Tables

TABLE OF CONTENTS (CONTINUED)

List of Appendices

LIST OF ACRONYMS

Acronym	Definition
AAR	Alternative Analysis Report
ACM	Asbestos Containing Material
ASTM	American Society for Testing and Materials
bgs	Below Ground Surface
Contractor	Paragon Environmental Construction, Inc.
CAMP	Community Air Monitoring Plan
Department	New York State Department of Environmental Conservation
DER-10	Division of Environmental Remediation Technical Guidance for Site Remediation and Investigation
DFARs	Daily Field Activity Reports
DUSRs	Data Usability Summary Reports
DER	Division of Environmental Remediation
D&B	D&B Engineers and Architects
EC	Engineering Control
ELAP	Environmental Laboratory Approval Program
Engineer	Holt Consulting
ERP	Environmental Restoration Program
HASP	Health and Safety Plan
IC	Institutional Control
IRM	Interim Remedial Measures
NAPL	Non-Aqueous Phase Liquid
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOL	New York State Department of Labor
OSHA	Occupational Health and Safety Administration
Owner	Harbor View Square, LLC
PCBs	Polychlorinated Biphenyls
PID	Photoionization Detector
PAHs	Polycyclic Aromatic Hydrocarbons
P.E.	Professional Engineer
PPE	Personal Protective Equipment
ppm	Parts per Million
Project Manager	Synapse Risk Management, LLC
RAR	Remedial Alternatives Report
Ramie	Ramie Surveying, P.C.
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design

LIST OF ACRONYMS (continued)

Acronym	Definition
RI	Remedial Investigation
SAC	State Assistance Contract
SCOs	Soil Cleanup Objectives
Site	68 West First Street
SMP	Site Management Plan
SSV	Site-Specific Variance
SVMS	Soil Vapor Mitigation System
SVOCs	Semivolatile Organic Compounds
TCL	Targeted Compound List
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
ug/m^3	Micrograms per Cubic Meter
ug/kg	Micrograms per Kilogram
VOCs	Volatile Organic Compounds

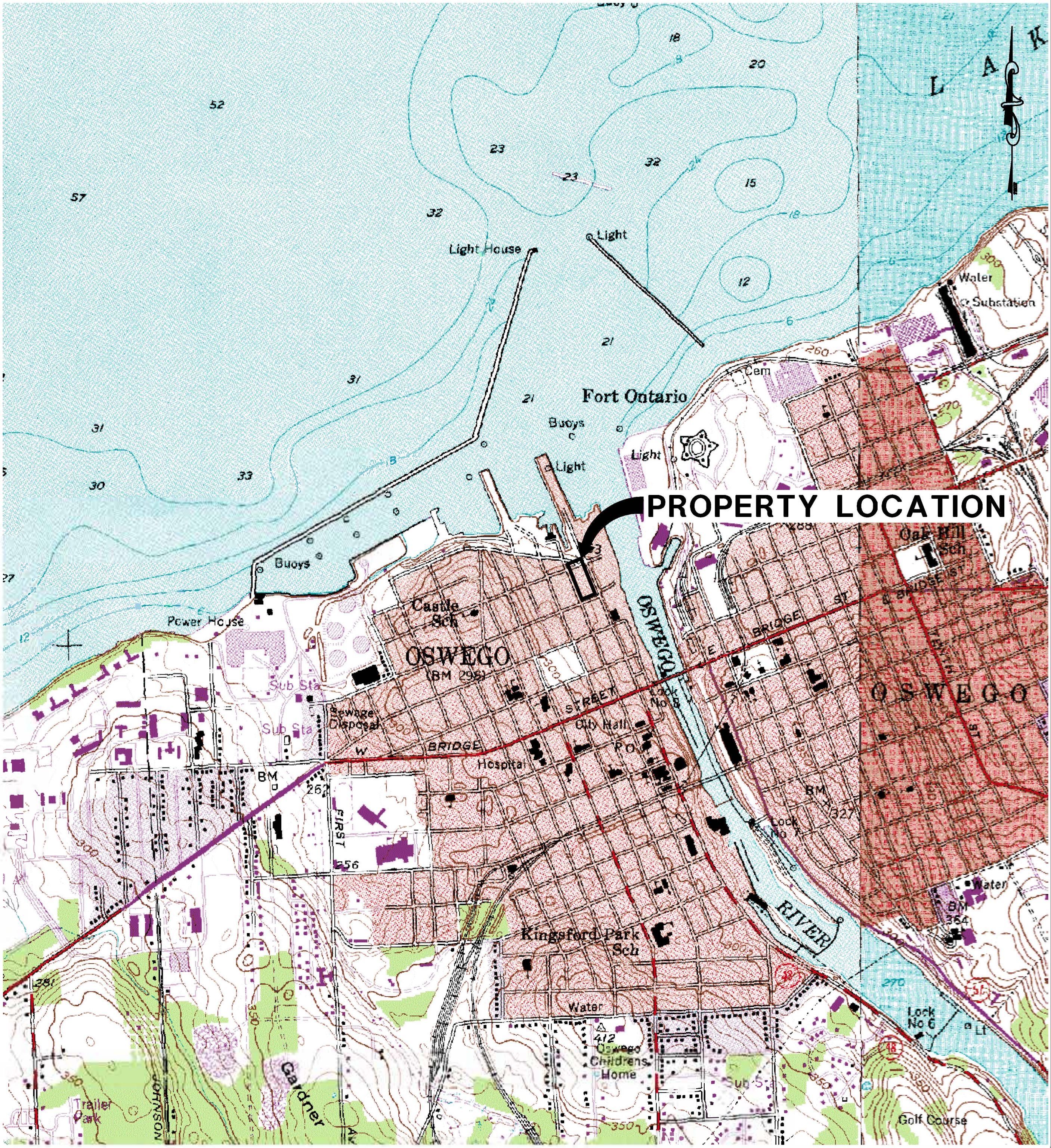
1.0 BACKGROUND AND SITE DESCRIPTION

1.1 Project Background

The Harbor View Square Site (Site) is located at 68 West First Street in the City of Oswego, New York (**Figure 1-1** – **Site Location Map**). The site is a 2.438-acre block bounded by West First Street to the east, West Second Street to the west, West Schuyler Street to the south, and Lake Street to the north (**Figure 1-2** – **Pre-Remediation Site Plan**). Note that the Site buildings shown in **Figure 1-2** were demolished to their concrete slabs between December 2018 and January 2019. **Figure 1-3 – Site Plan** shows the site layout as of 2021. The Site was originally investigated under the Environmental Restoration Program (ERP) as Site No. E738040, but is now owned by Harbor View Square, LLC (Volunteer), and underwent remediation under the Brownfield Cleanup Program, (Site No. C738040). The Volunteer entered into a Brownfield Cleanup Agreement (BCA) (Index No. C738040-11-16) with the New York State Department of Environmental Conservation (NYSDEC) in January 2017 for the Site. The New York State Department of Environmental Conservation is managing the off-site contamination under Harbor View Square – Off-Site (Site No. C738040A), which includes the off-site groundwater plume and off-site soil vapor.

This Groundwater Construction Completion Report (CCR) has been prepared to document the remedial activities conducted at the Site in accordance with the site-specific Work Plan for Reagent Injection (Holt, 2021) approved by the NYSDEC, as well as the requirements set forth in NYSDEC's Division of Environmental Remediation Technical Guidance for Site Remediation and Investigation (DER-10). A Soil and Sub-Slab Depressurization System CCR will be submitted for soil remediation efforts under a separate cover and both will be incorporated by reference, including a site management plan (SMP) by reference into a Final Engineering Report (FER) for the Site.

Remedial activities conducted at the Site were completed under the direction and guidance of Synapse Risk Management, LLC (Synapse) and Jeffrey R. Holt, P.E. (Holt), serving as the Engineer of Record for the Site. The information contained herein has been compiled by D&B Engineers and Architects, DPC (D&B) on behalf of the Volunteer utilizing all available information provided to both Synapse and the Engineer of Record, Jeffrey R. Holt, P.E.



SOURCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLES: OSWEGO WEST, N.Y., 1954, PHOTOREVISED 1978 AND OSWEGO EAST, N.Y., 1954, PHOTOREVISED 1978.

APPROXIMATE GRAPHIC SCALE:

0 2000' 4000'

P: EPA
5/18/17
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-SL3.DWG

	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	**SITE LOCATION MAP**	PROJECT NO.: HSGVIS-24-16-05 DATE: MAY 2017 FIGURE NO.: 1-1

LEGEND

APPROXIMATE SITE BOUNDARY

NOTES:

1. 2015 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.

0 60' 120'

GRAPHIC SCALE

	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	PRE-REMEDIATION SITE PLAN	PROJECT NO.: HSGVIS-24-16-05 DATE: APRIL 2021 FIGURE NO.: 1-2

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

F:\5277\dwg\5277-C-SP07.dwg, AERIAL PROP PLAN, 6/15/2021 2:39:23 PM, rferrell

APPROXIMATE SITE BOUNDARY

MONITORING WELLS

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.

0 60' 120'

GRAPHIC SCALE

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

F:\5277\dwg\5277-C-SP10.dwg, AERIAL PROP PLAN, 8/30/2021 10:42:49 AM, rferrell

	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	SITE PLAN	PROJECT NO.: HSGVIS-24-16-05 DATE: APRIL 2021 FIGURE NO.: 1-3

1.2 Site Description

The Site is a 2.438-acre parcel located in the City of Oswego, New York, which is identified as Tax Parcel Number 128.38-03-01 on Oswego County Tax Maps. A Site Boundary Survey including metes and boundary description of the Site and parcel certified by a surveyor licensed to practice in New York State is included as **Appendix A – Environmental Easement**. It should be noted that the included survey depicts an area approximately 2.438-acres in size which is subject to an environmental easement corresponding to the limits of the remediation performed at the Site that will be included in the Site Management Plan (SMP). The environmental easement for the Site prohibits the Site from being used for purposes other than restricted residential, commercial or industrial use, without the express written waiver of such prohibition by NYSDEC. The Site is currently being developed for restricted residential and commercial use.

The Oswego River is located approximately 390 feet to the east of the site, and flows north into Lake Ontario, which, at its nearest point, is located approximately 250 feet north of the site. The area to the west of the site is primarily residential. The area to the south contains a mixture of residential and commercial properties, and to the north there is a municipal parking area, a boat launch, a marina, a United States Coast Guard facility, and a marine museum located on property owned by the Oswego Port Authority. To the east and northeast are industrial properties, including a major oil storage facility, the City of Oswego West Side Excess Flow Management facility, and a cement shipping terminal.

Concurrently with the Site remedial activities discussed herein, the Site has been developed and consists of five on-site buildings including a mixed-use building (Building 1), three six-unit townhomes (Building 1, Building 2, and Building 3), and a maintenance building (**Figure 1-3 – Site Plan**).

1.3 Site History and Previous Investigations

The Site was initially developed as Fort Oswego and was used as a military installation until approximately the mid-1840’s (Pratt and Pratt, 2000). The Site has been used for industrial purposes since at least 1880. Past industrial operations at the site include use as a tinware manufacturing facility, lumberyards, a planning mill, Oswego Casket Company, Global Match Company and machine shops. The Site was also a wire manufacturing facility which was owned and/or operated by the Flexo Wire Company in 1960 and the Copperweld Steel Company, Flexo Wire Division in 1972. The Phase IA Cultural Resource Survey (Pratt and Pratt, 2000) identifies a railroad and railroad sidings along the eastern portion of the Site as recently as the 1960's. These railroads were removed by the mid-1970's.

From the mid-1980's to the mid-1990's the City of Oswego took ownership of the Site. In 2003, the Site was occupied by the City of Oswego Department of Public Works (DPW), which operated a metal fabricating workshop, a woodworking shop and an automobile maintenance shop at the Site. The DPW also utilized the Site for seasonal storage of equipment, trucks and supplies. Redevelopment of the Site into a mixed-use residential and commercial property began in 2018. The existing Site building used by the DPW was demolished to prepare the Site for redevelopment. The four new buildings have been constructed as part of redevelopment and are in various stages of occupancy.

Prior uses that appear to have led to site contamination include solvent usage and disposal, reportedly associated with the wire drawing operations; coal storage, usage and coal ash disposal; and, metal working operations, including machining and annealing (heat treating). Several investigations of the subsurface Site conditions and evaluations of remedial alternatives have been performed to define the nature and extent of Site contamination resulting from previous industrial activities at the Site. The Remedial Investigation/Remedial Alternatives Report (RI/RAR) was issued by Clough Harbor Associates (CHA) in 2011 and the Supplemental Subsurface Investigation/Alternatives Analysis Report (SSI/AAR) was issued by O'Brien and Gere (OBG) in 2013. These investigation activities were done under the NYSDEC Environmental Restoration Program as Site Number E738040. Following these investigation activities, the NYSDEC issued Record of Decisions (RODs) in 2013: one ROD for OU-1: On-Site Area; and one for OU-2: Off-Site Area. These RODs presented the remedy selected by NYSDEC to address documented contamination at each OU.

The Brownfield Cleanup Program (BCP) Site has only one operable unit. The primary contaminants of concern (COCs) for the Site groundwater include several chlorinated volatile organic compounds (CVOCs); specifically, tetrachloroethene (PCE) and trichloroethene (TCE) and their degradation products, which include 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride (VC). Other COCs of interest include several metals including lead, mercury, arsenic, barium, chromium and copper, as well as polycyclic aromatic hydrocarbons (PAHs).

An Interim Remedial Measure (IRM) was conducted in 2009 at the Site based on conditions observed during the RI activities. The IRM consisted of the removal of a 550-gallon aboveground fuel oil storage tank (AST), removal of a 15,000-gallon buried railroad tank car as well as sludge that was present within the buried railroad tank car (i.e., underground storage tank [UST]) and debris that was present within both tanks.

The AST was located on the west side of the on-site building in a concrete block containment structure. There was no indication that a release had occurred from the tank. The tank was disposed of off-site as scrap metal. There were several small jars with a blue powder within the tank as well as a railroad flare. The materials were removed and containerized for proper off-site disposal.

The 15,000-gallon UST was located on the eastern side of the Site. Its original use is unknown, but it is believed to have been used for recirculation of solvents or waste disposal during operation of the on-site wire drawing facility. The UST appeared to be sound, but the connections and piping had apparently leaked and contaminated surrounding soils. The UST was reportedly underlain by a concrete slab, which was left in-place.

Approximately 4,258 gallons of sludge were removed from the UST along with debris such as wood, rocks and heating coils. The sludge and debris were disposed of off-site. The UST was cleaned prior to off-site disposal using water which was collected and disposed of off-site as well.

Approximately 1 to 2 cubic yards of soil within the excavation were noted to exhibit an odor and generated elevated readings on a photoionization detector. A sample of this material was analyzed using the toxicity characteristic leaching procedure, and trichloroethene was detected in the leachate. This material was utilized to partially backfill the excavation.

Confirmatory samples collected following tank removal activities from the end of the excavations were analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). The only VOC detected was TCE, which was detected in each sample at concentrations less than the unrestricted soil cleanup objective (SCO). Low levels of several polycyclic aromatic hydrocarbon (PAHs) were also detected in each of the four samples. For three of the samples, none of the PAHs were detected at concentrations that exceeded their unrestricted SCOs. For the other sample, two PAHs were detected at concentrations that slightly exceeded their unrestricted SCO and their SCO for the protection of public health for restricted residential use.

Above grade portions of the Site buildings shown on **Figure 1-2** were demolished by others in December 2018 and January 2019. These buildings included a one-story concrete slab-on-grade, steel-framed masonry building which covered approximately 20,900 square feet and an attached one-story building that covered approximately 780 square feet.

1.4 Nature and Extent of Pre-Remediation Impacts

The following provides an overview of the pre-remediation environmental conditions at the Site.

1.4.1 Soil

PAHs and metals were present in soil across the site at concentrations greater than Part 375 SCOs for the protection of public health for restricted residential use. In general, the levels were only slightly greater than the SCOs; however, a few isolated locations contained higher levels. Lead was detected in one location in the southeast corner of the Site at 38,800 parts per million (ppm), compared to its restricted residential SCO for the protection of public health of 400 ppm;

however, samples collected near this location had much lower levels of lead (maximum of 319 ppm), and the next highest lead concentration detected was 875 ppm. Mercury was detected at a maximum concentration of 52 ppm in one location, compared to its restricted residential SCO for the protection of public health of 0.81 ppm. Samples collected near this location had much lower levels of mercury, and the next highest level of mercury detected during the investigation was 4.5 ppm. Benzo(a)pyrene (a PAH) was detected at a maximum concentration of 4.9 ppm, compared to its restricted residential SCO of 1 ppm, and it exceeded 1 ppm in 7 out of 23 samples collected.

PCE, TCE and their degradation products in general were detected in soil at relatively low concentrations, but in some instances at concentrations which exceeded the SCOs for the protection of groundwater. The highest concentrations of VOCs were detected in samples collected to the east of the southern half of the former on-site building, which is also east of the utility lines connecting the former sump and the former 15,000-gallon UST. Of the VOCs detected, TCE was present at the highest concentrations; up to 1 ppm, compared to its SCO for the protection of groundwater of 0.47 ppm. Cis-1,2-DCE was detected at concentrations up to 0.49 ppm, compared to its SCO for the protection of groundwater of 0.25 ppm. Other degradation products of TCE were detected at lower concentrations or not at all in soil. PCE was detected less frequently than TCE, at a maximum concentration of 0.022 ppm, compared to its SCO for the protection of groundwater of 1.3 ppm.

1.4.2 Groundwater

The groundwater results were compared to the Standard Criteria or Guidance (SCG) for groundwater – Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGs 1.1.1) and 6 NYCRR Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations. TCE was detected in groundwater at concentrations that ranged from 4.6 to 280 parts per billion (ppb). The detected TCE concentrations exceeded the SCG for groundwater of 5 ppb in 11 of 12 samples. The highest concentrations of TCE detected on-site were in samples collected from monitoring wells east of the southern sump. This suggests the primary source of groundwater contamination is located in or near the southern portion of the former building, most likely the southern sump, and the groundwater contamination extends east from that area in the direction of groundwater flow.

In addition to TCE, its degradation products were also detected including: cis-1,2-DCE in nine of 12 samples at concentrations ranging from non-detect to 1,100 ppb (SCG of 5 ppb); trans-1,2-DCE in three of 12 samples at concentrations ranging from non-detect to 26 ppb (SCG of 5 ppb); 1,1-DCE in one sample at a concentration of 8 ppb (SCG of 5 ppb) and vinyl chloride in 3 of 12 samples at concentrations ranging from non-detect to 67 ppb (SCG of 2 ppb).

1.4.3 Soil Vapor

PCE, TCE and their degradation products were detected in 2010 and 2012 at elevated concentrations in soil vapor and sub-slab vapor on-site. TCE and PCE were detected in soil vapor and sub-slab vapor samples at concentrations up to 34,000 micrograms per cubic meter (ug/m^3) and 590 ug/m^3, respectively. Indoor air samples were not collected during the investigation, because the buildings were anticipated to be demolished.

2.0 SUMMARY OF THE GROUNDWATER REMEDIAL ACTION

2.1 Remedial Action Objectives

Based on the findings of RI/RAR and the SSI/AAR, the Site-wide Remedial Action Objectives (RAOs) identified in the 2013 ROD for the Site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards. Remove the source of ground or surface water contamination.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.2 Summary of the Selected Remedy

The selected remedy presented in the Record of Decision (ROD) for the Site, issued in November 2013 under the Environmental Restoration Program (ERP), Site ID E738040, included the following elements:

Remedial Design

A remedial design program was to be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program.

Excavation

The ROD specified the excavation and off-site disposal of contaminant source areas, including the soil in and around the two sumps located within the former on-site building, soil surrounding the former underground storage tank (UST) and the soil surrounding the underground utility or process lines connected to the former 15,000-gallon UST. Excavation in these areas was to extend to bedrock or until endpoint samples indicate there is no soil remaining which contains VOCs at concentrations exceeding their soil cleanup objective for the protection of groundwater, as defined by 6 NYCRR Part 375-6.8. In addition, the concrete slab below the former UST was to be removed and further excavation conducted, if necessary. Soil to the east of the process lines connecting the southern building sump and the former UST was also to be excavated. It was estimated approximately 1,450 cubic yards of soil would be excavated from these areas identified above. These activities were conducted in 2019 and are documented in the Soil and Sub-Slab Depressurization System CCR (Holt, April 2022).

Excavation Contingency

If any on-site buildings were demolished or areas of paving removed, soil excavation was to be conducted to address any additional source areas, if identified.

In-Situ Chemical Treatment

The ROD specified in-situ chemical treatment would be implemented to treat chlorinated VOCs in groundwater through injections to be conducted into bedrock. In addition, the ROD prescribed injections into the overburden, if necessary.

.

Cover System

A site cover system, consisting of asphalt pavement and concrete building slabs, existed over much of the Site at the time the ROD was written. That existing cover system was to be maintained to allow for restricted residential use of the site. Any Site redevelopment was to maintain a site cover and could consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil SCOs. Where a soil cover was required, it would be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover was to be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site would meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). These activities were conducted in 2019 and 2020 and are documented in the Soil and Sub-Slab Depressurization System CCR (Holt, April 2022).

Vapor Mitigation

If the Site was redeveloped during the remedial action phase, the potential for soil vapor intrusion was to be evaluated for any buildings developed on the Site, and the recommended actions were to be implemented to address exposures related to soil vapor intrusion. These activities are documented in the Soil and Sub-Slab Depressurization System CCR (Holt, April 2022).

Institutional Controls

Institutional controls for the Site, in the form of an environmental easement for the controlled property, that require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3). The environmental easement will allow for the development of the Site as restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws. The environmental easement will also restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and required compliance with the Department approved Site Management Plan.

Site Management Plan

Implementation of a Site Management Plan to address remaining contamination in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC is required. This SMP must include the means for implementing the ICs and/or ECs that are required by the environmental easement for the Site.

2.3 Description of the Work Plan for Reagent Injection

Holt developed a Work Plan for Reagent Injection (Holt, August 2021) on behalf of the Volunteer, and in accordance with the ROD to set forth a technical scope of work for an ISCT pilot study to treat CVOCs in groundwater. The Work Plan for Reagent Injection is provided as **Appendix B** and summarized below.

Through subsurface investigations performed at the Site as part of the predesign investigation and documented in the Predesign Investigation Summary Report (Holt, April 2022), elevated concentrations of CVOCs have been identified in groundwater up to 50 feet below ground surface. The highest concentrations of CVOCs have been identified in groundwater between 15 and 30 feet below ground surface in the sandstone bedrock to the east of the southern half of the former on-site building, which is also east of the utility lines connecting the former sump and the former 15,000-gallon UST. Remedial excavation of surface soils in this area was completed in March 2019 and documented in the Soil and Sub-Slab Depressurization System CCR (Holt, April 2022).

As described in the Work Plan, one injection well was to be installed and four monitoring wells were to be installed at distances of 5, 10, 15 and 20 feet from the injection well at cross gradient and downgradient locations (see **Figure 2-1**). Rock core samples were to be collected from three locations prior to the installation of the monitoring and injection wells. The final depths for the monitoring wells were to be based on fracture zones identified in the rock cores. The monitoring and injection wells were to be installed to a total depth of approximately 30 feet below ground surface (bgs) and constructed of 2-inch inner diameter (I.D.) Schedule 40 PVC pipe and screened from 15 feet to 30 feet bgs.

At each well location, a 10-inch diameter boring was to be drilled through the overburden soils and extending three feet into bedrock. This boring was lined with a 10-inch steel conductor pipe. A 6.625-inch outer diameter, 6.065-inch inner diameter Schedule 40 steel pipe was placed inside the 10-inch pipe. The 10-inch pipe was to be removed and the annulus between the outer 6-inch pipe was to be filled with grout using a tremie pipe from the bottom of the borehole to within 6 to 10 inches of the surrounding grade. If the 10-inch conductor pipe could not be removed, it was to be left in place. The annulus grout was to cure for at least 24 hours prior to drilling or coring the bedrock. A six-inch diameter boring was then to be drilled to total depth before constructing the monitoring/injection well.

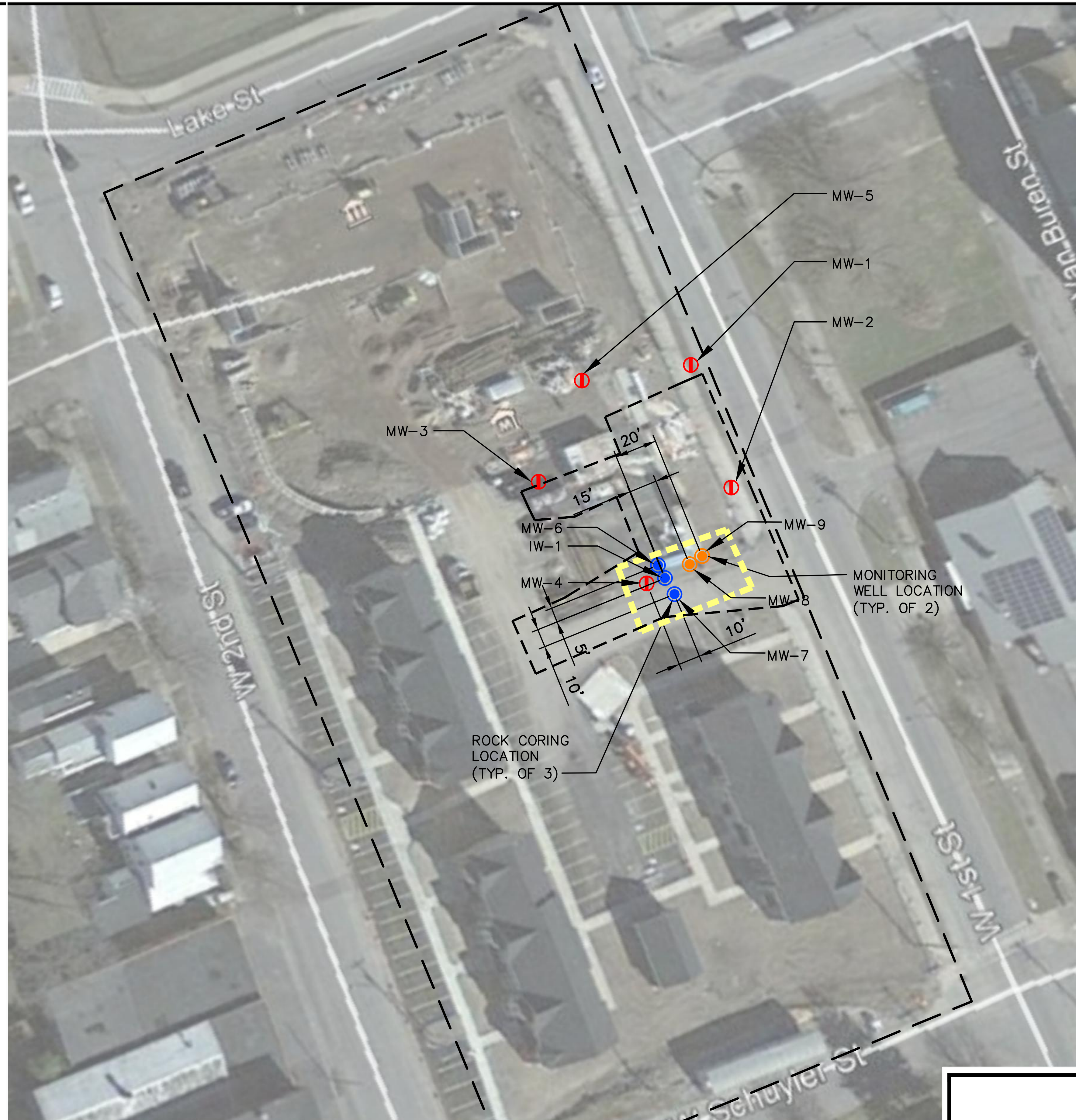
For the wells that were cored, a hollow stem auger rig was to be used to continuously core the hole with an NQ wireline core drilling system. After the cores were reviewed, the Driller was to ream out the borings to a six-inch diameter using an air rotary drill rig. Those wells that were not cored were to be drilled with the air rotary drill rig.

The injection well was to be installed to a total depth of approximately 30 feet below ground surface using an air rotary drill rig.

A minimum of seven days following successful development of the monitoring and injection wells, baseline groundwater samples were to be collected from the injection well, four new monitoring wells and existing monitoring well MW-4 for laboratory analysis for VOCs, metals, and select geochemical parameters.

For the chemical reagent injection, Regenesis Remediation Services was provided with site-specific geological, hydrogeological and groundwater analytical data to provide recommendations for the reduction of chlorinated VOCs in the groundwater at the Site. Based on their review of the data and their experience in performing in-situ groundwater remediation, a recommended reagent injection plan was developed. Regenesis recommended the injection of a wide distribution staged release, electron donor emulsion for anaerobic biodegradation combined with a sulfidated, colloidal zero-valent iron to extend the longevity of the chemical reduction of the groundwater contaminants. The estimate of the mass/volume of 3-D micro emulsion (3DME) and sulfidated colloidal zero-valent iron (SMZI) required was based on stoichiometric demand associated with chlorinated VOCs, terminal electron acceptors, and the minimum total organic carbon (TOC) distributed across the treatment area to enhance and support chlorinated solvent degradation. The calculated volume of 3DME assumed a TOC concentration of 200 mg/L would be required/provided to support biodegradation following the injections. The quantity of SMZVI selected was approximately 75% of the mass of 3DME to be injected. Additional materials, a safety factor, was included in the calculation to ensure adequate coverage. Finally, Regenesis's remedial design included the injection of an enriched microbial consortium containing species of dehalococcoides for anaerobic biodegradation bio-dechlor inoculum (BDI). The BDI was intended to assist with the treatment of undesirable anaerobic dechlorination intermediates (i.e., cis-1,2-DCE, VC).

Following the collection of baseline groundwater samples, the design called for 400 pounds of 3DMe and 300 pounds of SMZVI manufactured by Regenesis to be mixed with 1,869 gallons of water and pumped into the injection well at a controlled rate. Following injections of the 3DMe and SMZVI, 18 liters (or approximately 5 gallons) of BDI was to be injected concurrently with 175 gallons of deoxygenated water prepared using an oxygen scavenger such as sodium ascorbate, for a total volume of approximately 180 gallons of combined BDI and deoxygenated water.



P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

F:\5277\dwg\5277-C-SP04_workplan_DR.dwg, AERIAL PROP PLAN, 12/13/2021 3:17:17 PM, droot

LEGEND

- APPROXIMATE SITE BOUNDARY
- ROCK CORING LOCATION
- MONITORING WELL LOCATION
- EXISTING WELLS
- ACTUAL EXCAVATION AREA (APPROXIMATE)
- APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	INJECTION AND MONITORING WELL LOCATIONS	PROJECT NO.: HSGVIS-24-16-05	
		DATE: AUGUST 2021	
		FIGURE NO.: 2-1	

Post-injection groundwater monitoring was to consist of a minimum of three consecutive rounds of groundwater monitoring occurring approximately 30-, 60- and 90-days following the completion of the reagent injection program. Post-injection groundwater samples were to be collected from the injection well, four groundwater monitoring wells and existing well MW-4 for laboratory analysis for VOCs, metals, and select geochemical parameters.

3.0 REMEDIAL CONSTRUCTION ACTIVITIES

3.1 Permits, Approvals and Notifications

The following permits, approvals and notifications were obtained as part of the remedial construction activities:

- United States Environmental Protection Agency (USEPA) Injection Permit.
- City of Oswego Wastewater Discharge Permit for Temporary Discharge;

Copies of these permits are provided in **Appendix C**.

3.2 Site Preparation

The Contractor mobilized to the Site on September 20, 2021 and initiated site preparation activities. The following site preparation activities were undertaken by the Contractor as needed:

- Installation of temporary facilities and controls;
- Installation of sediment and storm water management controls;
- Completion of an underground utility survey.

3.2.1 Temporary Facilities

The Contractor initiated installation of the temporary facilities and controls at the Site as needed. This included temporary fencing, a decontamination pad and sanitation facilities.

3.2.2 Temporary Utilities

A temporary field office trailer was set up in the ground floor utility room of Building 4 at the Site during construction activities that provided temporary electrical utilities. Municipal potable water was obtained from a garden hose connected to Building 1 for use during drilling activities.

3.2.3 Site Security

A temporary perimeter construction fence with a locking gate was installed around the work area. Access to and from the work area was gained through an opening in the fencing that was closed and secured at the end of the work day. Only persons associated with the project were allowed admission to the work area. A sign-in sheet was maintained as a log of personnel on-site. No security incidents occurred during performance of the work.

3.2.4 Storm Water, Erosion and Sediment Controls

The Contractor installed sediment and storm water management controls at the Site including the installation of poly sheeting over a storm drain in the vicinity of work.

3.2.5 Underground Utility Survey

All underground utility work associated with any public or private utility services was initiated under a Dig Safe New York 811 request placed on September 13, 2021 (Call Ticket: 09131-001-722-00) by Summit Drilling Co. (Summit). The well locations were offset approximately three feet to the east to avoid a sewer line located in the proximity of the proposed location of the injection well IW-1. Summit hand cleared all five monitoring well/injection well locations to a depth of approximately 2 feet bgs prior to conducting well drilling activities.

3.3 Health and Safety

A site-specific HASP was prepared by Summit Drilling Co. in accordance with the requirements of the Occupational Health and Safety Administration (OSHA) for work conducted at the Site. The HASP was prepared to provide site-specific health and safety information, as well as to provide minimum procedures for worker and community protection. All activities conducted as part of the remedy were implemented in accordance with the HASP.

3.3.1 Personal Protective Equipment

The level of PPE used during the performance of the work was Level D, including site preparation, drilling, groundwater sampling and injections. Level D required donning of field clothes, hard hats, safety glasses, safety shoes and gloves.

3.3.2 Air Monitoring

A Community Air Monitoring Plan (CAMP) was implemented as part of the air monitoring program during all ground-intrusive work. Two perimeter air monitoring stations (one upwind and one downwind) were setup to continuously monitor air quality at the perimeter of the Site. Each station was equipped with a dust meter and organic vapor meter. The meters were setup to output results based on a 15-minute real-time average. The stations were positioned based on the current weather conditions.

Fugitive visible dust was a concern during the drilling activities. Particulate levels exceeded the action levels of 0.1 milligrams per cubic meter (mg/m^3) requiring implementation of dust control measures on two occasions on September 28, 2021 and on one occasion on September 29, 2021. On all three occasions, mitigation measures were immediately taken to address the migration of dust from the work area. Based on the CAMP monitoring data, at no time during the work was the perimeter action level of 5 ppm for VOCs exceeded. A copy of the air monitoring data recorded is provided in **Appendix D**. Daily Field Activity Reports for the work completed are provided in **Appendix E**.

3.3.3 Decontamination

Personnel decontamination procedures were performed in accordance with the HASP and were specific to the Level of PPE used to perform the work, as well as type(s) of hazardous substances encountered while performing the work. Drilling equipment was decontaminated prior to moving between each well location using a hot water pressure washer within the temporary decontamination pad. Non-dedicated sampling equipment was decontaminated using an alconox solution and a clean water rinse. Water generated during decontamination procedures was transferred to and contained in 55-gallon drums.

3.4 Reagent Injection

The groundwater remedial activities were initiated on September 20, 2021. Summit, the Driller, mobilized to the Site to prepare for the installation of the injection and groundwater monitoring wells and for the injection of chemical reagent. Daily Field Activity Reports for the work completed are provided in **Appendix E**. The following provides a description of the work completed. Prior to conducting well drilling activities, a rectangular section of asphalt at each location was saw cut and removed to provide access to the subsurface materials.

3.4.1 Bedrock Coring

Continuous rock cores were collected from well locations IW-1, MW-6 and MW-7. An eight-inch diameter hollow stem auger was used to drill into shallow bedrock at each location. Bedrock was encountered at depths ranging between 3 feet and 7.5 feet below ground surface at the well locations as shown on **Table 3-1** (below). The hollow stem auger was left in place to serve as a temporary casing during the performance of rock coring. A NX-wireline coring system was utilized to collect the continuous core samples from each location. Potable water was utilized during the coring process. Upon completion of the coring, the borehole was filled with cement/bentonite grout to ground surface and the area was restored with asphalt. Based on a review of the bedrock cores, fracture zones were noted to between 15 and 30 feet below ground surface in each of the bedrock cores and therefore the depth of the injection and monitoring wells remained as proposed at 30 feet below ground surface. Boring logs are provided in **Appendix F**.

Table 3-1

Monitoring/Injection Well Construction Details

Well ID	Depth to Bedrock (feet bgs)	Well Inner Diameter (inches)	Well Depth (feet btor)	Screen Length (feet)
MW-6	5	2	29.68	15
MW-7	7	2	29.86	15
MW-8	4	2	29.32	15
MW-9	3	2	29.68	15
IW-1	7.5	2	30.30	15

Notes:
1. Well depths presented in this table were measured below top of riser (btor) following well development and prior to conducting pre-injection sampling activities on October 18, 2021.

3.4.2 Injection/Monitoring Well Installation

For the drilling of the injection and monitoring wells, a ten-inch diameter tricone roller bit was used to drill through the overburden to the top of bedrock. A ten-inch diameter conductor pipe was installed in the borehole from ground surface to the top of bedrock. A ten-inch diameter downhole hammer drill bit was used to drill through the bedrock to 8 to10 feet below ground surface. A six-inch diameter steel casing was installed within the ten-inch diameter borehole and the annulus was filled with cement/bentonite grout. After the cement/bentonite grout was allowed to cure for minimum time of 24-hours, a six-inch diameter downhole hammer drill bit was used to drill through bedrock from the bottom elevation of the steel surface casing to approximately 30-feet below ground surface. A two-inch diameter PVC well screen and riser was installed within the borehole. The well screen was placed approximately 15 to 30 feet below ground surface. Gravel pack consisting of No. 2 well filter pack was placed in the annular space outside of the screen and riser from six inches below the screen to two feet above the screen. No. 00 filter pack was placed from the top of the No. 2 filter pack to six inches above the No. 2 filter pack. A bentonite seal, consisting of bentonite pellets and added potable water, was installed in the well annulus from the top of the No. 00 filter pack to two feet above the No. 00 filter pack. The bentonite seal was allowed to hydrate for at least one hour prior to grouting the well annulus with cement/bentonite grout. Approval to install six inches of No. 00 filter pack in the well anulus between the No. 2 filter pack and the bentonite seal for all the wells was provided verbally by the New York State Department of Environmental Conservation (NYSDEC) project manager. Every well location was finished with a new 8-inch steel flush mount road box installed in a concrete pad that extended on all sides to the surrounding asphalt. Monitoring Well Construction Logs are provided in **Appendix F**.

3.4.3 Injection/Monitoring Well Development

The new injection and monitoring wells installed were developed between October 4, 2021 and October 5, 2021. Development included over-pumping with a submersible pump. A minimum of five well volumes was removed from each of the wells. Water generated during well development activities was transferred to and stored in 55-gallon drums.

3.4.4 Pre-Injection Groundwater Monitoring

Seven days after well development, groundwater samples were collected from the injection well (IW-1) and groundwater monitoring wells MW-4, MW-6, MW-7, MW-8 and MW-9. Groundwater level and total well depth measurements were obtained from each of the wells sampled except for MW-4. Groundwater levels were not measured from MW-4 due to the difficulty of collecting water levels from the positive displacement case hole samplers. Static water level measurements were made to the nearest 0.01 foot using a fixed reference point (top of 2-inch PVC riser). Prior to collection of groundwater level measurements, the headspace of the well was measured with a photoionization detector (PID) as soon as the well plug was removed. Downhole instruments were decontaminated between each measurement location. Groundwater samples were collected using low flow sampling procedures from the each of wells sampled except MW-4. Before the groundwater samples were collected from the injection well, MW-6, MW-7, MW-8, and MW-9 field quality indicator parameters were monitored and allowed to stabilize. Stabilization is considered to be achieved when three consecutive readings are within the following limits:

- Turbidity - 10% for values greater than 5 NTU, < 5 NTU is considered stabilized;
- Dissolved Oxygen - 10% for values greater than 0.5 mg/L, < 0.5 mg/L is consider the stabilized;
- Specific Conductance - 3%;

- pH - ± 0.1 unit;
- Oxidation/Reduction Potential - ±10 millivolts.

The groundwater samples from MW-4 were collected in a similar manner and intervals as the June/July 2021 groundwater sampling event, which consisted of purging a calculated volume of water from each sampling interval and then recording field parameters. The well construction log and sampling procedures for MW-4 are included in the Predesign Investigation Summary Report (Holt, 2022). Collected groundwater samples were submitted to EurofinsTest America of Buffalo, New York a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method175);
- Alkalinity by USEPA Method 310.2;
- Total organic carbon/dissolved carbon by USEPA Method 9060A; and
- Total organic carbon by USEPA Method SM5310D.

The results of the pre-injection field water quality indicator parameters are provided in **Table 3-2**. Laboratory analytical results are presented in **Table 3-3**. Laboratory analytical data package (SDG: J191067) is provided in **Appendix G**. Data validation checklist/report are provided in **Appendix H**. As shown on **Table 3-2**, pH ranged from 6.49 to 11.76, ORP ranged from -32 to 162 mV, specific conductivity ranged from 0.855 to 1.86 mS/cm, turbidity ranged from 0 to 283 NTUs and dissolved oxygen ranged from 0.1 to 8.15 mg/L.

3.4.5 Reagent Injection

AWT Environmental Services, Inc. performed the reagent injections at the Site. Prior to performing the reagent injection, spill containment was set up surrounding the trailer containing all stored liquids and equipment. The injection system was then tested with water prior to utilizing any reagents in the system. The initial startup allowed for system checking including any leaks in the piping, fittings, valves, flow meters or pumps. A leak check was conducted with a recirculating line set with restriction to gain pressure. Following the completion of the initial startup and potable water injection to prime the system, field personnel mixed the Regenesis 3DME/S-MZVI reagents in batches consisting of 4 gallons of 3DME, 2 gallons of S-MZVI and 150 gallons of potable water. This ratio varied slightly from the proposed design mix ratio of 3.9 gallons of 3DME and 1.6 gallons of S-MZVI for every 150 gallons of potable water. Injections were initiated on October 27, 2021 and continued through October 28, 2021.

The mixed 3DME/S-MZVI reagent was immediately pumped into the injection well. During the injection process, the following injection parameters were monitored and recorded: flow rate, injection pressure and injection volume. Injection began at a slow rate and the injection rate was increased based upon the injection pressure and system response. The injection flow rate ranged of from 3.6 to 10.56 gallons per minute (gpm) with an average flow rate of 7.5 gpm. The injection pressures ranged from 12 to 28 pounds per square inch (psi) with an average injection pressure of 21.79 psi. The system was checked continuously for leaks and proper operation. The total volume of 3DMe/SMZVI/potable water reagent mixture was 1905 gallons. Following these reagent injections, 31 gallons of deoxygenated water was used to rinse the mix tank and lines and pumped into the injection well.

Table 3-2
Harbor View Square
68 West First Street, Oswego, New York
Pre-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)
MW-4_1	3/4/2021	9.67	11.74	7.77	59	1.86	92.2	7.69
MW-4_1	6/30/2021	----	22.8	7.10	162	1.76	260.0	2.14
MW-4_2	3/4/2021	11.2	11.03	7.63	---	1.81	41.1	6.62
MW-4_2	6/30/2021	----	20.64	7.07	152	1.61	73.4	2.47
MW-4_3	3/4/2021	11.59	10.42	7.60	66	1.57	105.0	8.15
MW-4_3	6/30/2021	----	22.46	7.01	39	1.36	112.0	0.53
MW-4_4	3/4/2021	11.78	9.32	7.93	54	1.44	67.2	5.45
MW-4_4	6/30/2021	----	22.49	6.49	57	1.43	53.5	0.10
MW-4_5	3/4/2021	13.01	9.46	7.94	54	1.43	9.6	6.09
MW-4_5	6/30/2021	----	22.19	6.49	-32	1.70	73.4	0.89
IW-1	10/19/2021	9.84	19.48	7.47	132	1.14	0.0	0.52
IW-1	10/27/2021	8.61	13.85	9.00	136	0.895	6.8	3.36
MW-6	10/19/2021	9.22	17.71	10.47	54	0.855	0.0	2.40
MW-6	10/27/2021	9.38	15.58	9.96	14	1.08	2.2	1.93
MW-7	10/18/2021	13.14	18.05	9.51	86	0.99	23.3	4.01
MW-7	10/27/2021	9.61	14.78	11.76	-24	1.29	0.0	5.82
MW-8	10/18/2021	16.93	16.58	7.40	137	1.19	3.1	2.72
MW-8	10/27/2021	11.98	16.08	7.82	142	1.24	283.0	4.81
MW-9	10/19/2021	9.98	19.15	7.29	110	1.18	0.0	2.20
MW-9	10/27/2021	8.99	15.77	7.85	150	1.2	0.0	3.03

* Groundwater quality parameters were not measured from MW-4 during the October 18-19, 2021 groundwater sampling event.
---- Water levels not measured due to limitations with pdCHD and standard water level meters.

Table 3-3
Harbor View Square
68 West First Street, Oswego, New York
Pre-Injection Groundwater Monitoring Well Analytical Results

Sample ID Sample Depth (BG) Sampling Date	IW-1 10/19/21	MW-4_1 (15-20) 10/18/21	MW-4_2 (25-30) 10/18/21	MW-4_3 (35-40) 10/18/21	MW-4_4 (42-47) 10/19/21	MW-4_5 (50-53) 10/19/21	MW-6 10/19/21	MW-7 10/18/21	MW-8 10/18/21	MW-9 10/19/21	NYSDEC Class GA Standard or Guidance Value
VOCs in ug/l											
1,1-Dichloroethene	U	U	U	4.4 J	***5.6 J***	***9.8 J***	U	U	U	U	5
Cis-1,2-Dichloroethylene	***140***	***230***	***320***	***270***	***270***	***350***	***1200***	***2000***	***250***	***250***	5
Tetrachloroethylene	U	U	U	U	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	U	U	5
Trichloroethylene	***890***	***1200***	***910***	***780***	***820***	***600***	***200***	***1200***	***25***	***19***	5
Vinyl Chloride	U	U	U	***17***	***14***	***110***	***82***	***110***	***55***	***100***	2
Other in ug/l											
Acetylene	U	U	U	U	U	U	U	0.57 J	U	U	--
Ethane	0.41 J	U	0.34 J	0.34 J	U	0.38 J	0.41 J	0.72 J	0.78 J	1.1	--
Ethene	U	0.28 J	0.71 J	0.86 J	0.48 J	6.0	2.2	2.1	1.8	6.4	--
Methane	4.8	9.3	25	24	4.2	61	64	13	22	61	--
METALS in mg/l											
Arsenic	U	U	U	U	U	U	U	U	U	U	0.025
Barium	0.39	***1.3***	0.71	***1.3***	0.78	0.69	0.096	0.27	0.39	0.20	1
Cadmium	U	U	U	U	U	U	U	U	U	U	0.005
Chromium	U	0.0020 J	0.0013 J	0.0026 J	0.0013 J	U	0.028	0.0021 J	0.0015 J	U	0.05
Lead	U	0.0078 J	0.0061 J	0.0075 J	0.0055 J	U	U	U	U	U	0.025
Selenium	U	U	U	U	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	U	U	0.05
Mercury	U	U	U	U	U	U	U	U	U	U	0.0007
Ferric Iron	U	0.85	0.44	1.4	0.62	0.51	U	0.12	0.28	0.22	--
Ferrous Iron	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	--
General Chemisty in mg/l											
Alkalinity, bicarbonate (as CaCO3)	176	185	193	181	198	212	52.7	82.4	206	236 T	--
Alkalinity, carbonate (as CaCO3)	U	U	U	U	U	U	U	U	U	U	--
Alkalinity, hydroxide (as CaCO3)	U	U	U	U	U	U	U	U	U	U	--
Alkalinity, total (as CaCO3)	176	185	193	181	198	212	52.7	82.4	206	236 T	--
Chloride (as Cl)	245	234	***260***	247	246	***347***	164	223	203	212	250
Nitrogen, nitrate (as N)	0.33	0.61	0.24	0.36	0.41	0.030 J	0.060	0.035 J	0.064	0.041 J	10
Nitrogen, nitrate-nitrite	0.37	0.64 B	0.27 B	0.39 B	0.41	0.078	0.12	0.035 BJ	0.098 B	0.075	10
Nitrogen, nitrite	0.045 BJ	0.032 BJ	0.033 BJ	0.032 BJ	U	0.048 BJ	0.060 B	UB	0.034 BJ	0.034 BJ	1
Sulfate (as SO4)	49.7	48.6	44.2	43.1	46.6	51.7	56.2	66.4	81.6	80.4	250
Sulfide	U	U	U	U	U	U	U	U	U	U	0.05
Dissolved Organic Carbon	3.5	4.8	4.1	4.5	19.3	9.1	3.7	3.2	3.8	3.5	--
Total Organic Carbon	4.3	6.8	5.2	17.8	13.8	10.4	4.9	3.4	4.3	4.3	--

Footnotes/Qualifiers:
- ug/l: Micrograms per liter
- mg/l: Milligrams per liter
- --: No standard
- U: Analyzed for but not detected
- J: Estimated value or limit
- H: Bias High
- UB Non detect based on blank results
- ***Exceeds Class GA Standard or Guidance Value***

D&B ENGINEERS AND ARCHITECTS

Following the injections identified above, deoxygenated water was simultaneously pumped with the BDI into the injection well. The BDI was injected at a pressure of 20 pounds per square inch from a temperature-maintained culture keg with nitrogen gas, and the deoxygenated water was injected at a pressure of 18 pounds per square inch from a separate tank. After injecting all 18 liters of the BDI, it was determined that the total volume of BDI/deoxygenated water injected was 65 gallons or an approximate ratio of 3 liters of BDI to 10 gallons of deoxygenated water. This varied considerably from the proposed design mix of 1 liter of BDI to 10 gallons of deoxygenated water. After injecting the 18 liters of BDI, the remaining 99 gallons of deoxygenated water was pumped into the injection well. The details associated with the injection including the volume of material injected and the flow rates and injection pressures are provided in the **Table 3-4**.

During the injection of the chemical reagents, field water quality indicator parameters (i.e., temperature, ORP, conductivity, pH, DO and turbidity) were monitored from monitoring wells MW-6, MW-7, MW-8 and MW-9. In addition, depth to water was also measured in each of these wells. A table summarizing the monitoring activities is presented in **Table 3-5**. As shown, each of the surrounding wells showed a rise in the water table during the injections with MW-6, MW-8 and MW-9 having water levels rise close to the ground surface. On October 27, 2021 packers were inserted in MW-6 and in MW-9 and on October 28, 2021 packers were inserted in MW-6, MW-9 and MW-8 to prevent water overflowing from the top of the well risers. Specific conductivity and pH within the wells remained relatively stable. Oxidation reduction potential (ORP) decreased significantly in all four monitoring wells indicating that the water quality went from an oxidizing environment to a reducing environment. Dissolved oxygen also decreased in three of the wells with it remaining fairly stable in MW-7. A reducing environment is needed to have anerobic biodegradation of the VOCs. Turbidity increased which is also shown by the appearance change from clear to cloudy in most wells.

3.4.6 Post Injection Groundwater Monitoring

Post injection groundwater monitoring occurred approximately 30-, 60- and 90-days following the completion of the reagent injection program. Groundwater samples were collected from the injection well and the four groundwater monitoring wells and existing well MW-4. Prior to groundwater sampling, groundwater level measurements were obtained from each of the wells, except for MW-4 due to the difficulty of collecting elevations from the positive displacement case hole samplers. All water level measurements were made using a fixed reference point at each measurement location. In addition, prior to collection of groundwater level measurements, the headspace of the well was measured utilizing a PID as soon as the well cover was opened. Downhole instruments were decontaminated between each measurement location. The static water level was measured to the nearest 0.01 foot. Groundwater samples from the wells were collected using low-flow sampling procedures. Field water quality indicator parameters (i.e., temperature, ORP, conductivity, pH, DO and turbidity) were monitored for stabilization. The groundwater samples from MW-4 were collected in a similar manner and intervals as the June/July 2021 groundwater sampling event, which consisted of purging a calculated volume of water from each sampling interval and then recording field parameters. Collected groundwater samples were submitted to Test America of Buffalo, New York a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175);
- Alkalinity by USEPA Method 310.2;
- Total organic carbon/dissolved carbon by USEPA Method 9060A; and
- Total organic carbon by USEPA Method SM5310D.

Table 3-4
Harbor View Square
68 West First Street, Owwego, New York
Reagent Injection Details

Well ID	Date	Time			3DME/S-MZVI Injectate Mix: 150 gal water, 4 gal 3DME and 2 gal S-MZVI. (gallons)	Anaerobic Rinse Water Injected (gallons)	BDI Plus Injectate Mix: 3 Liters of BDI Plus and 10 gal. of Anaerobic Water (gallons)	Anaerobic Water Injected (gallons)	Flow Rate (gallons per minute)	Injection Pressure (pounds per square inch)
IW-1	10/27/2021	10:38	to	11:20	161				5	12
IW-1	10/27/2021	11:56	to	12:51	170				6.4	20
IW-1	10/27/2021	13:39	to	14:08	154				3.6	18
IW-1	10/27/2021	14:31	to	14:58	162				8.16	21
IW-1	10/27/2021	15:20	to	15:40	150				7.2	25
IW-1	10/27/2021	16:02	to	16:25	149				7.36	22
IW-1	10/27/2021	16:49	to	17:04	153				10.56	28
IW-1	10/28/2021	8:39	to	8:56	150				10	28
IW-1	10/28/2021	9:19	to	9:56	194				7	16
IW-1	10/28/2021	10:20	to	10:45	156				8.2	24
IW-1	10/28/2021	11:07	to	11:37	156				6.4	21
IW-1	10/28/2021	12:01	to	12:34	150	31			8.8	25
IW-1	10/28/2021	13:05	to	13:20			65			20
IW-1	10/28/2021	13:20	to	14:03				99	8.8	25
		Total			**1905**	**31**	**65**	**99**		
		Average							**7.50**	**21.79**

Notes:
1. Injectate mix for 3DME/S-MZVI varied slighly from the proposed design mix of 150 gal. of water, 3.9 gal. of 3DME, and 1.6 gal. of S-MZVI.
2. Injectate mix for BDI Plus varied from the proposed design mix of 1 liter of BDI Plus per 9.75 gal. of anaerobic water.
3. Following injecting the 18 liters of BDI Plus, the remaining anaerobic water was injected into IW-1.

Table 3-5
Harbor View Square
68 West First Street, Oswego, New York
Field Water Quality Indicator Parameters During Injection

Well ID	Date	Time	Depth to Water (ft below top of riser)	Temp. (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens/ centimeter)	Turbidity (NTUs)	Dissolved Oxygen (mg/l))	Appearance
MW-6	10/27/2021	8:30	9.38	15.58	9.96	14	1.08	2.2	1.93	Clear
MW-6	10/27/2021	10:45	8.88	17.84	10.15	69	0.9	80.7	3.11	
MW-6	10/27/2021	11:49	11.54	17.26	9.89	38	0.998	35.3	2.96	
MW-6	10/27/2021	12:50	10.97	19.34	8.71	86	1.04	2	2.03	
MW-6	10/27/2021	13:08	10.73							
MW-6	10/27/2021	14:05	10.5							
MW-6	10/27/2021	14:11	10.22							
MW-6	10/27/2021	14:33	9.81							
MW-6	10/27/2021	15:02	5.18	19.64	8.62	-157	1.1	1000	0.58	
MW-6	10/27/2021	17:38	0	17.15	8.96	-224	1.79	1000	1.05	Very Dark Turbidity
MW-6	10/28/2021	8:00	8.38	18.09	8.44	-319	1.53	1000	2.53	Very Dark Turbidity
MW-6	10/28/2021	14:53	3.16	18.59	8.34	-322	2.23	1000	0.75	Very Dark Turbidity
MW-7	10/27/2021	8:20	9.61	14.78	11.76	-24	1.29	0.0	5.82	Clear
MW-7	10/27/2021	11:05	11.26							
MW-7	10/27/2021	11:45	11.1	16.92	10.88	36	1.05	61.6	6.32	
MW-7	10/27/2021	12:50	11.38							
MW-7	10/27/2021	13:35	11.23	18.88	11.14	9	1.05	108.0	5.56	
MW-7	10/27/2021	14:10	11.99	19.46	11.24	-17	1.01	106.0	4.60	
MW-7	10/27/2021	15:16	12.11	19.64	11.26	-19	0.962	91.1	4.00	
MW-7	10/27/2021	15:27	13.26							
MW-7	10/27/2021	15:40	12.81							
MW-7	10/27/2021	16:11	12.33							
MW-7	10/27/2021	16:27	11.76							
MW-7	10/27/2021	16:56	11.29	17.57	11.73	-38	1.28	39.0	4.15	Clear
MW-7	10/28/2021	8:14	9.48	17.42	11.89	-63	1.39	56.3	5.05	Clear
MW-7	10/28/2021	8:30	10.47							
MW-7	10/28/2021	9:58	9.89							
MW-7	10/28/2021	10:50	9.13							
MW-7	10/28/2021	12:12	7.92							
MW-7	10/28/2021	12:48	7.28	18.51	12.01	-71	1.51	1.0	3.75	
MW-7	10/28/2021	14:10	5.71	18.22	11.85	-164	1.44	194.0	5.65	White Haze

Table 3-5
Harbor View Square
68 West First Street, Oswego, New York
Field Water Quality Indicator Parameters During Injection

Well ID	Date	Time	Depth to Water (ft below top of riser)	Temp. (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens/ centimeter)	Turbidity (NTUs)	Dissolved Oxygen (mg/l))	Appearance
MW-8	10/27/2021	8:50	11.98	16.08	7.82	142	1.24	283	4.81	Light colored turbidity
MW-8	10/27/2021	11:10	11.84							
MW-8	10/27/2021	11:36	10.98	17.26	7.63	115	1.22	143	3.07	
MW-8	10/27/2021	12:50	10.41							
MW-8	10/27/2021	13:25	10.04	19.21	7.72	106	1.18	210	4.03	
MW-8	10/27/2021	14:19	10.30	19.64	8.63	115	1.17	145	3.35	
MW-8	10/27/2021	14:27	9.23							
MW-8	10/27/2021	15:40	9.49							
MW-8	10/27/2021	16:13	8.44							
MW-8	10/27/2021	16:27	7.96							
MW-8	10/27/2021	17:03	6.78	17.59	8.88	79	1.24	136	3.04	White Cloudy
MW-8	10/28/2021	8:21	7.43	18.2	8.77	92	1.22	57.2	2.18	Tan Cloudy
MW-8	10/28/2021	9:03	7.58							
MW-8	10/28/2021	9:58	5.54	18.58	7.59	120	1.23	59.4	1.8	
MW-8	10/28/2021	10:50	4.4	19.35	7.46	49	1.26	44.9	2.44	
MW-8	10/28/2021	12:40	1.17	19.15	7.35	-3	1.26	145	1.27	
MW-8	10/28/2021	14:36	1	18.03	7.75	-81	1.41	701	0.65	Dark Turbidity
MW-9	10/27/2021	9:15	8.99	15.77	7.85	150	1.2	0	3.03	Clear
MW-9	10/27/2021	11:12	4.89							
MW-9	10/27/2021	11:28	3.38	16.49	8.53	54	1.15	318	2.00	
MW-9	10/27/2021	12:50	1.49							
MW-9	10/27/2021	13:15	2.23	19.52	8.11	107	1.13	995	2.81	
MW-9	10/27/2021	17:28	0.00	17.13	7.94	-37	1.34	1000	1.21	Dark turbidity
MW-9	10/28/2021	8:21	8.35	17.18	7.9	66	1.17	180	2.63	Clear
MW-9	10/28/2021	14:25	0.00	18.69	8.54	-100	1.23	1000	0.26	Dark Tubidity

Historical VOC analytical results and VOC analytical results from the pilot study monitoring activities are presented on **Figure 3-1**. The results of the pre-injection and 30-, 60- and 90-day pre- and post-injection field water quality indicator parameters are presented in **Table 3-6** and pre- and post-injection groundwater monitoring well analytical results are presented in **Table 3-7**. Laboratory analytical data packages are provided in **Appendix G** (Pre-Injection SDG: 480-1191067-1, 30-day SDG: J192911, 60-day SDGs: J193821 and J193853, 90-day SDG: J194530). Data validation checklists/reports are provided in **Appendix H.**

3.5 Off-Site Transportation and Disposal of Materials

All spent cuttings, drillings, drilling fluids, flushing water and development water were stored in DOT-approved 55-gallon "open top" drums located near the well during well construction. No cuttings, or water were allowed to flow on the site surface. At the completion of the work day, all materials were contained in the 55-gallon drums. Approximately 470 gallons of water was generated during well installation, development and sampling activities and was subsequently discharged to the City of Oswego's sanitary sewer on November 12, 2021 and November 13, 2021 in accordance with the City of Oswego Wastewater Discharge Permit for Temporary Discharge issued to the Volunteer based on historical analytical results. Drill cuttings generated during well installation were containerized, sampled, and disposed off-site in accordance with all applicable federal, state and local laws and regulations. Waste characterization included the analysis of one composite sample from the drill cuttings in the drums. All waste sampling was performed in accordance with the requirements of the selected disposal facility. The drill cuttings were transferred from the 55-gallon drums to a dump truck and transported by a Part 364 waste transporter for disposal at Bristol Hill Landfill in Fulton New York on February 15, 2022. The empty drums were placed in an onsite dumpster for recycling. Copies of the Part 364 waste transporter permit, waste manifest and associated analytical reports are provided in **Appendix I**. Used personal protective equipment, and disposable sampling equipment was disposed of offsite as municipal solid waste.

MW-3_1 (15-20)	3/9/21	6/29/21
1,1-DCE	0.44	U
Cis-1,2-DCE	**12**	**7.1**
TCE	**9.6**	**5.2**

MW-3_2 (25-30)	3/9/21	6/29/21
1,1-DCE	1.4 J	U
Cis-1,2-DCE	**140**	**140**
Trans-1,2-DCE	U	3.7 J
TCE	**19**	**23**
Vinyl Chloride	**17**	**14**

MW-3_3 (34-39)	3/9/21	6/29/21
Cis-1,2-DCE	**110**	**180**
Trans-1,2-DCE	U	**8.6**
TCE	**18**	**35**
Vinyl Chloride	**12**	**13**

MW-3_4 (45-50)	3/9/21	6/29/21
1,1-DCE	0.81 J	U
Cis-1,2-DCE	**73**	**91**
Trans-1,2-DCE	2.2	2.9
TCE	**16**	**19**
Vinyl Chloride	**8.8**	**11**

IW-1	10/19/21	11/30/21	12/28/21	1/27/22
Cis-1,2-DCE	**140**	**96**	**170**	**93**
TCE	**890**	U	U	U
Vinyl Chloride	U	**16**	**20**	**20**

MW-4_1 (15-20)	3/4/21	6/30/21	10/18/21	11/30/21	12/29/21	1/27/22
Cis-1,2-DCE	**97**	**190**	**230**	**1100**	**930**	**640J**
TCE	**1700**	**1400**	**1200**	**20 J**	U	**53**
Vinyl Chloride	U	U	U	**110**	**240**	**140**

MW-4_2 (25-30)	3/4/2021	6/30/2021	10/18/21	11/30/21	12/29/21	1/27/22
Cis-1,2-DCE	**310**	**460**	**320**	**880**	**800**	**510J**
Trans-1,2-DCE	U	**9 J**	U	U	U	U
TCE	**720**	**810**	**910**	**25**	U	U
Vinyl Chloride	U	**27**	U	**110**	**190**	**130**

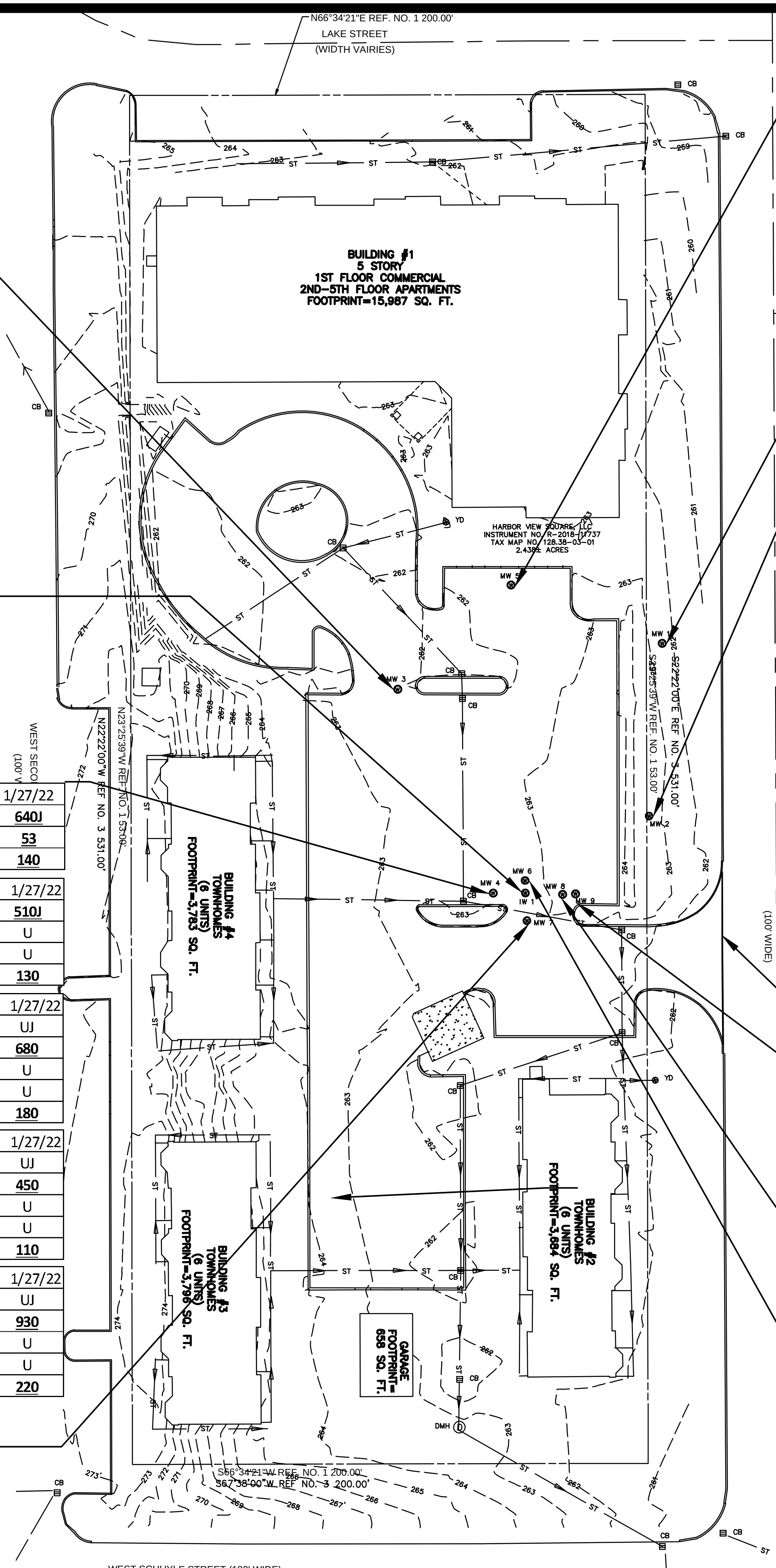
MW-4_3 (35-40)	3/4/21	6/30/21	10/18/21	11/30/21	12/29/21	1/27/22
1,1-DCE	5 J	U	4.4J	U	U	UJ
Cis-1,2-DCE	**740**	**1000 D**	**270**	**270**	**710**	**680**
Trans-1,2-DCE	**28**	**30**	U	U	U	U
TCE	**340**	**300**	**780**	**6.6J**	**7.1J**	U
Vinyl Chloride	**32**	**38**	**17**	**50**	**170**	**180**

MW-4_4 (42-47)	3/4/21	6/30/21	10/19/21	11/30/21	12/29/21	1/27/22
1,1-DCE	4.3 J	U	**5.6**	U	U	UJ
Cis-1,2-DCE	**650**	**940**	**270**	**780**	**720**	**450**
Trans-1,2-DCE	**22**	**17**	U	U	U	U
TCE	**220**	**260**	**820**	**21**	**7.4J**	U
Vinyl Chloride	**32**	**37**	**14**	**110**	**140**	**110**

MW-4_5 (50-53)	3/4/21	6/30/21	10/19/21	11/30/21	12/29/21	1/27/22
1,1-DCE	3.9 J	U	**9.8J**	U	U	UJ
Cis-1,2-DCE	**410**	**730**	**350**	**440**	**210**	**930**
Trans-1,2-DCE	**9.4 J**	U	U	U	U	U
TCE	**89**	**51**	**600**	**15**	U	U
Vinyl Chloride	**38**	**130**	**110**	**150**	**510**	**220**

MW-7	10/18/21	11/30/21	12/29/21	1/27/22
Cis-1,2-DCE	**2000**	**1600**	**2500**	**3100J**
TCE	**1200**	**620**	**290**	**230**
Vinyl Chloride	**110**	**88**	**92**	**80**

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24–16/HSGVIS–2416–B08.DWG



MW-5_1 (20-25)	7/1/21
Cis-1,2-DCE	**96**
Trans-1,2-DCE	2.2
TCE	**10**
Vinyl Chloride	**4.6**

MW-5_2 (46-51)	7/1/21
Cis-1,2-DCE	**100**
Trans-1,2-DCE	2.2
TCE	**6**
Vinyl Chloride	**5.1**

MW-5_3 (54.7-59.7)	7/1/21
Cis-1,2-DCE	**92**
Trans-1,2-DCE	2.1
TCE	**16**
Vinyl Chloride	**10**

MW-1_1 (15-20)	7/1/21
Cis-1,2-DCE	**22**
TCE	**19**
Vinyl Chloride	**4.9**

MW-1_2 (25-30)	7/1/21
Cis-1,2-DCE	**100**
TCE	**7.4**
Vinyl Chloride	**27**

MW-1_3 (30-35)	7/1/21
Cis-1,2-DCE	**94**
TCE	4.7
Vinyl Chloride	**31**

MW-1_4 (40-45)	7/1/21
Cis-1,2-DCE	**91**
Trans-1,2-DCE	2
TCE	**12**
Vinyl Chloride	**20**

NYSDEC CLASS GA STANDARD OR GUIDANCE VALUE (UG/L)	
1,1-DCE	5
Cis-1,2-DCE	5
PCE	5
Trans-1,2-DCE	5
TCE	5
Vinyl Chloride	2

MW-2_1 (15-20)	3/9/21	6/30/21
Cis-1,2-DCE	**25**	**190**
PCE	3.6	1.6
Trans-1,2-DCE	U	1.6
TCE	**41**	**84**
Vinyl Chloride	**4.7**	**31**

MW-2_2 (25-30)	3/9/21	6/30/21
Cis-1,2-DCE	**590**	**590**
TCE	**52**	**180**
Vinyl Chloride	**130**	**97**

MW-2_3 (30-35)	3/9/21	6/30/21
1,1-DCE	U	3.1 J
Cis-1,2-DCE	**620**	**420**
TCE	**56**	**130**
Vinyl Chloride	**130**	**72**

MW-2_4 (45-50)	3/9/21	6/30/21
Cis-1,2-DCE	**530**	**450**
Trans-1,2-DCE	**16**	**12**
TCE	**15**	**14**
Vinyl Chloride	**33**	**20**

SITE BOUNDARY

MW-9	10/19/21	11/30/21	12/29/21	1/27/22
Cis-1,2-DCE	**250**	**170**	**160**	**120 J**
TCE	**19**	**33**	**11**	U
Vinyl Chloride	**110**	**35**	**41**	**26**

MW-8	10/18/21	11/30/21	12/29/21	1/27/22
Cis-1,2-DCE	**250**	**97**	**100**	**9.8J**
TCE	**25**	**8.7**	**10**	2.6
Vinyl Chloride	**55**	**26**	**51**	**20**

MW-6	10/19/21	11/30/21	12/29/21	1/27/22
Cis-1,2-DCE	**1200**	**1600**	**3800**	**2700J**
TCE	**200**	U	U	U
Vinyl Chloride	**82**	**220**	**760**	**540**

DOWNSTREAM DEFENDER

LEGEND

SITE BOUNDARY

ST — STORM SEWER (ARROW DEPICTS FLOW DIRECTION)

CB — CATCH BASIN

W — MONITORING WELL

D — DOWNSTREAM DEFENDER

NOTES:

1. BASE MAP WAS DIGITIZED FROM HARBOR VIEW SQUARE POST CONSTRUCTION AS–BUILT DATED 12/29/2021 THAT WAS PREPARED BY PASSERO ASSOCIATES.
2. MONITORING WELL LOCATIONS WERE SURVEYED BY PASSERO ASSOCIATES IN DECEMBER 2021.
3. LOCATIONS OF SUBSURFACE UTILITIES SHOWN ARE APPROXIMATE.
4. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST. THE LOCATION OF WHICH ARE UNKNOWN.
5. ALL CONCENTRATIONS PRESENTED IN MICROGRAMS PER LITER (UG/L) OR PARTS PER BILLION (PPB).
6. CONCENTRATIONS ONLY SHOWN FOR ANALYTES THAT WERE DETECTED IN GROUNDWATER SAMPLES.
7. SAMPLES WERE COLLECTED FROM POSITIVE DISPLACEMENT CASED HOLE SAMPLERS AT MONITORING WELLS MW–1 THROUGH MW–5.
8. LOW FLOW SAMPLES WERE COLLECTED FROM INJECTION/MONITORING WELLS IW–1 AND MW–6 THROUGH MW–9.
9. LABORATORY QUALIFIERS:
   U – NOT DETECTED ABOVE METHOD DETECTION LIMIT.
   J – ESTIMATED VALUE.

60 30 0 60'
1"=60'

HARBOR VIEW SQUARE
NYSBCP SITE NO. C738040
68 WEST FIRST STREET
OSWEGO, NEW YORK

PILOT INJECTION GROUNDWATER MONITORING RESULTS

PROJECT NO.: HSGVIS–24–16–05
DATE: APRIL 2021
FIGURE NO.: 3–1

F:\5277\dwg\5277-C-PL02.dwg, FIG, 4/21/2022 10:19:50 AM, rferrell

Table 3-6
Harbor View Square
68 West First Street, Oswego, New York
Post-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)	Appearance/Observations
MW-4_1	11/12/2021	---	14.28	6.75	-97	0.341	22.9	9.47	Hazy Light Brown Turbidity
MW-4_1	11/30/2021	---	11.86	5.84	-153	1.630	13.7	4.36	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_1	12/29/2021	---	10.17	6.86	-156	1.650	10.2	4.62	Clear
MW-4_1	1/27/2022		9.08	7.25	-100	1.510	0.0	0.00	Dark Turbidity
MW-4_2	11/12/2021	---	14.24	6.74	-92	0.300	28.8	1.26	Hazy Light to Medium Brown Turbidty
MW-4_2	11/30/2021	---	10.66	6.00	-161	1.550	12.5	3.50	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_2	12/29/2021	---	12.54	6.65	-157	1.940	14.6	5.62	Meduium Turbidity, Medium Sheen
MW-4_2	1/27/2022		9.69	7.11	-87	1.650	0.0	0.00	Dark Turbidity
MW-4_3	11/12/2021	---	14.51	6.79	-104	0.364	78.5	9.84	Greyish Brown Tubidity with Bacterial Sheen
MW-4_3	11/30/2021	---	10.66	5.92	-158	1.750	25.3	3.92	Medium Turbidity, Moderate Bacterial Sheen, Sour Odor
MW-4_3	12/29/2021	---	11.93	6.65	-159	1.910	14.9	4.67	Dark Turbidity, Medium Sheen
MW-4_3	1/27/2022		12.20	6.86	-81	1.650	0.0	0.27	Dark Turbidity
MW-4_4	11/12/2021	---	14.34	6.02	-104	2.170	428.0	0.00	Dark Grey Turbidty
MW-4_4	11/30/2021	---	11.37	5.91	-165	1.750	18.8	8.04	Dark Turbidity, Heavy Bacterial Sheen, Sour Odor
MW-4_4	12/29/2021	---	11.02	6.56	-153	1.990	15.2	10.80	Dark Turbidity, Heavy Sheen
MW-4_4	1/27/2022		8.94	7.03	-86	1.660	0.0	1.53	Dark Turbidity
MW-4_5	11/12/2021	---	14.22	5.93	-78	2.780	884.0	0.10	Very Dark Turbidity
MW-4_5	11/30/2021	---	11.19	5.70	-135	2.050	94.8	2.92	Very Dark Turbidity, Bacterial Sheen, Sour Odor
MW-4_5	12/29/2021	---	12.01	6.12	-110	1.970	17.8	10.21	Very Light Turbidity, Light Sheen
MW-4_5	1/27/2022	---	11.50	6.22	18	1.550	0.0	0.43	Dark Turbidity
IW-1*	10/19/2021	10.19	19.48	7.47	132	1.140	0.0	0.52	Clear
IW-1	11/13/2021	9.40	15.29	7.94	-513	1.580	62.0	0.00	Hazy Green
IW-1	11/30/2021	10.58	15.50	6.81	-193	1.800	45.0	0.20	Clear, Light Bacterial Sheen, Used Cooking Oil Odor
IW-1	12/28/2021	10.93	13.95	7.14	-352	2.050	5.2	1.00	Sheen
IW-1	1/27/2022	11.35	10.05	7.64	-365	1.830	0.0	0.35	Greenish Yellow
MW-6*	10/19/2021	9.54	17.71	10.47	54	0.855	0.0	2.40	Clear
MW-6	11/13/2021	9.69	14.92	6.39	-459	2.540	523.0	0.00	Dark Turbidity
MW-6	11/30/2021	10.50	15.50	6.81	-193	1.800	45.0	0.20	Clear
MW-6	12/28/2021	10.96	12.83	6.03	-131	1.720	21.1	0.94	Sheen
MW-6	1/27/2022	11.00	11.04	6.78	-201	1.390	20.9	0.34	Clear
MW-7*	10/18/2021	12.91	17.94	9.51	86	0.990	23.3	4.01	Clear
MW-7	11/13/2021	9.42	14.39	9.00	-287	0.936	0.0	0.00	Clear
MW-7	11/30/2021	10.52	13.22	10.95	-234	1.140	0.9	0.38	Clear
MW-7	12/28/2021	12.20	14.80	9.60	-368	1.030	9.4	1.18	Clear
MW-7	1/27/2022	13.75	10.98	9.60	-283	0.868	0.0	0.46	Slighly Cloudy White
MW-8*	10/18/2021	15.72	16.58	7.40	137	1.190	3.1	2.72	Clear
MW-8	11/13/2021	5.50	14.40	6.78	-137	1.370	23.1	0.00	Clear
MW-8	11/30/2021	9.38	14.95	6.80	-283	1.300	9.5	0.32	Light Grey Turbidity, Light Bacterial Sheen, Used Cooking Oil Odor
MW-8	12/29/2021	10.43	14.86	7.14	-229	1.540	12.2	0.82	Light Sheen
MW-8	1/27/2022	10.55	10.50	6.95	-148	1.440	3.9	0.00	Clear
MW-9*	10/19/2021	10.05	19.15	7.29	110	1.180	0.0	2.20	Clear
MW-9	11/13/2021	5.23	15.29	6.73	-72	1.230	196.0	0.00	White Haze w/ Some Turbidity
MW-9	11/30/2021	9.41	15.66	6.45	-184	1.470	61.7	0.34	Grey Turbidity, Light Bacterial Sheen, Used Cookin Oil Odor
MW-9	12/29/2021	11.99	15.80	5.67	-77	1.530	10.5	0.67	Sheen
MW-9	1/27/2022	12.75	9.40	6.07	-89	1.430	0.0	0.56	Clear

* Pre-Injection Water Quality Parameters shown for IW-1, MW-6, MW-7, MW-8 and MW-9.

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Analytical Results

Sample ID Sample Depth (BG) Sampling Date	IW-1 10/19/21	IW-1 11/30/21	IW-1 12/28/21	IW-1 01/27/22	MW-4_1 (15-20) 10/18/21	MW-4_1 (15-20) 11/30/21	MW-4_1 (15-20) 12/29/21	MW-4_1 (15-20) 01/27/22	NYSDEC Class GA Standard or Guidance Value
VOCs in ug/l									
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5
Cis-1,2-Dichloroethylene	***140***	***96 J***	***170***	***93 J***	***230***	***1100 J***	***930***	***640 J***	5
Tetrachloroethylene	U	U	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5
Trichloroethylene	***890***	U	U	U	***1200***	***20 J***	U	***53***	5
Vinyl Chloride	U	***16 J***	***20***	***20***	U	***110 J***	***240***	***140***	2
Other in ug/l									
Acetylene	U	U	U	U	U	1.2 J	U	U	--
Ethane	0.41 J	160	94 J	160 J	U	24	32 J	21 J	--
Ethene	U	150	77 J	120 J	0.28 J	44	110 J	130 J	--
Methane	4.8	3900	1900 JD	4500 JD	9.3	1600	2500 D	3200 D	--
METALS in mg/l									
Arsenic	U	U	U	U	U	U	U	U	0.025
Barium	0.39	***2.3***	***1.8***	***2.0***	***1.3***	***2.2***	***2.0***	***2.1***	1
Cadmium	U	0.00052 J	U	U	U	0.00055 J	U	U	0.005
Chromium	U	U	U	U	0.0020 J	U	U	U	0.05
Lead	U	0.014	0.011	0.0081 J	0.0078 J	0.0067 J	U	U	0.025
Selenium	U	***0.011 J***	***0.013 J***	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	0.05
Mercury	U	U	U	U	U	U	U	U	0.0007
Ferric Iron	U	116	78.1	89.0	0.85	36.4	15.5	17.5	--
Ferrous Iron	UJ	13.7 J	17.8 J	18.0 J	UJ	2.2 J	0.35 J	UJ	--
General Chemisty in mg/l									
Alkalinity, bicarbonate (as CaCO3)	176	739	56.6 J	321 J	185	360	289	311 J	--
Alkalinity, carbonate (as CaCO3)	U	U	U	U	U	U	U	U	--
Alkalinity, hydroxide (as CaCO3)	U	U	--	--	U	U	--	--	--
Alkalinity, total (as CaCO3)	176	739	56.6 J	321 J	185	360	289	311 J	--
Chloride (as Cl)	245	207	***267***	***301***	234	***277***	***297***	***357***	250
Nitrogen, nitrate (as N)	0.33	0.037 J	0.47	UJ	0.61	0.021 J	0.038 J	0.026 J	10
Nitrogen, nitrate-nitrite	0.37	0.037 J	0.51	UJ	0.64	0.021 J	0.038 J	0.026 J	10
Nitrogen, nitrite	UB	U	0.045 J	UJ	UB	U	U	UJ	1
Sulfate (as SO4)	49.7	U	U	U	48.6	2.7 J	U	4.9 J	250
Sulfide	U	U	U	U	U	U	U	U	0.05
Dissolved Organic Carbon	3.5	580	427	329	4.8	162	112 J	84.4	--
Total Organic Carbon	4.3	563	323	336	6.8	174	123 J	98.5	--

Footnotes/Qualifiers:
- ug/l: Micrograms per liter
- mg/l: Milligrams per liter
- --: No standard
- U: Analyzed for but not detected
- J: Estimated value or limit
- UB: Non detect based on blank results
- D: Exceeded the calibration range reanalyzed and reported from a secondary dilution

Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Analytical Results

Sample ID Sample Depth (BG) Sampling Date	MW-4_2 (25-30) 10/18/21	MW-4_2 (25-30) 11/30/21	MW-4_2 (25-30) 12/29/21	MW-4_2 (25-30) 01/27/22	MW-4_3 (35-40) 10/18/21	MW-4_3 (35-40) 11/30/21	MW-4_3 (35-40) 12/29/21	MW-4_3 (35-40) 01/27/22	NYSDEC Class GA Standard or Guidance Value
VOCs in ug/l									
1,1-Dichloroethene	U	UJ	U	U	4.4 J	U	U	U	5
Cis-1,2-Dichloroethylene	*320*	*880 J*	*800*	*510 J*	*270*	*270 J*	*710*	*680 J*	5
Tetrachloroethylene	U	U	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5
Trichloroethylene	*910*	*25 J*	U	U	*780*	*6.6 J*	*7.1 J*	U	5
Vinyl Chloride	U	*110 J*	*190*	*130*	*17*	*50 J*	*170*	*180*	2
Other in ug/l									
Acetylene	U	1.5 J	U	U	U	1.8 J	U	U	--
Ethane	0.34 J	22	35 J	46 J	0.34 J	23	37 J	34 J	--
Ethene	0.71 J	51	100 J	190 J	0.86 J	58	99 J	130 J	--
Methane	25	1800	2800 D	6600 D	24	2000	3100 D	4800 D	--
METALS in mg/l									
Arsenic	U	U	U	U	U	U	U	U	0.025
Barium	0.71	*2.3*	*2*	*2.4*	*1.3*	*2.3*	*2*	*2.2*	1
Cadmium	U	U	U	U	U	U	U	U	0.005
Chromium	0.0013 J	U	U	U	0.0026 J	U	U	U	0.05
Lead	0.0061 J	0.012	0.0044 J	0.0037 J	0.0075 J	0.010	0.0059 J	U	0.025
Selenium	U	U	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	0.05
Mercury	U	U	U	U	U	U	U	U	0.0007
Ferric Iron	0.44	46.4	30.8	32.9	1.4	44.0	34.3	28.6	--
Ferrous Iron	UJ	3.6 J	4.5 J	UJ	UJ	5.9 J	2.6 J	UJ	--
General Chemisty in mg/l									
Alkalinity, bicarbonate (as CaCO3)	193	358	360	361 J	181	357	331	337 J	--
Alkalinity, carbonate (as CaCO3)	U	U	U	U	U	U	U	U	--
Alkalinity, hydroxide (as CaCO3)	U	U	--	--	U	U	--	--	--
Alkalinity, total (as CaCO3)	193	358	360	361 J	181	357	331	337 J	--
Chloride (as Cl)	*260*	*282*	*316*	*354*	247	*284*	*321*	*374*	250
Nitrogen, nitrate (as N)	0.24	0.074	0.14 J	UJ	0.36	0.039 J	0.14 J	UJ	10
Nitrogen, nitrate-nitrite	0.27	0.074	0.14 J	UJ	0.39	0.039 J ^+	0.14 J	UJ	10
Nitrogen, nitrite	UB	U	U	U	UB	U	U	U	1
Sulfate (as SO4)	44.2	U	U	U	43.1	U	U	U	250
Sulfide	U	U	U	U	U	U	U	U	0.05
Dissolved Organic Carbon	4.1	159	191 J	138	4.5	199	183 J	138	--
Total Organic Carbon	5.2	189	197 J	176	17.8	204	204 J	140	--

Footnotes/Qualifiers:
ug/l: Micrograms per liter
mg/l: Milligrams per liter
--: No standard
U: Analyzed for but not detected
J: Estimated value or limit
UB: Non detect based on blank results
D: Exceeded the calibration range reanalyzed and reported from a secondary dilution
Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Analytical Results

Sample ID Sample Depth (BG) Sampling Date	MW-4_4 (42-47) 10/19/21	MW-4_4 (42-47) 11/30/21	MW-4_4 (42-47) 12/29/21	MW-4_4 (42-47) 01/27/22	MW-4_5 (50-53) 10/19/21	MW-4_5 (50-53) 11/30/21	MW-4_5 (50-53) 12/29/21	MW-4_5 (50-53) 01/27/22	NYSDEC Class GA Standard or Guidance Value
VOCs in ug/l									
1,1-Dichloroethene	***5.6 J***	UJ	U	U	***9.8 J***	UJ	U	U	5
Cis-1,2-Dichloroethylene	***270***	***780 J***	***720***	***450 J***	***350***	***440 J***	***210***	***930 J***	5
Tetrachloroethylene	U	U	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5
Trichloroethylene	***820***	***21 J***	***7.4 J***	U	***600***	***15 J***	U	U	5
Vinyl Chloride	***14***	***110 J***	***140***	***110***	***110***	***150 J***	***510***	***220***	2
Other in ug/l									
Acetylene	U	1.3 J	U	U	U	1.6 J	U	U	--
Ethane	U	17	31 J	16 J	0.38 J	12	13 J	23 J	--
Ethene	0.48 J	44	80 J	76 J	6.0	76	69 J	81 J	--
Methane	4.2	1500	3000 D	4700 D	61	1200	2000 D	3900 D	--
METALS in mg/l									
Arsenic	U	U	U	U	U	U	U	U	0.025
Barium	0.78	***2.3***	***2***	***2.3***	0.69	***1.6***	***3.5***	***1.7***	1
Cadmium	U	0.00053 J	U	U	U	0.00061 J	U	U	0.005
Chromium	0.0013 J	U	U	U	U	0.0034 J	U	U	0.05
Lead	0.0055 J	0.0080 J	0.0055 J	0.0046 J	U	0.011	0.012	U	0.025
Selenium	U	U	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	0.05
Mercury	U	U	U	U	U	U	U	U	0.0007
Ferric Iron	0.62	47.2	31.9	34.3	0.51	77.3	86.7	16.3	--
Ferrous Iron	UJ	2.9 J	5.7 J	0.12 J	UJ	2.9 J	19.3 J	UJ	--
General Chemisty in mg/l									
Alkalinity, bicarbonate (as CaCO3)	198	375	356	389 J	212	556	387	220 J	--
Alkalinity, carbonate (as CaCO3)	U	U	U	U	U	U	U	U	--
Alkalinity, hydroxide (as CaCO3)	U	U	--	--	U	U	--	U	--
Alkalinity, total (as CaCO3)	198	375	356	389 J	212	556	387	220 J	--
Chloride (as Cl)	246	***282***	***316***	***373***	***347***	***265***	***278***	***445***	250
Nitrogen, nitrate (as N)	0.41	U	0.13 J	0.042 J	0.030 J	0.026 J	0.59 J	UJ	10
Nitrogen, nitrate-nitrite	0.41	0.076	0.13 J	0.042 J	0.078	0.026 J	0.67 J	UJ	10
Nitrogen, nitrite	U	0.18	U	U	UB	U	0.076	U	1
Sulfate (as SO4)	46.6	U	U	U	51.7	8.5 J	U	2.0 J	250
Sulfide	U	U	U	U	U	***1.2***	U	U	0.05
Dissolved Organic Carbon	19.3	209	205 J	164	9.1	1020	325 J	75.1	--
Total Organic Carbon	13.8	209	202 J	169	10.4	927	334 J	69.9	--

Footnotes/Qualifiers:
ug/l: Micrograms per liter
mg/l: Milligrams per liter
--: No standard
D: Exceeded the calibration range reanalyzed and reported from a secondary dilution
U: Analyzed for but not detected
J: Estimated value or limit
UB: Non detect based on blank results
Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Analytical Results

Sample ID / Sample Depth (BG) / Sampling Date	MW-6 10/19/21	MW-6 11/30/21	MW-6 12/28/21	MW-6 01/27/22	MW-7 10/18/21	MW-7 11/30/21	MW-7 12/28/21	MW-7 01/27/22	NYSDEC Class GA Standard or Guidance Value
VOCs in ug/l									
1,1-Dichloroethene	U	U	U	U	U	UJ	U	U	5
Cis-1,2-Dichloroethylene	***1200***	***1600 J***	***3800 D***	***2700 J***	***2000***	***1600 J***	***2500***	***3100 J***	5
Tetrachloroethylene	U	U	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5
Trichloroethylene	***200***	U	U	U	***1200***	***620 J***	***290***	***230***	5
Vinyl Chloride	***82***	***220 J***	***760***	***540***	***110***	***88 J***	***92***	***80***	2
Other in ug/l									
Acetylene	U	U	U	1.0 J	0.57 J	1.0 J	1.1 J	1.4 J	--
Ethane	0.41 J	55	46 J	46 J	0.72 J	UB	U	U	--
Ethene	2.2	87	110 J	180 J	2.1	3.2	2.7 J	4.9 J	--
Methane	64	3500	2600 D	3400 D	13	25	20	28	--
METALS in mg/l									
Arsenic	U	U	U	U	U	0.012 J	0.014 J	0.011 J	0.025
Barium	0.096	***1.4***	***1.6***	***1.5***	0.27	0.20	0.3	0.41	1
Cadmium	U	0.00063 J	U	U	U	U	U	U	0.005
Chromium	0.028	U	U	U	0.0021 J	0.0013 J	U	U	0.05
Lead	U	0.012	0.0086 J	0.0033 J	U	U	U	U	0.025
Selenium	U	0.010 J	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	0.05
Mercury	U	U	U	U	U	U	U	U	0.0007
Ferric Iron	U	86.8	63.8	33.3	0.12	U	0.1	U	--
Ferrous Iron	UJ	17.2 J	3 J	0.44 J	UJ	UJ	UJ	1.7 J	--
General Chemisty in mg/l									
Alkalinity, bicarbonate (as CaCO3)	52.7	577	365	294 J	82.4	121	63	67.6 J	--
Alkalinity, carbonate (as CaCO3)	U	U	U	U	U	U	U	U	--
Alkalinity, hydroxide (as CaCO3)	U	U	--	--	U	U	--	--	--
Alkalinity, total (as CaCO3)	52.7	577	365	294 J	82.4	121	63	67.6 J	--
Chloride (as Cl)	164	246	***261***	***274***	223	168	194	203	250
Nitrogen, nitrate (as N)	0.060	UJ	0.41	0.022 J	0.035 J	U	U	UJ	10
Nitrogen, nitrate-nitrite	0.12	0.068 J	0.48	0.022 J	UB	U	U	UJ	10
Nitrogen, nitrite	UB	0.16 J	0.068	U	U	U	U	U	1
Sulfate (as SO4)	56.2	U	U	U	66.4	43.0	28.3	17.8	250
Sulfide	U	U	U	U	U	U	***1.2***	U	0.05
Dissolved Organic Carbon	3.7	512	193	178	3.2	15.2	23.8	17.0	--
Total Organic Carbon	4.9	523	248	136	3.4	14.9	23.1	17.9	--

Footnotes/Qualifiers:
ug/l: Micrograms per liter
mg/l: Milligrams per liter
--: No standard
D: Exceeded the calibration range reanalyzed and reported from a secondary dilution
U: Analyzed for but not detected
J: Estimated value or limit
UB: Non detect based on blank results
Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Analytical Results

Sample ID Sample Depth (BG) Sampling Date	MW-8 10/18/21	MW-8 11/30/21	MW-8 12/29/21	MW-8 01/27/22	MW-9 10/19/21	MW-9 11/30/21	MW-9 12/29/21	MW-9 01/27/22	NYSDEC Class GA Standard or Guidance Value
VOCs in ug/l									
1,1-Dichloroethene	U	UJ	U	U	UJ	U	U	U	5
Cis-1,2-Dichloroethylene	***250***	***97 J***	***100***	***9.8 J***	***250***	***170 J***	***160***	***120 J***	5
Tetrachloroethylene	U	U	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	5
Trichloroethylene	***25***	***8.7 J***	***10***	2.6 J	***19 J***	***33***	***11***	U	5
Vinyl Chloride	***55***	***26 J***	***51***	***20***	***100***	***35 J***	***41***	***26***	2
Other in ug/l									
Acetylene	U	U	U	U	U	U	U	U	--
Ethane	0.78 J	UB	1 J	1.6 J	1.1	3.2	2 J	5.9	--
Ethene	1.8	3.6	47	76 J	6.4	8.9	32	65 J	--
Methane	22	27	160 J	480	61	100	460 J	1900 D	--
METALS in mg/l									
Arsenic	U	0.017	0.012 J	0.014 J	U	0.018	0.019	0.024	0.025
Barium	0.39	0.60	1	***1.3***	0.20	0.57	1	***1.7***	1
Cadmium	U	0.00058 J	U	U	U	0.00056 J	U	U	0.005
Chromium	0.0015 J	U	0.0014 J	U	U	0.0023 J	U	U	0.05
Lead	U	U	U	U	U	0.0040 J	0.005 J	0.0047 J	0.025
Selenium	U	U	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	0.05
Mercury	U	U	U	U	U	U	U	U	0.0007
Ferric Iron	0.28	2.7	4	7.3	0.22	7.9	7.2	29.6	--
Ferrous Iron	UJ	UJ	UJ	UJ	UJ	0.54 J	18.6 J	7.1 J	--
General Chemisty in mg/l									
Alkalinity, bicarbonate (as CaCO3)	206	347	380	457 J	236	466	483	465 J	--
Alkalinity, carbonate (as CaCO3)	U	U	U	U	U	U	U	U	--
Alkalinity, hydroxide (as CaCO3)	U	U	--	--	U		--	--	--
Alkalinity, total (as CaCO3)	206	347	380	457 J	236	466	483	465 J	--
Chloride (as Cl)	203	203	210	190	212	172	174	177	250
Nitrogen, nitrate (as N)	0.064	0.023 J	UJ	0.027 J	0.041 J	0.026 J	0.33 J	UJ	10
Nitrogen, nitrate-nitrite	UB	0.023 J	0.025 J	0.027 J	0.075	0.026 J	0.37 J	UJ	10
Nitrogen, nitrite	UB	U	0.021 J	U	UB	U	0.043 J	0.098 J	1
Sulfate (as SO4)	81.6	8.6 J	11.3	5.9 J	80.4	U	U	UJ	250
Sulfide	U	***2.0***	***0.8 J***	U	U	***2.0***	U	U	0.05
Dissolved Organic Carbon	3.8	53.4	48.2 J	52.9	3.5	235	234 J	183	--
Total Organic Carbon	4.3	44.2	41.1 J	50.2	4.3	212	291 J	278	--

Footnotes/Qualifiers:
ug/l: Micrograms per liter
mg/l: Milligrams per liter
--: No standard
D: Exceeded the calibration range reanalyzed and reported from a secondary dilution
U: Analyzed for but not detected
J: Estimated value or limit
UB: Non detect based on blank results
Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Anlaytical Results for PFAS

Sample ID Sample Depth (BG) Sampling Date	IW-1 10/19/21	IW-1 01/27/22	MW-4_1 (15-20) 10/18/21	MW-4_1 (15-20) 01/27/22	Preliminary Target Levels (PTL) / Drinkning Water Standards (DWS)
PFAS in ng/l					
1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	U	U	U	U	100 PTL
1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	U	U	U	U	100 PTL
2-(N-methyl perfluorooctanesulfonamido) acetic acid	U	U	U	U	100 PTL
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	U	U	U	U	100 PTL
Perfluorobutanesulfonic Acid	3.1	4.6	3.7	5.0	100 PTL
Perfluorobutyric Acid (PFBA)	6.1	U	5	U	100 PTL
Perfluorodecane Sulfonic Acid	U	U	U	U	100 PTL
Perfluorodecanoic Acid (PFDA)	U	U	U	U	100 PTL
Perfluorododecanoic Acid (PFDoA)	U	U	U	U	100 PTL
Perfluoroheptane Sulfonate (PFHpS)	U	U	U	U	100 PTL
Perfluoroheptanoic Acid (PFHpA)	1.3 J	1.3 J	0.96 J	1.2 J	100 PTL
Perfluorohexanesulfonic Acid	3.7	1.7 J	1.4 J	1.7 J	100 PTL
Perfluorohexanoic Acid (PFHxA)	2	UB	2.3	UB	100 PTL
Perfluorononanoic Acid	0.44 J	UJ	0.49 J	0.37 J	100 PTL
Perfluorooctane Sulfonamide (FOSA)	U	U	U	U	100 PTL
Perfluorooctane Sulfonic Acid (PFOS)	5	0.8 J I	4.5	3.2	10 DWS
Perfluorooctanoic Acid (PFOA)	2.7	2.1	2.7	3.1	10 DWS
Perfluoropentanoic Acid (PFPeA)	1.8 J	3.9	1.5 J	2.5	100 PTL
Perfluorotetradecanoic Acid (PFTeA)	U	U	U	U	100 PTL
Perfluorotridecanoic Acid (PFTriA)	U	U	U	U	100 PTL
Perfluoroundecanoic Acid (PFUnA)	U	U	U	U	100 PTL
Total PFAS	26.14	14.4	22.55	17.07	500 PTL

PTL: Preliminary Target Levels
DWS: Drinkning Water Standards

Footnotes/Qualifiers:
ng/l: Nanogram per liter
U: Analyzed for but not detected
UB: Non detect based on blank result
J: Estimated value or limit

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Anlaytical Results for PFAS

Sample ID Sample Depth (BG) Sampling Date	MW-4_2 (25-30) 10/18/21	MW-4_2 (25-30) 01/27/22	MW-4_3 (35-40) 10/18/21	MW-4_3 (35-40) 01/27/22	Preliminary Target Levels (PTL) / Drinkning Water Standards (DWS)
PFAS in ng/l					
1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	U	U	U	U	100 PTL
1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	U	U	U	U	100 PTL
2-(N-methyl perfluorooctanesulfonamido) acetic acid	U	U	U	U	100 PTL
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	U	U	U	U	100 PTL
Perfluorobutanesulfonic Acid	3.9	5.1	4.4	4.5	100 PTL
Perfluorobutyric Acid (PFBA)	5.5	U	5.1	U	100 PTL
Perfluorodecane Sulfonic Acid	U	U	U	U	100 PTL
Perfluorodecanoic Acid (PFDA)	U	U	U	U	100 PTL
Perfluorododecanoic Acid (PFDoA)	U	U	U	U	100 PTL
Perfluoroheptane Sulfonate (PFHpS)	U	U	U	U	100 PTL
Perfluoroheptanoic Acid (PFHpA)	1.2 J	1.3 J	1.3 J	1.1 J	100 PTL
Perfluorohexanesulfonic Acid	2.6	1.7 J	2.1	1.4 J	100 PTL
Perfluorohexanoic Acid (PFHxA)	4.1	UB	10	UB	100 PTL
Perfluorononanoic Acid	0.53 J	U	0.62 J	U	100 PTL
Perfluorooctane Sulfonamide (FOSA)	U	U	U	U	100 PTL
Perfluorooctane Sulfonic Acid (PFOS)	4.9	2.8	4.4	2.5	10 DWS
Perfluorooctanoic Acid (PFOA)	3.1	2.8	2.8	3.0	10 DWS
Perfluoropentanoic Acid (PFPeA)	2.6	2.4	2.2	2.5	100 PTL
Perfluorotetradecanoic Acid (PFTeA)	U	U	U	U	100 PTL
Perfluorotridecanoic Acid (PFTriA)	U	U	U	U	100 PTL
Perfluoroundecanoic Acid (PFUnA)	U	U	U	U	100 PTL
Total PFAS	28.43	16.1	32.92	15	500 PTL

PTL: Preliminary Target Levels
DWS: Drinkning Water Standards

Footnotes/Qualifiers:
ng/l: Nanogram per liter
U: Analyzed for but not detected
UB: Non detect based on blank result
J: Estimated value or limit

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Anlaytical Results for PFAS

Sample ID Sample Depth (BG) Sampling Date	MW-4_4 (42-47) 10/19/21	MW-4_4 (42-47) 01/27/22	MW-4_5 (50-53) 10/19/21	MW-4_5 (50-53) 01/27/22	Preliminary Target Levels (PTL) / Drinkning Water Standards (DWS)
PFAS in ng/l					
1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	U	U	U	U	100 PTL
1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	U	U	U	U	100 PTL
2-(N-methyl perfluorooctanesulfonamido) acetic acid	U	U	U	U	100 PTL
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	U	U	U	U	100 PTL
Perfluorobutanesulfonic Acid	3.6	4.6	3.1	3.4	100 PTL
Perfluorobutyric Acid (PFBA)	4.2 J	U	3.5 J	U	100 PTL
Perfluorodecane Sulfonic Acid	U	U	U	U	100 PTL
Perfluorodecanoic Acid (PFDA)	U	U	U	U	100 PTL
Perfluorododecanoic Acid (PFDoA)	U	U	U	U	100 PTL
Perfluoroheptane Sulfonate (PFHpS)	U	U	U	U	100 PTL
Perfluoroheptanoic Acid (PFHpA)	1.1 J	1.3 J	1.1 J	0.96 J	100 PTL
Perfluorohexanesulfonic Acid	2.1	1.5 J	1.7 J	1.1 J	100 PTL
Perfluorohexanoic Acid (PFHxA)	7.9	UB	11	UB	100 PTL
Perfluorononanoic Acid	0.44 J	U	0.49 J	0.35 J	100 PTL
Perfluorooctane Sulfonamide (FOSA)	U	U	U	U	100 PTL
Perfluorooctane Sulfonic Acid (PFOS)	3.9	2.9	4.1	2.7	10 DWS
Perfluorooctanoic Acid (PFOA)	2.9	2.8	2.9	2.3	10 DWS
Perfluoropentanoic Acid (PFPeA)	1.9	2.6	1.7 J	UB	100 PTL
Perfluorotetradecanoic Acid (PFTeA)	U	U	U	U	100 PTL
Perfluorotridecanoic Acid (PFTriA)	U	U	U	U	100 PTL
Perfluoroundecanoic Acid (PFUnA)	U	U	U	U	100 PTL
Total PFAS	28.04	15.7	29.59	10.81	500 PTL

PTL: Preliminary Target Levels
DWS: Drinking Water Standards

Footnotes/Qualifiers:
ng/l: Nanogram per liter
U: Analyzed for but not detected
UB: Non detect based on blank result
J: Estimated value or limit

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Anlaytical Results for PFAS

Sample ID Sample Depth (BG) Sampling Date	MW-6 10/19/21	MW-6 01/27/22	MW-7 10/18/21	MW-7 01/27/22	Preliminary Target Levels (PTL) / Drinkning Water Standards (DWS)
PFAS in ng/l					
1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	U	U	U	U	100 PTL
1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	U	U	0.99 J	U	100 PTL
2-(N-methyl perfluorooctanesulfonamido) acetic acid	U	U	U	U	100 PTL
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	U	U	U	U	100 PTL
Perfluorobutanesulfonic Acid	3.5	5.0	3.5	3.4	100 PTL
Perfluorobutyric Acid (PFBA)	5.3	U	7.5	5.1 J	100 PTL
Perfluorodecane Sulfonic Acid	U	U	U	U	100 PTL
Perfluorodecanoic Acid (PFDA)	U	U	U	U	100 PTL
Perfluorododecanoic Acid (PFDoA)	U	U	U	U	100 PTL
Perfluoroheptane Sulfonate (PFHpS)	U	U	U	U	100 PTL
Perfluoroheptanoic Acid (PFHpA)	0.94 J	1.0 J	1.9	1.4 J	100 PTL
Perfluorohexanesulfonic Acid	4.9	3.5	4.9	2.5	100 PTL
Perfluorohexanoic Acid (PFHxA)	1.6 J	UB	2.9	UB	100 PTL
Perfluorononanoic Acid	0.51 J	U	0.68 J	0.61 J	100 PTL
Perfluorooctane Sulfonamide (FOSA)	U	U	U	U	100 PTL
Perfluorooctane Sulfonic Acid (PFOS)	6.8	2.9	3.7	3.6	10 DWS
Perfluorooctanoic Acid (PFOA)	3.1	3.3	4.3	3.8	10 DWS
Perfluoropentanoic Acid (PFPeA)	1.4 J	2.8 J	4	2.6	100 PTL
Perfluorotetradecanoic Acid (PFTeA)	U	U	U	U	100 PTL
Perfluorotridecanoic Acid (PFTriA)	U	U	U	U	100 PTL
Perfluoroundecanoic Acid (PFUnA)	U	U	U	U	100 PTL
Total PFAS	28.05	18.5	34.37	23.01	500 PTL

PTL: Preliminary Target Levels
DWS: Drinking Water Standards

Footnotes/Qualifiers:
ng/l: Nanogram per liter
U: Analyzed for but not detected
UB: Non detect based on blank result
J: Estimated value or limit

`

Table 3-7
Harbor View Square
68 West First Street, Oswego, New York
Groundwater Monitoring Well Anlaytical Results for PFAS

Sample ID / Sample Depth (BG) / Sampling Date	MW-8 10/18/21	MW-8 01/27/22	MW-9 10/19/21	MW-9 01/27/22	Preliminary Target Levels (PTL) / Drinkning Water Standards (DWS)
PFAS in ng/l					
1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	U	U	U	U	100 PTL
1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	U	U	U	2.5 J	100 PTL
2-(N-methyl perfluorooctanesulfonamido) acetic acid	U	U	0.92 J	U	100 PTL
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	U	U	0.69 J	U	100 PTL
Perfluorobutanesulfonic Acid	2.8	3.0	2.6	1.9	100 PTL
Perfluorobutyric Acid (PFBA)	14	12 J	13	U	100 PTL
Perfluorodecane Sulfonic Acid	U	U	U	U	100 PTL
Perfluorodecanoic Acid (PFDA)	U	U	0.34 J	U	100 PTL
Perfluorododecanoic Acid (PFDoA)	U	U	U	U	100 PTL
Perfluoroheptane Sulfonate (PFHpS)	U	U	U	U	100 PTL
Perfluoroheptanoic Acid (PFHpA)	2.3	1.9	1.7 J	2.1	100 PTL
Perfluorohexanesulfonic Acid	3.6	4.6	4.7	6.5 J	100 PTL
Perfluorohexanoic Acid (PFHxA)	3.7	3.4 UB	3	UB	100 PTL
Perfluorononanoic Acid	0.53 J	0.67 J	0.7 J	0.34 J	100 PTL
Perfluorooctane Sulfonamide (FOSA)	U	U	U	U	100 PTL
Perfluorooctane Sulfonic Acid (PFOS)	2.8	3.3	5.5	4.8	10 DWS
Perfluorooctanoic Acid (PFOA)	3.6	4.0	3.9	3.8	10 DWS
Perfluoropentanoic Acid (PFPeA)	6.3	5.3	5.1	3.6	100 PTL
Perfluorotetradecanoic Acid (PFTeA)	U	U	U	U	100 PTL
Perfluorotridecanoic Acid (PFTriA)	U	U	U	U	100 PTL
Perfluoroundecanoic Acid (PFUnA)	U	U	U	U	100 PTL
Total PFAS	39.63	38.17	42.15	25.54	500 PTL

PTL: Preliminary Target Levels
DWS: Drinkning Water Standards

Footnotes/Qualifiers:
ng/l: Nanogram per liter
U: Analyzed for but not detected
UB: Non detect based on blank result
J: Estimated value or limit

3.6 Site Restoration

Immediately upon completion of the work, 55-gallon drums materials and supplies (i.e. orange construction fence, plywood) were staged in parking spaces located east of the work activities pending disposal and/or off-site transportation. Asphalt that was saw cut and removed to facilitate well installation was restored with a new 8-inch steel flush mount road box installed in a concrete pad that extended on all sides to the surrounding asphalt.

3.7 Conclusions/Recommendations

Based on the review of the post injection data, a reduction in TCE has been observed. A comparison of pre- and post-injection groundwater monitoring analytical results for TCE indicated that of the ten samples collected that exhibited TCE concentrations greater than 5 ug/L in pre-injection samples, only two exhibited TCE concentrations greater than 5 ug/L in post-injection samples. Seven of the ten samples collected exhibited non-detectable concentrations of TCE. Although TCE concentrations have been significantly reduced, elevated concentrations of DCE and VC are present as expected with anaerobic biodegradation.

The groundwater analytical results also indicate an increase in concentrations of ethane, ethene and methane. The increase in methane, in particular the injection well and nearby MW-4 and MW-6, may indicate that methanogenesis is occurring. Favorable concentrations of methane (>1,000 ug/L) remain in all monitoring well locations since the injections, except for side-gradient well MW-7 and downgradient well MW-8. Significant increases in alkalinity were observed following injections and remain, potentially resulting from the dissolution of carbonate minerals from the production of carbon dioxide during metabolism of the microorganisms, which is another factor indicating biodegradation is occurring. As sulfate is also an alternate election acceptor, sulfate reduction is also an indication that anaerobic biodegradation is occurring. The elevated concentrations of total organic carbon and negative oxidation/reduction potential observed in the 90-day groundwater monitoring also indicates the environment remains conducive to anaerobic biodegradation

The post-injection sampling results indicate that anerobic biodegradation is on-going at the Site. Reagent longevity of three years or greater has been observed at other sites. Continued groundwater monitoring will be performed in accordance with the approved Site Management Plan (SMP). Subsequent rounds of groundwater sampling will provide additional data to support the remedial design, the effectiveness of the continued biodegradation of chlorinated VOCs in groundwater, and a better understanding of the longevity of the reagents injected during the pilot study. A conceptual work plan for future injections, installation of additional injection wells and monitoring wells is provided in the SMP and will be modified based on the results of future groundwater sampling. The work plan for additional injections and monitoring will be provided to NYSDEC for review and approval prior to the performance of any additional injections.

4.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

The Institutional and Engineering Control Plan is a component of the SMP which details the steps necessary to manage and implement the institutional and engineering controls for the Site consistent with the requirements of the ROD for the Site and DER-10 to protect human health and the environment. Details regarding most institutional controls and engineering controls (IC/EC) required for the site's remedial program are documented in the Soil and Sub-Slab Depressurization Systems CCR. The IC/EC's that are pertinent to this report are those established to manage remaining contamination in the on-site groundwater.

4.1 Description of Institutional Controls

The site remedy requires that an environmental easement be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to restricted residential, commercial or industrial uses only.

The Environmental Easement for the site was executed by the Department on December 18, 2019 and filed with the Oswego County Clerk on January 2, 2020. The County Recording Identifier number for this filing is R-2020-000033. A copy of the Environmental Easement and proof of filing is provided in **Appendix A**.

4.2 Description of Engineering Controls

The Engineering Controls (EC) for the Site include a cover system, sub-slab depressurization systems, a stormwater treatment system (oil/water separator), ISCT injections and MNA. Details of the cover system, sub-slab depressurization systems, a stormwater treatment system (oil/water separator) are presented in the Soil and Sub-Slab Depressurization Systems Construction Completion Report.

4.2.1 Groundwater Injections

The 90-day post-injection monitoring results show continued progress in achieving remedial goals for groundwater. The Site Management Plan includes provisions for injections and additional groundwater monitoring, as well as a conceptual draft injection work plan and implementation schedule that will be evaluated, updated and finalized for submission for NYSDEC approval.

5.0 REFERENCES

New York State Department of Environmental Conservation (June 1998). *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.* Technical and Operational Guidance Series (TOGS) 1.1.1.

New York State Department of Environmental Conservation. *Surface Water and Groundwater Quality Standards and Effluent Limitations, 6 NYCRR Part 703.*

Pratt and Pratt Archaeological Consultants, Inc. (March 25, 2000). *Phase 1A Cultural Resource Survey, Bowling Center, City of Oswego, Oswego County, NY.*

New York State Department of Environmental Conservation, Division of Environmental Remediation (December 14, 2006). *Environmental Remediation Programs, 6 NYCRR Part* 375.

New York State Department of Environmental Conservation, Division of Environmental Remediation (May 2010). *DER-10/Technical Guidance for Site Investigation and Remediation.*

CHA (January 2011). *Remedial Investigation/Remedial Alternatives Report, Former Flex-O-Wire Site, Oswego, New York, ERP Site #E7-38-040.*

OBG (February 2013). *Supplemental Subsurface Investigation/Alternatives Analysis Report, Flex-O-Wire Site, 68 W. First Street, Oswego, New York, ERP Site #E7-38-040.*

New York State Department of Environmental Conservation (November 2013). *Record of Decision, 68 West First Street, Operable Unit Number 01: On-Site Area, Environmental Restoration Project, Oswego, Oswego County, Site No. E738040.*

Holt (July 2018, Revised October 2018). *Soil Remedial Action Work Plan, Harbor View Square, 68 West First Street, Oswego, New York, NYS BCP Site No. C738040.*

Holt (August 2021), *Work Plan for Reagent Injection, Harbor View Square, 68 West First Street, Operable Unit Number 01, Oswego, New York, NYS BCP Site No. C738040.*

Holt (April 2022), *Predesign Investigation Summary Report, Harbor View Square, 68 West First Street, Oswego, New York.*

Holt (April 2022), *Soil and Sub-Slab Depressurization System Construction Completion Report, Harbor View Square, 68 West First Street, Oswego, New York.*

Holt (April 2022), *Site Management Plan, Harbor View Square, 68 West First Street, Oswego, New York.*

6.0 CERTIFICATIONS

I, Jeffrey, R. Holt, P.E., am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that construction activities were completed in substantial conformance with the Department-approved Work Plan For Reagent Injection.

57039	5/9/22	
NYS Professional Engineer #	Date	Signature

APPENDIX A

ENVIRONMENTAL EASEMENT

OSWEGO COUNTY – STATE OF NEW YORK
MICHAEL C. BACKUS COUNTY CLERK
46 EAST BRIDGE STREET, OSWEGO, NEW YORK 13126

COUNTY CLERK'S RECORDING PAGE
*****THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH*****

INSTRUMENT #: R-2020-000033

Receipt#: 20209129055
Clerk: CCOLLINS
Rec Date: 01/02/2020 12:18:05 PM
Doc Grp: D
Descrip: EASEMENT
Num Pgs: 10
Rec'd Frm: VANGUARD RESEARCH & TITLE SERVICES INC- LISA

Party1: HARBOR VIEW SQUARE LLC
Party2: PEOPLE OF THE STATE OF NEW YORK
Town: OSWEGO

Recording:

Number of Pages	50.00
Recording Fee/Cover Sheet	20.00
Extra Name Charge	0.50
TP 584	5.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
Sub Total:	95.50
Transfer Tax	
Transfer Tax	0.00
Sub Total:	0.00
Total:	95.50

**** NOTICE: THIS IS NOT A BILL ****

***** Transfer Tax *****
Transfer Tax #: 1844
Exempt

Total: 0.00

Record and Return To:

GREGORY ALLEN
90 STATE STREET SUITE 1009
ALBANY NY 12207

I hereby certify that the within and foregoing was recorded in the Oswego County Clerk's Office

Michael C. Backus
Oswego County Clerk

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 18th day of December, 2019 between Owner, Harbor View Square, LLC, having an office at 1201 East Fayette Street, Suite 26, Syracuse, New York 13210, County of Onondaga, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 68 West First Street in the City of Oswego, County of Oswego and State of New York, known and designated on the tax map of the County Clerk of Oswego as tax map parcel number: Section 128.38 Block 03 Lot 01, being the same as that property conveyed to Grantor by deed dated November 6, 2018 and recorded in the Oswego County Clerk's Office in Instrument No. R-2018-011737. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 2.438 +/- acres, and is hereinafter more fully described in the Land Title Survey dated July 29, 2019 prepared by Colin M. Kraft, L.L.S. of Land Lines Surveying, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C738040-11-16, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Oswego County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining

contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation

Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C738040
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the

recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Harbor View Square, LLC:

By: ______________________

Print Name: Benjamin Lockwood

Title: Authorized Signatory Date: 12/5/19

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Onondaga)

On the 5th day of December, in the year 20 19, before me, the undersigned, personally appeared Benjamin Lockwood personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Nancy J Monast
Notary Public - State of New York

NANCY J. MONAST
Notary Public, State of New York
Qualified In Onondaga County
No. 01MO6297763
Commission expires March 3, 2022

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: ______________________________
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 18th day of December, in the year 2019, before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2022

SCHEDULE "A" PROPERTY DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND, situate in the City of Oswego, County of Oswego and State of New York being more particularly bounded and described as follows:

Beginning at the intersection of the north line of West Schuyler Street with the west line of West First Street;

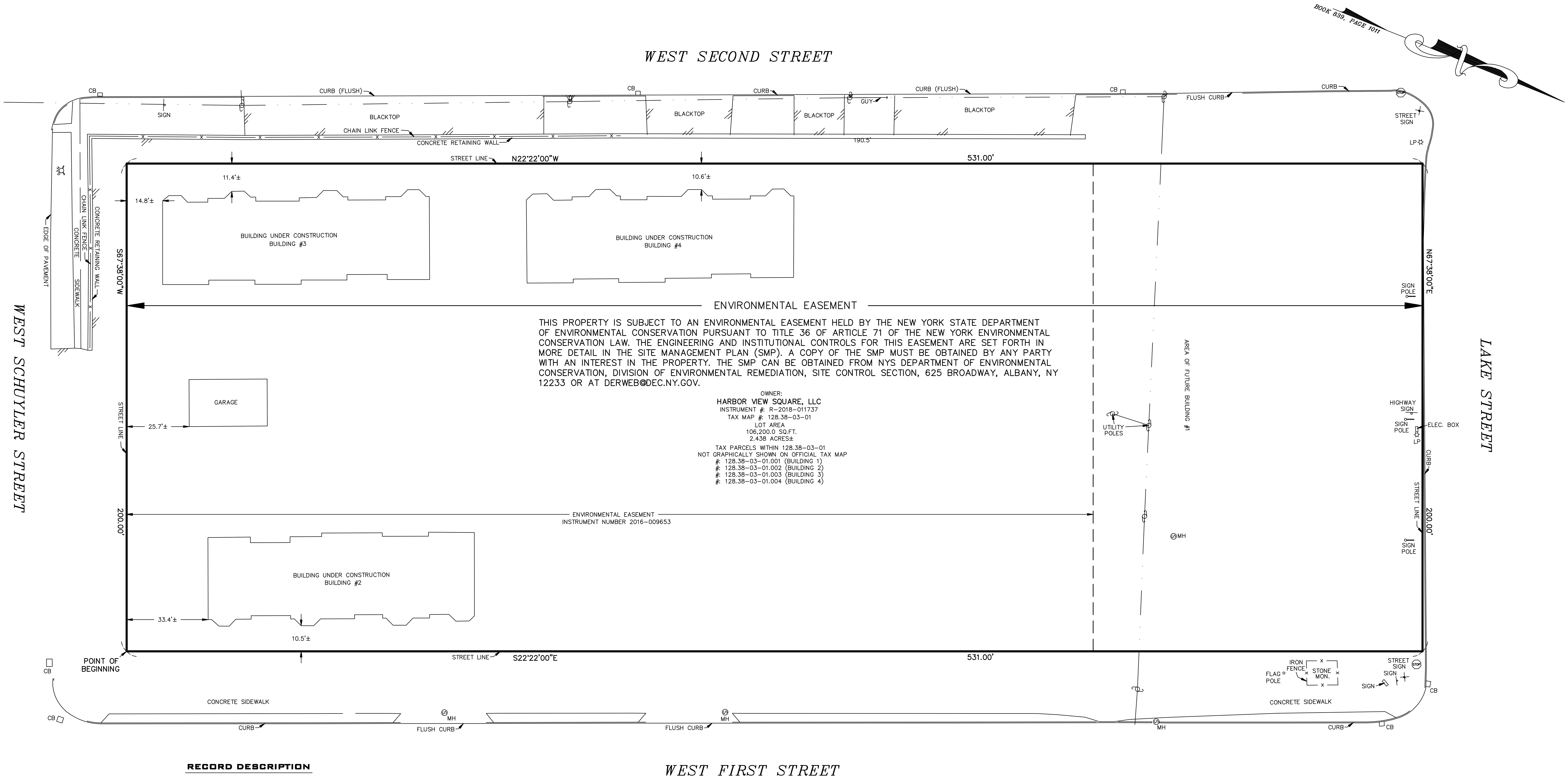
Thence S 67° 38' 00" W, along the said north line of West Schuyler Street, a distance of 200.00 feet to the intersection of the north line of West Schuyler Street with the east line of West Second Street;

Thence N 22° 22' 00" W, along the east line of West Second Street, a distance of 531.00 feet to the intersection of the east line of West Second Street with the south line of Lake Street;

Thence N 67° 38' 00" E, along the south line of Lake Street, a distance of 200.00 feet to the intersection of the south line of Lake Street with the west line of aforesaid West First Street;

Thence S 22° 22' 00" E, along the west line of West First Street, a distance of 531.00 feet to the point or place of beginning.

Containing 106,200 square feet or 2.438 acres of land, more or less.



RECORD DESCRIPTION

68 WEST FIRST STREET: TAX PARCEL NUMBER 128.38-03-01 (UNIT 1)

THE UNIT DESIGNATED AS UNIT No. 1 IN THE DECLARATION COMPRISING HARBOR VIEW SQUARE CONDOMINIUM LOCATED IN THE CITY OF OSWEGO, COUNTY OF OSWEGO, NEW YORK, (HEREINAFTER CALLED THE "PROPERTY"), MADE BY HOUSING VISIONS CONSULTANTS, INC. UNDER THE CONDOMINIUM ACT OF THE STATE OF NEW YORK, AS AMENDED (ARTICLE 9-B OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK), DATED NOVEMBER 6TH, 2018 AND RECORDED IN THE OFFICE OF THE COUNTY CLERK OF OSWEGO COUNTY ON THE 30TH DAY OF NOVEMBER, 2018 AS INSTRUMENT NUMBER 2018-011736 (HEREINAFTER CALLED THE "DECLARATION"), WHICH UNIT IS ALSO DESIGNATED AS UNIT 1, LOCATED ON PAGE A-100 OF THE CONSTRUCTION DRAWINGS FOR HARBOR VIEW SQUARE - BLDG. #1 AS CERTIFIED AND PREPARED BY PASSERO ASSOCIATES, AND FILED SIMULTANEOUSLY WITH SAID DECLARATION IN THE OFFICE OF THE COUNTY CLERK OF OSWEGO COUNTY (HEREINAFTER CALLED THE "UNIT"), TOGETHER WITH OTHERS WITH THE USE OF THE COMMON ELEMENTS, AS DEFINED IN SAID DECLARATION. THE APPURTENANT INTERESTS OF UNIT 1 IN THE COMMON ELEMENTS IS 12%. THE LAND AREA OF THE PROPERTY IS DESCRIBED AS FOLLOWS:

ALL TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF OSWEGO, COUNTY OF OSWEGO, STATE OF NEW YORK BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTH LINE OF WEST SCHUYLER STREET WITH THE WEST LINE OF WEST FIRST STREET

THENCE; S 67° 38' 00" W, ALONG THE NORTH LINE OF WEST SCHUYLER STREET, A DISTANCE OF 200.00 FEET TO THE INTERSECTION OF THE NORTH LINE OF WEST SCHUYLER STREET WITH THE EAST LINE OF WEST SECOND STREET

THENCE; N 22° 22' 00" W, ALONG THE EAST LINE OF WEST SECOND STREET, A DISTANCE OF 531.00 FEET TO THE INTERSECTION OF THE EAST LINE OF WEST SECOND STREET WITH THE SOUTH LINE OF LAKE STREET

THENCE; N 67° 38' 00" E, ALONG THE SOUTH LINE OF LAKE STREET, A DISTANCE OF 200.00 FEET TO THE INTERSECTION OF THE SOUTH LINE OF LAKE STREET WITH THE WEST LINE OF AFORESAID WEST FIRST STREET

THENCE; S 22° 22' 00" E, ALONG THE WEST LINE OF WEST FIRST STREET, A DISTANCE OF 531.00 FEET TO THE POINT AND PLACE OF BEGINNING

CONTAINING 106,200 SQUARE FEET OR 2.438 ACRES OF LAND MORE OR LESS

68 WEST FIRST STREET: TAX PARCEL NUMBER 128.38-03-01 (UNIT 2)

THE UNIT DESIGNATED AS UNIT No. 2 IN THE DECLARATION COMPRISING HARBOR VIEW SQUARE CONDOMINIUM LOCATED IN THE CITY OF OSWEGO, COUNTY OF OSWEGO, NEW YORK, (HEREINAFTER CALLED THE "PROPERTY"), MADE BY HOUSING VISIONS CONSULTANT'S, INC. UNDER THE CONDOMINIUM ACT OF THE STATE OF NEW YORK, AS AMENDED (ARTICLE 9-B OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK), DATED NOVEMBER 6, 2018 AND RECORDED IN THE OFFICE OF THE COUNTY CLERK OF OSWEGO COUNTY ON THE 30TH DAY OF NOVEMBER, 2018 AS INSTRUMENT NUMBER R-2018-011736 (HEREINAFTER CALLED THE "DECLARATION"), WHICH UNIT IS ALSO DESIGNATED AS UNIT 2, LOCATED ON PAGES A-101, A-102, A-103, AND A-104 OF THE CONSTRUCTION DRAWINGS FOR HARBOR VIEW SQUARE - BLDG. #2, AND ON PAGES A-100 AND A-101 OF THE CONSTRUCTION DRAWINGS FOR HARBOR VIEW SQUARE - BLDG. #3 & BLDG. #4 AS CERTIFIED AND PREPARED BY PASSERO ASSOCIATES, AND FILED SIMULTANEOUSLY WITH SAID DECLARATION IN THE OFFICE OF THE COUNTY CLERK OF OSWEGO COUNTY (HEREINAFTER CALLED THE "UNIT"), TOGETHER WITH OTHERS WITH THE USE OF THE COMMON ELEMENTS, AS DEFINED IN SAID DECLARATION. THE APPURTENANT INTERESTS OF UNIT 2 IN THE COMMON ELEMENTS IS 88%. THE LAND AREA OF THE PROPERTY IS DESCRIBED AS FOLLOWS:

ALL TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF OSWEGO, COUNTY OF OSWEGO, STATE OF NEW YORK BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTH LINE OF WEST SCHUYLER STREET WITH THE WEST LINE OF WEST FIRST STREET

THENCE; S 67° 38' 00" W, ALONG THE NORTH LINE OF WEST SCHUYLER STREET, A DISTANCE OF 200.00 FEET TO THE INTERSECTION OF THE NORTH LINE OF WEST SCHUYLER STREET WITH THE EAST LINE OF WEST SECOND STREET

THENCE; N 22° 22' 00" W, ALONG THE EAST LINE OF WEST SECOND STREET, A DISTANCE OF 531.00 FEET TO THE INTERSECTION OF THE EAST LINE OF WEST SECOND STREET WITH THE SOUTH LINE OF LAKE STREET

THENCE; N 67° 38' 00" E, ALONG THE SOUTH LINE OF LAKE STREET, A DISTANCE OF 200.00 FEET TO THE INTERSECTION OF THE SOUTH LINE OF LAKE STREET WITH THE WEST LINE OF AFORESAID WEST FIRST STREET

THENCE; S 22° 22' 00" E, ALONG THE WEST LINE OF WEST FIRST STREET, A DISTANCE OF 531.00 FEET TO THE POINT AND PLACE OF BEGINNING

CONTAINING 106,200 SQUARE FEET OR 2.438 ACRES OF LAND MORE OR LESS

ENVIRONMENTAL EASEMENT DESCRIPTION

ALL TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF OSWEGO, COUNTY OF OSWEGO, STATE OF NEW YORK BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTH LINE OF WEST SCHUYLER STREET WITH THE WEST LINE OF WEST FIRST STREET

THENCE; S 67° 38' 00" W, ALONG THE NORTH LINE OF WEST SCHUYLER STREET, A DISTANCE OF 200.00 FEET TO THE INTERSECTION OF THE NORTH LINE OF WEST SCHUYLER STREET WITH THE EAST LINE OF WEST SECOND STREET

THENCE; N 22° 22' 00" W, ALONG THE EAST LINE OF WEST SECOND STREET, A DISTANCE OF 531.00 FEET TO THE INTERSECTION OF THE EAST LINE OF WEST SECOND STREET WITH THE SOUTH LINE OF LAKE STREET

THENCE; N 67° 38' 00" E, ALONG THE SOUTH LINE OF LAKE STREET, A DISTANCE OF 200.00 FEET TO THE INTERSECTION OF THE SOUTH LINE OF LAKE STREET WITH THE WEST LINE OF AFORESAID WEST FIRST STREET

THENCE; S 22° 22' 00" E, ALONG THE WEST LINE OF WEST FIRST STREET, A DISTANCE OF 531.00 FEET TO THE POINT AND PLACE OF BEGINNING

CONTAINING 106,200 SQUARE FEET OR 2.438 ACRES OF LAND MORE OR LESS

LEGEND

	STREET LINE
	OVERHEAD WIRE
Ⓢ MH	SEWER MANHOLE
Ⓓ MH	STORM SEWER MANHOLE
	SIGN
	UTILITY POLE
LP	LIGHT POLE
CB	CATCH BASIN
STOP	STOP SIGN

NOTES:

1) SURVEY SUBJECT TO ANY FACTS THAT AN UP TO DATE ABSTRACT OF TITLE MAY SHOW
2) PROPERTY WAS AN ACTIVE CONSTRUCTION SITE AT TIME OF SURVEY
3) UNDERGROUND UTILITIES ARE NOT A PART OF THIS SURVEY

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LAND LINES SURVEYING, P.C.
6181 JAMESVILLE TOLL ROAD
JAMESVILLE, NEW YORK 13078
315-492-4604

I HEREBY CERTIFY THAT THIS IS A CORRECT MAP MADE FROM AN ACTUAL SURVEY

STATE OF NEW YORK · COLIN M. KRAFT · 050450 · LICENSED LAND SURVEYOR

Colin M. Kraft

COLIN M. KRAFT
LICENSE No. 50450

68 WEST FIRST STREET
CITY OF OSWEGO
COUNTY OSWEGO
STATE OF NEW YORK

DRAWN BY: CMK	DATE: 7/29/2019
SCALE: 1"=20'	DWG.No.: 190745

APPENDIX B

REAGENT INJECTION WORK PLAN

WORK PLAN FOR
REAGENT INJECTION

HARBOR VIEW SQUARE
68 WEST FIRST STREET
OPERABLE UNIT NUMBER: 01
OSWEGO, NEW YORK
NYS BCP SITE NO. C738040

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Prepared by:

SYNAPSE RISK MANAGEMENT
360 ERIE BOULEVARD EAST
SYRACUSE, NEW YORK 13202

AUGUST 2021

HARBOR VIEW SQUARE
NYS BCP SITE NO. C738040
OPERABLE UNIT NUMBER: 01
OSWEGO, NEW YORK

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

List of Appendices

List of Figures

List of Tables

1.0 GENERAL

1.1 Purpose

A. This Reagent Injection Work Plan provides the technical scope of work for installation of a bedrock injection well and four groundwater monitoring wells for the pilot study at the Harbor View Square site (Site), located at 68 West First Street, Oswego, New York, New York State Department of Environmental Conservation (NYSDEC) Site No. C738040, Operable Unit Number 01 (On-Site). The Site location is shown in Figure 1. This injection pilot study is being performed as part of the requirements set forth in the Record of Decision for the Site, issued by NYSDEC in November 2013.

1.2 Scope of Work

A. The Applicant, Harbor View Square, LLC., will conduct a reagent injection pilot study at the Site. The pilot study shall include the installation of one injection well and four monitoring wells and the injection of reagents including (3-D Microemulsion, S-MZVI and BDI Plus) as described in the below sections. The reagents shall be provided by Regensis.

B. All work shall be performed in accordance with all applicable federal, state and local laws, rules and regulations. Noise levels shall, at all times, be maintained within the limits of local noise ordinances.

C. All electrical work shall be in accordance with the standards and guidance of the National Electrical Code, the National Electrical Safety Code and with local codes which apply, including the requirements for hazardous locations.

D. On-site work shall be performed during the normal business hours of 7 am to 6 pm.

E. Materials brought to the Site shall be stored in accordance with manufacturer’s instructions, with seals and labels intact and legible. Temperature and humidity shall be maintained within ranges required by manufacturer’s instructions. Periodic inspections will be conducted of stored materials and equipment to assure that materials and equipment are maintained under specified conditions and free from damage or deterioration. The Contractor shall submit a plan prior to mobilization specifying how they will store the materials to comply with the manufacturer's recommendations.

F. All work on-site shall be performed in the presence of a Professional Engineer, or someone under the direct supervision of the Professional Engineer, Jeffrey Holt, P.E. The Engineering Certification is included as Appendix H.

G. All work will be performed pursuant to the Site’s Health and Safety Plan, included as Appendix A.

H. The Site's Community Air Monitoring Plan, included as Appendix B, shall be implemented during all intrusive work at the Site.

I. In general, the overall work to be performed shall be as follows:

1. Constructing a decontamination pad;

2. Constructing a reagent storage area and implementing the spill contingency plan;

3. Decontaminating equipment and materials;

4. Drilling injection well(s) and monitoring well(s);

5. Development of injection well(s) and monitoring well(s);

6. Mixing the reagents per the manufacturer's recommendations;

7. Injecting the reagents via the newly-installed injection well(s);

8. Monitoring injection performance including injection pressure, formational acceptance and surface daylighting;

9. Site cleanup, restoration, and containment of cuttings/drillings, drilling fluid and well development water and disposal of cuttings, drilling fluid and well development water off-site;

10. Removing temporary decontamination facilities; and

11. Pre and post injection groundwater monitoring.

1.3 Schedule

A. The work will be performed two weeks after approval of the Work Plan in August 2021. Work will occur over a 10-day period followed by groundwater monitoring beginning in September 2021 as described in the sections below. The Construction Completion Report (CCR) will be submitted 90 days after the final sampling event.

1.4 Description of the Site

A. The Harbor View Square Site is a Brownfield Cleanup Program (BCP) Site located at 68 West First Street, Oswego, New York (see Figure 1). Operable Unit Number 01 is the On-Site area. The Site covers approximately 2.438 acres and consists of the block bounded by West First Street to the east, West Second Street to the west, West Schuyler Street to the south and Lake Street to the north (see Figure 2). The Site is owned by the Harbor View Square, LLC and is also referred to as the former Flexo Wire site.

B. The generally flat-lying Site slopes gently to the east toward the Oswego River, located approximately 390 feet to the east. The river flows north into Lake Ontario, which, at its nearest point, is located approximately 250 feet north of the Site. The area to the west of the Site is primarily residential. The area to the south contains a mixture of residential and commercial properties, and to the north there is a municipal parking area, a boat launch, a marina, a United States Coast Guard facility, and a marine museum located on property owned by the Oswego Port Authority. To the east and northeast are industrial properties, including a major oil storage facility, the City of Oswego West Side Excess Flow Management facility and a cement shipping terminal.

C. Contamination in the Site subsurface has been identified as chlorinated volatile organic compounds (VOCs) and metals. Prior site usage that has led to site contamination includes solvent usage and disposal, reportedly associated with the wire drawing operations; coal storage, usage and coal ash disposal; and metal working operations, including machining and annealing.

D. Through subsurface investigations performed at the Site, elevated concentrations of VOCs have been identified in groundwater up to 50 feet below ground surface. The highest concentrations of VOCs have been identified in groundwater between 15 and 30 feet below ground surface in the sandstone bedrock in the area of a former underground storage tank and process lines. Remedial excavation of surface soils in this area was completed in March 2019. The horizontal extent of these excavations is shown in Figure 2. Zones of potential injection were identified in the bedrock core logged during the installation of the existing bedrock well MW-1 (converted to a groundwater monitoring well from VA-RC-1) at approximately 13 and 25 feet below ground surface (bgs). The shallower zone (13 feet bgs) also corresponds to Hydrostratigraphic Unit 1 described in the report by Parsons (January 2021).

1.5 Reference to Standards and Regulations

A. The latest revisions of standards of AWWA and ASTM shall apply as referenced herein.

B. The Brownfield Cleanup Program, New York State Environmental Conservation Law, Article 27, Title 14.

C. 6 NYCRR Part 375 - Environmental Remediation Programs

D. NYSDEC DER-10 – Technical Guidance for Site Investigation and Remediation (May 2010);

1.6 Permits

A. Applicant shall obtain permits required for obtaining water and constructing the wells (e.g., road opening, DOT, etc.).

B. The Applicant has a UIC permit.

1.7 Utilities

A. New York one call (1-800-962-7962) and the appropriate utility company will be notified no less than 48 hours prior to any work.

B. All aboveground and buried utilities and structures will be identified and protected. As an added precaution, the first 5 feet below ground surface will be cleared using hand tools.

1.8 Environmental Protection

A. All work shall be scheduled and conducted in a manner that will prevent the erosion of soil and release of soil and water in the work area. Control measures shall be provided, such as diversion channels, berms, sedimentation or filtration systems, silt fences or other special surface treatments as required to prevent the release of soil and water, and silting, muddying and contamination of surface waters, drainage ways, storm water collection systems and recharge basins. It should be noted that all of the work is being performed in paved areas so erosion control is not a concern. All necessary control measures shall be in place prior to performing Work.

B. All necessary measures will be taken to prevent the migration of dust outside the pilot test injection area due to the work activities. No oil, calcium chloride or liquids other than liquids specifically approved by the Environmental Professional shall be used for dust control. An Environmental Professional is defined as a person, including a firm headed by such person, who possess sufficient specific education, training, and experience necessary to exercise professional judgement to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a site or off-site areas, sufficient to meet the objectives and performance factors of the areas of practice identified by this guidance.

C. All waste resulting from work activities shall be removed and disposed at an approved facility in accordance with all applicable federal, state and local laws and regulations.

D. Disposal in and adjacent to the work area of any debris, wastes, effluent, trash, garbage, oil, grease, chemicals, etc. resulting from the work will not be permitted.

E. All necessary measures shall be taken to control the release of odors and vapors.

1.9 Spill Control

A. Equipment and trained personnel will be within the pilot test injection area to perform emergency measures necessary to contain, remove and clean up all spills generated from the work.

B. In the event of a spill, immediate action will be taken in accordance with the Spill Contingency Plan, and federal, state and local laws and regulations. In addition, NYSDEC will be notified immediately of any spill and shall continuously inform NYSDEC of any and all actions implemented to comply with applicable requirements. The Spill Contingency Plan is included as Appendix G.

C. Chemicals are expected to be stored on the site for no more than 30 days.

1.10 Security

A. The Site will be secured with security fencing and a locking gate around the work area.

B. A Site Entrance/Exit Log will be maintained and shall contain signed entry and exit record for project personnel and visitors. The log shall record time of entry and exit and firm of the individual. Persons not associated with the project will not be admitted on site.

C. Appropriate warning signs will be hung from temporary fences. These fences will surround the work area and any breaks of gaps in the fences will be attended to immediately.

1.11 Health and Safety

A. A Site-Specific Health and Safety Plan for the Site is attached as Appendix A, and it shall be followed by all on-site personnel. All on-site personnel shall have completed OSHA training and medical monitoring requirements for work on hazardous waste sites.

B. A Community Air Monitoring Plan (CAMP) is attached as Appendix B that includes concentration-based action levels, will be implemented as part of well installation and injection program. The CAMP will be implemented during ground intrusive activities. The plan complies with the requirements of the New York State Department of Health Generic Community Air Monitoring Plan.

C. A Construction Health and Safety Plan (CHASP) will be prepared. Personnel performing remedial work will be required to read and comply with the requirements of the CHASP. The CHASP will be required to address all the appropriate federal, state and local regulatory requirements necessary to undertake and successfully complete implementation of the remedy. The CHASP will be prepared in accordance with 29 CFR 1910.120 and any other applicable laws, rules, and regulations and will include the following items:

1. Health and safety organization, including résumés of personnel responsible for health and safety;
2. Project description and hazard assessment;
3. Training requirements;
4. Medical surveillance requirements;
5. Project control procedures;
6. Standard operating procedures and engineering controls;
7. Personnel protective equipment requirements;
8. Personnel hygiene and decontamination protocols;
9. Equipment decontamination procedures;
10. Air monitoring requirements;
11. Emergency equipment/first aid requirements;
12. Emergency responses/contingency procedures;
13. Heat and cold stress procedures;
14. Record keeping requirements; and
15. Community protection plan.

1.12 Submittals

A. During drilling of each well, a complete log shall be maintained and submitted to NYSDEC as part of the construction completion report. The report shall include the following:

   1. The reference point for all depth measurements.
   2. The depth at which each change of formation occurs.
   3. The identification of the material of which each stratum is composed.
   4. The depth interval from and method which formation samples were taken.
   5. The depth at which hole diameters (bit sizes) change.
   6. Other pertinent data requested by the Engineer.

B. During drilling of each well, a detailed daily driller's report shall be maintained and submitted as requested by the Engineer. The report will give a complete description of all formations encountered, number of feet drilled, number of hours on the job, shutdown due to breakdown, materials used, feet of casing set, and other pertinent data.

C. During injection, a detailed daily report shall be maintained and submitted to the Engineer. The report shall include the following:

1. Time and injection rate (flow rate) shall be recorded at the beginning of injection and each time there is a change in the injection rate.

2. Injection pressure and injection totalizer (volume) shall be recorded at a frequency of 1 reading per 15 minutes of injection. Initial injection pressures should be within a range of between 10 and 20 pounds per square inch (PSI), to prevent the reagent to surface.

3. Time at which each tank is emptied including approximate volume injected from the tank as read from volume markings on the tank.

D. During the work, daily injection reports will be prepared that will include date; weather conditions, including wind direction; community air monitoring station locations; health and safety information, (e.g., personal protective equipment utilized, etc.); personnel on-site and tasks conducted; equipment on-site and tasks for which it was utilized; a summary of the volume of injectate mixed and injected; a photographic log; logs of deliveries; logs of loads of waste removed from the site with date, time, hauler name, license plate, destination, etc.; and any other pertinent information.

E. Final logs of all borings will be prepared.

1.13 Meetings

A. Following an initial pre-construction meeting, project meetings will be held once every week until it is agreed that the frequency can be changed. These meetings will be held virtually through a web-based meeting platform.

B. During implementation of the pilot study, the Environmental Professional will provide full-time on-site inspection of the work, engage in day-to-day communications with the Contractor and maintain records and prepare meeting minutes, as appropriate.

1.14 Handling of Materials

A. All equipment, parts and materials shall be properly protected so that no damage or deterioration will occur during a prolonged delay from time of shipment until installation is completed, and the units and equipment are ready for operation.

B. If water is used for drilling, potable water will be used and a waste storage tank or container for each well. The storage capacity shall be 50% greater than the anticipated drilling waste generated per borehole.

C. All spent cuttings, drillings, drilling fluids (if used), flushing water and development water will be stored in a leak proof container located near the well during well construction. No cuttings, fluids (if used) or water shall be allowed to flow on the site surface. All cuttings shall be contained in DOT-approved 55-gallon “ring top” drums or approved equal. Fluids and waters will be containerized in a temporary storage tank.

D. All waste generated will be containerized, sampled, characterized and disposed off-site in accordance with all applicable federal, state and local laws and regulations. This includes, but is not limited to, drill cuttings, used personal protective equipment, decontamination wastewater and disposable sampling equipment. Waste characterization will include analysis of samples needed to make a "contained-in" determination. All waste sampling shall be performed in accordance with the requirements of the selected disposal facility. All waste will be containerized in leak proof, vapor tight Department of Transportation (DOT) approved 55-gallon “ring top” drums, or approved equal. All waste will be transported by a Part 364 waste transporter and will be properly disposed of at a facility authorized to accept the waste.

1.15 Site Cleanup

A. Immediately upon completion of the work, all equipment, materials and supplies will be removed from the Site of the work, remove all surplus materials and debris, fill in all holes or excavations, and grade the site to elevations of the surface levels which existed before work started.

1.16 Reporting

A. Upon completion of the final post-injection groundwater monitoring event (90 days), a Groundwater Construction Completion Report (CCR) will be prepared to document the pilot injection and present the data. It is anticipated that this CCR will also present the need for additional injections and/or additional monitoring.

2.0 MONITORING WELL AND INJECTION WELL INSTALLATION

2.1 Specifications of the Wells

A. Monitoring Wells

1. Four monitoring wells will be installed at 5, 10, 15 and 20 feet at cross gradient and downgradient locations from the injection well (see Figure 3). The final locations for the monitoring wells will be based on fracture zones identified in the rock core samples, which shall be collected from a minimum of three locations prior to the installation of the injection and monitoring wells. The monitoring wells shall be installed to a total depth of approximately 30 feet below ground surface.

   At each well location, a 10-inch diameter boring will be drilled through the overburden soils and extending three feet into bedrock. This boring will be lined with a 10-inch steel conductor pipe. A 6.625-inch outer diameter, 6.065-inch inner diameter Schedule 40 steel pipe will then be placed inside the 10-inch pipe. The 10-inch pipe will be removed and the annulus between the outer 6-inch pipe will be filled with grout using a tremie pipe from the bottom of the borehole to within 6 to 10 inches of the surrounding grade. If the 10-inch pipe cannot be removed it will be left in place. The annulus grout will be left to cure for at least 24 hours prior to drilling or coring the bedrock. A six-inch diameter boring with then be drilled to total depth before constructing the monitoring well per the specifications shown in Figure 4.

   For the wells that are cored, a hollow stem auger rig will be used to continuously core the hole with an NQ wireline core drilling system. The Driller will take necessary steps to ensure core integrity is maintained. Final monitoring well depth and screen length may vary based upon the Engineer's review of the rock core samples. After the cores have been reviewed, the Driller will ream out the borings to a six-inch diameter using an air rotary drill rig. Those wells that are not cored will be drilled with the air rotary drill rig. The following summarizes the specifications for each well.

Well ID	Well Inner Diameter (inches)	Approximate Well Depth (feet bgs)	Screen Length (feet)
MW-6	2	30	15
MW-7	2	30	15
MW-8	2	30	15
MW-9	2	30	15

B. Injection Well

1. The location of the injection well will be based on the fracture zones identified in the rock coring samples. The injection well shall be installed as shown on Figure 3 to a total depth of approximately 30 feet below ground surface using an air rotary drill rig. Driller will take necessary steps to ensure core integrity is maintained. The following summarizes the specifications for each well. Final injection well depth and screen length may vary based upon the Engineer's review of the rock coring samples.

Well ID	Well Inner Diameter (inches)	Approximate Well Depth (bgs)	Screen Length (feet)
IW-1	2	30	15

2.2 Well Construction

A. Monitoring well and injection well schematics are shown on Figure 4.

B. Clean equipment as per Section 2.9.

C. Construction of monitoring wells/injection well may include the removal and excavation of pavement or concrete prior to initiation of drilling.

D. Drill pipe lubrication if any shall be limited to vegetable shortening or approved equal.

E. Drilling fluid (if used) shall only consist of potable water approved by the Engineer. No other fluids or additives shall be used unless approved by the Engineer.

2.3 Boring Logs

A. Overburden and Bedrock

1. Digital photographs will be taken of each interval along with identifying information (location, date, interval) written on a white board or similar means, prior to disturbing the sample.

2. All sample intervals will be inspected and logged, and headspace screening will be performed on all intervals with a photoionization detector (PID).

3. The amount of visual contamination present in soil or bedrock will be noted (none, stain, sheen, blebs, stringers, saturated, pooled). The following definitions will be used to define contamination:

- None: No visual evidence of contamination is seen.
- Stain: Soil is discolored un-naturally, apparently from site contaminants.
- Sheen: No measurable contamination is observed, but the sample exhibits a silvery or rainbow sheen indicative of a non-aqueous phase liquid (NAPL) layer molecules thick.
- Blebs: Discontinuous droplets/spots of contamination are observed.
- Stringers: Continuous, discrete, contamination pathways are observed.
- Saturated: Contamination is infused within the entire soil matrix.
- Pooled: Contamination (e.g., NAPL) is observed at significant thicknesses, separate from the soil or bedrock matrix.

B. For overburden, continuous soil samples will be collected to the top of bedrock and visually classified. All soil cores collected will be described in writing as to: color (including the presence of mottling), grain size, sorting, cohesiveness, texture, moisture content/saturation, depth to water table, PID readings, presence of man-made objects such as brick fragments, metal scrap, or concrete, and the presence or absence of odors, staining, or other signs of contamination (e.g., coating on downhole tools, or lifting of contamination to the surface during sample recovery). If staining, discoloration, or contamination is noted along specific layers or other structures, the characteristics and stratigraphic position of these layers will be clearly noted.

C. Bedrock core logs will include the following information: time required to drill each run and the run length, an estimate of the volume of drilling water lost during each run, the drill type and size, depth to water, indications of fluid flow, lithology, texture, color, recovery, weathering, fractures and breaks with an assessment if they are natural or mechanical, rock quality designation (RQD), PID readings, presence or absence of odors, staining, or other signs of contamination (e.g., coating on downhole tools, or lifting of contamination to the surface during sample recovery). If staining, discoloration, or contamination is noted along specific structures or fractures, the characteristics and stratigraphic position of these layers will be clearly noted, and any other pertinent information.

2.4 Rock Coring

A. Advance a minimum of three, and up to five, borings using a 4.25-inch diameter hollow stem auger to the overburden/bedrock interface in order to verify that consistent fractures in similar zones. If the fractures are not consistent in the first three rock cores, then up to two additional rock cores will be obtained and analyzed. The boreholes will be cored using NQ wireline drilling to a depth of 30 feet BGS.

B. Upon recovery of the cores, each rock core shall be placed in wooden core boxes. The geologic characteristics shall be inspected and recorded. Each core box shall be labeled with the facility name, well I.D. and depth range.

C. Upon completion of the coring, the rock borehole shall be reamed to six inches in diameter using an air rotary drill rig to depth of approximately 30 feet.

2.5 Well Casing and Screen

A. Monitoring Wells

1. The well riser shall be 2-inch inner diameter (I.D.) Schedule 40 PVC pipe. The well riser will be installed below the ground surface as shown in Figure 4. When installed, the surface casing shall be flush with the ground surface. The surface casing shall be joined by welding or through the use of outside threaded couplings.

2. The 2-inch Schedule 40 PVC casing shall be flush threaded and joined by screwing the threaded joints together. No glue shall be used in the joining of casing sections. Well screens shall be new 2-inch diameter, Schedule 40 PVC, machine slotted, flush threaded on one end and sealed with a threaded PVC plug or sump on the other end. Slot size shall be 0.020-inch.

3. Screens shall be attached to the casing by screwing the threaded joints together. No glue shall be used to join the screen to the casing (riser pipe).

B. Injection Wells

1. The well riser shall be 2-inch inner diameter (I.D.) Schedule 40 PVC pipe. The well riser shall be installed below the ground surface as shown in Figure 4. When installed, the surface casing shall flush with the ground surface. The surface casing shall be joined by welding or through the use of outside threaded couplings.

2. The 2-inch Schedule 40 PVC casing shall be flush threaded and joined by screwing the threaded joints together. No glue shall be used in the joining of casing sections.

3. Well screens shall be new 2-inch diameter, Schedule 40 PVC, machine slotted, flush threaded on one end and sealed with a threaded PVC plug or sump on the other end. Slot size shall be 0.030-inch.

4. Screens shall be attached to the casing by screwing the threaded joints together. No glue shall be used to join the screen to the casing (riser pipe).

C. Casing and appurtenances shall be clean and free of all oil, grease and any other organic contamination. All casing will be contained in factory sealed, individually wrapped packaging prior to use. Casing that is not packaged or is removed from damaged packing must be decontaminated on-site prior to installation. All persons handling screens shall wear clean, disposable latex gloves to prevent possible cross contamination.

D. Every effort shall be made to ensure casing plumbness and centralization within the borehole.

E. Centralizers may be employed as an optional method of ensuring centralization and plumbness.

2.6 Gravel Pack

A. A gravel pack will be placed around the outside of the screened section of the injection and monitoring wells.

B. Screen gravel pack shall be No. 2 well gravel pack, 100 percent passing the No. 8 sieve and less than 2 percent passing the No. 25 sieve, as supplied by the U.S. Silica Company, or approved equal. The No. 2 well gravel pack shall be clean, washed and graded silica sand supplied in sealed bags.

C. The pack shall be placed around the outside of the well screen by means of a tremie pipe or other method approved by the Environmental Professional to ensure that no bridging of the hole occurs and shall extend from the bottom of the borehole to a minimum of 2 feet above the top of the screen or as otherwise directed by the Environmental Professional.

2.7 Cement Bentonite Grout Mix

A. The bentonite utilized for the cement/bentonite grout needed to set the surface casing shall be sodium-based bentonite. The cement utilized for the cement/bentonite shall be Portland Cement Types I or II.

B. The cement bentonite grout mix ratio shall be 5 pounds bentonite, 94 pounds cement and 8.3 gallons of water. The target density is 13.9 pounds/gallon with an acceptable density range of 13.4 to 14.5 pounds/gallon.

C. All grout shall be allowed to cure for a minimum of 24 hours or as necessary to provide a proper cure prior to starting the next phase of work.

2.8 Bentonite Seal

A. The bentonite shall be ½ inch diameter with a dry bulk density of 82 lbs. per cubic foot and containing a minimum of 90 percent sodium montmorillonite. The pellets shall be capable of swelling to 10 to 15 times their dry volume when hydrated with potable water. The bentonite pallets shall be Volclay Tablets as manufactured by CETCO Drilling Products, or approved equal.

B. A bentonite seal shall be placed in the well by means of a tremie pipe or other method approved by the Engineer to ensure that no bridging of the hole occurs and shall extend from the top of the sand pack to a minimum of 2 feet above the sand pack, or as otherwise directed by the Engineer. In the event that bentonite pallets or chips are utilized for a bentonite seal above the water table, approved potable water shall be used for hydration.

C. The bentonite seal shall be allowed to hydrate for a minimum of 1 hour prior to grouting of the well annulus.

2.9 Well Caps and Protective Covers

A. Each well and well casing shall be protected from entry of foreign materials at all times and upon well completion fitted with a locking and flush mount steel road-box cover.

B. Temporary well guard and identifying flagging shall be provided and installed immediately upon well completion and prior to development and removal of the drill rig from the well site.

C. If the well is not complete at the end of the work day, the uncompleted borehole/well will be secured.

D. Upon completion of the well, a vented PVC "J" plug will be installed into the 2-inch PVC inner casing.

E. Upon completion of the well, a flushmount protective casing will be installed that can be secured with a lock.

F. Protective casings shall be furnished with drain holes to prevent collection of water inside the protective casing.

2.10 Cleaning Procedures

A. Sampling Equipment: All sampling equipment shall be, at a minimum, cleaned of all foreign matter, washed with a non-phosphate detergent, rinsed with potable water, then followed by a final rinse with distilled/deionized water in that order, or cleaned of foreign matter and steam cleaned at a temperature of 212°F and void of any external oils and greases prior to use in each well.

B. Contact Equipment: All contact equipment including sample pumps and hoses shall be cleaned and flushed between uses. This cleaning process will consist of steam cleaning of pump casing and cables followed by a 10-gallon flush of potable water through the pump. A new length of dedicated high-density polyethylene tubing shall be used for each well and disposed of after use. The pump, tubing and cables shall always be placed on clean high-density polyethylene sheeting to avoid contact with ground surface.

C. Drilling/Heavy Equipment: All drilling and heavy equipment including drill rigs, well casing and auger flights shall be cleaned after mobilization to and prior to demobilization from the project site and between individual locations on the site. The two options that are available and allowable to accomplish cleaning the heavy equipment include steam cleaning and manual scrub brushing and washing.

D. All equipment shall be stored aboveground in a clean manner as approved by the Engineer. All downhole equipment shall be stored in such a manner as to prevent contact with the ground surface.

E. Drilling fluid changes during borehole construction shall include cleaning of all drilling equipment in the manner described in this Section, in addition to the removal of drilling fluid in the borehole by flushing, bailing or air lift, as necessary to ensure clean fluid in the borehole.

F. All water used for drilling and cleaning must be potable.

G. A bermed and lined decontamination pad will be on-site on which to clean all equipment, materials and supplies. All decontamination fluids shall be contained, properly characterized, and disposed of off-site. The decontamination pad will be removed at the end of the drilling program.

2.11 Well Development

A. Each injection and monitoring well installed will be developed. Development shall be by airlift (in-line oil filter required), interrupted over-pumping with a submersible pump, surge block and bailer, or other methods approved by the Engineer. A minimum of five well volumes must be purged. Development shall continue until the well water is less than 50 NTUs as measured with a turbidity meter at minimum pumping rates of 5 gpm or until the Engineer approves cessation of development.

2.12 Well Acceptance Criteria

A. A well shall be developed to the point that it is producing water free of drilling fluid additives (if used) and is sediment-free. Sediment-free shall be defined as not more than 50 NTUs as measured with a turbidity meter. A minimum of 5 well volumes will be purged during well development.

B. In order to ensure that all wells are sufficiently straight a 1.5-inch diameter by 4-feet long dummy will be passed to the bottom of the PVC well screen to the bottom of the well.

3.0 REAGENT INJECTIONS

3.1 General

A. The injections shall be performed in one phase.

B. All wetted parts of the injection system shall be compatible with the reagent (i.e., 3-D Microemulsion, S-MZVI and BDI Plus) being injected. Material information sheets are provided in Appendix D.

C. The injection system components shall be sized to efficiently perform the injections without constantly stopping to mix additional reagents.

D. A secondary containment area lined with material that is resistant to the reagent being injected around the injection system and reagent storage area shall be constructed. The secondary containment area shall be capable of holding 110% of the total storage volume.

E. All lines feeding any mixing tanks (reagent lines, water lines, etc.) and all lines used for injecting the mixed reagent shall be metered so that the volume transferred can be accurately measured. Secondary containment shall be provided for all lines to contain all spills/leaks.

F. Potable water shall be used for chemical mixing and injection. Groundwater shall not be utilized as a water source.

G. All hoses, conveyance piping cam locks, pressure gauges, flow meters and backflow preventers shall be compatible with the reagents.

H. All fittings shall be leak proof and properly installed to prevent spills.

I. A ball valve, globe valve and pressure gauge shall be provided on the injection line immediately prior to the injection well. Hose fittings shall be equipped with the ability to disconnect the hoses without having to unthread parts.

J. The empty reagent containers shall be disposed of in accordance with all federal, state and local laws and regulations. At a minimum, at the completion of the reagent injection and prior to disposal off-site, the containers will be rinsed with 5 gallons of water and transfer the water to a mixing tank. The Contractor shall rinse each container 2 to 3 times. All rinsate shall be containerized and disposed of off-site in accordance with all applicable federal, state and local requirements.

3.2 Regenesis Reagent (3-D Microemulsion, S-MZVI, BDI Plus)

A. The reagent shall consist of 400 pounds of 3-D Microemulsion, 300 pounds of S-MZVI and 18 liters of BDI Plus as manufactured by Regenesis. Safety Data Sheets (SDS) for the 3-D Microemulsion and S-MZVI are provided in

Appendix C. The Regenesis Application Design Summary is provided in Appendix F.

B. The 3-D Microemulsion, S-MZVI and BDI Plus shall be mixed with mix water in accordance with the manufacturer's recommendations utilizing equipment recommended by the manufacturer. Please see Appendix E for application and handling guidelines.

C. The reagent mixture shall be injected at the location shown on Figure 3. The following table presents the application summary of 3-D Microemulsion, S-MZVI and BDI Plus, including field mixing ratios for the injection point:

No. of Injection Points	3DME concentrate per point (gals)	Mix water per point (gals)	S-MZVI volume per point (lbs)	BDI Plus volume per point (L)	BDI Plus mix water volume per point (gals)
1	48	1,869	20	18	180

Total Volume: 2,122 gals

D. When delivering anaerobic microbes such as BDI, a volume of deoxygenated water using an oxygen scavenger such as sodium ascorbate will be prepared. The BDI is delivered independently of the 3DMe and ZVI. The 3DMe and ZVI will be injected into the well and then the BDI will be injected into the well. The exact volume of deoxygenated water used to deliver the BDI will be determined once the lithology of the zone is evaluated.

3.3 Injection

A. The system will be tested with water prior to utilizing any reagents in the system. The initial startup will allow for system checking including any leaks in the piping, fittings, valves, flow meters or pumps. A leak check shall be conducted with a recirculating line set with restriction to gain pressure. Pressure will not exceed 20 pounds per square inch (psi). Leaks will be repaired before proceeding to reagent solution preparation and injection.

B. Following the completion of the initial startup and potable water injection to prime the system, field personnel shall mix the Regenesis reagents in accordance with the mixing ratios provided in the table above.

C. The mixed reagent will be pumped into the injection well. During the injection process, injection parameters to be monitored and recorded are flow rate, injection pressure and injection volume.

D. Injection will begin at a slow rate and increase the injection rate based upon the injection pressure and system response. The initial injection rate shall be within a range of between 10 and 20 psi to prevent the reagent from daylighting. The reagent injection sequencing will be based on field conditions encountered after mobilization. The system shall be checked continuously for leaks and proper operation, and pressure shall be monitored with a pressure gauge at the injection well head. The pressure is expected to increase, but shall not exceed 50 psi.

E. During the reagent injection process groundwater will be monitored from two cross gradient monitoring wells, two downgradient monitoring wells and one existing upgradient FLUTe well. The monitoring wells will be monitored for field parameters such as a specific conductance, turbidity, pH, oxidation-reduction potential (ORP), and dissolved oxygen (DO). The intent of the parameter monitoring is to document any changes in specific conductance, turbidity and pH, that may be indicative of reagent communication in the upper groundwater unit in the cross-gradient and downgradient areas of the Site.

F. At the completion of the injection, the injection system tanks will be rinsed with approximately 15 - 25 gallons of water. This process shall be repeated approximately 2 to 3 times. All rinsate shall be containerized and disposed of off-site in accordance with all applicable federal, state and local requirements.

3.4 Pre-Injection Groundwater Monitoring

A. Groundwater samples will be collected from the injection well, four groundwater monitoring wells and existing well MW-4 (converted to a groundwater monitoring well from VA-RC-4). Groundwater sampling will not occur within seven days of well development. This monitoring will be performed by the Environmental Professional.

B. Prior to groundwater sampling, each well will be surveyed by a New York State licensed surveyor. Groundwater level measurements will be obtained from each of the wells to be sampled. All water level measurements will be made using a fixed reference point at each measurement location. Prior to collection of groundwater level measurements, the headspace of the well will be measured utilizing a PID as soon as the well cover is opened. Downhole instruments will be decontaminated between each measurement location. The static water level will be measured to the nearest 0.01 foot.

C. Groundwater samples from the wells to be sampled will be collected using low-flow sampling. Initially, the required purge volume will be calculated and once the minimum purge volume is removed the field quality indicator parameters (i.e. temperature, ORP, conductivity, pH, DO and turbidity) will be monitored. Indicator parameters will be monitored every 5 minutes or however long it takes to purge one flow cell volume, whichever is longer, and recorded in the field log. The well shall be considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings. If groundwater recovery is very slow, it may be necessary to wait several hours, or overnight, for sufficient volume to become available for the necessary sample analyses. The groundwater sample from MW-4 (converted to a groundwater monitoring well from VA-RC-4) will be collected in a similar manner (monitoring parameters) and groundwater intervals as the March 2021 groundwater sampling event.

D. Collected groundwater samples will be submitted to Test America of Buffalo, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175);
- Alkalinity by USEPA Method 310.2;
- Total organic carbon/dissolved carbon by USEPA Method 9060A;
- Total organic carbon by USEPA Method SM5310D; and
- Polyfluoroalkyl Substances (PFAS) by USEPA Method 537.1.

E. Test America of Buffalo, New York is a NYSDOH ELAP certified laboratory meeting the requirements for sample custody procedures, including cleaning and handling sample containers and analytical equipment, will be used to analyze samples collected during the site investigation. Upon receipt of shipped samples at the laboratory, the laboratory's sample custodian will inspect the samples for integrity and check the shipment against the chain-of-custody. Discrepancies are reported to the laboratory's project manager who contacts Synapse for resolution.

When the shipment and chain-of-custody are in agreement, the sample custodian will enter the samples into the Laboratory Information System and will assign each sample a unique laboratory number. This number will be affixed to each sample bottle. The sample custodian will then enter the sample and analysis information into the laboratory computer system.

The laboratory will implement the following standard operating procedures for laboratory/sample security within the laboratory facility:

- Samples are stored in a secure area;
- Access to the laboratory is through a monitored area;
- Visitors sign a visitor's log and are escorted while in the laboratory;
- Only the designated sample custodians have keys to the sample storage area(s); and,
- Transfers of samples in and out of storage are documented.

While in the laboratory, samples that require storage at 4°C +/- 2°C will be stored in a locked refrigerator unless they are being used for analysis. The laboratory's sample custodian will be responsible for sample storage and security to ensure that:

- Samples and extracts are stored for 60 days after the final analytical data report has been forwarded to Synapse. The samples, extracts, and sample digestion byproducts are then discarded in accordance with the Occupational Safety and Health Administration guidance; and

- Samples are not stored with standards or sample extracts.

F. Appropriate Quality Assurance/Quality Assurance (QA/QC) samples including Matrix Spike/Matrix Spike Duplicates (MS/MSD), trip blanks, field blanks and equipment blanks in accordance with NYSDEC DER-10 and NYSDEC guidance for the Sampling, Analysis and Assessment of Per- and Polyfluoroalkyl Substances will be collected. Analytical methods and the quality assurance summary is provided in Table 1.

G. All sampling will be performed in accordance with the requirements of NYSDEC DER-10 and NYSDEC guidance for the Sampling, Analysis and Assessment of Per- and Polyfluoroalkyl Substances will be collected and will be handled separately from other samples. The following guidelines will be observed during sampling events:

   1. Ensure field clothing, including boots, does not contain Gore-Tex or Tyvek.

   2. Gloves will be made of nitrile, no latex gloves will be worn.

   3. All safety boots are constructed of polyurethane or polyvinyl chloride.

   4. Field crews should avoid fabric softener use in clothing, cosmetics, moisturizers, hand cream, unauthorized sunscreen or insect repellent.

   5. There should be no Teflon or LDPE containing materials int eh sampling train, use HDPE, stainless steel, acetate, silicon or polypropylene.

   6. There will be no waterproof field books, plastic clipboards, binders or spiral hard cover notebooks on site.

   7. Fill coolers with only regular ice, no chemical ice packs.

   8. Sample containers and caps must be made of HDPE or polypropylene.

   9. Use PFAS-free water for decontamination with Alconox or Liquinox.

10. Restrict food to water and hydrations drinks in the staging areas away from sample collection points.

11. Use a pen to clearly label each collected sample with the sample ID, sample source, and the time and date of collection for accurate identification. No permanent marker should be used.

H. Laboratory analytical reports will be provided to NYSDEC within 7 days of receipt from the laboratory.

I. Laboratory deliverables shall conform to the NYSDEC's Analytical Services Protocol (ASP) Category B deliverables and will include an electronic data deliverable (EDD). All groundwater data will be validated and uploaded to the EQuIS database.

3.5 Post Injection Groundwater Monitoring

A. A minimum of three consecutive rounds of groundwater monitoring occurring approximately 30, 60 and 90 days following the completion of the reagent injection program shall be completed.

B. Groundwater samples will be collected from the injection well, four groundwater monitoring wells and existing well MW-4 (converted to a groundwater monitoring well from VA-RC-4). This monitoring will be performed by the Engineer.

C. Prior to groundwater sampling, groundwater level measurements will be obtained from each of the newly installed wells. All water level measurements will be made using a fixed reference point at each measurement location. Prior to collection of groundwater level measurements, the headspace of the well will be measured utilizing a PID as soon as the well cover is opened. Downhole instruments will be decontaminated between each measurement location. The static water level will be measured to the nearest 0.01 foot.

D. Groundwater samples from the wells to be sampled will be collected using low-flow sampling. Initially, the required purge volume will be calculated and once the minimum purge volume is removed the field quality indicator parameters (i.e. temperature, ORP, conductivity, pH, DO and turbidity) will be monitored. Indicator parameters will be monitored every 5 minutes or however long it takes to purge one flow cell volume, whichever is longer, and recorded in the field log. The well shall be considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings. If groundwater recovery is very slow, it may be necessary to wait several hours, or overnight, for sufficient volume to become available for the necessary sample analyses. The groundwater sample from MW-4 (converted to a groundwater monitoring well from VA-RC-4) will be collected in a similar manner (monitoring parameters) and groundwater intervals as the March 2021 groundwater sampling event.

E. Sampling procedures and analytical requirements will be the same as specified in Section 3.4 of the Work Plan. Collected groundwater samples will be submitted to Test America of Buffalo, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175);
- Alkalinity by USEPA Method 310.2;
- Total organic carbon/dissolved carbon by USEPA Method 9060A;
- Total organic carbon by USEPA Method SM5310D; and
- PFAS by USEPA Method 537.1.

The first round of samples collected from the new monitoring wells will be analyzed for PFAS. An assessment will be made based on the analytical results of those samples as to the need for additional PFAS analysis of samples from later sampling rounds. Samples analyzed for PFAS will be handled separately from other samples. The following guidelines will be observed during PFAS sampling events:

1. Ensure field clothing, including boots, does not contain Gore-Tex or Tyvek.
2. Gloves will be made of nitrile, no latex gloves will be worn.
3. All safety boots are constructed of polyurethane or polyvinyl chloride.
4. Field crews should avoid fabric softener use in clothing, cosmetics, moisturizers, hand cream, unauthorized sunscreen or insect repellent.
5. There should be no Teflon or LDPE containing materials int eh sampling train, use HDPE, stainless steel, acetate, silicon or polypropylene.

6. There will be no waterproof field books, plastic clipboards, binders or spiral hard cover notebooks on site.

7. Fill coolers with only regular ice, no chemical ice packs.

8. Sample containers and caps must be made of HDPE or polypropylene.

9. Use PFAS-free water for decontamination with Alconox or Liquinox.

10. Restrict food to water and hydrations drinks in the staging areas away from sample collection points.

11. Use a pen to clearly label each collected sample with the sample ID, sample source, and the time and date of collection for accurate identification. No permanent marker should be used.

F. Test America of Buffalo, New York is a NYSDOH ELAP certified laboratory meeting the requirements for sample custody procedures, including cleaning and handling sample containers and analytical equipment, will be used to analyze samples collected during the site investigation. Upon receipt of shipped samples at the laboratory, the laboratory's sample custodian will inspect the samples for integrity and check the shipment against the chain-of-custody. Discrepancies are reported to the laboratory's project manager who contacts Synapse for resolution.

When the shipment and chain-of-custody are in agreement, the sample custodian will enter the samples into the Laboratory Information System and will assign each sample a unique laboratory number. This number will be affixed to each sample bottle. The sample custodian will then enter the sample and analysis information into the laboratory computer system.

The laboratory will implement the following standard operating procedures for laboratory/sample security within the laboratory facility:

- Samples are stored in a secure area;
- Access to the laboratory is through a monitored area;
- Visitors sign a visitor's log and are escorted while in the laboratory;
- Only the designated sample custodians have keys to the sample storage area(s); and,
- Transfers of samples in and out of storage are documented.

While in the laboratory, samples that require storage at 4°C +/- 2°C will be stored in a locked refrigerator unless they are being used for analysis. The laboratory's sample custodian will be responsible for sample storage and security to ensure that:

- Samples and extracts are stored for 60 days after the final analytical data report has been forwarded to Synapse. The samples, extracts, and sample digestion byproducts are then discarded in accordance with the Occupational Safety and Health Administration guidance; and,

- Samples are not stored with standards or sample extracts.

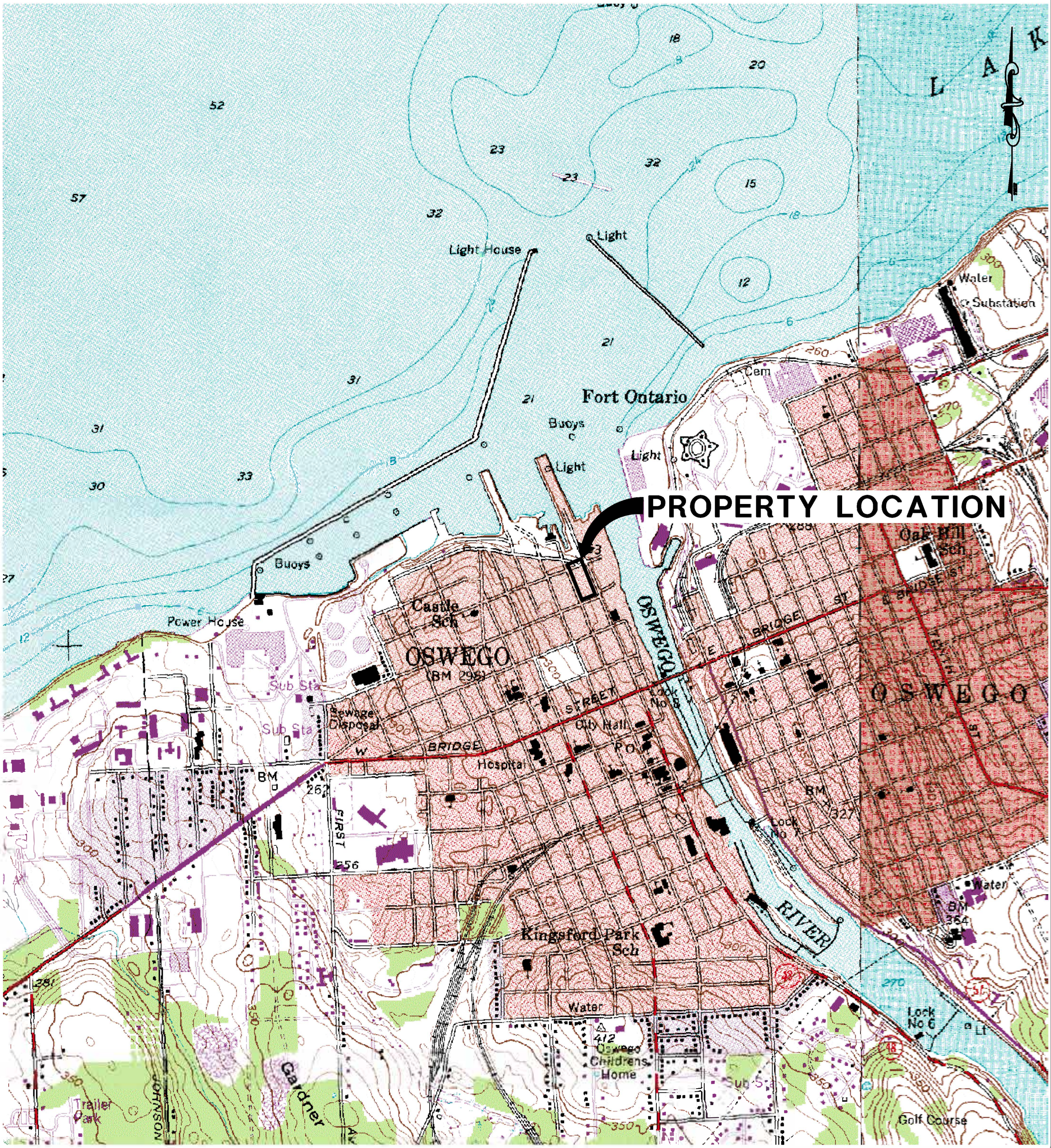
G. Appropriate Quality Assurance/Quality Assurance (QA/QC) samples including Matrix Spike/Matrix Spike Duplicates (MS/MSD), trip blanks, field blanks and equipment blanks in accordance with NYSDEC DER-10. Analytical methods and the quality assurance summary is provided in Table 1.

H. All sampling will be performed by the Engineer in accordance with the requirements of NYSDEC DER-10.

I. Laboratory analytical reports will be provided to NYSDEC within 7 days of receipt from the laboratory.

J. Laboratory deliverables shall conform to the NYSDEC's Analytical Services Protocol (ASP) Category B deliverables and will include an electronic data deliverable (EDD). All groundwater data will be validated and uploaded to the EQuIS database.

FIGURES



SOURCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLES: OSWEGO WEST, N.Y., 1954, PHOTOREVISED 1978 AND OSWEGO EAST, N.Y., 1954, PHOTOREVISED 1978.

APPROXIMATE GRAPHIC SCALE:

0 2000' 4000'

P: EPA
5/18/17
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-SL3.DWG

synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	**SITE LOCATION MAP**	PROJECT NO.: HSGVIS-24-16-05 DATE: MAY 2017 FIGURE NO.: 1

APPROXIMATE SITE BOUNDARY

PROPOSED EXCAVATION AREA (APPROXIMATE)

ACTUAL EXCAVATION AREA (APPROXIMATE)

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.

0 60' 120'

GRAPHIC SCALE

synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	LIMITS OF REMEDIAL EXCAVATIONS	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 FIGURE NO.: 2

F:\5277\dwg\5277-C-SP06.dwg, 8/5/2021 3:54:00 PM

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

LEGEND

APPROXIMATE SITE BOUNDARY

ROCK CORING LOCATION

MONITORING WELL LOCATION

EXISTING WELLS

ACTUAL EXCAVATION AREA (APPROXIMATE)

APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

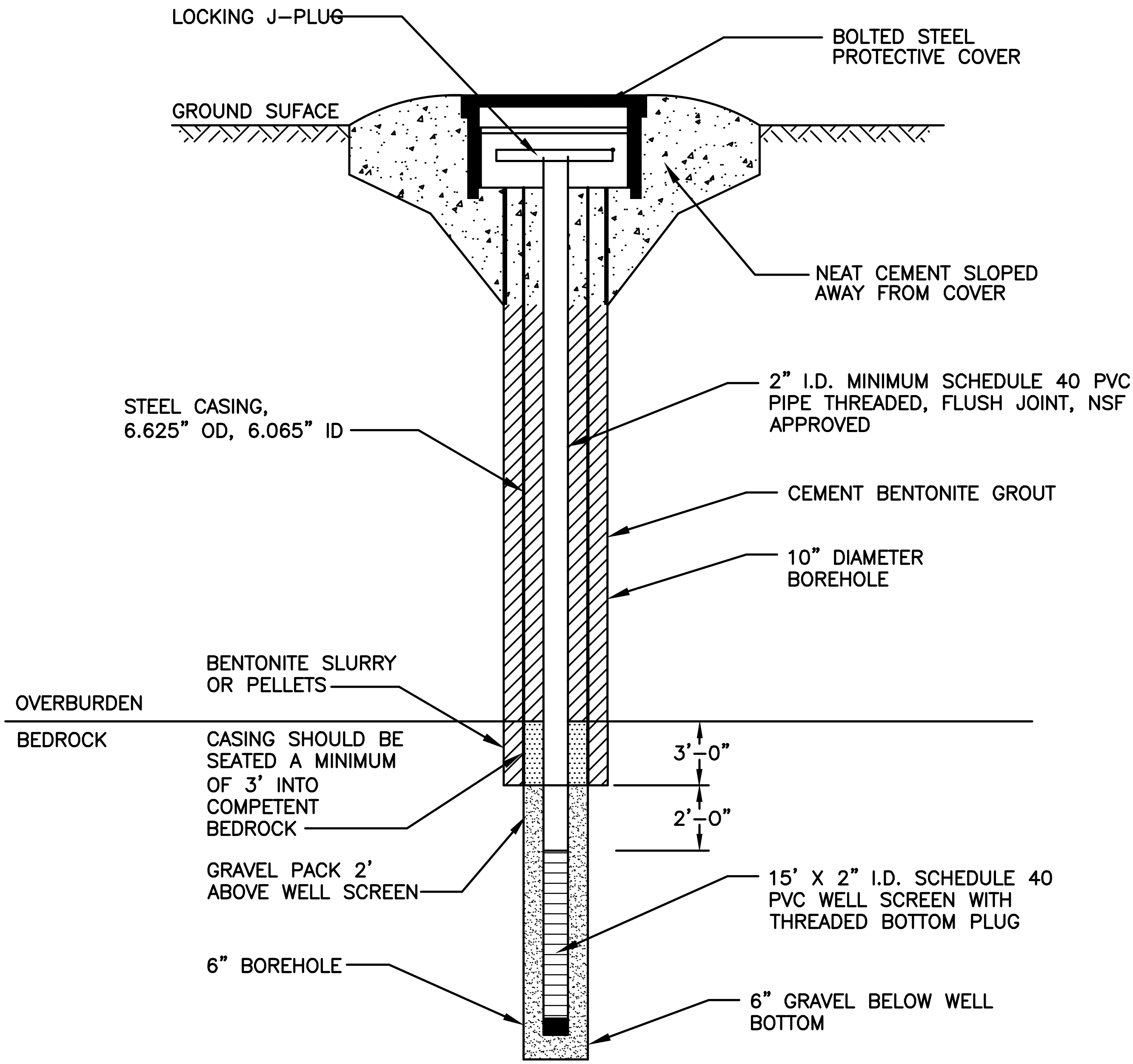
synapse
connect. advise. insure.

SYNAPSE PROPERTY RESOURCES
360 ERIE BLVD. EAST
SYRACUSE, NEW YORK 13202

HARBOR VIEW SQUARE
NYSBCP SITE NO. C738040
68 WEST FIRST STREET
OSWEGO, NEW YORK

PROPOSED WELL LOCATIONS

PROJECT NO.:	HSGVIS-24-16-05
DATE:	AUGUST 2021
FIGURE NO.:	3



synapse
connect. advise. insure.

SYNAPSE PROPERTY RESOURCES
360 ERIE BLVD. EAST
SYRACUSE, NEW YORK 13202

PLAN FOR CONSTRUCTION OF BEDROCK MONITORING/INJECTION WELLS

FIGURE 4

F:\5277\dwg\5277-WELLS.dwg, 8/6/2021 8:58:13 AM

TABLES

TABLE 1

Analytical Methods/Quality Assurance Summary Table
Harbor View Square
68 West First Street
Oswego, New York
NYS BCP Site No. C738040

Sample Marix Type	Sample Frequency	Equipment Blank Frequency	Trip Blank Frequency	Analyitcal Parameters	Anaytical Method	Analytical Reporting Requirement	Reporting Limit	Matrix Spike Frequency	Field Duplicate Frequency	Sample Preservation	Sample Container Type and Volume	Method Hold Time
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	1 per cooler	VOCs	USEPA Method 8260C	Category B	1.00 ug/L	5%	5%	HCl	3 - 40 mL vials	14 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Metals	USEPA Method 6010C/7410	Category B	0.002-0.01 mg/L	5%	5%	NHO3	500 mL plastic	180 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Sulfate and Chloride	USEPA Method 300.1	Category B	2.00 and 0.50 mg/L	5%		None	60 mL plastic	28 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Sulfide	USEPA Method SM4500 S2	Category B	1.00 mg/L	5%		Zinc Acetate and NaOH	250 mL plastic	7 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Nitrate and Nitrite	USEPA Method 353.2	Category B	0.02 mg/L	5%		None	250 mL plastic	48 hours
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Ferric Iron	USEPA Method SM4500 FE	Category B	0.0075 mg/L	5%		None	125 mL plastic	IMMEDIATELY/180 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Ethene, Ethane, Methane, Acetylene	USEPA Method 5021A (RSK Method 175)	Category B	1.00-5.00 ug/L	5%		HCl	3-50 mL vials	14 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Total organic carbon/dissolved carbon	USEPA Method 9060A	Category B	1.00 mg/L	5%		HCl	2-40 mL vials	28 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	NA	NA	Total organic carbon	USEPA Method SM5310D	Category B	1.00 mg/L	5%		HCl	2-40 mL vials	28 days
Groundwater	MW-6, MW-7, MW-8, MW-9, VA-RC-4	1 per cooler	NA	Polyfluoroalkyl Substances (PFAS)	USEPA Method 537.1	Category B	2.00-5.00 ng/L	5%		None	(2) 250 mL polypropylene	14 days/40 days

APPENDIX A

HEALTH AND SAFETY PLAN

Site-Specific
Health and Safety Plan for

Harbor View Square
68 West First Street
Oswego, New York
NYS BCP Site No. C738040

Prepared by:

synapse

Synapse Property Resources
360 Erie Boulevard East
Syracuse, New York 13202

SYNAPSE
HEALTH AND SAFETY PLAN
REVIEW AND APPROVAL

CLIENT: Harbor View Square, LLC

SITE NAME: Harbor View Square

PROJECT NAME: Brownfield Cleanup Program Remediation

PROJECT NUMBER: *HSGV 24-16*

START DATE: April 15, 2017

END DATE: November 15, 2019

Roger R. cREIGHTON Project Manager	Signature:________________________	Date:_______________
Roger Creighton Synapse Health and Safety Coordinator	Signature:________________________	Date:_______________
Varies Site Health and Safety Officer	Signature:________________________	Date:_______________
Brian Macrae Managing Partner	Signature:________________________	Date:_______________

This Health and Safety Plan has been written for the use of Synapse Property Resources (*Synapse)* employees and approved *Synapse* subconsultants*,* subcontractors and clients.

Our work can be hazardous, and it is imperative that we never forget that! It is the intent of this document to address our risks. The health and safety guidelines in this Plan were prepared specifically for this site, its conditions, purposes, dates and personnel and must be amended if conditions change. This Plan must not be used on any other site without prior research by trained health and safety specialists.

Synapse claims no responsibility for its use by others for purposes unrelated to this project. This Plan will provide useful information to subcontractors and will assist them in developing their own HASP. Subcontractors and subconsultants should sign this plan (See Attachment 7) as an acknowledgement of hazard information and notice that they must ensure that the risks posed by work on this site are addressed. Synapse is readily available to assist subcontractors in identifying and addressing their employees' risks.

TABLE OF CONTENTS

ATTACHMENTS

Attachment 1 – Site Figures

Attachment 2 – Directions to Hospital

Attachment 3 – Incident Investigation Form & Root Cause Analysis Flow Chart

Attachment 4 – Utility Clearance Logs

Attachment 5a – Air Monitoring Equipment Calibration/Check Log

Attachment 5b – Air Monitoring Log

Attachment 6 – Daily Production Health & Safety Briefing

Attachment 7 – Acknowledgment & Agreement Form

Attachment 8 – Community Air Monitoring Plan (Bound Separately)

1.0 Objectives and Goals of this HASP

The purpose of this HASP is to:

- **Document a proactive, scientific exposure assessment for this site and project that identifies and provides an understanding of health and safety risks.**
- **Document proactive precautions to avoid the risks and stay safe.**

Our goal of this HASP is to:

- **Complete site work described in the Remedial Work Plan without any incidents; no injuries, no illnesses, no impacts to the environment or to property and equipment. NONE! We have zero tolerance for incidents of any type. We expect all subcontractors and other project participants to share this goal.**
- **Comply with the provisions and requirements set forth by OSHA.**

2.0 Scope of Work

The Scope of Work includes the implementation of the Brownfield Cleanup Program Remedial Work Plan (RWP), which will consist of a series of plans. This HASP was prepared for the use of Synapse personnel and subcontractors while performing the following tasks:

Bedrock Drilling and Sampling

This task will include observation of the installation of five bedrock holes at the site, as described in the Pre-Design Investigation Work Plan (PDIWP).

Archeological Survey

This task will consist of observation of the archeological survey. Several exploration trenches will be advanced in the area of the former Fort Oswego, as shown in Attachment 1.

Contaminated Soil Excavation and Clean Fill Placement

This task includes the excavation of existing contaminated site soils in the area of the former UST, beneath the former process lines, and beneath Sump 1 and Sump 2. Upon removal of the soils, soil samples will be collected from the excavation base and sidewalls. The collected samples will be submitted for laboratory analysis under standard chain-of-custody protocols to confirm all contamination was successfully removed. Synapse anticipates the excavation to extend to bedrock, expected to be between two and five feet below ground surface (bgs). If additional contamination remains on the bedrock surface, a remediating compound will be applied to the base of the excavation. The excavation will then be backfilled with certified clean fill, mechanically compacted into place.

Bedrock Injections

This task includes observation of injections into the bedrock. This plan will be updated to include the scope of work for the injection progam when it has been defined.

3.0 Background Information on the Project Site

The Site is located at 68 West First Street in the City of Oswego, Oswego County. The Site covers approximately 2.438 acres and consists of the block bounded by West First Street to the east, West Second Street to the west, West Schuyler Street to the south and Lake Street to the north. The northwestern portion of the site is covered by a one-story concrete slab-on grade, steel-framed masonry building which covers approximately 20,900 square feet. The primary contaminants of concern (COCs) for the site include several chlorinated volatile organic compounds (CVOCs); specifically tetrachloroethene (PCE) and trichloroethene (TCE) and their degradation products, which include 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride (VC). Other COCs of interest include; several metals, including lead, mercury and others, as well as polycyclic organic hydrocarbons (PAHs).

4.0 Property Owner Safety Procedures

Not applicable.

5.0 Site Plan

A site plan is included in **Attachment 1.**

6.0 Emergency Response

If an incident occurs, the following steps will be taken

- *The Site Health & Safety Officer (SHSO) will evaluate the incident and assess the need for assistance and/or evacuation.*
- *The SHSO will call for outside assistance as needed.*
- *The SHSO will act as liaison between the outside agencies and on-site personnel.*
- *The SHSO will ensure that the Project Manager (PM) and Synapse(HR) are notified of the incident; and*
- *The SHSO will take appropriate measure to stabilize the incident scene.*

The SHSO must be familiar with the directions to the hospital given in **Attachment 2.**

Injury or Illness

If an injury or illness occurs, take the following action:

- Determine if emergency response (fire/ambulance) support is necessary. If so, dial **911**. Provide the location of the injured person and other details as requested. If it makes sense to take an individual to the hospital, follow the directions in **Attachment 2.**

- Get First Aid for the person immediately. Utilize first aid kit in vehicle. Also utilize the bloodborne pathogens kit. *(Make sure you have both kits, or one combined kit).*

- Notify the SHSO immediately. The SHSO is responsible for preparing and submitting the Incident/Near Miss Investigation Report to Synapse's within 24 hours of the incident, as well as notifying the employee's supervisor and Project Manager. Use the Incident/Near Miss Investigation Report and Root Cause Analysis Flowchart in **Attachment 3**. Synapse phone is (315) 475-3700. ***(Note: All incidents must be reported to Synapse within 24 hours, but the actual investigation need not be completed within 24 hours.)***

- The SHSO will assume responsibility during a medical emergency until more qualified emergency response personnel arrive at the site.

First Aid Procedures for Minor Cuts, Scratches, Bruises, etc.

- Each occupational illness or injury shall be reported immediately by employees to SHSO. The SHSO will complete the Incident/Near Miss Investigation Report in **Attachment 4** and report the incident to Synapse.

Medical Cases Not Requiring Ambulance Service

- Medical cases normally not requiring ambulance services are injuries such as minor lacerations, minor sprains, etc.

- The SHSO will ensure prompt transportation of the injured person to a physician or hospital following the directions in **Attachment 2**.

- A representative of Synapse/sub-contractor should always drive the injured employee to the medical facility and remain at the facility until the employee is ready to return.

- If the driver of the vehicle is not familiar with directions to the hospital, a second person shall accompany the driver and the injured employee to the hospital

- If it is necessary for the SHSO to accompany the injured employee, provisions must be made to have another employee, properly trained and certified in first aid, to act as the temporary SHSO.

- If the injured employee is able to return to the jobsite the same day, he/she should bring with him/her a statement from the doctor containing such information as:

- Date
- Employee's name
- Diagnosis
- Date he/she is able to return to work, regular or light duty
- Date he/she is to return to doctor for follow-up appointment, if necessary
- Signature and address of doctor

If the injured employee is unable to return to the jobsite the same day, the employee who transported him should bring this information back to the jobsite and report it to Synapse at (315) 475-3700 and Synapse Health & Safety Coordinator, Roger Creighton at (315) 849-0905.

Emergency Cases Requiring Ambulance Services

- ♦ Medical cases requiring ambulance services would be such cases as severe head injuries, amputations, heart attacks, etc.

- ♦ Should ambulance service be necessary, the following procedures should be taken immediately.

  - Contact necessary ambulance service and company emergency services by dialing **911** and notify the SHSO for the site.

  - Administer first aid until ambulance service arrives.

  - While the injured employee is being transported, the SHSO should contact the medical facility to be utilized.

  - One designated representative should accompany the injured employee to the medical facility and remain at the facility until final diagnosis and other relevant information is obtained.

Death of an Individual or Hospitalization of Three or More Employees

The procedure as outlined in "First Aid and Medical Cases", above, should be followed. If the injured person dies, then SYNAPSE, local officials and coroner must be notified ***immediately***. Synapse will notify the **local OSHA office within 8 hours of the incident or fatality** in the event of fatality or hospitalization of three or more employees.

Response to Spills or Cut Lines

Prevent problems by documenting the location of underground lines (e.g., product, sewer, telephone, fiber optic) before starting site work. If a line or tank is drilled through, or another leak occurs, document the event as soon as possible using the Incident Investigation Report in **Attachment 3. Notification of the event must be made to Synapse immediately**. Include dates, times, actions taken, agreements reached, and names of people involved. Use additional pieces of paper to document the event completely. The SHSO, PM and client must be notified immediately. The PM will notify the regulatory authority or utility as necessary.

In the event of a spill/release, follow this plan:

1. Stay upwind of the spill/release.
2. Wear appropriate PPE.
3. Turn off equipment and other sources of ignition.
4. Turn off pumps and shut valves to stop the flow/leak.
5. Plug the leak or collect drippings, when possible.
6. Use sorbent pads to collect product and impede its flow, if possible.
7. Call Fire Department immediately if fire or emergency develops.
8. Inform Synapse Project Manager about the situation.
9. Determine if the client wants Synapse to repair the damage or if the client will use an emergency repair contractor.
10. Based on agreements, contact emergency spill contractor for containment of free product.
11. Advise the client of spill discharge notification requirements and determine who will complete and submit forms. *(Do not submit or report to agencies without the client's consent.)* Document each interaction with the client and regulators and note, in writing; name, title, authorizations, refusals, decisions, and commitments to any action.
12. Do not transport or approve transportation of contaminated soils or product until proper manifests have been completed and approved. Be aware that soils / product may meet criteria for hazardous waste.
13. Do not sign manifests as generator of wastes; contact PM to discuss waste transportation.

Notifications – a spill/release requires completion of an Incident Investigation (II) as per Synapse's LPS program. **The PM must involve the client/generator in the Incident Investigation process. Synapse's incident investigation form must be completed (see Attachment 3) and submitted to Synapse within 24 hours. The client/generator is under obligation to report to the proper government agencies. If the spill extends into waterways, the Coast Guard and the National Response Center (800) 424-8802 must be notified immediately by the client or with his permission.**

All spills/releases must be reported to *NYSDEC Hotline at (800) 457-7362 immediately after spill/release identification.*

7.0 Contractor Emergency Action Plan

The SHSO will ensure that the Subcontractor/Contractor is capable of efficient evacuation/emergency response in the event of an emergency. Subcontractor/Contractor's employees will be trained by their employer in site-specific evacuation/emergency procedures, including alarm systems and evacuation plans and routes.

The Subcontractor/Contractor shall instruct its employees that in the event of an emergency such as a fire, release, or accident involving injuries, they are required to dial **911**. The reporting employee is to state the problem clearly and fully and remain on the line until dismissed by the operator.

Synapse staff and Subcontractor/Contractors working in an area where an emergency exists shall evacuate to a safe location, preferably upwind, away from the area and take attendance. The gathering location will be: **on the corner of West First and West Schuyler Streets.**

(If the emergency causes the route to a gate surrounding the site is closed, the Synapse staff and Subcontractor/Contractors shall move to an open area upwind of the hazard area, and remain there until instructed by emergency response personnel (i.e., police, fire, ambulance, paramedics, etc.) to do otherwise.)

Subcontractor/Contractor has the responsibility to account for its own employees and to provide such information immediately to emergency response personnel upon request.

Synapse staff and Subcontractor/Contractor may not reenter the emergency site without specific approval from emergency response personnel.

In the event of fire ignition in close proximity to Synapse staff and Subcontractor/Contractor's employees, those persons shall evacuate the area and notify emergency personnel unless the fire is readily extinguished with portable dry chemical equipment on-hand. **When in doubt, emergency response personnel shall be notified.**

8.0 Local Emergency Contact Names and Phone Numbers

DIRECTIONS AND MAP TO THE HOSPITAL – SEE ATTACHMENT 2

EMERGENCY CONTACTS	NAME	TELEPHONE NO.
Hospital	Oswego Hospital	315-349-5511 (911)
Ambulance	Oswego County Ambulance	315-592-4145 (911)
Police	Oswego Police Department	315-343-1212 (911)
Fire	Oswego Fire Department	315-343-2161 (911)

9.0 Government Contact Names and Phone Numbers

AGENCY	NAME	TELEPHONE NO.
Utility Location	Dig Safe New York	(800) 526-0400
NYSDEC	NYSDEC Hotline	(800) 457-7362

10.0 Project Personnel and Relevant Information

A question about this project posed by neighbors, the press, or other interested parties should be directed immediately to:

Name: Matthew Hoskins **Company**: Synapse **Phone:** 315-475-3700

Subcontractors shall review and sign the form in **Attachment 7 ACKNOWLEDGMENT & AGREEMENT FORM**

PROJECT JOB TITLE	NAME	TELEPHONE NO.	GENERAL PROJECT RESPONSIBILITIES	TRAINING DATES	
				40 Hr HAZWOPER	8 Hr Refresher
Site Health and Safety Officer	Varies	Varies	Implementing this HASP. Has authority to stop work. Perform air quality tasks. Take charge of all incidents. Review subcontractor's HASP	Varies	varies
Project Manager	Roger Creighton	315-475-3700 315-254-8547cell	Overall financial and logistics. Contact client and subs to understand all hazards. Discuss with SHSO. Follow-up all incidents upon notice.	1995	2017
Project Staff	Varies	Varies	Conduct work in accordance with JSA and this HASP. Report all incidents and near misses immediately to Project Manager.	Varies	Varies
Subcontractor Cascade Environmental	Michael Jordan	802-229-1883 Office 802-498-3828 Cell	Responsible for coordination of the all bedrock cores and borings.	1996	2017
SYNAPSE Health & Safety Coordinator	Roger Creighton	315-475-3700 Office 315-254-8547 Cell	Respond with corporate resources to all incidents as appropriate. Assist in HASP review. Assist in incident investigation.	1996	2017
Synapse Managing Partner	Brian Macrae	315-475-3700 Office 315-254-8638 Cell	Assist with incident review, recordkeeping.	1994	2003

11.0 Maximum Concentrations of Contaminants Identified Onsite

Listed below are the maximum concentrations of primary contaminants of concern in the soil/groundwater that are expected to be encountered at the site.

Substance	**Date of Sample**	**Media**	**Sample Concentration** *(Note units of measure, ppm)*
PCE	2012	Soil	<25 mg/kg
TCE	2012	Soil	<25 mg/kg
1,1-DCE	2012	Groundwater	<25 mg/L
Cis-1,2-DCE	2012	Groundwater	<25 mg/L
Trans-1,2-DCE	2012	Groundwater	<25 mg/L

12.0 Potential Airborne Concerns

- ***A site specific Community Air Monitoring Plan has been prepared and is provided as Attachment 8, to be utilized in conjunction with this HASP and sets forth the following objectives:***

  1. ***Protect human health and the environment form exposure to site contaminants associated with the soil boring activities set forth in the* VCACWP.**
  2. ***Minimize risk of exposure to offsite receptors to site contaminants potentially associated with the soil boring activities set forth in the* VCACWP.**

13.0 Detailed Project Steps with Hazard Assessments and Precautions

Traffic Control Plan:

(Incidents on sites have shown the need for a well-thought out traffic control plan. This plan must consider:

- *Level of traffic activity on a site and provide for the safety of all workers on the site. E.g., a gasoline site that is open to the public should require sawhorse barricades to protect workers.*
- *Cones and caution tape have proven ineffective in a number of situations. Other traffic control precautions include candles, oversized cones with flags, placing vehicles between staff and the public, etc.*
- *We must cordon off as much space as is necessary to ensure our safety. This must be discussed with clients as it may mean closing down additional gasoline pumps or entrances to a factory, etc.*
- *Company and personal vehicles should be parked as far away from potential traffic as possible.*
- *How contractor heavy equipment, e.g., vacuum trucks, drill rigs, cranes, loader/diggers, etc will be parked and maneuvered around the site. All heavy equipment movements must be coordinated in advance to avoid incidents.*
- *Review local regulations for: formally developed traffic control plans signed by licensed individuals, police details, flagmen, hours of activity, closure of streets to move equipment, etc.)*

Work on this project will be conducted during the hours: 7 A.M. & 7 P.M.

Shutoff valves/switches for utilities and products:

To be determined on site

Jewelry safety: Jewelry can be dangerous. Large ear rings, long necklaces, loose-fitting bracelets, rings, watches, etc. can become entangled in machinery and cause removal of limbs, as well as be conductive of electricity. Use caution and avoid unnecessary hazards!

NOTE: Synapse staff and subcontractors are not to enter an excavation without first contacting Roger Creighton, Health & Safety Coordinator (315) 475-3700.

Bedrock Borings

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each work day. Safe Performance Self Assessment (SPSA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered.

❶ Job Steps	❷ Personal Protective Equipment	❸ Potential Hazard	❹ Critical Actions
Clear boring locations.	Gather necessary PPE. PPE must include: reflective vest for traffic, steel toed and shank shoes, hard hat, safety glasses with side shields, ear plugs/muffs, leather gloves for the non-chemical aspects of work; Chemical resistance PPE to include: full-face respirator with organic vapor cartridges, appropriate gloves, and other PPE as needed.	Traffic hazards, overhead and underground installations, product releases, property damage, dealer inconvenience.	• Reference Overhead and Underground Utility Checklist. • Coordinate with facility contact (or designee) to minimize potential conflicts. • Review proposed locations against available construction drawings and known utilities, tanks, product lines, etc. • Mark out the proposed excavation locations. • Call underground utility locating service for public line location clearance, and get list of utilities being contacted. If necessary, coordinate private line locator for private property.
Cascade will set up necessary traffic control.	Reflective vest, steel toed and shank shoes, hard hat (if required by job site).	Potentially can be struck by vehicle during placement. Vehicle accident as a result of improper traffic control equipment placement.	• Use buddy system for placing traffic control. • Address traffic issues, as required.
Set up exclusion zone(s), stockpile area and establish work areas/heavy equipment pathways.		Injury or exposure to public or other onsite personnel. Slip/fall hazards. Onsite vehicular accident with heavy equipment.	• Implement exclusion zone set-up instructions. • Set up clear walking paths between work stations.
Hand digging/post-holing where necessary to expose	Steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection,	Damage to lines (and associated physical hazards or property	• Use hand tools whenever possible.

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each work day. Safe Performance Self Assessment (SPSA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered.

❶ Job Steps	❷ Personal Protective Equipment	❸ Potential Hazard	❹ Critical Actions
and protect underground installations as needed.	reflective safety vest, and leather gloves for the non-chemical aspects of work.	damage). Back strain. Injury or vehicle damage from falling into holes.	● Use proper lifting techniques. ● Barricade/cover holes until job is complete.
Assist with set up of heavy equipment.	Wear reflective vest for traffic, steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection devices, and leather gloves.	Damage caused by heavy equipment while accessing set-up location. Struck by equipment.	● Verify clear pathway to boring locations. ● Provide as-needed hand signals and guidance to driver to place rig. ● Visually inspect equipment (fire extinguisher on board, no oil or other fluid leaks, cabling and associated equipment in good condition, pressurized hoses secured with whip-checks or adequate substitute, jacks in good condition). ● Maintain eye contact with operator.
Commence borings	Use PPE as follows: ➢ Level D (all the time): Safety glasses, hard hat, disposable ear plugs, long-sleeved shirts and pants, steel-toed boots. ▪ For contact with moist soil or liquid: **Gloves:** 0.008-inch gauge Nitrile gloves, leather work gloves **Boot Covers:** PVC, Neoprene or equivalent **Chemical resistant Suit:** Tyvek ➢ Upgrade to Level C (if necessary): Level D plus half-mask respirator with safety goggles or full face respirator ▪ **Cartridges:** Organic Vapor/HEPA ▪ **Gloves:** 0.008-inch gauge inner Nitrile gloves, with 0.11-inch gauge outer Nitrile gloves and leather work gloves ▪ **Boot Covers:** Neoprene ▪ **Chemical Resistant Suit:** PE Tyvek	Heat or cold exposure, exposure to chemical hazards, hitting an underground or overhead utility, flammable or oxygen-deficient atmosphere from accumulated vapors, trip and fall, side wall cave-in, equipment failure, noise.	● Monitor weather conditions and take breaks as needed for cold or hot weather. ● Keep work area clear of tripping or slipping hazards. Perform periodic visual inspections of heavy equipment and keep it at least 5' from excavation edge, or one foot away from the edge for every foot of depth if greater than 5' deep. ● Perform necessary soil classification.
Collect samples in accordance with sampling plan. (samples to be analyzed on site by Cascade)	Steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and chemical resistant gloves.	Injury from heavy equipment. Exposure to site contaminants.	● Stay out of drill rig moving parts whenever possible. ● Use agreed-upon hand signals with heavy equipment operators. ● Monitor air around excavation in accordance with **Section 12**.
<u>General</u>			
Typical work	Steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work. If you suspect that equipment is contaminated, wear chemical resistant gloves during decontamination of equipment.	Weather related incidents: automobile accidents, slips and falls.	● Check weather reports daily. Project visits will not be performed during inclement weather. Sampling may be performed during light rain mist. Wear raincoats. ● Drive at speed limit or less as needed to keep safe distance from vehicle in front, avoid short stops.

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each work day. Safe Performance Self Assessment (SPSA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered.

❶ Job Steps	❷ Personal Protective Equipment	❸ Potential Hazard	❹ Critical Actions
No eating, drinking, or smoking on-site. No contact lenses on-site.		Exposure to site contaminants	
A safety meeting will be held each day, even if there is only one person working on the project on any given day.			● Topics will always include the work scheduled for the day and restatement of the hazards and means to avoid them. Other topics may include sampling in general and advances in technology and how it may be applied to the project. Use **Attachment 6** for logging the topics discussed.

Excavation Oversight

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each work day. Safe Performance Self Assessment (SPSA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered.

❶ Job Steps	❷ Personal Protective Equipment	❸ Potential Hazard	❹ Critical Actions
Clear excavation area.	Gather necessary PPE. PPE must include: reflective vest for traffic, steel toed and shank shoes, hard hat, safety glasses with side shields, ear plugs/muffs, leather gloves for the non-chemical aspects of work; Chemical resistance PPE to include safety glasses, appropriate gloves, and other PPE as needed.	Traffic hazards, overhead and underground installations, product releases, property damage, dealer inconvenience.	• Reference Overhead and Underground Utility Checklist. • Coordinate with facility contact (or designee) to minimize potential conflicts. • Review proposed locations against available construction drawings and known utilities, tanks, product lines, etc. • Mark out the proposed excavation locations. • Call underground utility locating service for public line location clearance, and get list of utilities being contacted. If necessary, coordinate private line locator for private property.
Excavation contractor will set up necessary traffic control.	Reflective vest, steel toed and shank shoes, hard hat (if required by job site).	Potentially can be struck by vehicle during placement. Vehicle accident as a result of improper traffic control equipment placement.	• Use buddy system for placing traffic control. • Address traffic issues, as required.
Set up exclusion zone(s), in the work area.		Injury or exposure to public or other onsite personnel. Slip/fall hazards. Onsite vehicular accident with heavy equipment.	• Implement exclusion zone set-up instructions. • Set up clear walking paths between work stations.
Set up CAMP equipment	Use PPE as follows: ➢ Level D (all the time): Safety glasses, hard hat, disposable ear plugs, long-sleeved shirts and pants, steel-toed boots.	Heat or cold exposure, exposure to chemical hazards, hitting an underground or overhead utility, flammable or oxygen-deficient atmosphere from accumulated vapors, equipment failure, noise.	• Monitor weather conditions and take breaks as needed for cold or hot weather. • Keep work area clear of tripping or slipping hazards. Perform periodic visual inspections of heavy equipment and keep it at least 5' from test pit edge.
Clean site/demobilize	Steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work.	Traffic. Safety hazard left on site. Lifting hazards.	• Use buddy system as necessary to remove traffic control. • Leave site clean of refuse and debris. • Notify station personnel of departure. • Use proper lifting techniques or use mechanical assistance.
Package and deliver samples to lab		Bottle breakage (if any), back strain.	• Handle and pack bottles carefully (bubble wrap bags are helpful). Use proper lifting techniques.
General			
Typical work	Steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work. If you suspect that equipment is contaminated, wear chemical resistant gloves	Weather related incidents: automobile accidents, slips and falls.	• Check weather reports daily. Project visits will not be performed during inclement weather. Sampling may be performed during light rain mist. Wear raincoats. • Drive at speed limit or less as needed to keep safe distance from vehicle in front, avoid short stops.

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each work day. Safe Performance Self Assessment (SPSA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered.

❶ Job Steps	❷ Personal Protective Equipment	❸ Potential Hazard	❹ Critical Actions
	during decontamination of equipment.		
No eating, drinking, or smoking on-site. No contact lenses on-site. No facial hair that would interfere with respirator fit.			
A safety meeting will be held each day, even if there is only one person working on the project on any given day.			● Topics will always include the work scheduled for the day and restatement of the hazards and means to avoid them. Other topics may include sampling in general and advances in technology and how it may be applied to the project. Use **Attachment 6** for logging the topics discussed.

14.0 Waste Characteristics

A. **Waste Generation** (Type(s)/Quantities Expected):

Anticipated (YES/NO): YES

Types: Liquid __X__ Solid __X__ Sludge _____ Other (describe)

Quantity (Expected Volume): 1 Drum

B. **Characteristics** (Expected):

Corrosive _____ Flammable/Ignitable _____ Radioactive _____ Toxic

Reactive _____ Unknown

Other (specify)

C. **Packaging requirements for waste material** (Expected):

- DOT-approved drums
- Baker tanks—water (possibly tankers if trucked off site)
- lined waste bins
- Excavated soil will be return to the excavation.

D. **Disposal and/or Treatment Methods Proposed:**

Attachment 1

SITE PLAN

LEGEND

APPROXIMATE SITE BOUNDARY

NOTES:

1. 2015 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.

0 80' 160'

GRAPHIC SCALE

P: BL
5/18/17
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B01.DWG

synapse connect. advise. insure.

SYNAPSE PROPERTY RESOURCES
360 ERIE BLVD. EAST
SYRACUSE, NEW YORK 13202

HARBOR VIEW SQUARE
NYSBCP SITE NO. C738040
68 WEST FIRST STREET
OSWEGO, NEW YORK

AERIAL PROPERTY PLAN

PROJECT NO.: HSGVIS-24-16-05

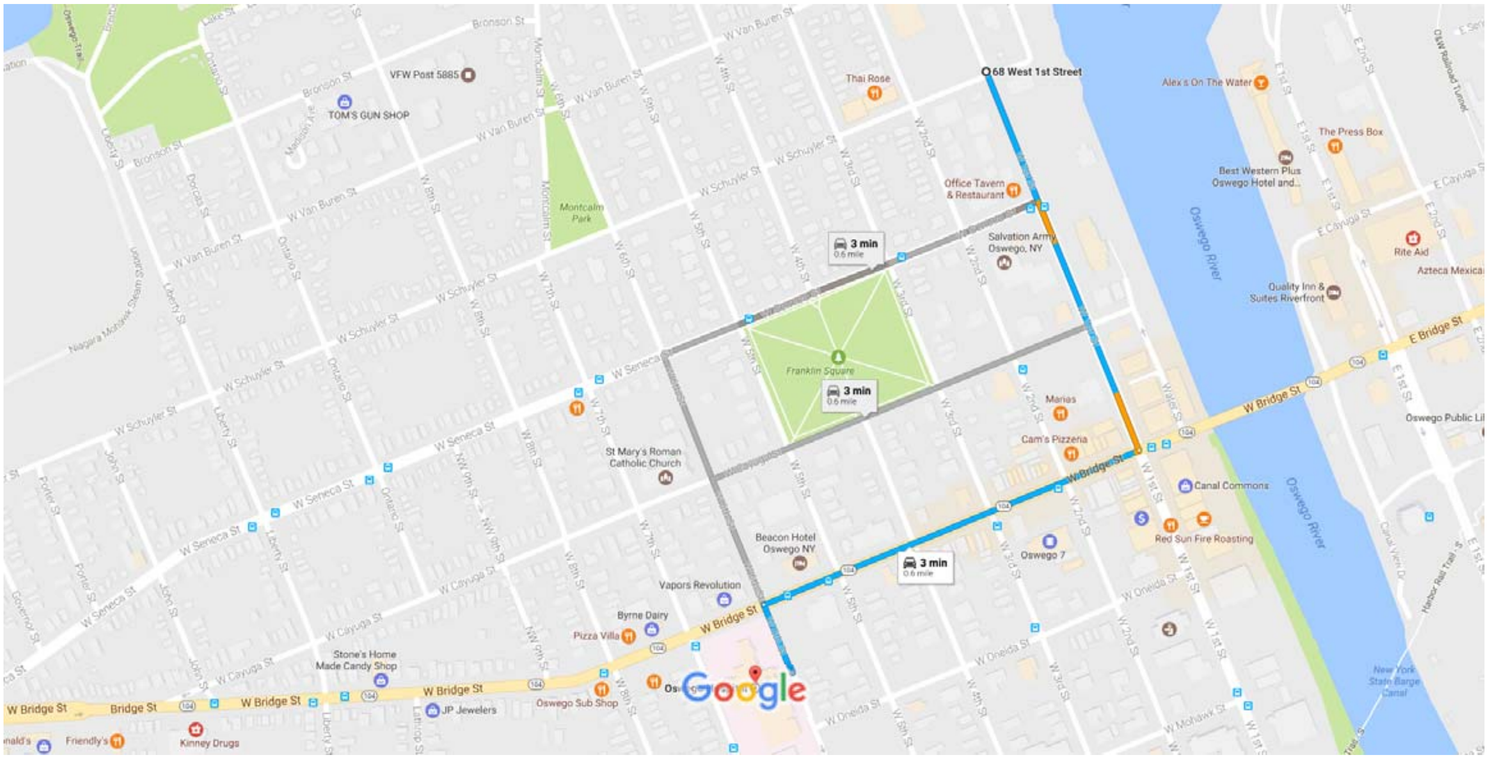
DATE: MAY 2017

FIGURE NO.: 2

Attachment 2

DIRECTIONS TO OSWEGO HOSPITAL

Google Maps **68 W 1st St, Oswego, NY 13126 to Oswego Hospital** Drive 0.6 mile, 3 min



Map data ©2017 Google 200 ft

via W 1st St and W Bridge St 3 min
Fastest route 0.6 mile

via W Seneca St and W 6th St 3 min
0.6 mile

via W 1st St and W Cayuga St 3 min
0.6 mile

Attachment 3

Incident Investigation/ Near-Miss Investigation Report

INCIDENT TYPE

Date of Incident:

☐ Fatality	☐ Industrial Non-Recordable	☐ Spill/Leak	☐ General Liability
☐ Lost Workday	☐ Non-Industrial	☐ Product Integrity	☐ Criminal Activity
☐ LW Restricted Duty	☐ Off-the-Job Injury	☐ Equipment	☐ Notice of Violation
☐ OSHA Medical or Illness w/o LW	☐ MVA	☐ Business Interruption	☐ Near Miss
☐ First Aid	☐ Fire	**(TO BE COMPLETED BY HR)**	

This report must be completed by the employee's supervisor or Site Health and Safety Officer immediately upon learning of the incident. The completed report must be reviewed and signed by the CEO and e-mailed or faxed to the Health & Safety Coordinator within 24 hours of the incident, even if employee is not available to review and sign. Employee or employee's doctor must submit a copy of the doctor's report to Synapse within 24 hours of the initial exam and any subsequent exams. Phone: 315-475-3700, Fax: 315-475-3780, E-Mail: vdemarchi@synapseriekmanagement.com. After hours or weekends, please call Roger Creighton Cell: 315-254-8547.

EMPLOYER

Company Name:

Work Location Address where incident occurred: Project Name:

EMPLOYEE

Name: SSN: Birthdate:

Employment Status: ☐ Full-Time ☐ Part-Time ☐ Hourly-As-Needed | How long in present job?

INJURY OR ILLNESS INFO

Where did incident / near miss occur? (number, street, city, state, zip):

County: | On Employer's premises? ☐ Yes ☐ No

Specific activity the employee was engaged in when the incident / near miss occurred:

All equipment, materials, or chemicals the employee was using when the incident / near miss occurred (e.g., the machine employee struck against or which struck employee; the vapor inhaled or material swallowed; what the employee was lifting, pulling, etc.):

Describe the specific injury or illness (e.g., cut, strain, fracture, skin rash, etc.):

Body part(s) affected (e.g., back, left wrist, right eye, etc.):

Name and address of Health Care Provider (e.g., physician or clinic): | Phone No.:

If hospitalized, name and address of hospital: | Phone No.:

Date of injury or onset of illness(MM/DD/YYYY) / / | Time of event or exposure: ☐ AM ☐ PM

Time employee began work: ☐ AM ☐ PM | Did employee lose at least one full shift's work? ☐ No ☐ Yes, 1st date absent (MM/DD/YYYY) / /

Has employee returned to work? ☐ Regular work ☐ Restricted work ☐ No, still off work ☐ Yes, date returned (MM/DD/YYYY) / /

Did employee die? ☐ No ☐ Yes, date (MM/DD/YYYY) / /

Date employer notified of incident / near miss: (MM/DD/YYYY) / /

To whom reported:

Other workers injured/made ill in this event? ☐ Yes ☐ No

Description of Incident / Near Miss: (Describe fully the incident / near miss events. Tell what happened and how it happened.)

Motor Vehicle Accident (MVA)		Professional Driver? ☐ Yes ☐ No	
Total Years Driving:	Company Vehicle? ☐ Yes ☐ No	Operation Type:	Accident Situation:
Truck Transportation:	Years with Carrier:	Vehicle Type:	Equipment #:
Accident Location (street, city, state):			

Hazardous Material? ☐ Yes ☐ No	Recordable? ☐ Yes ☐ No	No. of Vehicles Towed	No. of Injuries:	No. of Fatalities:

Spill/Leak/Product Quality

Product Name		Quantity		Product 2 Name		Quantity		Product 3 Name		Quantity	
Agency Notifications											

Cost of Incident	$

Third Party Incidents

Name of Owner		Address		Telephone	
Description of Damage:					
Witness Name		Address		Telephone	
Witness Name		Address		Telephone	

#	Root Cause and Contributing Factors: Conclusion (Describe in Detail Why Incident / Near Miss Occurred)
1	
2	
3	
4	
5	

Root Cause(s) Analysis (RCA):

1. Lack of skill or knowledge
2. Lack of or inadequate operational procedures or work standards
3. Inadequate communication of expectations regarding procedures or work standards
4. Inadequate tools or equipment
5. Correct way takes more time and/or requires more effort
6. Short-cutting standard procedures is positively reinforced or tolerated
7. Person thinks there is no personal benefit to always doing the job according to standards
8. Uncontrollable

#	RCA #	Solution(s): How to Prevent Incident / Near Miss From Reoccurring	Person Responsible	Due Date	Closure Date

Investigation Team Members

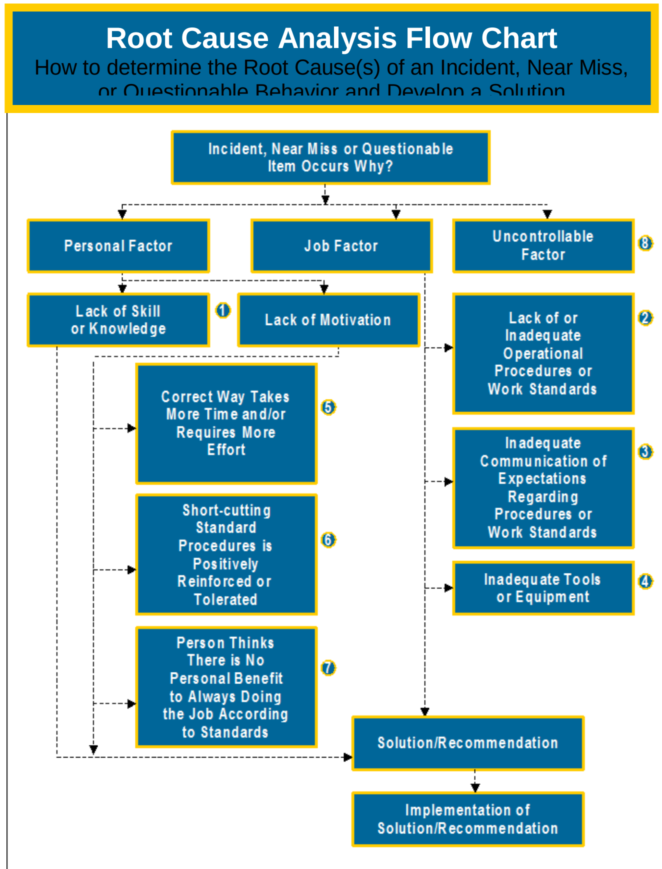
Name	Job Title	Date

Results of Solution Verification and Validation

Reviewed By

Name	Job Title	Date
	First Line Supervisor	
	Other (name)	

Acknowledgment Signatures for Injuries/Illnesses		
Title	**Signature**	**Date**
Health & Safety Coordinator: Roger Creighton		
Project Managers:		
Brian Macrae		
Paul Fisher		
Scott Matthews		
Chief Executive Officer: Vita DeMarchi		



Attachment 4
UTILITY CLEARANCE LOGS

Project: Harbor View

Location: Oswego, New York Date

Instructions. This checklist has to be completed by *a Synapse* staff members and subcontractors as a safety measure to insure that all underground utility lines, other underground structures as well as above-ground power lines are clearly marked out in the area selected for boring or excavation. **DRILLING OR EXCAVATION WORK MAY NOT PROCEED UNTIL (New Jersey One Call) HAS BEEN CONTACTED 72 HOURS PRIOR TO INVASIVE ACTIVITIES, FACILITY OPERATORS HAVE LOCATED UTILITIES WITHIN THE FACILITY, UTILITIES AND STRUCTURES ARE MARKED, AND THIS CHECKLIST HAS BEEN COMPLETED**. As a final measure to prevent hitting buried utilities during drilling, field personnel must hand auger or post hole dig a five-foot hole at the potential drilling location before commencing drilling. Alternate techniques such as vacuum excavation are acceptable provided they will not damage any buried utilities.

Assignment of Responsibility. *Synapse and Subcontractors* are responsible for having underground utilities and structures located and marked. Preferably, the utility companies themselves should mark out the lines.

Drilling or Excavation Sites. Attach a map of the property showing the drilling or excavation sites. If sites are widely separated, attach several map(s) indicating the area(s) checked for underground utilities or underground structures and the location of above-ground power lines.

Utilities and Structures

TYPE	NOT PRESENT	PRESENT	HOW MARKED[1]
Petroleum products line			
Natural gas line			
Steam line			
Water line			
Sewer line			
Storm drain			
Telephone cable			
Electric power line			
Product tank			
Septic tank/drain field			
Other			

[1]Flags, paint on pavement, wooden stakes, etc.

Client Approval (with attached map)	NAME	COMPANY	PHONE

Name and affiliation of person who marked out underground lines or structures.		
NAME	**COMPANY**	**PHONE**

Synapse Risk Management, LLC			
Field Team Leader		Date Completed	

SUBSURFACE CLEARANCE REVIEW
(To Be Used For ANY Invasive Work)

Site #: __________________ Synapse Project #: _____________________ Date: ________________

Borehole #s Reviewed: _____________________________ Clearance Performed by: _____________________
(Consultant Rep)

Yes No Pre-Mobilization

☐ ☐ 1. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?

☐ ☐ 2. Does each borehole location allow for clear entry and exit, adequate workspace, and a clear path for raising the mast and operating the drill rig and all support equipment?

☐ ☐ 3. Are all of the proposed borehole locations and associated areas of pavement cutting at least 3 feet from any subsurface utilities shown on client's building plans? PM check here ☐ if plans not provided by client (therefore not applicable to this job).

☐ ☐ 4. Are all of the proposed borehole locations and associated areas of pavement cutting at least 3 feet from any subsurface utilities shown on public right-of-way street improvement or other public property plan or site map? PM check here ☐ if not applicable to this job.

☐ ☐ 5. Has the Facility Manager indicated no knowledge of any subsurface utilities within 3 feet of the proposed borehole locations? (Review locations with the Facility Manager).

☐ ☐ 6. Are all of the proposed borehole locations and associated areas of pavement cutting at least 3 feet from any subsurface utilities identified during a geophysical survey? PM to check here ☐ if applicable to this job.

☐ ☐ 7. Have all Utility Locating Service providers notified by the public line locator marked out their facilities in the vicinity of the borehole locations or otherwise notified us that they do not have any facilities near the proposed borehole locations?

☐ ☐ 8. Are all proposed borehole locations and associated areas of pavement cutting at least 3 feet from a visual line connecting two similar looking manhole covers?

☐ ☐ 9. Are all proposed borehole locations and associated areas of pavement cutting at least 3 feet from a visual line perpendicular to the street from the water, gas, and electrical meters?

☐ ☐ 10. Are all proposed boring locations and associated areas of pavement cutting clear of pavement joints, curbs, crash posts, or other engineered structures?

☐ ☐ 11. Does the pavement lack signs of previous excavation (e.g. no pavement subsidence, no differences in pavement texture or relief, no pavement patching)? If there are signs, determine the purpose of the previous excavation and act accordingly.

☐ ☐ 12. Before drilling have you hand dug a hole to 5 feet below grade, if possible, and is the diameter of the hole greater than the outer diameter of the drilling auger? Note: a tile probe is a handy tool that can also assist you in clearing boreholes.

☐ ☐ 13. Does the soil you encountered in the hand-dug hole appear to be native material (i.e. free of clean gravel, clean sand, aggregate base [gravelly sand with ~10% fines], or other non-native looking material)?

☐ ☐ 14. You know that buildings require utilities. Have you made sure that you have identified all the expected utilities or have made sure that you can explain any missing utilities?

DO NOT DRILL if you answered "NO" to any of the above questions.

- Document the reason for a "NO" answer on the back of this form.
- Contact your supervisor for instructions and document instructed actions and results of actions on the back of this form.

Attachment 5a
AIR MONITORING EQUIPMENT CALIBRATION/CHECK LOG*

DATE	INSTRUMENT/ MODEL NO.	SERIAL NO.	BATTERY CHECK OK?	ZERO ADJUST OK?	CALIBRATION GAS (PPM)	READING (PPM)	LEAK CHECK	PERFORMED BY	COMMENTS

* Submit copies of logs to Health and Safety Coordinator, Roger Creighton within 24 hours, if a PEL is exceeded, or personal protective equipment level is upgraded at (315) 475-3700 or via email at rcreighton@synapseriskmanagement.com

Attachment 5b
AIR MONITORING LOG

DATE	TIME	LOCATION	SOURCE/AREA/ BREATHING ZONE	INSTRUMENT	CONCENTRATION/UNITS	SAMPLED BY

* Submit copies of logs to the Health and Safety Coordinator, Roger Creighton within 24 hours, if a PEL is exceeded, or personal protective equipment level is upgraded at (315) 475-3700 or via email at rcreighton@synapseriskamnagement.com

Attachment 6

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date:	
Start Time:	
Issues Discussed:	
1.	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
Meeting Conducted by:	
Name (Site Health and Safety Officer)	**Signature**

DISCUSSION IDEAS FOR THE DAILY PRODUCTION H&S MEETING

- Emergency response plan, emergency vehicle (full of fuel) and muster point
- Route to medical aid (hospital or other facility)
- Work hours, is night work planned?
- Hand signals around heavy equipment
- Traffic control
- Pertinent Legislation and Regulations
- Above and below ground utilities (energized or de-energized)
- Material Data Sheets (MSDS)
- To who, what, why, and when to report an incident
- Fire extinguisher and first aid kit locations
- Excavations, trenching sloping and shoring
- Personal protective equipment (PPE) and training
- Safety equipment and training
- Emergency telephone and telephone numbers (may not be 911)
- Eye wash stations and washroom locations
- Energy lock-out/tag-out procedures. Location of “kill Switches” etc.
- Weather restrictions
- Site security. Site hazards. Is special waste present.
- Traffic and people movements
- Working around machinery (both static and mobile)
- Sources of ignition, static electricity etc.
- Stings, bites, large animals and other naturally related injuries
- Working above grade
- Working at isolated sites
- Decontamination procedures (both personnel and equipment)
- Falls, trips, sprains and lifting injuries (how to prevent)
- Right to refuse unsafe work
- Adjacent property issues (residence, business, school, day care center)

Attachment 7

HEALTH AND SAFETY PLAN ACKNOWLEDGMENT AND AGREEMENT FORM

(All *Synapse* and subcontractor personnel must sign.)

"Zero Tolerance for Incident of ANY Kind. Work Together to Ensure A SAFE and High Quality Project

This Health and Safety Plan has been developed for the purpose of informing Synapse employees of the hazards they are likely to encounter on the project site, and the precautions they should take to avoid those hazards. Sub-contractors and other contractors at the site must develop their own Health and Safety Plan to address the hazards faced by their own employees. Synapse has provided a copy of this Plan to contractors in the interest of full disclosure of hazards of which we may be aware, and to satisfy Synapse's responsibilities under the Occupational Safety and Health Administration (OSHA) Hazard Communication standard. Similarly, contractors are required to inform Synapse of any hazards of which they are aware or that the contractor's work on site might possibly pose to SYNAPSE employees, including (but not limited to) the Material Safety Data Sheets for chemicals the contractor may bring on-site. This plan should NOT be understood by contractors to provide information on all of the hazards to which a contractor's employees may be exposed as a result of their work.

I further certify that I have received training and medical surveillance according to the Health and Safety Plan and the OSHA Standard on Hazardous Waste Operations and Emergency Response (29 CFR 1910.120):

All parties conducting site activities are required to coordinate their activities and practices with the project Site Health and Safety Officer. Your signature below confirms that you have read and understand the hazards discussed in this Plan, and understand that sub-contractors and contractors must develop their own Health and Safety Plan for their employees. You also understand you could be prohibited by the Site Health and Safety Officer or other *Synapse* personnel from working on this project for not complying with any aspect of this Health and Safety Plan.

Name	Title	Signature	Company	Date

APPENDIX B

COMMUNITY AIR MONITORING PLAN

Community Air Monitoring Plan

HARBOR VIEW SQUARE
68 West First Street
OSWEGO, NEW YORK

NYS BCP Site No. C738040

Prepared by:

Synapse Risk Management
360 Erie Boulevard East
Syracuse, New York 13202

July 2018

Table of Contents

LIST OF FIGURES

Disclaimer

This Community Air Monitoring Plan (CAMP) was prepared by Synapse Risk Management (Synapse) for Housing Visions and is intended to be used during the implementation of the Pre-design Investigation at 68 West First Street in Oswego, New York. Any changes in project conditions and/or the scope of work will require a review and modification to this CAMP. Such changes will be completed in the form of an addendum to this plan or a revision of the plan.

The provisions of this plan are mandatory for all personnel assigned to the project. All visitors to the project site must also abide by the requirements of the plan. It should be acknowledged that the personnel of other consulting and/or contracted companies shall work in accordance with their own independent task-specific HASPs. The policies and procedures presented in this document shall not be construed to supercede any federal, state, or local regulations, and do not relieve any employer, agent, or invitee involved in the project from complying with applicable federal, state, and local regulations.

This CAMP is not intended or represented to be suitable for reuse by others on extensions of this or any other project. Any reuse without prior written approval or adaptation by Synapse will be at the user's sole risk and without liability and legal exposure to Synapse.

1 Introduction

This plan presents the Community Air Monitoring Plan (CAMP), which was prepared by Synapse Risk Management (Synapse) to protect the community from any potential airborne releases that could result during field work associated with the Harbor View Square Brownfield Cleanup Program (BCP).

This plan is consistent with requirements set forth in the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation, *Technical Guidance for Site Investigation and Remediation*, May 2010 (DER-10).

1.1 Objective

This CAMP identifies the air monitoring activities to be performed at the site during implementation of both non-intrusive and intrusive activities. The overall objectives of this CAMP are as follows:

- Prevent exposures to the public during the implementation of work activities over the course of the Harbor View Square BCP;
- Set forth the monitoring requirement and associated documentation; and
- Set forth guidance for potential contingency situations that may arise.

2 Air Monitoring

Air monitoring during the implementation of various work activities will include volatile organic compounds (VOCs) and particulate monitoring utilizing specialized instruments, visual observations for fugitive dust and documenting meteorological conditions on a daily basis. The monitoring locations, frequency and methods for monitoring VOCs and particulate are discussed in the following sections of this CAMP.

2.1 VOC Monitoring

Real time VOC monitoring will be conducted during non-invasive and invasive work activities conducted during various aspects of the BCP. The locations will be based on wind direction and frequency of the monitoring will be based the type of work being conducted. Below is breakdown of work activities that require continuous versus. periodic VOC monitoring.

Monitoring Type	Work Activities
Continuous	▪ Soil Borings or Monitoring Well Installation; ▪ Soil Excavation; ▪ Soil Loading ▪ Test pits; and ▪ Demolition of contaminated structures.
Periodic	▪ Groundwater sampling

The upwind location will be determined at the beginning of each work day with an initial VOC recording. If the wind direction changes during the course of the work, another VOC reading will be recorded at the new upwind location to establish baseline conditions. The downwind measurements will be recorded at the downwind perimeter of the work area. If the work activities are determined ort considered invasive then continuous monitoring will be conducted. If the work activities are considered non-invasive, then periodic monitoring for VOC will be sufficient.

Locations	Frequency
Upwind perimeter	▪ Start of work day; and ▪ New background measurements based on wind direction change.
Downwind perimeter	▪ Continuous for invasive work; and ▪ Periodic for non-invasive work.

The VOC recording will be performed utilizing a photoionization detector (PID) that should be calibrated on a daily basis. The PID shall be adjusted to provide continuous monitoring and integrating a 15-minute running average through the course of the work day.

2.2 Particulate Monitoring

The particulate monitoring will be conducted on a continuous basis and at varying locations based on wind direction. The upwind location will be determined at the beginning of each workday. If the wind direction changes through the course of the day a new upwind location will be established for baseline conditions.

Locations	**Frequency**
Upwind perimeter	Continuous
Downwind perimeter	Continuous

The particulate recordings will be conducted utilizing an instrument that can measure particles less than 10 micrometers (um) in size (PM-10). The particulate monitor should be programed to record in real time and set to have an alarm notification if an action level for particulate is exceeded during work activities (0.150 mg/m^3).

2.3 Regional Meteorological Monitoring

Meteorological monitoring should be documented daily through the course of the work activities. Daily temperature, wind direction and general atmospheric conditions, such as clear / cloudy and rain / snow should be recorded

3 Response and Action Levels

3.1 VOCs

The real-time monitoring data (15-minute averages) will dictate specific work procedures and locations. The air monitoring devices to be used include:

- Photoionization Detector (PID) with a 10.6 millivolt lamp;
- MIE DATARAM 4000 to monitor particulate levels.

Levels	Actions
Total VOCs at downwind perimeter exceed background by 5 parts per million (ppm) (15-Min Average)	▪ Stop work activities & continue monitoring. ▪ Work activities can resume when levels reduce below 5 ppm.
Total VOCs at downwind perimeter exceed background levels between 5 ppm & 25 ppm (15-Min Average)	▪ Stop work activities & identify the source of the VOC exceedance & correct, continue monitoring. ▪ Continue work activities if VOCs 200 feet downwind of the site perimeter or ½ distance to the nearest structure is below 5 ppm (15-Min Average). Should not be less that 20-feet.
Total VOCs at the perimeter work area exceed 25 ppm (15-Min Average)	▪ Stop all work activities.

3.2 Particulate Monitoring

Real time particulate monitoring will be conducted by Synapse at the site perimeter. Particulate monitoring will be conducted utilizing a MIE DATARAM 4000 at a minimum frequency of once per hour consistent with TAGM 4031. The continuous particulate monitoring will be integrated over a 15-minute running average.

Levels	Actions
Particulate level at the downwind perimeter 0.1 milligrams per cubic meter (mg/m^3) greater than the up-wind location (15 min period).	▪ Implement dust suppression measures.
Visible dust observed leaving the perimeter.	▪ Implement dust suppression measures.
After implementation of dust suppression measures, particulate levels at downwind perimeter greater than 0.150 mg/m^3 action level.	▪ Stop all work. ▪ Work activities can only resume if 0.150 mg/m^3 action level are below at the downwind location and no visible dust.

4 Documentation

The following data will be recorded and documented daily when the CAMP is implemented:

- Daily calibration logs to document that instruments are working within the limits per the manufacturer;
- Weather conditions including temperature, wind direction, wind speed, other atmospheric condition, date and time;
- Logs of VOCs on a 15-minute average;
- Logs of continuous Particulate monitoring; and

5 References

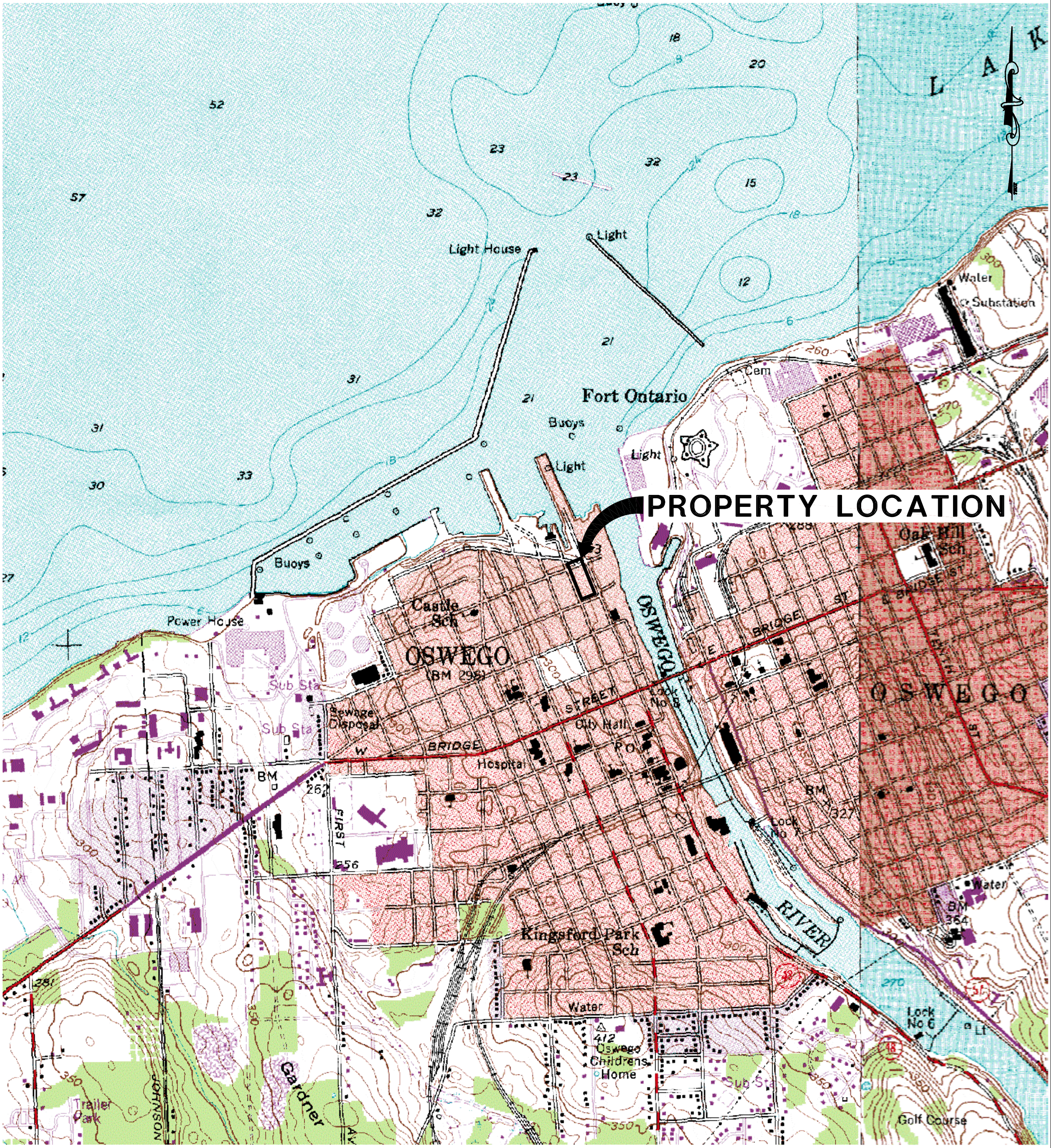
This CAMP complies with applicable Occupational Safety and Health Administration (OSHA) regulations, United States Environmental Protection Agency (USEPA) regulations, and Synapse Health and Safety policies and procedures. This plan follows the guidelines established in the following:

- NYSDEC DER-10.
- NYSDEC Technical and Administrative Guidance Memorandum (TAGM) MWR-89-4031 entitled “Fugitive Dust Suppression and Particulate Monitoring Program and Inactive Hazardous Waste Site,” dated October 27, 1989 (TAGM 4031).
- Standard Operating Safety Guides, EPA (Publication 9285.1-03, June 1992).
- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH, OSHA, USCG, EPA (86-116, October 1985).
- Title 29 of the Code of Federal Regulations (CFR), Part 1910.120.
- Title 29 of the Code of Federal Regulations (CFR), Part 1926.
- Pocket Guide to Chemical Hazards, DHHS, PHS, CDC, NIOSH, (2010).
- Threshold Limit Values and Biological Exposure Indices, ACGIH, (2013)
  - Documentation of any exceedance and corrective response.

FIGURES

Community Air Monitoring Plan
Harbor View Square
68 West First Street
Oswego, New York

July 2018



SOURCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLES: OSWEGO WEST, N.Y., 1954, PHOTOREVISED 1978 AND OSWEGO EAST, N.Y., 1954, PHOTOREVISED 1978.

APPROXIMATE GRAPHIC SCALE:

0 2000' 4000'

P: EPA
5/18/17
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-SL3.DWG

synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	**PROPERTY LOCATION PLAN**	PROJECT NO.: HSGVIS-24-16-05 DATE: MAY 2017 FIGURE NO.: 1

LEGEND

APPROXIMATE SITE BOUNDARY

NOTES:

1. 2015 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.

0 80' 160'
GRAPHIC SCALE

P: BL
5/18/17
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B01.DWG

synapse
connect. advise. insure.

SYNAPSE PROPERTY RESOURCES
360 ERIE BLVD. EAST
SYRACUSE, NEW YORK 13202

HARBOR VIEW SQUARE
NYSBCP SITE NO. C738040
68 WEST FIRST STREET
OSWEGO, NEW YORK

AERIAL PROPERTY PLAN

PROJECT NO.: HSGVIS-24-16-05
DATE: MAY 2017
FIGURE NO.: 2

APPENDIX C

SAFETY DATA SHEETS

REGENESIS

Technology-Based Solutions for the Environment

SAFETY DATA SHEET

1. Identification

Product identifier	**3-D Microemulsion® Factory Emulsified**
Other means of identification	None.
Recommended use	Remediation of soils and groundwater.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name	Regenesis
Address	1011 Calle Sombra San Clemente, CA 92673
Telephone	949-366-8000
E-mail	CustomerService@regenesis.com
Emergency phone number	CHEMTREC® at 1-800-424-9300 (International)

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Causes skin irritation. Causes serious eye damage.
Precautionary statement	
Prevention	Wash thoroughly after handling. Wear protective gloves. Wear eye/face protection.
Response	If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
HRC-PED	823190-10-9	50-51
Water	7732-18-5	35-36
Sodium lactate	72-17-3	13-14

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Carbon dioxide (CO2). Dry chemical powder. Foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, phosphorus compounds and metal oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Water spray should be used to cool containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Surfaces may become slippery after spillage. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Spilled product may create a slipping hazard. Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Flush area clean with lots of water. Be aware of potential for surfaces to become slippery. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get this material in contact with eyes. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear approved, tight fitting indirect vented or non-vented safety goggles where splashing is probable. Face shield is recommended.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Rubber or vinyl-coated gloves are recommended.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Emulsion.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	> 199.9 °F (> 93.3 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1 - 1.2
Solubility(ies)	
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Undergoes hydrolysis in water to form lactic acid and soybean oil.

Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Bases. Acids.
Hazardous decomposition products	Thermal decomposition or combustion may produce: carbon oxides, phosphorus compounds, metal oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Ingestion may cause irritation and malaise.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	Material is readily degradable and undergoes hydrolysis in several hours.
Bioaccumulative potential	No data available.
Mobility in soil	Not available.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
One or more components are not listed on TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 09-April-2015

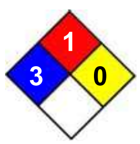
Revision date -

Version # 01

Further information HMIS® is a registered trade and service mark of the American Coatings Association (ACA).

HMIS® ratings
Health: 3
Flammability: 1
Physical hazard: 0

NFPA ratings



Disclaimer Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

REGENESIS
Technology-Based Solutions for the Environment

SAFETY DATA SHEET

1. Identification

Product identifier	**S-MicroZVI or S-MZVI**
Other means of identification	None.
Recommended use	Remediation of contaminants in soil and groundwater.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name	Regenesis
Address	1011 Calle Sombra San Clemente, CA 92673 USA
General information	949-366-8000
E-mail	CustomerService@regenesis.com

Emergency phone number	For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:
USA, Canada, Mexico	1-800-424-9300
International	1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.

Precautionary statement

Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Contact with acids liberates very toxic gas.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Glycerol	56-81-5	40 - 50
Zero valent iron	7439-89-6	30 - 50
Iron(II) sulfide	1317-37-9	1 - 4

Composition comments	All concentrations are in percent by weight unless otherwise indicated. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO_2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, iron oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	This material will not burn until the water has evaporated. Residue can burn. When dry may form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Viscous metallic suspension.
Color	Dark gray
Odor	Slight.
Odor threshold	Not available.
pH	7 - 8 (When mixed with water) 10 (As shipped)
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	3000 cP (77 °F (25 °C))
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Contact with acids will release highly flammable and highly toxic hydrogen sulfide gas. Can react with some acids with the evolution of hydrogen.
Conditions to avoid	Contact with incompatible materials. Avoid drying out product. May generate combustible dust if material dries.
Incompatible materials	Strong oxidizing agents. Acids.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Spray mist may irritate the respiratory system. For dry material: Dust may irritate respiratory system.

Skin contact Prolonged or repeated exposure may cause minor irritation.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Glycerol (CAS 56-81-5)		
Acute		
Dermal		
LD50	Rabbit	> 18700 mg/kg
Oral		
LD50	Rat	27200 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Further information Contains an ingredient known to produce adverse effects in a small percentage of hypersensitive individuals exhibited as respiratory distress and allergic skin reactions.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Glycerol (CAS 56-81-5)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	> 10000 mg/l, 24 Hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Glycerol (CAS 56-81-5)	-1.76

Mobility in soil No data available.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Glycerol (CAS 56-81-5)	Other Flavoring Substances with OSHA PEL's

US state regulations

US. Massachusetts RTK - Substance List

Glycerol (CAS 56-81-5)

US. New Jersey Worker and Community Right-to-Know Act

Glycerol (CAS 56-81-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Glycerol (CAS 56-81-5)

US. Rhode Island RTK

Glycerol (CAS 56-81-5)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Zero valent iron (CAS 7439-89-6)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

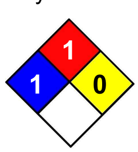
Issue date 27-December-2018

Revision date -

Version # 01

HMIS® ratings Health: 1
Flammability: 1
Physical hazard: 0

NFPA ratings



Disclaimer Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

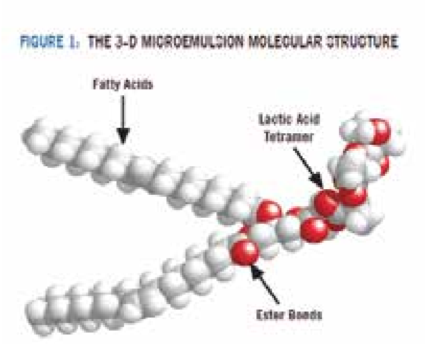
APPENDIX D

MATERIAL INFORMATION SHEETS

3-D Microemulsion® Factory Emulsified Technical Description

3-D Microemulsion (3DME®) is comprised of a patented molecular structure containing oleic acids (i.e., oil component) and lactates/polylactates, which are molecularly bound to one another (figure 1). The 3DME molecule contains both a soluble (hydrophilic) and in-soluble (lipophilic) region. These two regions of the molecule are designed to be balanced in size and relative strength. The balanced hydrophilic/lipophilic regions of 3DME result in an electron donor with physical properties allowing it to initially adsorb to the aquifer material in the area of application, then slowly redistribute via very small 3DME "bundles" called micelles. These 3DME micelles spontaneously form within sections of the aquifer where concentrations of 3DME reach several hundred parts per million. The micelles' small size and mobility allow it to move with groundwater flow through the aquifer matrix, passing easily through the pore throats in between soil grains resulting in the further redistribution of 3DME within the aquifer. This allows for advective distribution of the oleic acids which are otherwise insoluble and unable to distribute in this manner, allowing for increased persistence of the lactate/polylactates component due to their initial attachment to the oleic acids.

Example of 3-D Microemulsion



Due to its patented molecular structure, 3DME offers far greater transport when compared to blended emulsified vegetable oil (EVO) products, which fail to distribute beyond the limits of pumping. 3DME also provides greater persistence when compared to soluble substrates such as lactates or simple sugars. The 3DME molecular structures capitalize on the best features of the two electron-donor types while at the same time, minimize their limitations. 3DME is delivered to the site as a ready-to-apply emulsion that is simply diluted with water to generate a large volume of a 3DME colloidal suspension.

Suspension of 3DME generated by this mixing range from micelles on the order of .02 microns to .05 microns in diameter, to "swollen" micelles, (termed "microemulsions") which are on the order of .05 to 5 microns in diameter. Once injected into the subsurface in high volumes, the colloidal suspension mixes and dilutes in existing pore waters. The micelles/microemulsions on the injection front will then begin to sorb onto the surfaces of soils as a result of zeta potential attraction and organic matter within the soils themselves. As the sorption continues, the 3DME will "coat" pore surfaces developing a layer of molecules and in some cases a bilayer. This sorption process continues as the micelles/microemulsion moves outward and disassociates into their hydrophilic/hydrophobic components. The specialized chemistry of 3DME results in a staged release of electron donors: free lactate (immediate); polylactate esters (mid-range) and free fatty acids & fatty acid esters (long-term). Material longevity of three years or greater has been seen at most sites as determined from biogeochemical analyses.

For a list of treatable contaminants with the use of 3DME, view the Range of Treatable Contaminants Guide

Chemical Composition

- Hydrogen Release Compound Partitioning Electron Donor – CAS #823190-10-9
- Sodium Lactate – CAS# 72-17-3
- Water – CAS# – 7732-18-5

3-D MICROEMULSION
Factory Emulsified

3-D Microemulsion® Factory Emulsified Technical Description

Properties

- Density – Approximately 1.0 grams per cubic centimeter (relative to water)
- pH – Neutral (approximately 6.5 to 7.5 standard units)
- Solubility – Soluble in Water
- Appearance – White emulsion
- Odor – Not detectable
- Vapor Pressure – None
- Non-hazardous

Storage and Handling Guidelines

Storage
Store in original tightly closed container
Store in a cool, dry, well-ventilated place
Store away from incompatible materials
Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass

Handling
Avoid contact with eyes, skin, and clothing
Provide adequate ventilation
Wear appropriate personal protective equipment
Observe good industrial hygiene practices

Applications

- 3DME is diluted with water prior to application. Resulting emulsion has viscosity similar to water.
- Easily injects into formation through direct push injection points, injection wells or other injection delivery systems.

Application instructions for this product are contained here 3DME FE Application Instructions.

Health and Safety

Material is food grade and relatively safe to handle. We recommend avoiding contact with eyes and prolonged contact with skin. OSHA Level D personal protection equipment including vinyl or rubber gloves, and eye protection are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: SDS-3DME FE.

REGENESIS®

www.regenesis.com

Corporate Headquarters
1011 Calle Sombra, San Clemente CA 92673
949.366.8000

European Headquarters
The Tramshed, Beehive Yard
Walcot St, Bath BA1 5BB, United Kingdom

S-MicroZVI™
Sulfidated Zero-Valent Iron

S-MicroZVI Specification Sheet

S-MicroZVI Technical Description

S-MicroZVI™ is an *In Situ* Chemical Reduction (ISCR) reagent that promotes the destruction of many organic pollutants and is most commonly used with chlorinated hydrocarbons. It is engineered to provide an optimal source of micro-scale zero valent iron (ZVI) that is both easy to use and delivers enhanced reactivity with the target contaminants via multiple pathways. S-MicroZVI can destroy many chlorinated contaminants through a direct chemical reaction (**see Figure 1**). S-MicroZVI will also stimulate anaerobic biological degradation by rapidly creating a reducing environment that is favorable for reductive dechlorination.

S-MicroZVI is Best in Class For

- Longevity
- Kinetics
- Transport

Sulfidated ZVI

S-MicroZVI is composed of colloidal, sulfidated zero-valent iron particles suspended in glycerol using proprietary environmentally acceptable dispersants. The passivation technique of sulfidation, completed using proprietary processing methods, provides unparalleled reactivity with chlorinated hydrocarbons like PCE and TCE and increases its stability and longevity by minimizing undesirable side reactions. In addition to superior reactivity, S-MicroZVI is designed for easy handling that is unmatched by any ZVI product on the market. Shipped as a liquid suspension, S-MicroZVI requires no powder feeders, no thickening with guar, and pneumatic or hydraulic fracturing is not mandatory. When diluted with water prior to application, the resulting suspension is easy to inject using either direct push or permanent injection wells.

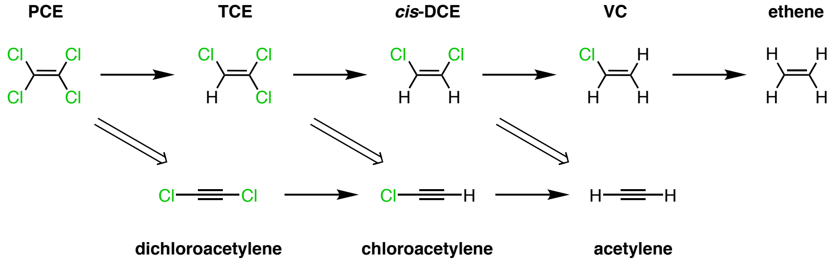


Figure 1: *Chlorinated ethene degradation pathways and products. The top pathway with single line arrows represent the reductive dechlorination (hydrogenolysis) pathway. The lower pathway with downward facing double line arrows represent the beta-elimination pathway.*

To see a list of treatable contaminants, view the S-MicroZVI treatable contaminants guide.

S-MicroZVI Specification Sheet

Chemical Composition

Iron, powders CAS 7439-89-6
Iron (II) sulfide CAS 1317-37-9
Glycerol CAS 56-81-8

Properties

Physical State: Liquid
Form: Viscous metallic suspension
Color: Dark gray
Odor: Slight
pH: Typically 7-9 as applied
Density: 15 lb/gal

Storage and Handling Guidelines

Storage:
- Use within four weeks of delivery
- Store in original containers
- Store at temperatures below 95F°
- Store away from incompatible materials

Handling:
- Never mix with oxidants or acids
- Wear appropriate personal protective equipment
- Do not taste or swallow
- Observe good industrial hygiene practices

Applications

S-MicroZVI is diluted with water on site and easily applied into the subsurface through low-pressure injections. S-MicroZVI can also be mixed with products like 3-D Microemulsion® or PlumeStop® prior to injection.

Health and Safety

The material is relatively safe to handle; however, avoid contact with eyes, skin and clothing. OSHA Level D personal protection equipment including: vinyl or rubber gloves and eye protection are recommended when handling this product. Please review the Safety Data Sheet for additional storage, and handling requirements here: S-MicroZVI SDS.

www.regenesis.com

Corporate Headquarters
1011 Calle Sombra, San Clemente CA 92673 USA
Tel: +1 949.366.8000

European Offices (UK, Ireland, Belgium and Italy)
Email: europe@regenesis.com
Tel: +44 (0)1225 61 81 61

BIO-DECHLOR INOCULUM

BDI PLUS® Technical Description

Bio-Dechlor INOCULUM Plus (BDI PLUS®) is an enriched natural consortium containing species of Dehalococcoides sp. (DHC). BDI PLUS has been shown to simulate the rapid and complete dechlorination of chlorinated solvents such as tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE) and vinyl chloride (VC) to non-toxic end products, ethene, carbon dioxide and water.

The culture also contains microbes capable of dehalogenating halomethanes (e.g., carbon tetrachloride and chloroform) and haloethanes (e.g., 1,1,1-TCA and 1,1-DCA) as well as mixtures of these contaminants.

Species of Dehalococcoides sp. (DHC)

For a list of treatable contaminants with the use of BDI PLUS, view the Range of Treatable Contaminants Guide

Chemical Composition

- Non-hazardous, naturally-occurring, non-altered anaerobic microbes and enzymes in a water-based medium.

Properties

- Appearance – Murky, yellow to grey water
- Odor – Musty
- pH 6.0 to 8.0
- Density – Approximately 1.0 grams per cubic centimeter (0.9 to 1.1 g/cc)
- Solubility – Soluble in Water
- Vapor Pressure – None
- Non-hazardous

Storage and Handling Guidelines

Storage
Store in original tightly closed container
Store away from incompatible materials
Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass
Store in a cool, dry area at 4-5°C (39 - 41°F)
Material may be stored for up to 3 weeks at 2-4°C without aeration

Handling
Avoid prolonged exposure
Observe good industrial hygiene practices
Wear appropriate personal protective equipment

BIO-DECHLOR INOCULUM

BDI PLUS® Technical Description

Applications

- BDI PLUS is delivered to the site in liquid form and is designed to be injected directly into the saturated zone requiring treatment.
- Most often diluted with de-oxygenated water prior to injection into either hydraulic push injection points or properly constructed injection wells.
- The typical dilution rate of the injected culture is 10 gallons of deoxygenated water to 1 liter of standard BDI PLUS culture.

Application instructions for this product are contained here BDI PLUS Application Instructions.

Health and Safety

Material is non-hazardous and relatively safe to handle; however avoid contact with eyes and prolonged contact with skin. OSHA Level D personal protection equipment including: vinyl or rubber gloves and safety goggles or a splash shield are recommended when handling this product. An eyewash station is recommended. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: BDI PLUS SDS.

REGENESIS

www.regenesis.com
1011 Calle Sombra, San Clemente CA 92673
949.366.8000

APPENDIX E

REGENESIS APPLICATION AND MATERIAL HANDLING GUIDELINES

BIO-DECHLOR INOCULUM

Bio-Dechlor INOCULUM PLUS (BDI PLUS®) Installation Instructions:

General Guidelines

Bio-Dechlor INOCULUM PLUS (BDI PLUS®) is an enriched natural microbial consortium containing species of Dehalococcoides. This microbial consortium has since been enriched to increase its ability to rapidly dechlorinate contaminants during *in situ* bioremediation processes. BDI PLUS has been shown to stimulate the rapid and complete dechlorination of compounds such as tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride (VC). BDI PLUS also contains microorganisms capable of degrading chloromethanes (carbon tetrachloride and chloroform) as well as chloroethanes like trichloroethane (TCA).

Recent trends in engineered bioremediation indicate that the treatment of chlorinated solvent contamination sometimes results in slow or incomplete degradation of the intermediate compounds. When faced with this circumstance, bioaugmentation with a microbial consortium such as BDI PLUS offers a solution to accelerate or simply make possible the complete dechlorination of these otherwise recalcitrant compounds.

REGENESIS® believes that the best approach to install BDI PLUS into the subsurface is by direct-push methods. This allows for the BDI PLUS solution to be applied directly into the aquifer material and provides greater coverage/treatment over the life of the project. As a minimum, the following equipment will be needed to perform this type of installation:

- Direct-push drilling unit
- Grout pump (e.g. Geoprobe GS 2000)
- Appropriate hose assembly including a fitting that links a hose from the grout pump to the direct-push rods (provided by REGENESIS with shipment)
- One or more 55$^+$ gallon water drums, fitted with an appropriate lid that has at least one bung hole (number of drums depends on size of application)
- Rotary transfer pump (or equivalent) with appropriate amount of hose to connect from 55-gal drum to hopper of grout pump (similar to Grainger No. 1P893, Fill-Rite model #FR112GR)
- Compressed Nitrogen gas tank with appropriate regulator (0 to 15 pounds per square inch (psi). A 300-ft^3 tank should be sufficient for discharge of concentrated or non-concentrated kegs and for nitrogen sparging to deoxygenate batch water.
- Pressure washer (or equivalent) for cleaning

Material Packaging and Safety

BDI PLUS is a mixture of living bacteria including members of the Dehalococcoides genus that are capable of anaerobically degrading chlorinated contaminants. The culture has been tested to ensure that it is free of the most common pathogenic bacteria, but like all living cultures it should be handled with due care to prevent contamination of work surfaces or field personnel.

During installation activities, REGENESIS recommends that field personnel use at least level "D" personal protection equipment (PPE). A Materials Safety Data Sheet (MSDS) is sent with each shipment and should be reviewed before proceeding with installation activities.

BIO-DECHLOR INOCULUM

Warning

- The BDI PLUS container is pressurized to 10 to 15 psi with nitrogen before shipping
- Wear suitable eye protection, gloves, respirator and protective clothing
- Gas cylinders used to dispense culture MUST be equipped with a proper pressure regulator
- During operation DO NOT exceed the containers maximum working pressure of 15 psi

Unpacking

1. Carefully remove the container from shipping cooler and stand upright. DO NOT use the plastic sight tube as a handle.
2. Carefully check the container, connectors, valves and tubing for any damage or defects. If defects or damage is observed, do not use. Report any damage to REGENESIS at 949.366.8000. A back up set of quick connects is provided in the packaging material.
3. Check and ensure that all valves are in the CLOSED position.

Storage

If the schedule of bacteria application requires adding the bacteria over a period of more than one day, the keg(s) should be stored at a temperature 2-4 °C, but freezing must be avoided. This can normally be achieved by storing the kegs under ice in the provided coolers. Keg should be pressurized with Nitrogen to pressure 10- 15 psi. before storing to ensure a tight seal on the keg cap.

Culture Keg in Cooler

Shipping

After completion of operation, please, ship cooler with keg and all attachments back to the following address:

Shaw Environmental, Inc.
17 Princess Road, Lawrenceville, NJ 08648

Specific Installation Procedures

1. The BDI PLUS must be added to the previously prepared “oxygen-free” water before it is installed in the subsurface. The desired amount of BDI PLUS should be carefully discharged into the 55-gal drum containing the appropriate amount of “oxygen free” water. The tables provided below indicates the amount of water that a given amount of BDI PLUS should be mixed with.
   The BDI PLUS must be added to “oxygen-free” water before it is installed in the subsurface. To ensure that the water has reached the desired anoxic state prior to mixing with BDI PLUS an appropriate amount of nitrogen sparging into the 55-gal drum containing a given amount of water at least one hour prior to adding the BDI PLUS. To ensure that a sufficient quantity of “oxygen free” water is available throughout the day, a large trough of “nitrogen sparged” water can be prepared and additional 55-gal drums can be filled from this trough. The water in the trough can be transferred to the 55-gal drums where the BDI is mixed with the water using a primed transfer pump.

Nitrogen sparging is accomplished by a gas sparging device equivalent to a fish tank aerator. Adjust the 300ft^3 nitrogen tank pressure regulator to 3-5 psi and immerse the gas sparger to the bottom of the drum or trough. By internal convection and oxygen stripping processes, the oxygen levels should diminish within an hour. Be careful to not consume too much gas and not have nitrogen to empty the kegs. Keeping an eye on tank pressure loss and dissolved oxygen level will indicate when one can trim down on the sparge pressure and conserve the nitrogen.

<u>BDI PLUS Dilution Chart</u>

Volume of BDI PLUS	Volume of Water
5 liters	50 gal
1 liter	10 gal

Volume of BDI PLUS Concentrate	Volume of Water
0.5 liters	50 gal
0.1 liter	10 gal

2. The drive rod assembly should be fitted with a disposable tip on the first drive rod and pushed down to the desired depth. This process should be done in accordance with the manufacturer's standard operating procedure (SOP).
3. A sub-assembly connecting the delivery hose to the drive rods and pump should be used. The sub-assembly should be constructed in a manner that allows for the drive rods to be withdrawn while the material is being pumped.
4. Prior to connecting the hose to the sub-assembly a volume check should be completed to determine the volume and weight of product displaced with each pump stroke.
5. After the drive rods have been pushed to the desired depth, the rod assembly should be with drawn three to six inches so that the disposable tip has room to be dropped.
   a. If an injection tool is used instead of an expendable tip, the application of material can take place without any preliminary withdrawal of the rods.
6. Fill the annular space of the drive rods with water. This will minimize the amount of air introduced to the system.
7. Insert the telescoping suction pipe on the rotary transfer pump into a bung hole on the lid of the 55-gal drum and make sure that the pipe reaches the bottom of the drum. If possible, attach the suction pipe to the bung hole with the 2" bung adapter to ensure that the pump remains securely in place while pumping the Bio-Dechlor INOCULUM mixture from the drum to the pump hopper.
8. Attach the hose to the outlet of the rotary transfer pump making sure that the opposite end of the hose reaches the pump hopper. Open the opposite bung hole on the drum lid to prevent a vacuum then pump the desired amount of BDI PLUS solution into the hopper of the pump.
9. Connect the hose from the grout pump to the drive rod assembly.
10. Start pumping the BDI PLUS product solution.
11. The initial volume of BDI PLUS solution pumped should only be enough to displace the water within the drive rods. Once this is done the actual injection can start.
12. Begin withdrawing the drive rods, in accordance with the manufacturer's SOP, and start pumping the BDI PLUS solution simultaneously. The dosage should be 0.1 liter per vertical foot or 1 gallon per vertical foot if prepared using the BDI dilution chart. The withdrawal rate should be such that it allows theappropriate quantity of material to be injected into each vertical foot of aquifer being

treated. The withdrawal rate should be slow to avoid creating a vacuum. This vacuum can potentially pull a small volume of material to the surface if the drive rods are withdrawn too quickly.

13. In less permeable soils such as clays and silts, there may be difficulty accepting the volume of estimated material. In this case REGENESIS recommends using a “step-wise” application approach. For this approach we suggest withdrawing the drive rods in one-foot increments and then injecting the quantity of material required per vertical foot.
14. Look for any indications of aquifer refusal such as:
    - Excessive pump noise or application pressure spikes (e.g. squealing)
    - Surfacing of material through the injection point (“blow-by”) If acceptance appears to be an issue it is critical that the aquifer is given enough time to equilibrate before breaking down the drive rods and/or removing the hose. The failure to do this can lead to excessive back flow of the BDI PLUS material on personnel, equipment, and the ground surface.
15. If BDI PLUS solution continues to “surface” after the drive rods have been completely removed from the borehole a plug may be necessary. Large diameter disposable tips or wood stakes have been used successfully for this purpose.
16. Drive rods should be disconnected after one rod (typically 4 feet in length) has been withdrawn. The drive rods should be placed in a bucket (or equivalent) after they have been disconnected.
17. Complete the installation of the BDI PLUS solution at the designated application rate across the entire targeted vertical interval.
18. After the injection is completed, an appropriate seal should be installed above the vertical interval where the BDI PLUS solution has been placed to prevent contaminant migration. Typically, bentonite powder or chips are used to create this seal. However, consultants should review local regulations before beginning field installation activities to confirm that this approach can be used.
19. Complete the borehole at the surface as appropriate using concrete or asphalt.
20. Repeat steps 7 through 19 until the entire application has been completed. If additional drums of de-oxygenated water are required, prepare as suggested in Step 1.
21. Prior to the installation of BDI PLUS, all surface and overhead impediments should be identified as well as the location(s) of any underground structure(s). Underground structures include but are not limited to: utility lines (gas, electrical, sewer, etc), drain piping, and landscape irrigation systems.
22. The planned injection locations should be adjusted in the field to account for impediments and obstacles.
23. The actual injection locations should be marked prior to the start of installation activities to facilitate the application process.
24. Using an appropriate pump to install the BDI PLUS product is very critical to the success of the application as well as the overall success of the project. Based on our experience in the field, REGENESIS strongly recommends using a pump that has a pressure rating of at least 1,000 psi and a delivery rate of at least 3 gallons per minute. If the application involves both HRC and BDI PLUS, two separate pumps may be required to facilitate the process. The pump used to deliver HRC to the subsurface should be in accordance with the specifications outlined in the General Guidelines section of the HRC Installation Instructions.

Additional Information

The internal workings of the grout pump can be cleaned easily by recirculating a solution of hot water and a biodegradable cleaner (e.g. Simple Green) through the pump and delivery hose(s). If additional cleaning and decontamination is required it should be conducted in accordance with the manufacturer's SOP and local regulatory requirements.

Note: REGENESIS assumes that all of the material (microorganisms) sent to a site for installation purposes will be used for that particular project and that no material (microorganisms) will be left over at the conclusion of the installation activities.

APPENDIX F

REGENESIS APPLICATION DESIGN SUMMARY

REGENESIS

Project Information		
Harbor view		
Oswego		
Pilot bedrock		
Prepared For:		
Synapse		
Target Treatment Zone (TTZ) Info	**Unit**	**Value**
Areal Extent	sq ft	900
Top Treat Depth	ft	15.0
Bot Treat Depth	ft	30.0
Vertical Treatment Interval	ft	15.0
Treatment Zone Volume	ft^3	13,500
Treatment Zone Volume	cy	500
Soil Type	---	bedrock
Porosity	cm^3/cm^3	0.07
Effective Porosity	cm^3/cm^3	0.05
Treatment Zone Pore Volume	gals	7,069
Treatment Zone Effective Pore Volume	gals	5,049
Fraction Organic Carbon (foc)	g/g	0.005
Soil Density	g/cm^3	2.6
Soil Density	lb/ft^3	162
Soil Weight	lbs	2.2E+06
Hydraulic Conductivity	ft/day	2.0
Hydraulic Conductivity	cm/sec	7.06E-04
Hydraulic Gradient	ft/ft	0.005
GW Velocity	ft/day	0.20
GW Velocity	ft/yr	73
Contaminant Mass	**Unit**	**Value**
Dissolved Phase Contaminant Mass	lbs	0.14
Sorbed Phase Contaminant Mass	lbs	2.82
Competing Electron Acceptor Mass	lbs	5.31
Total Mass Contributing to H2 Demand	**lbs**	**8.26**
Mass Flux and 3DME Demand	**Unit**	**Value**
Groundwater Flux	L/day	127
Stoichiometric 3DME Demand	lbs	30
Total Mass Flux 3DME Demand	lbs	31
Total 3DME Demand	**lbs**	**62**
Application Dosing		
3-D Microemulsion to be Applied	**lbs**	**400**
S-MZVI to be Applied	**lbs**	**300**
BDI Plus to be Applied	**liters**	**18**

3-D Microemulsion®, S-MZVI®, CRS®, BDI® Plus Application Design Summary

Pilot bedrock		
Treatment Type	**Grid**	Input special application instructions here as needed.
Treatment Areal Extent (sq ft)	900	
Spacing Within Rows (ft)	30	
Spacing Between Rows (ft)	30	
DPT Injection Points	1	
Top Application Depth (ft bgs)	15	**Field Mixing Ratios**
Bottom Application Depth (ft bgs)	30	3DME Concentrate per Pt (gals)
3DME to be Applied (lbs)	**400**	48
3DME to be Applied (gals)	48	Mix Water per Pt (gals)
3DME Mix %	3%	1869
Volume Water (gals)	**1,869**	3DME Mix Volume per Pt (gals)
3DME Mix Volume (gals)	1,917	1917
S-MZVI to be Applied (lbs)	**300**	S-MZVI Volume per Pt (gals)
S-MZVI Volume (gals)	20	20
BDI Plus to be Applied (L)	**18**	BDI Volume per Pt (L)
BDI Plus Mix Water Volume (gals)	180	18.0
Total Application Volume (gals)	**2,122**	Volume per pt (gals)
Estimated Radius of Injection (ft)	14.8	2122
Prepared by: Alana Miller		Volume per vertical ft (gals)
Date: 8/5/2021		141

Technical Notes/Discussion

Assumptions/Qualifications

In generating this preliminary estimate, Regenesis relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

REGENESIS developed this Scope of Work in reliance upon the data and professional judgments provided by those whom completed the earlier environmental site assessment(s). The fees and charges associated with the Scope of Work were generated through REGENESIS' proprietary formulas and thus may not conform to billing guidelines, constraints or other limits on fees. REGENESIS does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where REGENESIS may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by REGENESIS, it is the sole responsibility of the entity seeking reimbursement to ensure the Scope of Work and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, REGENESIS does not knowingly present or cause to be presented any claim for payment to the Government.

APPENDIX G

SPILL CONTINGENCY PLAN

General Spill Containment Procedures
for
Remedial Material Injection

The remedial materials will be delivered to the site in totes and drums. The procurement, delivery, unloading and storage of these remedial materials will be performed by others.

The concentrated solution will be transferred from the storage area to a dilution tank and blended with dilution water from an onsite source. A liner will be placed at the customer's remedial material storage area upon which transfer of liquids to the mix system dilution tank will occur. Potable water will be draw from the onsite source and stored in a temporary holding tank and metered into the dilution system as needed. The dilution, delivery tanks, and AWT's dilution system will be spotted near the injection area for the duration of the delivery event. An enclosed trailer will house all remedial material handling and dilution equipment. Potable water and remedial material storage will be available to AWT from a source within 150' of the setup area for the delivery system.

The system would be mobilized and set in place on a containment liner with a perimeter berm. Where required, electric generators and a diesel air compressors would be staged with in the containment liner. During mobilization, all system components will be set up and made operational and a complete checkout of all system components run with potable water for a shakedown test to confirm system readiness.

The trailer would also be equipped with lighting for interior and adjacent operations as well as housing an eye wash station and safety shower facility.

Where lines are run out of the mix area to delivery locations, drip pans or five gallon buckets will be used to contain drips occurring during connection and disconnection of the lines to the injection locations.

At the end of each shift all injection gear will be rinsed down and rinse water will be contained as instructed by the customer. The appurtenant equipment will be removed from the work area and stowed in the injection trailer overnight. At the end of the project, all rinse water will be disposed of off-site in accordance with all applicable federal, state and local requirements.

APPENDIX H

ENGINEERING CERTIFICATION

ENGINEERING CERTIFICATION

I, Jeffrey R. Holt, P.E., certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Work Plan for Pilot Scale Reagent Injection was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigations and Remediation (DER-10).

HOLT CONSULTING

JEFFREY R. HOLT, P.E.

APPENDIX C

PERMITS, APPROVALS AND NOTIFICATIONS

Type or print all information. See reverse for instructions. OMB No. 2040-0042 Approval Expires 4/30/2022

INVENTORY OF INJECTION WELLS

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

(This information is collected under the authority of the Safe Drinking Water Act)

1. DATE PREPARED *(Year, Month, Day)*

06-08-21

2. FACILITY ID NUMBER (To be completed by the permitting authority)

3. FACILITY INFORMATION

NAME, ADDRESS, PHONE NUMBER AND/OR EMAIL

Harbor View Square LLC
68 West First Street
Oswego, NY 13126
315-472-3820
rcreighton@synapsellc.com

INDIAN COUNTRY ☐ Yes ☒ No

4. LEGAL CONTACT INFORMATION

NAME, ADDRESS, ORGANIZATION, PHONE NUMBER AND/OR EMAIL

Harbor View Square LLC
1201 East Fayette Street
Syracuse, NY 13210
315-472-3820 rcreighton@synapsellc.com

TYPE ☒ Owner ☐ Operator

5. LOCATIONAL INFORMATION

Surface Location

1/4 of ____ 1/4 of ____ Section 128.38 Township 03 Range 01

____ ft. from (N/S) ____ Line of quarter section

____ ft. from (E/W) ____ Line of quarter section.

Latitude 43-27'39.82" N

Longitude 76-30'50.77" W

6. WELL INFORMATION:

A. CLASS AND TYPE		B. NUMBER OF WELLS		C. TOTAL NUMBER OF WELLS	D. WELL OPERATION STATUS				
		COMM	NON-COMM		UC	AC	TA	PA	AN
5	*		1	1	1				

KEY: AC = Active
UC = Under Construction
TA = Temporarily Abandoned
PA = Permanently Abandoned and Approved by State
AN = Permanently Abandoned and not Approved by State

COMMENTS *(Optional):*

Chemical injection program conducted under the supervision of NYSDEC Region 7 and inaccordance with Brownfield Cleanup Agreement C738040. Class V/Type B6 Beneficial Use - Subsurface Environemntal Remediation. Revised 7/15/2021.

Name and Official Title *(Please type or print)*

Roger Creighton, Synapse Risk Management, Senior Risk Manager

Date Submitted

6/8/2021 / Revised 7/13/2021

INSTRUCTIONS FOR FORM 7520-16

Use this form to provide inventory information about injection wells regulated under the Underground Injection Control Program.

DATE PREPARED: Enter date in order of year, month, and day.

FACILITY OR EPA ID NUMBER: This will be completed by EPA or the permitting authority.

NAME, ADDRESS, PHONE AND/OR EMAIL OF FACILITY: Enter the name and street address, city/town, state, and ZIP code of the facility. Also provide an email address (if available) and/or a phone number.

INDIAN COUNTRY: Check yes if the well is located in Indian country. Indian country (as defined in 18 U.S.C. 1151) includes: all land within the limits of any Indian reservation under the jurisdiction of the U.S. government; all dependent Indian communities within the borders of the U.S.; and all Indian allotments, the Indian titles to which have not been extinguished.

NAME, ADDRESS, PHONE, ORGANIZATION, AND/OR EMAIL OF LEGAL CONTACT: Enter the name and street address, city/town, state, and ZIP code and the name of the organization to which the legal contact for any questions regarding the information provided belongs. Also provide an email address (if available) and/or a phone number.

LEGAL CONTACT TYPE: Check the appropriate box to indicate the type of legal contact (i.e., owner or operator). For wells operated by lease, the operator is the legal contact.

WELL LOCATION: Fill in the complete township, range, and section to the nearest quarter-quarter section. A township is north or south of the baseline, and a range is east or west of the principal meridian (e.g., T12N, R34W). Also include the distance, in feet, from the nearest north or south line and nearest east or west line of the quarter-section. Also, enter the **latitude** and **longitude** of the well in decimal degrees, to five or six places if possible; be sure to include a negative sign for the longitude of a well in the Western Hemisphere and a negative sign for the latitude of a well in the Southern Hemisphere. For an area permit, give the latitude and longitude of the approximate center of the area.

WELL CLASS AND TYPE: Enter the class (as defined in 40 CFR 144.6) and type of injection well. Use the most pertinent code selected from the list on the next page. When selecting type X, please explain in the comment space.

NUMBER OF WELLS: Enter the total number of **commercial** and **non-commercial** wells of each class/type, as applicable. A commercial facility is a single or multiple well facility that is specifically engaged in the business of injecting waste fluids generated by third party producers that is originated off-site and transported to the facility by truck for a fee or compensation.

TOTAL NUMBER OF WELLS: Enter the total number of injection wells of each specified class and type.

WELL OPERATION STATUS: Enter the number of wells under each operation status (use the key on the front of the form).

PAPERWORK REDUCTION ACT NOTICE: The public reporting and recordkeeping burden for this collection of information is estimated to average 0.4 hours per response. Burden means the total time, effort, or financial resource expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal Agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and, transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW., Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.

CLASS AND TYPE OF WELL

CLASS I: Wells that inject industrial and municipal waste, including hazardous waste, beneath the lowermost formation containing a USDW.

Type

I Non-Hazardous Industrial Disposal Well.
M Non-Hazardous Municipal Disposal Well.
H Hazardous Waste Disposal Well injecting below the lowermost USDW.
R Radioactive Waste Disposal Well.
X Other Class I Wells (not included in Type "I," "M," "H," or "R").

CLASS II: Wells used to dispose of fluids which are brought to the surface in connection with oil or natural gas production; to inject fluids for enhanced recovery of oil or natural gas; or to store hydrocarbons.

Type

A Annular Disposal Well.
D Produced Fluid Disposal Well.
H Hydrocarbon Storage Well (excluding natural gas).
R Enhanced Recovery Well.
X Other Class II Wells (not included in Type "A," "D," "H," or "R").

CLASS III: Wells that inject fluids for the extraction of minerals.

Type

G In Situ Gasification Well.
M Solution Mining Well.
S Sulfur Mining Well by Frasch Process.
T Geothermal Well.
U Uranium Mining Well (excluding solution mining of conventional mines).
X Other Class III Wells (not included in Type "G," "M," "S," "T," "U," or "X").

CLASS IV: Wells that inject hazardous waste into/above USDWs.

Type

H Hazardous Facility Injection Well.
R Remediation Well at RCRA or CERCLA site.

CLASS V: Wells not currently classified as Class I, II, III, IV, or VI.

Type

A Industrial Well.
B Beneficial Use Well.
C Fluid Return Well.
D Sewage Treatment Effluent Well.
E Cesspool (non-domestic).
F Septic System.
G Experimental Technology Well.
H Drainage Well.
I Mine Backfill Well.
J Waste Discharge Well.

CITY OF OSWEGO
WASTEWATER DISCHARGE PERMIT FOR TEMPORARY DISCHARGE
Permit Period: November 10, 2021 – 15, 2021

PERMITTEE: HARBOR VIEW SQUARE, LLC
LOCATION: 88 WEST FIRST STREET
OSWEGO, NEW YORK 13126

MAILING ADDRESS: HARBOR VIEW SQUARE, LLC
1201 EAST FAYETTE STREET
SYRACUSE, NY, 13210

CONTACT PERSON: Roger Creighton, Senior Risk Manager
360 Erie Blvd. East
Syracuse, NY 13202
315-849-0905

This Permit is granted, pursuant to the information submitted by **Synapse Risk Management, 360 Erie Blvd. East, Syracuse, NY 13202**, dated September 2018, February 2019 and March 2019, which confirms that all parameters required are compliant with the City's Sewer Use Ordinance, Pre-Treatment Regulations and applicable provisions of Federal or State Law. The groundwater to be discharged to the City Sanitary Collection System under this Permit has been collected from the same source as that monitored in 2019 and no further monitoring analyses are required

This Permit is not transferrable.

Therefore, **HARBOR VIEW SQUARE, LLC** is authorized:

To discharge Groundwater that has been collected from core drilling and is presently stored in thirty-two 55-gallon storage containers. The groundwater will be discharged to a City of Oswego Sanitary Sewer manhole located between the street and sidewalk at 88 West 1st Street, subject to the following conditions:

A. The Groundwater will be pumped into the Sanitary Sewer system manhole as agreed upon, during the hours of 7 am – 3 pm. on Friday, November 12, 2021. Appropriate measures shall be employed to protect the City Sewer from any other discharge and to ensure that the discharge hose is firmly secured in the manhole.

B. Discharge Operations will not be permitted during rain events that may involve stormwater overflow at the City's Excess Flow Management Facility located adjacent to the Harbor View Square construction site. If such conditions are imminent, the Wastewater Treatment Department will notify the Permittee.

C. The total amount of discharge is estimated to be no more than 1100 gallons.

D. **Harbor View Square, LLC** agrees to provide the City with the actual amount of discharge, which shall be calculated based on the previous examination of the 55 gallon holding containers.

E. **Harbor View Square, LLC** agrees to pay A Permit Fee of **$125.00**, in addition to the rate of **$0.12** per gallon of discharge to the City Sanitary Sewer. This amount is payable on or before December 15, 2021. Payment is to be made to the **City Chamberlain**, 13 West Oneida Street, Oswego, NY, with the designation of **Enterprise Fund** in the memo line.

F. Questions and/or concerns related to this Discharge Permit should be addressed to Ken Scherrieble, President (Camden Group) Phone: 914-489-4127; e-mail: info@camdengroupusa.com or John McGrath, Chief Operator (Westside WWTP) Phone: 315-342-8173; e-mail: labmanager@oswegony.org

G. Upon completion of the permitted work, a Project Closeout Letter is to be forwarded to the Westside WWTP, c/o John W. McGrath, Chief Operator, 2 First Avenue, Oswego, NY 13126.

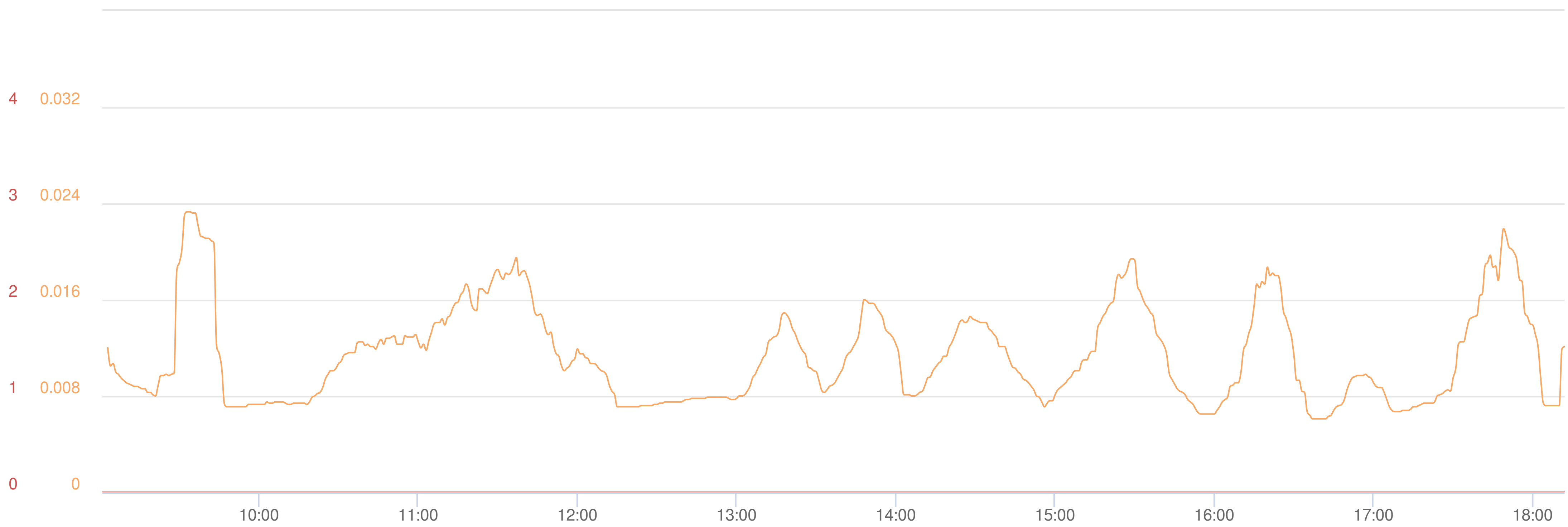
William J. Barlow Jr. Mayor
City Hall – 13 West Oneida Street
Oswego, New York

Roger Creighton, Senior Risk Manager
Synapse Risk Management, LLC
Syracuse, NY 13202

APPENDIX D

COMMUNITY AIR MONITORING DATA

Tue, 21st of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)

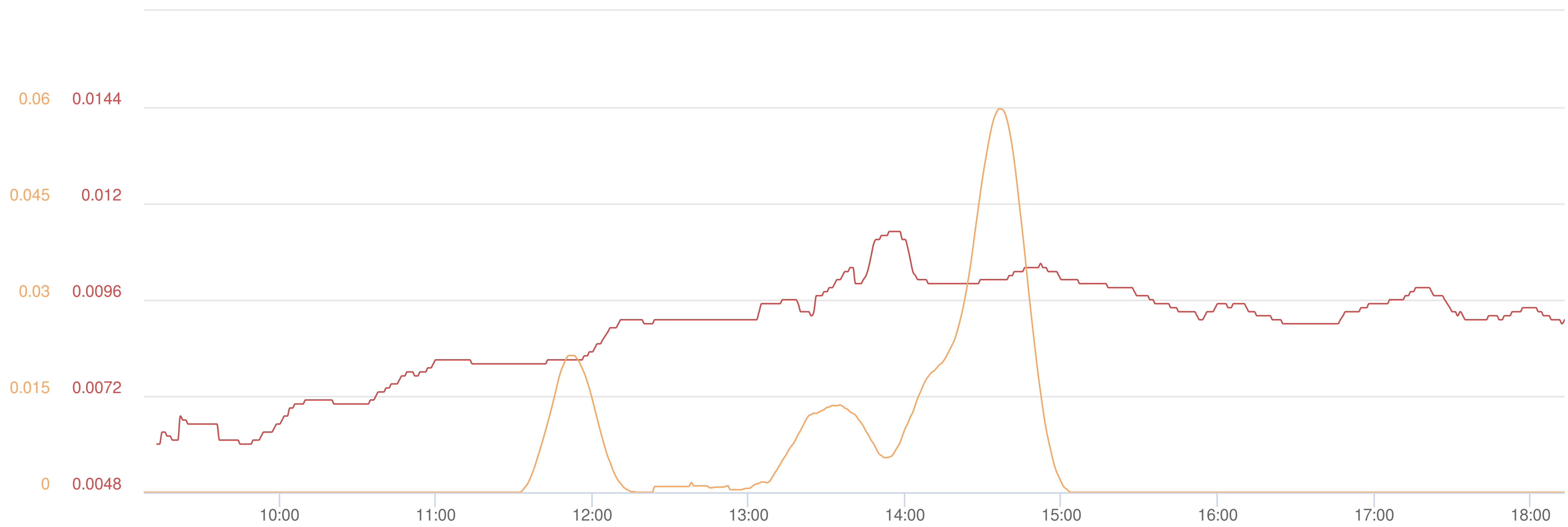


Mass Conc. Total mg/m³ AVG 15m mg/m³ DustTrak-8530 RS232(C)		
MIN	AVG	MAX
0.0061	0.0113	0.0233

VOC ppm AVG 15m ppm miniRAE 3000 RS232(A)		
MIN	AVG	MAX
0	0	0

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Tue, 21st of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

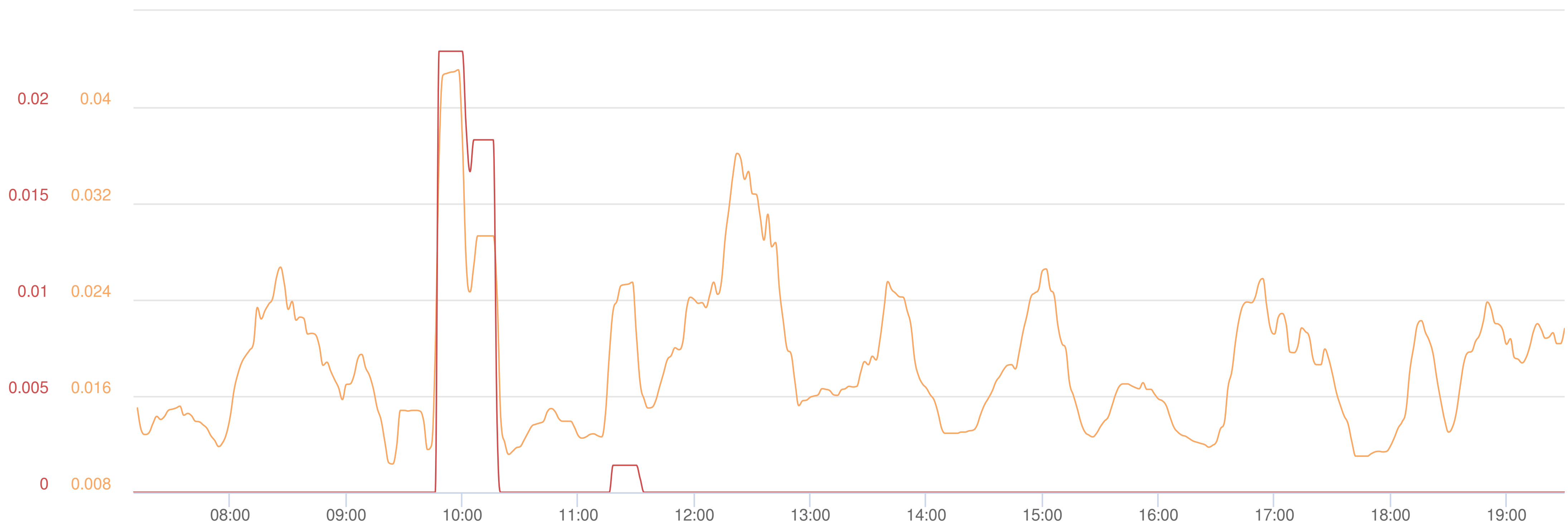
MIN	AVG	MAX
0.006	0.0089	0.0113

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0597

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Wed, 22nd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0101	0.0187	0.0431

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0229

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Wed, 22nd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)

Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

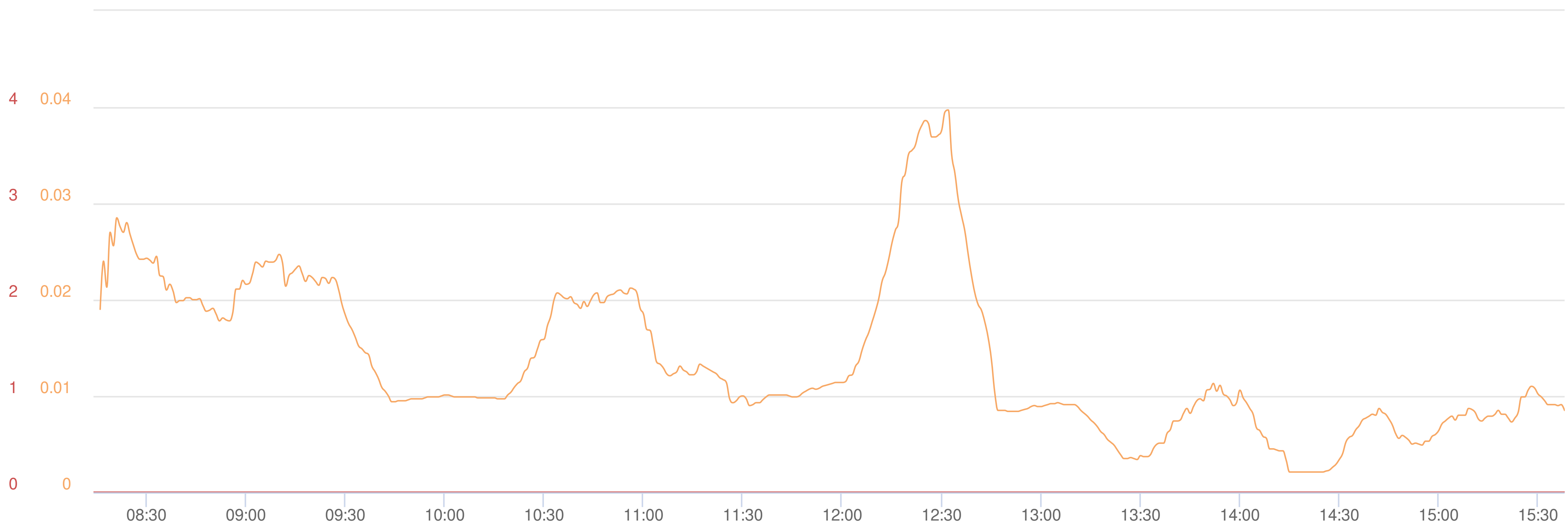
MIN	AVG	MAX
0.01	0.0132	0.0273

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Thu, 23rd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

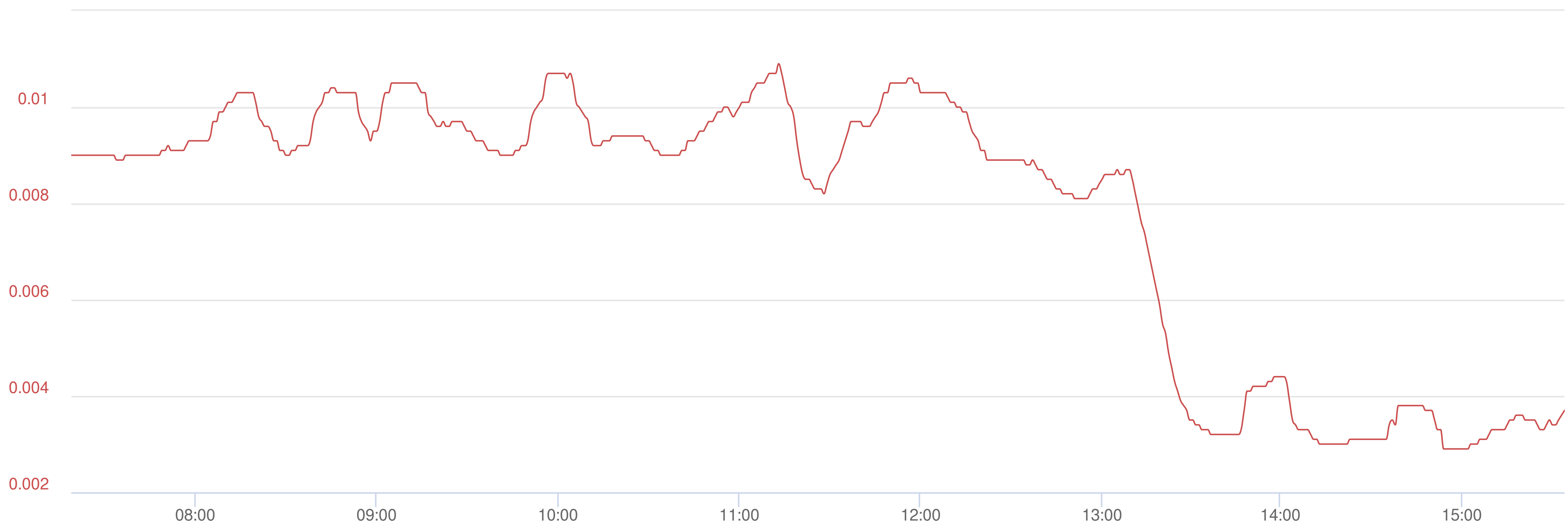
MIN	AVG	MAX
0.0021	0.0136	0.0397

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Thu, 23rd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)

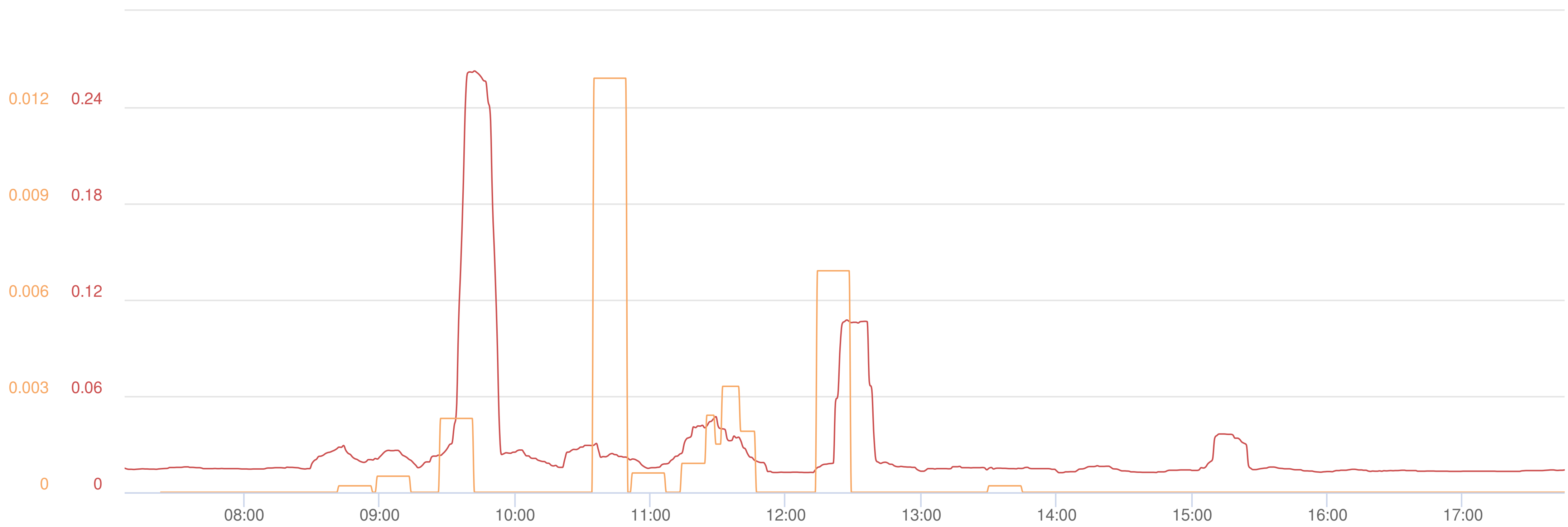


Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0029	0.0078	0.0109

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Tue, 28th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

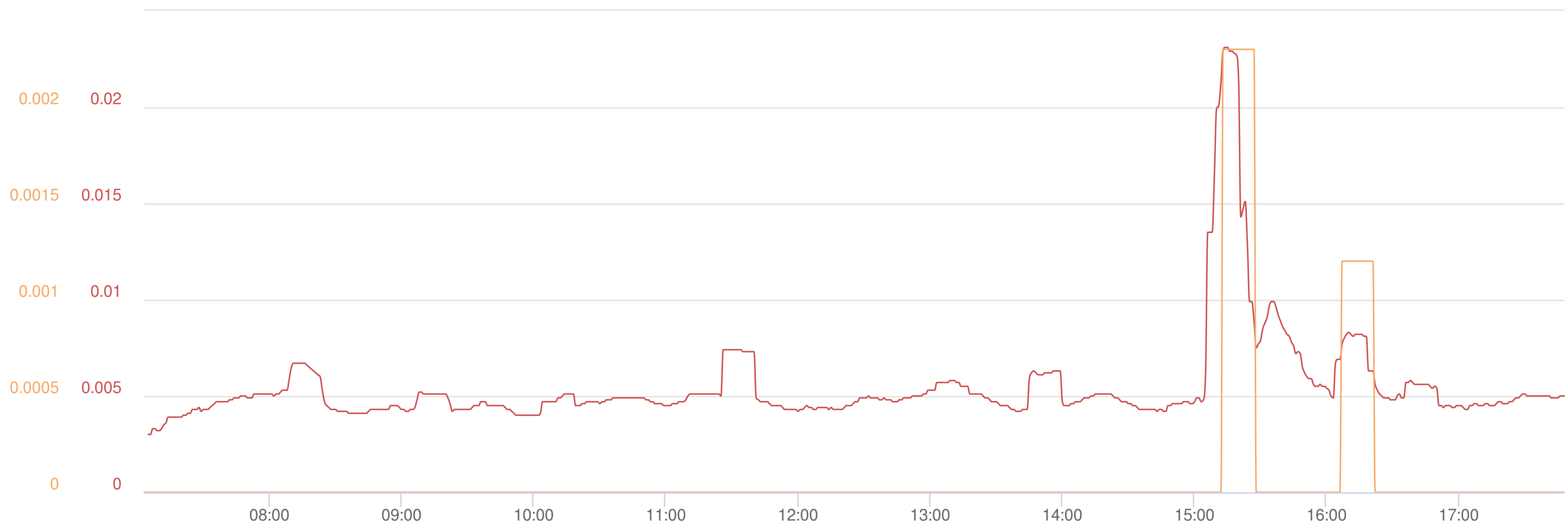
MIN	AVG	MAX
0.0122	0.0257	0.2625

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0129

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Tue, 28th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m mg/m³
DustTrak-8530
RS232(C)

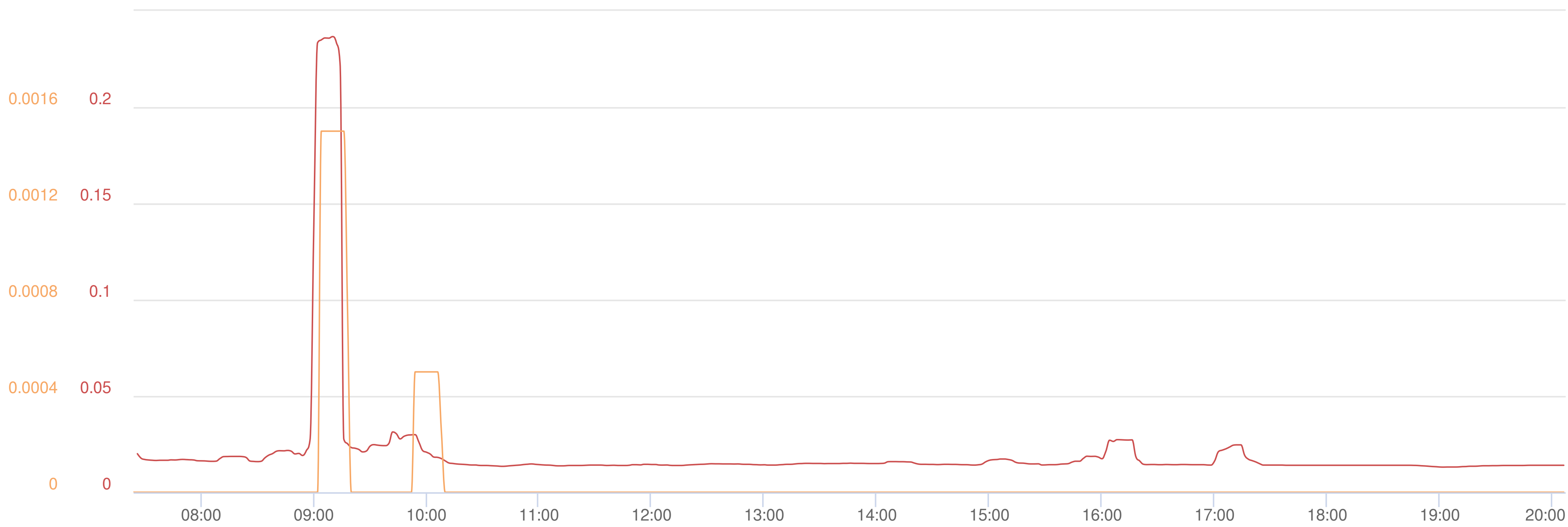
MIN	AVG	MAX
0.003	0.0055	0.0231

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0023

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Wed, 29th of Sep 2021, 6:00:00 – 22:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

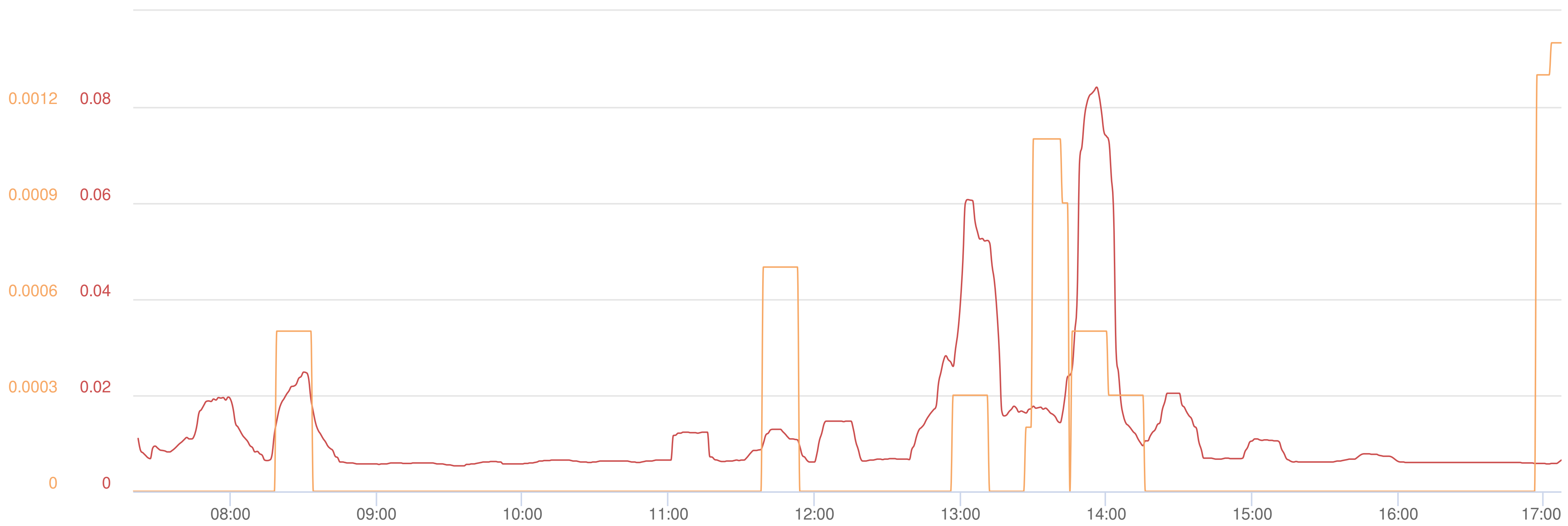
MIN	AVG	MAX
0.013	**0.02**	**0.2374**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0.0015**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Wed, 29th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

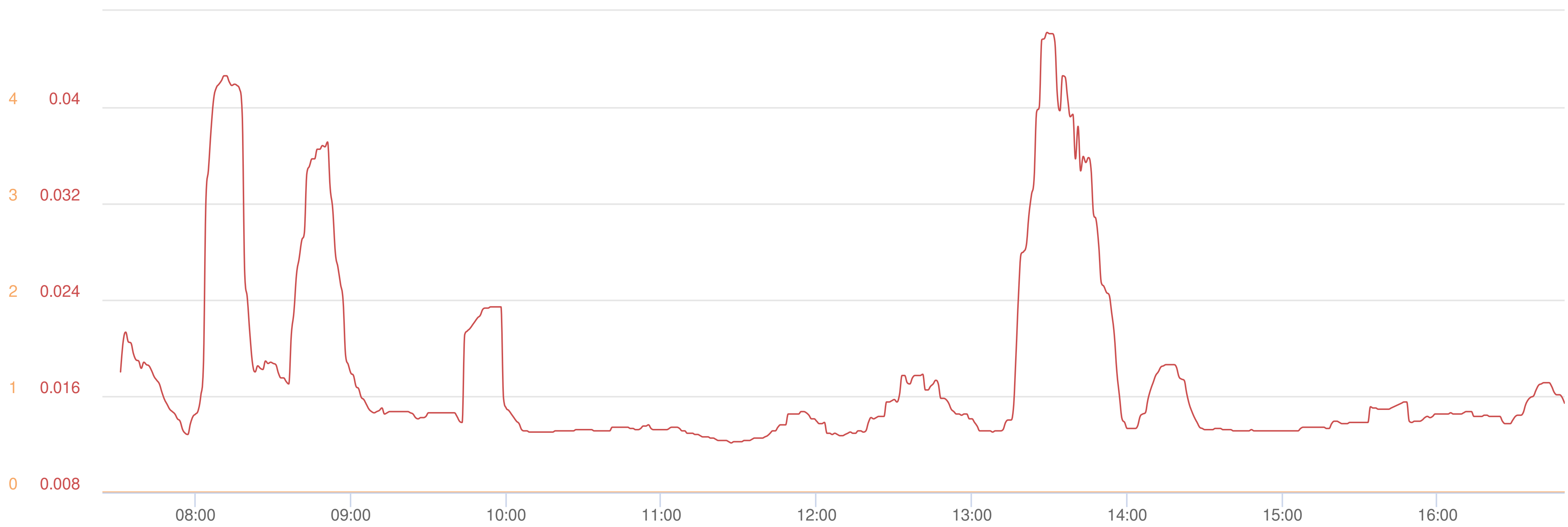
MIN	AVG	MAX
0.0053	0.0127	0.0841

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0.0001	0.0014

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Thu, 30th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

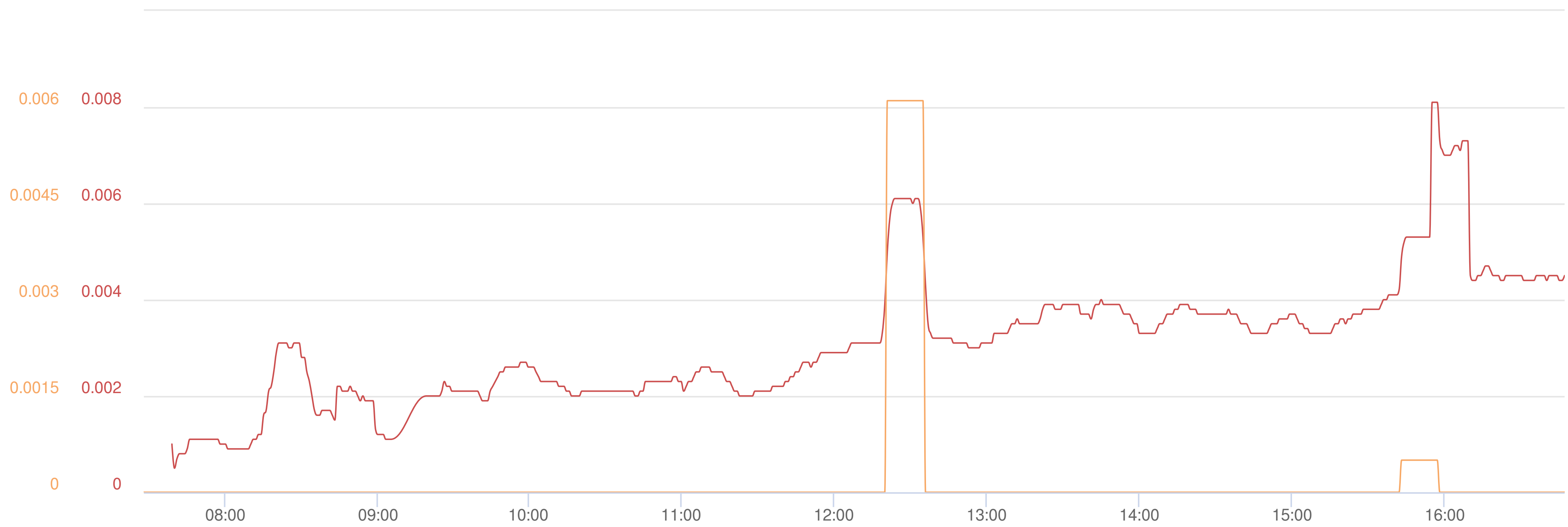
MIN	AVG	MAX
0.0121	**0.0175**	**0.0462**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Thu, 30th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0005	0.0031	0.0081

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0061

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Fri, 1st of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)

Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

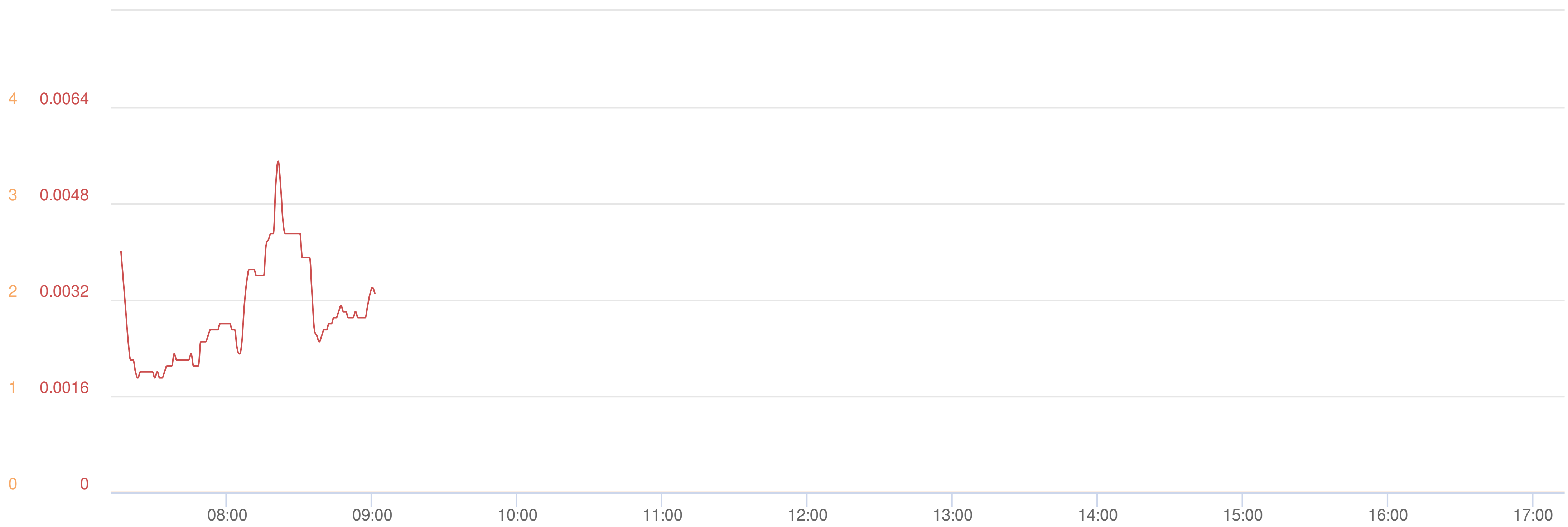
MIN	AVG	MAX
0.012	0.0175	0.0352

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0017

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Fri, 1st of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

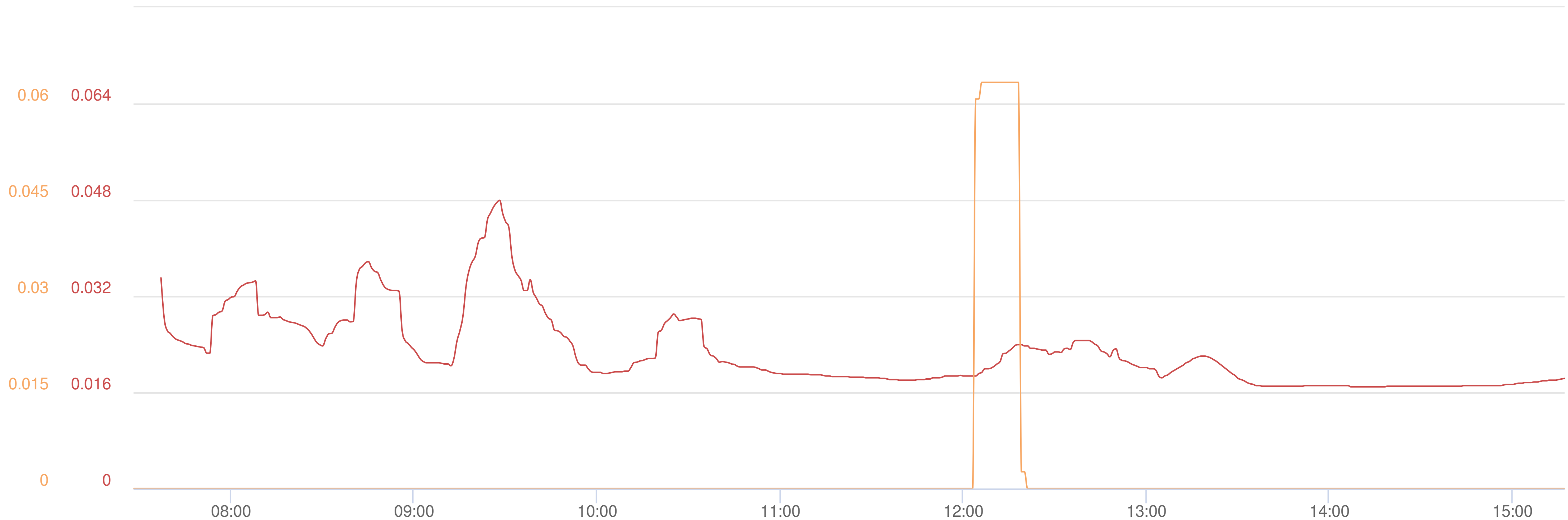
MIN	AVG	MAX
0.0019	0.003	0.0055

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

Sat, 2nd of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

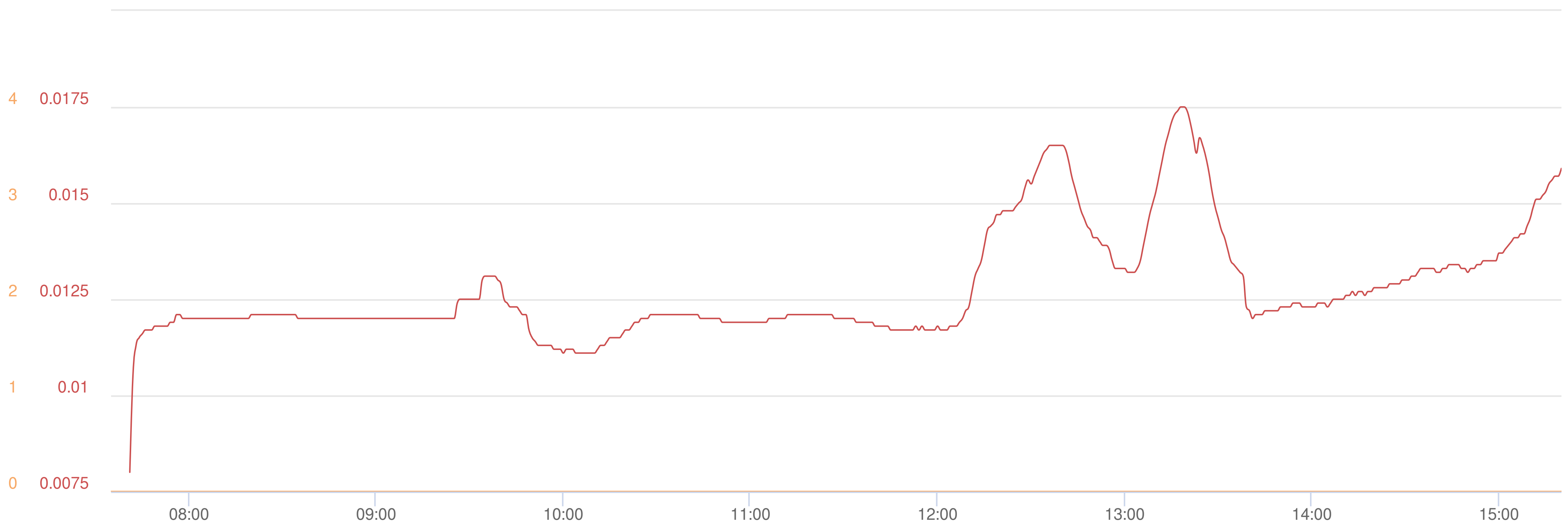
MIN	AVG	MAX
0.0169	0.023	0.0479

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0633

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Sat, 2nd of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

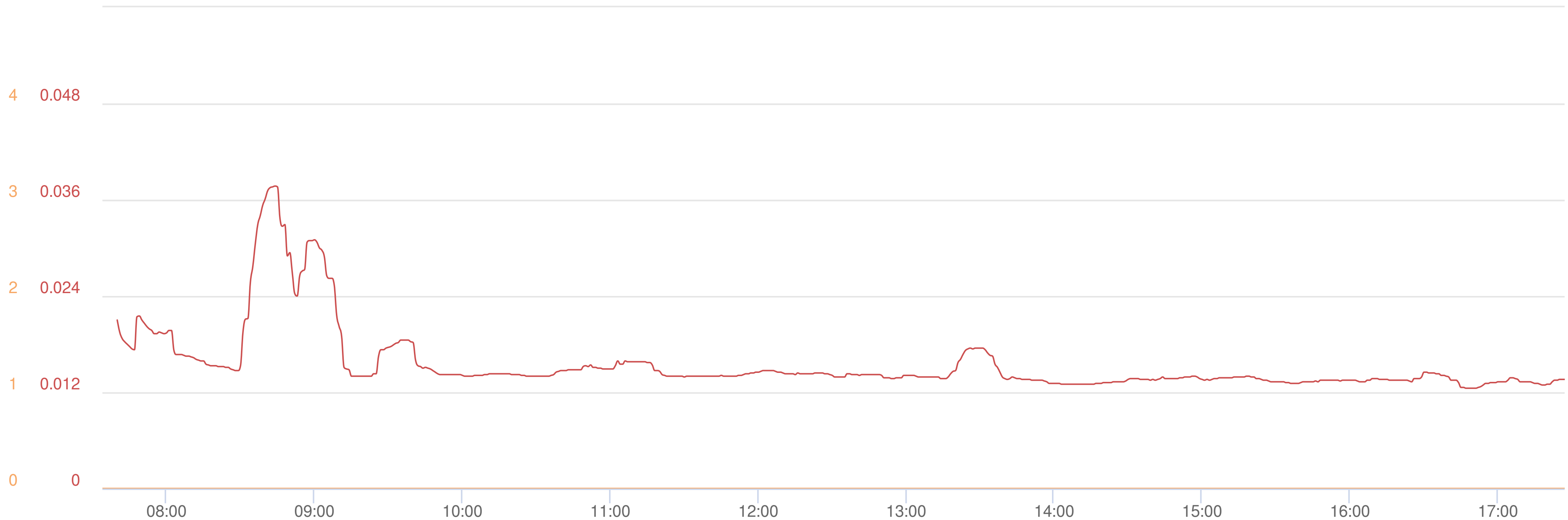
MIN	AVG	MAX
0.008	0.0128	0.0175

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name D&B #2
S/N 0B357616
Description (FA04701)
Location 33 1st Ave, Oswego, NY 13126, USA

Mon, 4th of Oct 2021, 6:00:00 – 17:53:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

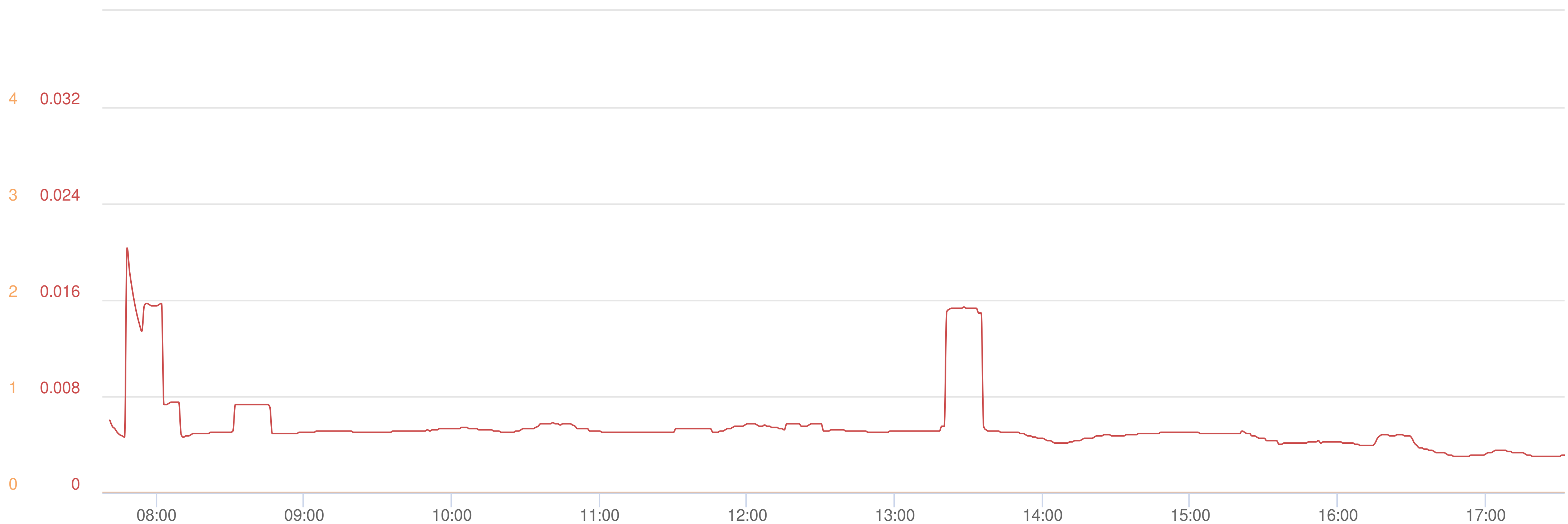
MIN	AVG	MAX
0.0125	**0.0155**	**0.0377**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Mon, 4th of Oct 2021, 6:00:00 – 17:47:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.003	**0.005**	**0.0203**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

APPENDIX E

DAILY FIELD ACTIVITY REPORTS

D&B ENGINEERS AND ARCHITECTS

DATE: September 20, 2021	
REPORT NO. 210920	
PAGE NO. 1 OF 2	
PROJECT NO. 5277-01-01K	
NYSDEC SITE NO. C738040	

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square	Clear	12:30	76°F	0.0	10-15	S
LOCATION	Oswego, New York	Cloudy	16:00	78°F	0.0	10-15	S
ATTACHMENTS	▪ Photo Log ▪ Health and Safety Plan Acknowledgment and Agreement Form						

SITE CONDITIONS: Dry.

WORK GOAL: Mobilize to perform rock coring.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	12:30	4:30
Jon Fitzsimmons	Spoleta	---	---
Joshua Cook	NYSDEC	---	15:30
George Anderson	Summit	15:45	16:30
Michael Pierce	Summit	15:45	16:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations			
PID	MiniRAE 3000+		
Hollow Stem Auger Drill Rig	Diedrich D120		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ | **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 20, 2021 **REPORT NO.** 210920 **PAGE NO.** 2 OF 2 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at the Harbor View Square site (the Site) to provide oversight during the mobilization and setup for rock coring to be performed at the Site. D&B expected drilling company, Summit Drilling (Summit), to arrive to the Site at 13:00, however they did not arrive until 15:45.

Summit reviewed and agreed to the Site-Specific Health and Safety Plan. A signed copy of the Health and Safety Plan Acknowledgment and Agreement Form is attached.

D&B informed Summit and Spoleta that rock core could not commence until fencing was installed around the work area perimeter. Spoleta informed D&B that the fence would be installed the following day, on September 21, 2021.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt H
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Attachment 7

HEALTH AND SAFETY PLAN ACKNOWLEDGMENT AND AGREEMENT FORM

(All *Synapse* and subcontractor personnel must sign.)

"Zero Tolerance for Incident of ANY Kind. Work Together to Ensure A SAFE and High Quality Project

This Health and Safety Plan has been developed for the purpose of informing Synapse employees of the hazards they are likely to encounter on the project site, and the precautions they should take to avoid those hazards. Sub-contractors and other contractors at the site must develop their own Health and Safety Plan to address the hazards faced by their own employees. Synapse has provided a copy of this Plan to contractors in the interest of full disclosure of hazards of which we may be aware, and to satisfy Synapse's responsibilities under the Occupational Safety and Health Administration (OSHA) Hazard Communication standard. Similarly, contractors are required to inform Synapse of any hazards of which they are aware or that the contractor's work on site might possibly pose to SYNAPSE employees, including (but not limited to) the Material Safety Data Sheets for chemicals the contractor may bring on-site. This plan should NOT be understood by contractors to provide information on all of the hazards to which a contractor's employees may be exposed as a result of their work.

I further certify that I have received training and medical surveillance according to the Health and Safety Plan and the OSHA Standard on Hazardous Waste Operations and Emergency Response (29 CFR 1910.120):

All parties conducting site activities are required to coordinate their activities and practices with the project Site Health and Safety Officer. Your signature below confirms that you have read and understand the hazards discussed in this Plan, and understand that sub-contractors and contractors must develop their own Health and Safety Plan for their employees. You also understand you could be prohibited by the Site Health and Safety Officer or other *Synapse* personnel from working on this project for not complying with any aspect of this Health and Safety Plan.

Name	Title	Signature	Company	Date
Michael Rose	helper	[illegible]	Summit Drilling	9/20/21
[illegible]	Driver	[illegible]	Summit Drilling	9/20/21
FRED [illegible]	DRILLER	[illegible]	Summit	9/27/21
John [illegible]	helper	[illegible]	Summit	9/27/21
Andre Williams	Helper	[illegible]	Summit	9/27/21

PHOTOGRAPH LOG
SEPTEMBER 20, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
IMG_0671	09-20-2021	View of the work area, facing west.

PHOTOGRAPH LOG
SEPTEMBER 20, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

IMG_0671– View of the work area, facing west.

D&B ENGINEERS AND ARCHITECTS

DATE:	September 21, 2021
REPORT NO.	210921
PAGE NO.	1 OF 2
PROJECT NO.	5277-01-01K
NYSDEC SITE NO.	C738040

DAILY FIELD ACTIVITY REPORT

PROJECT Harbor View Square

LOCATION Oswego, New York

ATTACHMENTS

- Daily Production Health and Safety Briefing Log
- Site Layout Map
- Air Monitoring Report
- Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Cloudy	7:00	63°F	0.0	10-15	S
Cloudy	18:30	74°F	0.0	10-15	S

SITE CONDITIONS: Dry.

WORK GOAL: Perform rock coring at MW-6.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	18:30
Jon Fitzsimmons	Spoleta	---	---
Matthew Hoskins	D&B	8:30	15:00
George Anderson	Summit	7:00	18:30
Michael Pierce	Summit	7:00	18:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations			
PID	MiniRAE 3000+		
Hollow Stem Auger Drill Rig	Diedrich D120		
Hand Auger			
Cut-off saw	STIHL TS-420		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 21, 2021
		REPORT NO. 210921
		PAGE NO. 2 OF 2
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to perform oversight of rock coring by Summit Drilling (Summit), log rock cores, and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP).

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was traffic safety. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout Map, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. D&B did not observe any visible dust outside of the immediate work area from work activities. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

The work area to perform the rock cores was established. Using chain link fence panels, D&B, Spoleta Construction (Spoleta) and Summit installed security fencing around the perimeter of the work area to create the exclusion zone. Summit constructed a square decontamination area composed of polyethylene sheeting held down and contained by 4 by 4 wood planks. D&Bt marked the locations to perform rock coring at injection well IW-1, and monitoring wells MW-6 and MW-7. To avoid a sewer line, these locations were offset three feet east from their locations proposed on Figure No. 3 in the Work Plan for Reagent Injection dated August 2021. Approximate locations of the rock cores, security fencing, and decontamination pad are shown on the Site Layout Map, attached.

The location of MW-7 was the first to be cored. A cut-toff saw was used to remove the asphalt and potable water was used to mitigate dust. After the asphalt was removed, Summit used a hand auger to remove overburden until refusal was encountered at approximately 1.7 feet below ground surface (bgs). Summit used an eight-inch diameter hollow stem auger drill bit to drill through overburden soil. Bedrock was encountered at approximately seven feet bgs. Summit continued boring the hollow stem auger into bedrock to approximately eight feet bgs (twelve inches into bedrock). The hollow stem auger drill was left in-place to serve as a temporary casing when rock coring was performed.

Summit used a NX-wireline coring system to collect continues rock core samples from the location of MW-7. Rock cores were collected from approximately eight to 28 feet bgs. Approximately 1,005 gallons of potable water was used during the coring. No drilling water used while rock coring returned to the surface through the borehole. The rock core was placed in labeled core boxes that were retained on-Site. All drilling spoils were contained and placed in 55-gallons steel drums that were retained on-Site. Summit plans to complete rock coring at MW-7 to 30 feet bgs on September 22, 2021.

D&B logged observations of the overburden soil and the rock core samples. All overburden soils appeared to be imported fill material composed of well rounded, well graded, brown sandy gravel with little to no moisture and did not display any signs of contamination or photoionization detector (PID) headspace readings indicating volatile organic compounds (VOCs) greater than 0.0 parts per million (ppm). Observations recorded while logging the bedrock core samples included time required to drill each run, run length, estimated of the volume of drilling water lost during each run, lithology, texture, sedimentary structures, color, recovery, weathering, fractures and breaks with an assessment if they are natural or mechanical, rock quality designation (RQD), and PID headspace readings. None of the PID headspace readings indicated VOC concentrations greater than 0.0 ppm and the were no odors or visible signs of contamination from the rock core samples.

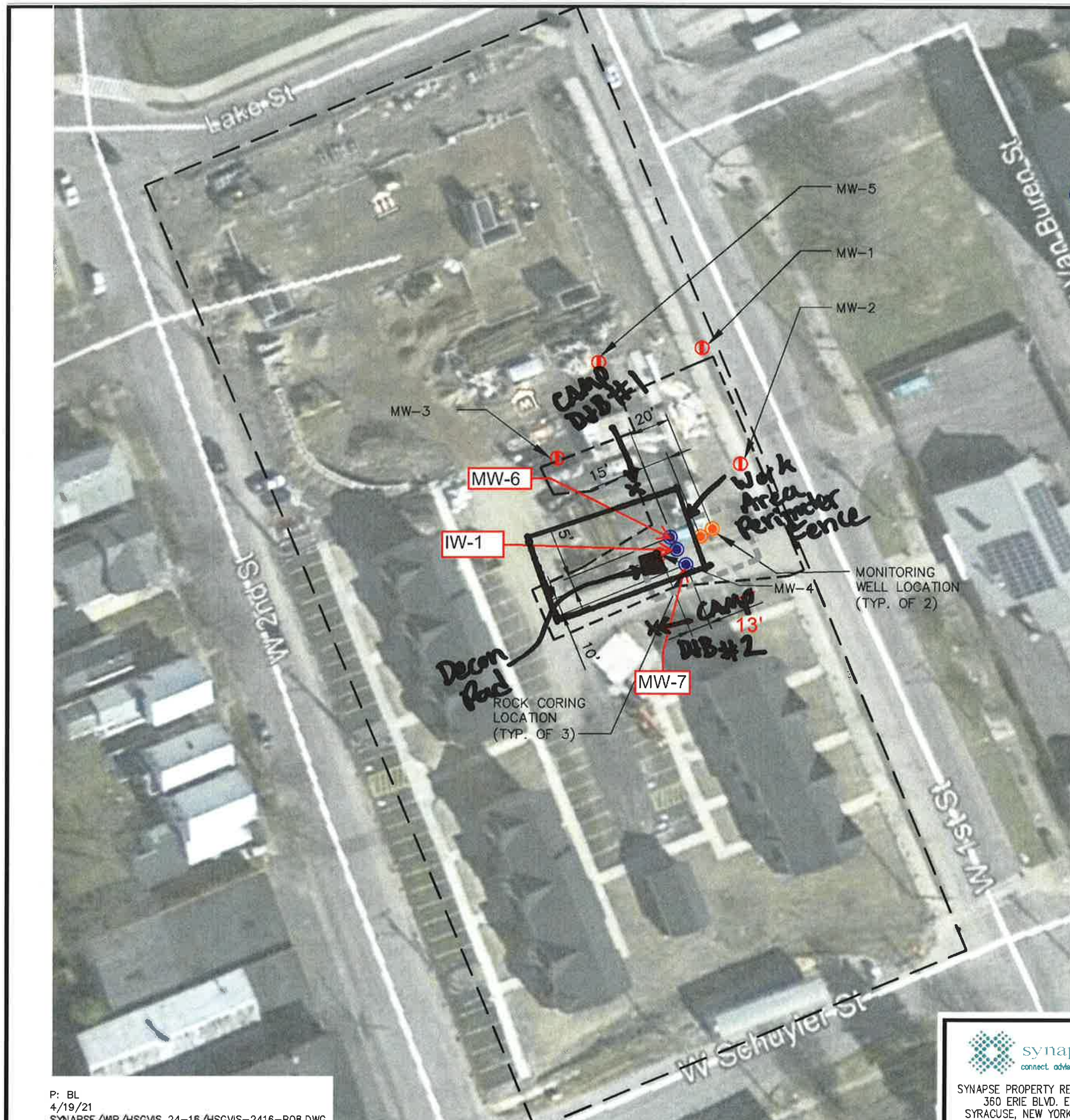
PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt H
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Attachment 6

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date:	
9-21-21	
Start Time:	
7:00	
Issues Discussed:	
1. Traffic Safety	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
George Anderson Summit	[signature]
Michael Pierce Summit	[signature]
Meeting Conducted by:	
Tracey Garland DHB	
Name (Site Health and Safety Officer)	**Signature** [signature]

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM



P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

LEGEND

- APPROXIMATE SITE BOUNDARY
- ROCK CORING LOCATION
- MONITORING WELL LOCATION
- EXISTING WELLS
- ACTUAL EXCAVATION AREA (APPROXIMATE)
- APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

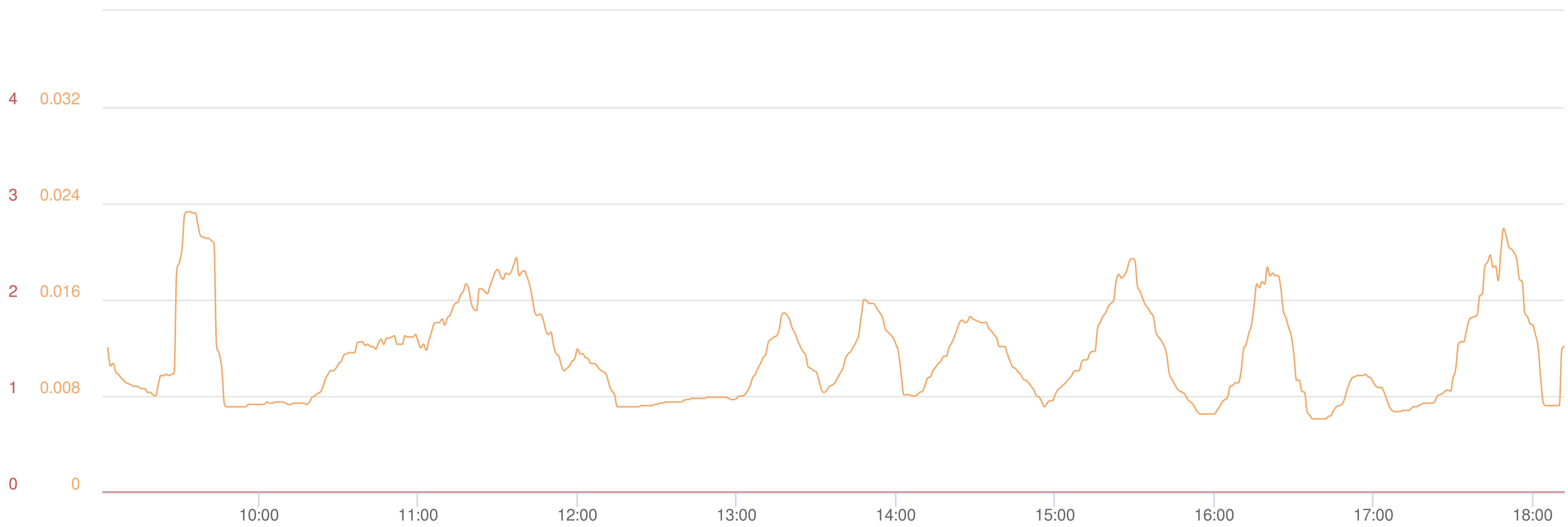
synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 FIGURE NO.: ~~3~~

Site Layout
9-21-2021

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
September 21, 2021

Tue, 21st of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

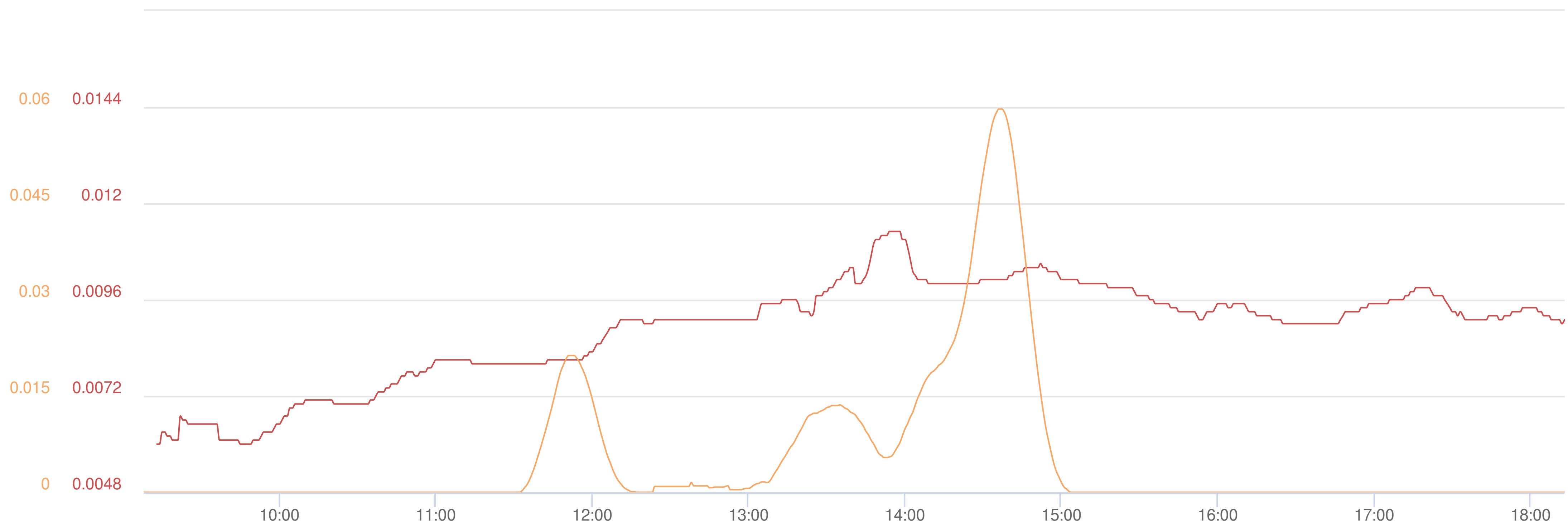
MIN	AVG	MAX
0.0061	0.0113	0.0233

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Tue, 21st of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.006	0.0089	0.0113

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0597

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG
SEPTEMBER 21, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210921_092953	09-21-2021	Summit removing asphalt from the location of MW-7, facing north.
20210921_100638	09-21-2021	MW-7 after hand clearing.
20210921_100822	09-21-2021	The decontamination pad set up by Summit, facing east.
20210921_103941	09-21-2021	Drilling spoils from the hollow stem auger at MW-7 before bedrock was encountered.
20210921_104725	09-21-2021	Drilling spoils from the hollow stem auger at MW-7 after bedrock was encountered.
20210921_114210	09-21-2021	Summit coring rock at MW-7, facing west.
20210921_142636	09-21-2021	The rock core recovered from eight to 13 feet at MW-7, top starting from the lower right and the bottom on the upper left.
20210921_152017	09-21-2021	The rock core recovered from 13 to 18 feet at MW-7, top starting from the left in the center row running towards the bottom on the lower right.
20210921_163459	09-21-2021	The rock core recovered from 18 to 23 feet at MW-7, top starting from the lower right and bottom on the upper left.
20210921_174844	09-21-2021	The rock core recovered from 23 to 28 feet at MW-7, top starting from middle of the center row running towards the bottom on the upper left.

PHOTOGRAPH LOG
SEPTEMBER 21, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210921_092953– Summit removing asphalt from the location of MW-7, facing north.

20210921_100638- MW-7 after hand clearing.

PHOTOGRAPH LOG

SEPTEMBER 21, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210921_100822– The decontamination pad set up by Summit, facing east.

20210921_103941– Drilling spoils from the hollow stem auger at MW-7 before bedrock was encountered.

PHOTOGRAPH LOG
SEPTEMBER 21, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210921_104725– Drilling spoils from the hollow stem auger at MW-7 after bedrock was encountered.

20210921_114210– Summit coring rock at MW-7, facing west.

PHOTOGRAPH LOG
SEPTEMBER 21, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210921_142636– The rock core recovered from eight to 13 feet at MW-7, top starting from the lower right and the bottom on the upper left.

20210921_152017– The rock core recovered from 13 to 18 feet at MW-7, top starting from the left in the center row running towards the bottom on the lower right.

PHOTOGRAPH LOG

SEPTEMBER 21, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210921_163459– The rock core recovered from 18 to 23 feet at MW-7, top starting from the lower right and bottom on the upper left.

20210921_174844– The rock core recovered from 23 to 28 feet at MW-7, top starting from middle of the center row running towards the bottom on the upper left.

D&B ENGINEERS AND ARCHITECTS

DATE:	September 22, 2021
REPORT NO.	210922
PAGE NO.	1 OF 3
PROJECT NO.	5277-01-01K
NYSDEC SITE NO.	C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Rain	7:00	67°F	0.1"	10-15	S
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout Map ▪ Air Monitoring Report ▪ Photo Log	Rain	19:30	71°F	1.0"	10-15	S

SITE CONDITIONS: Wet

WORK GOAL: Complete rock coring at MW-6 and IW-1

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	19:45
Jon Fitzsimmons	Spoleta	---	---
George Anderson	Summit	7:00	19:45
Michael Pierce	Summit	7:00	19:45
Joshua Cook	NYSDEC	9:30	15:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations			
PID	MiniRAE 3000+		
Hollow Stem Auger Drill Rig	Diedrich D120		
Hand Auger			
Cut-off saw	STIHL TS-420		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee rock coring performed by Summit Drilling (Summit) at locations of MW-7 and IW-1, log rock cores, and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Approximate locations of the rock cores, security fencing, and decontamination pad are shown on the Site Layout Map, attached.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was pinch points. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout Map, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. D&B did not observe any visible dust outside of the immediate work area from work activities. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

Summit used a NX-wireline coring system to complete the collection of continuous rock core samples at MW-7 to 30.6 feet below ground surface elevation (bgs), continuing from worked perform on September 21, 2021, when MW-7 was cored to 28 feet bgs. Approximately 175 gallons of potable water was used during the coring today, and a total of approximately 1,180 gallons was used to core the entire borehole. No drilling water used while rock coring returned to the surface through the borehole. The rock core was placed in labeled core boxes that were retained on-Site. All drilling spoils were contained and placed in 55-gallons steel drums that were retained on-Site.

Before starting coring activities at IW-1, Summit decontaminated all equipment that was used within the borehole at MW-7. Decontamination was performed within the decontamination pad using a pressure washer with potable water. All water used during decontamination was contained within the decontamination pad.

Summit removed asphalt from the locations of IW-1 and MW-6. A cut-off saw was used to remove the asphalt and potable water was used to mitigate dust. After the asphalt was removed, Summit used a hand auger to remove overburden until refusal was encountered between one and two feet bgs at both locations.

At IW-1, an eight-inch diameter hollow stem auger drill bit to drill through surface soil to bedrock, which was encountered at approximately 7.5 feet bgs. Summit continued boring the hollow stem auger into bedrock to approximately eight feet bgs (six inches into bedrock). The hollow stem auger drill was left in-place to serve as a temporary casing when rock coring was performed.

Summit used a NX-wireline coring system to collect continuous rock core samples from the location of IW-1. Rock cores were collected from approximately eight to 30 feet bgs. Approximately 1,885 gallons of potable water was used to core the borehole. No drilling water returned to the surface through the borehole. The rock core was placed in labeled core boxes that were retained on-Site. All drilling spoils were contained and placed in 55-gallons steel drums that were retained on-Site.

D&B logged observations of the overburden soil and the rock core samples. All overburden soils appeared to be imported fill material composed of well rounded, well graded, brown sandy gravel with little to no moisture and did not display any signs of contamination or photoionization detector (PID) headspace readings indicating volatile organic compounds (VOCs) greater than 0.0 parts per million (ppm). Observations recorded while logging the bedrock core samples included time required to drill each run, run length, estimated of the volume of drilling water lost during each run, lithology, texture, sedimentary structures, color, recovery, weathering, fractures and breaks with an assessment if they are natural or mechanical, rock quality designation (RQD), and PID headspace readings. None of the PID headspace readings indicated VOC concentrations greater than 0.0 ppm and the were no odors or visible signs of contamination from the rock core samples.

After completing coring activities at MW-7 and IW-1, Summit decommissioned the boreholes by filling them from the bottom with cement/bentonite and topping with cold patch asphalt.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 22, 2021 **REPORT NO.** 210922 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt H
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

~~Attachment 6~~

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 9-22-21

Start Time: 7:00

Issues Discussed:

1. Pinch points
2.
3.
4.
5.

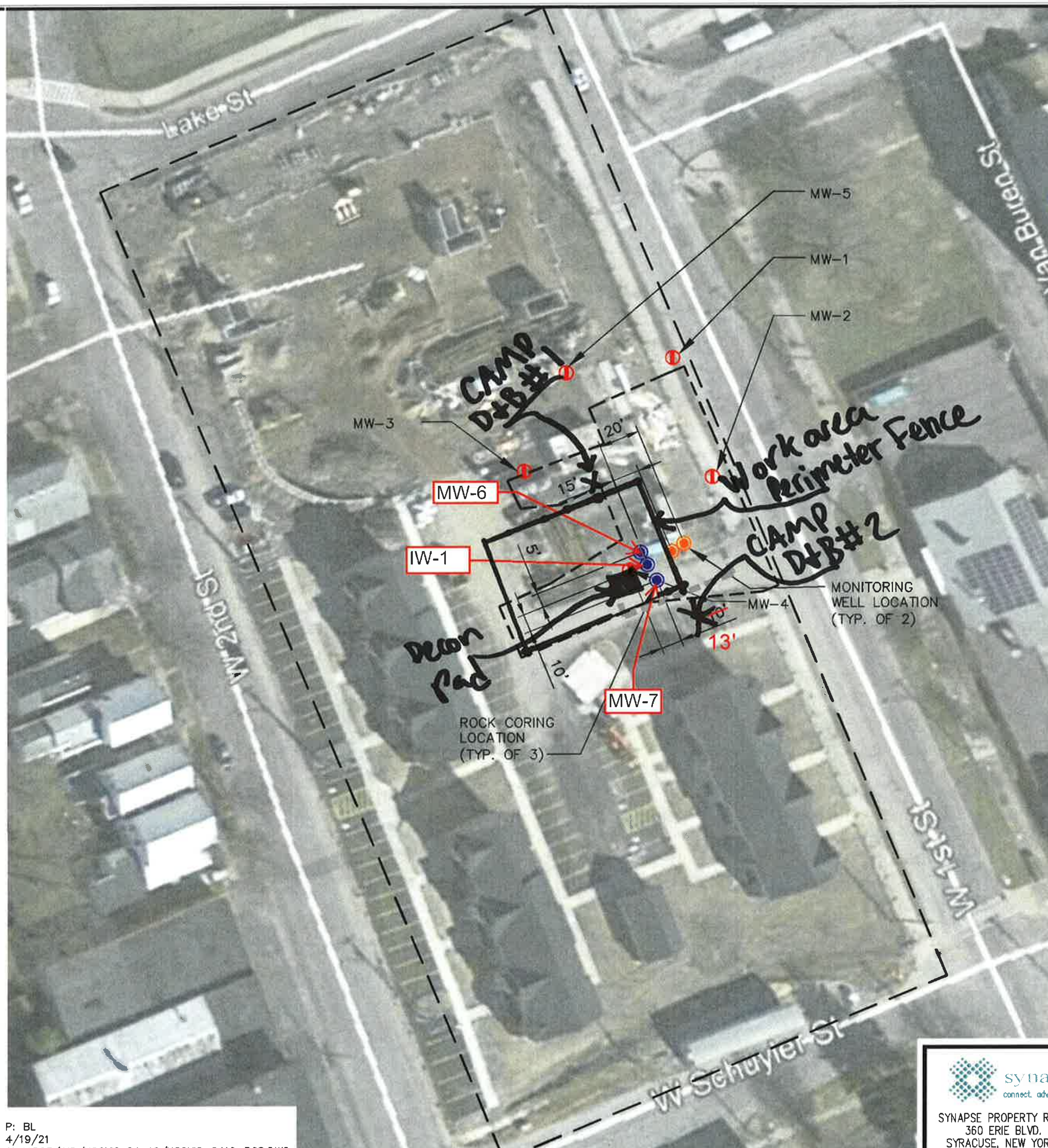
Attendees

Print Name and Company	Signature
Michael Pierce Summit	
George Anderson Summit	

Meeting Conducted by:

Tracey Collins

Name (Site Health and Safety Officer) **Signature**



LEGEND

APPROXIMATE SITE BOUNDARY

ROCK CORING LOCATION

MONITORING WELL LOCATION

EXISTING WELLS

ACTUAL EXCAVATION AREA (APPROXIMATE)

APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'

GRAPHIC SCALE

synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 FIGURE NO.: 3

Site Layout 9-22-21

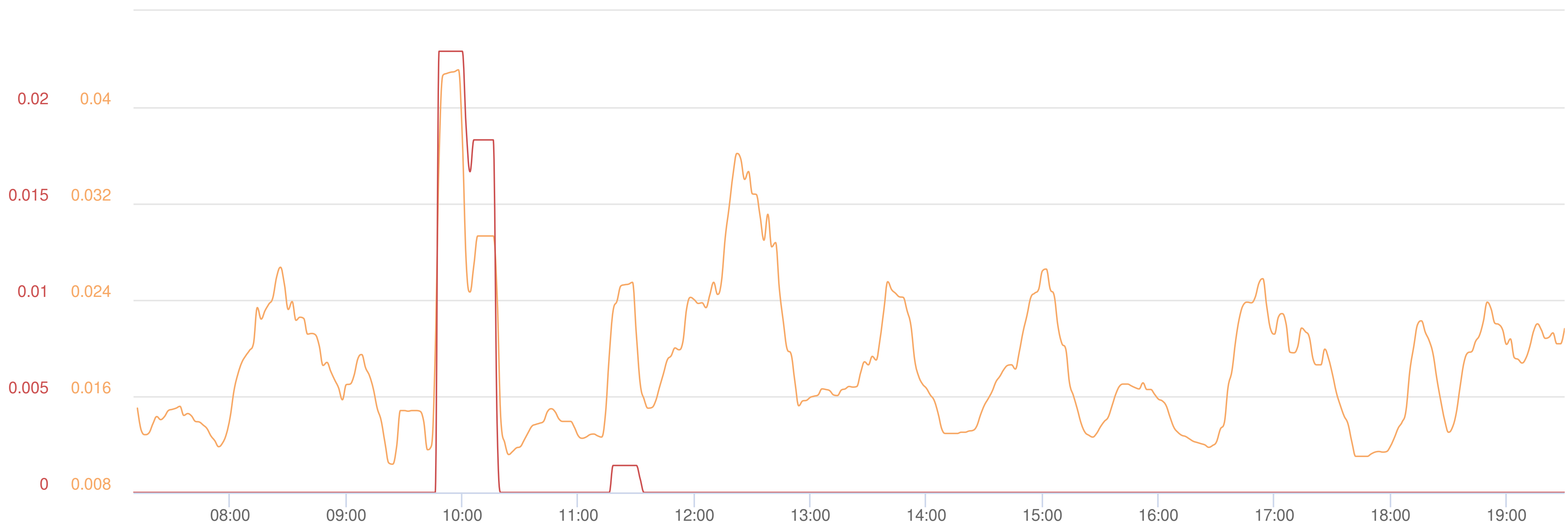
F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
September 22, 2021

Wed, 22nd of Sep 2021, 6:00:00 – 23:00:00

(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

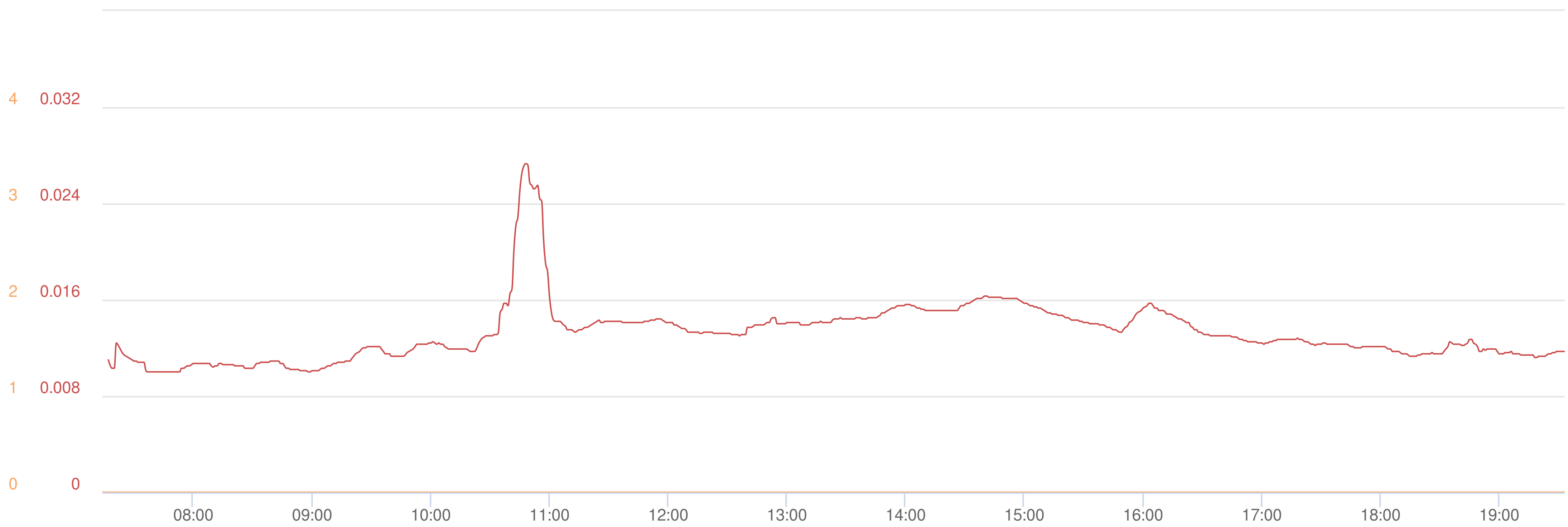
MIN	AVG	MAX
0.0101	**0.0187**	**0.0431**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0.0229**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Wed, 22nd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.01	**0.0132**	**0.0273**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG
SEPTEMBER 22, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

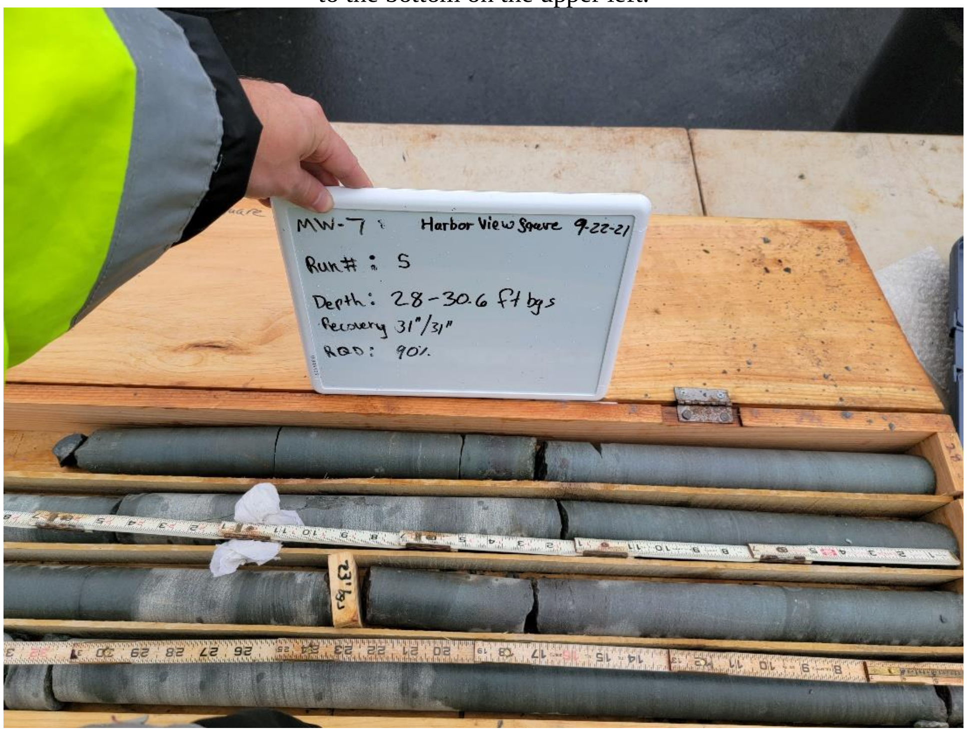
PHOTO	DATE	DESCRIPTION
20210922_082114	09-22-2021	The rock core recovered from 28 to 30 feet at MW-7, top starting from the upper right running to the bottom on the upper left.
20210922_111609	09-22-2021	Summit decontaminating equipment used in the borehole for MW-7, facing west.
20210922_114409	09-22-2021	Drilling spoils from the hollow stem auger at IW-1 before bedrock was encountered.
20210922_133414	09-22-2021	The rock core recovered from eight to 13 feet at IW-1, top starting from the lower right and the bottom on the upper left.
20210922_150101	09-22-2021	The rock core recovered from 18 to 23 feet at IW-1, top starting from the center of the middle row running left to the bottom on the upper left.
20210922_170806	09-22-2021	The rock core recovered from 18 to 23 feet at IW-1, top starting from the lower right and bottom on the upper left.
20210922_182110	09-22-2021	The rock core recovered from 23 to 28 feet at IW-1, top starting from middle of the second row running towards the bottom on the upper left.
20210922_190601	09-22-2021	The rock core recovered from 28 to 30 feet at IW-1, top starting from middle of the third row running towards the bottom on the upper left.
20210922_190607	09-22-2021	The rock core recovered from IW-1 from 28 to 29.3 feet, shown as the top row.
20210922_190610	09-22-2021	The rock core recovered from IW-1 from 29.3 to 29.6 feet, shown as the top row.
20210922_194552	09-22-2021	The work area at the end of the day, facing southwest.
20210922_194632	09-22-2021	The work area at the end of the day, facing northeast.

PHOTOGRAPH LOG
SEPTEMBER 22, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210922_082114	09-22-2021	The rock core recovered from 28 to 30 feet at MW-7, top starting from the upper right running to the bottom on the upper left.
20210922_111609	09-22-2021	Summit decontaminating equipment used in the borehole for MW-7, facing west.
20210922_114409	09-22-2021	Drilling spoils from the hollow stem auger at IW-1 before bedrock was encountered.
20210922_133414	09-22-2021	The rock core recovered from eight to 13 feet at IW-1, top starting from the lower right and the bottom on the upper left.
20210922_150101	09-22-2021	The rock core recovered from 18 to 23 feet at IW-1, top starting from the center of the middle row running left to the bottom on the upper left.
20210922_170806	09-22-2021	The rock core recovered from 18 to 23 feet at IW-1, top starting from the lower right and bottom on the upper left.
20210922_182110	09-22-2021	The rock core recovered from 23 to 28 feet at IW-1, top starting from middle of the second row running towards the bottom on the upper left.
20210922_190601	09-22-2021	The rock core recovered from 28 to 30 feet at IW-1, top starting from middle of the third row running towards the bottom on the upper left.
20210922_190607	09-22-2021	The rock core recovered from IW-1 from 28 to 29.3 feet, shown as the top row.
20210922_190610	09-22-2021	The rock core recovered from IW-1 from 29.3 to 29.6 feet, shown as the top row.
20210922_194552	09-22-2021	The work area at the end of the day, facing southwest.
20210922_194632	09-22-2021	The work area at the end of the day, facing northeast.

PHOTOGRAPH LOG
SEPTEMBER 22, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210922_082114 – The rock core recovered from 28 to 30 feet at MW-7, top starting from the upper right running to the bottom on the upper left.



20210922_111609 - Summit decontaminating equipment used in the borehole for MW-7, facing west.

PHOTOGRAPH LOG
SEPTEMBER 22, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210922_114409 – Drilling spoils from the hollow stem auger at IW-1 before bedrock was encountered.

20210922_133414 – The rock core recovered from eight to 13 feet at IW-1, top starting from the lower right and the bottom on the upper left.

PHOTOGRAPH LOG
SEPTEMBER 22, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210922_150101 – The rock core recovered from 18 to 23 feet at IW-1, top starting from the center of the middle row running left to the bottom on the upper left.

20210922_170806 - The rock core recovered from 18 to 23 feet at IW-1, top starting from the lower right and bottom on the upper left.

PHOTOGRAPH LOG

SEPTEMBER 22, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210922_182110 – The rock core recovered from 23 to 28 feet at IW-1, top starting from middle of the second row running towards the bottom on the upper left.

20210922_190601 – The rock core recovered from 28 to 30 feet at IW-1, top starting from middle of the third row running towards the bottom on the upper left.

PHOTOGRAPH LOG
SEPTEMBER 22, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210922_190607 – The rock core recovered from IW-1 from 28 to 29.3 feet, shown as the top row.

20210922_190610 – The rock core recovered from IW-1 from 29.3 to 29.6 feet, shown as the top row.

D&B ENGINEERS AND ARCHITECTS

DATE:	September 23, 2021
REPORT NO.	210923
PAGE NO.	1 OF 2
PROJECT NO.	5277-01-01K
NYSDEC SITE NO.	C738040

DAILY FIELD ACTIVITY REPORT

PROJECT Harbor View Square

LOCATION Oswego, New York

ATTACHMENTS

- Daily Production Health and Safety Briefing Log
- Site Layout Map
- Air Monitoring Report
- Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Rain	7:00	70°F	0.1”	0-5	N
Cloudy	16:30	68°F	0.0”	0-5	N

SITE CONDITIONS: Wet

WORK GOAL: Complete rock coring at MW-6

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	17:00
Jon Fitzsimmons	Spoleta	---	---
George Anderson	Summit	7:00	16:30
Michael Pierce	Summit	7:00	16:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations			
PID	MiniRAE 3000+		
Hollow Stem Auger Drill Rig	Diedrich D120		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒

HASP? YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		DATE: September 23, 2021
		REPORT NO. 210923
		PAGE NO. 2 OF 2
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee rock coring performed by Summit Drilling (Summit) at the location of MW-6, log rock cores, and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Approximate locations of the rock cores, security fencing, and decontamination pad are shown on the Site Layout Map, attached.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was slip and trip hazards. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout Map, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. The CAMP station upwind from the work area, D&B #2, did not report VOC concentrations on this date because of a technical issue, however VOC levels detected from the downwind CAMP station were lower than action levels. D&B did not observe any visible dust outside of the immediate work area from work activities. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

Summit decontaminated all equipment that was used within the borehole before starting and after completing coring activities at MW-6. Decontamination was performed within the decontamination pad using a pressure washer with potable water. All water used during decontamination was contained within the decontamination pad.

At MW-6, an eight-inch diameter hollow stem auger drill bit was used to drill through bedrock which was encountered at approximately four feet bgs. Summit continued boring the hollow stem auger into bedrock to approximately five feet bgs (twelve inches into bedrock). The hollow stem auger drill was left in-place to serve as a temporary casing when rock coring was performed.

Summit used a NX-wireline coring system to collect continuous rock core samples from the location of MW-6. Rock cores were collected from approximately eight to 30.1 feet bgs. Approximately 2,775 gallons of potable water was used to core the entire borehole. No water used while rock coring returned to the surface through the borehole. The rock core was placed in labeled core boxes that were retained on-Site. All drilling spoils were contained and placed in 55-gallons steel drums that were retained on-Site.

D&B logged observations of the overburden soil and the rock core samples. All overburden soils appeared to be imported fill material composed of well rounded, well graded, brown sandy gravel with little to no moisture and did not display any signs of contamination or photoionization detector (PID) headspace readings indicating volatile organic compounds (VOCs) greater than 0.0 parts per million (ppm). Observations recorded while logging the bedrock core samples included time required to drill each run, run length, estimated of the volume of drilling water lost during each run, lithology, texture, sedimentary structures, color, recovery, weathering, fractures and breaks with an assessment if they are natural or mechanical, rock quality designation (RQD), and PID headspace readings. None of the PID headspace readings indicated VOC concentrations greater than 0.0 ppm and the were no odors or visible signs of contamination from the rock core samples.

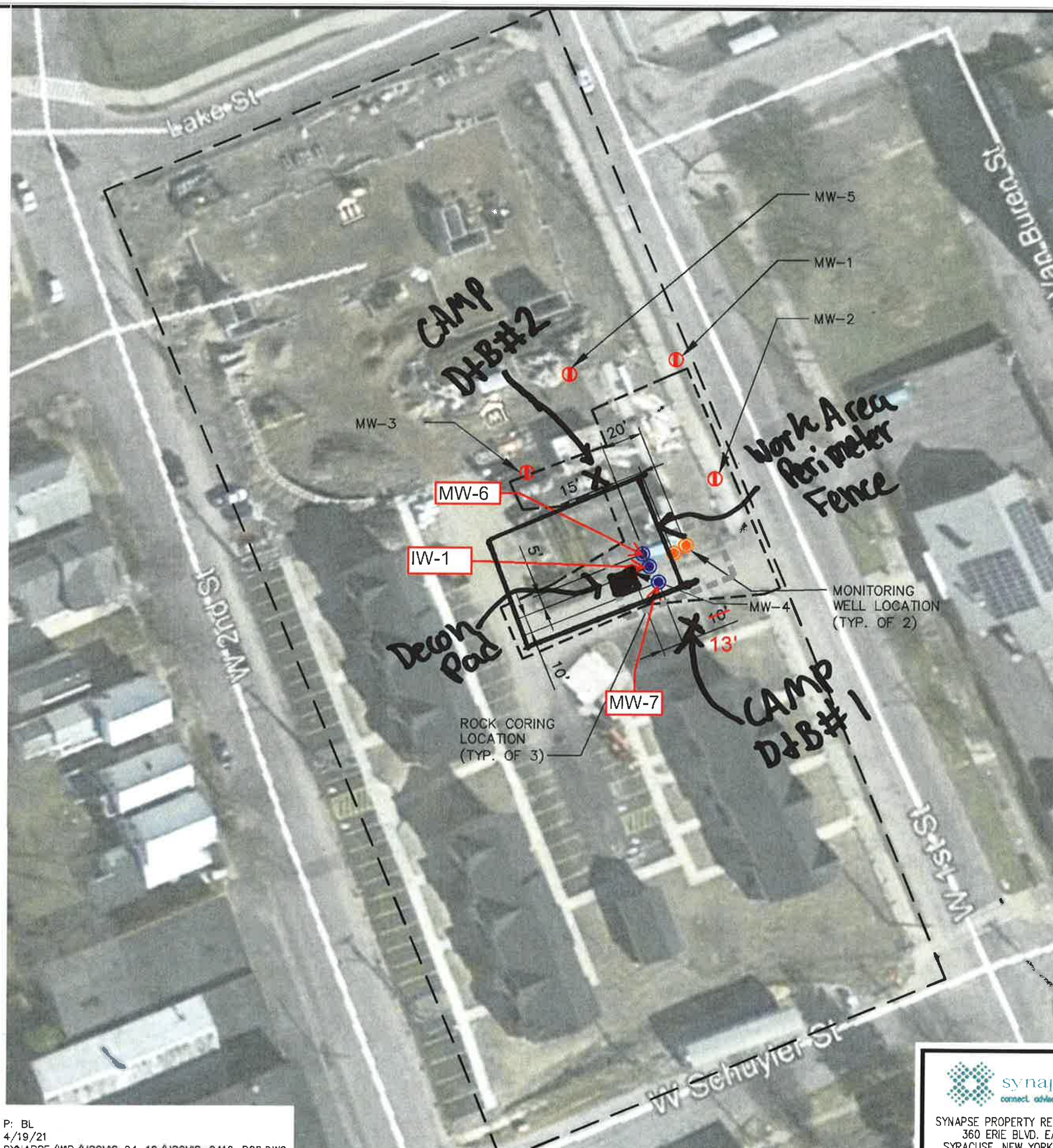
After completing coring activities at MW-6, Summit decommissioned the borehole by filling it from the bottom with cement/bentonite and topped with cold patch asphalt.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt Hoskins
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

~~Attachment 8~~

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 9-23-21	
Start Time: 7:00	
Issues Discussed:	
1. Cleanliness & trips slips	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
Michael Pierce Summit	
George Anderson Summit	
Meeting Conducted by:	
Tracey Cahill	
Name (Site Health and Safety Officer)	**Signature**



LEGEND

- APPROXIMATE SITE BOUNDARY
- ROCK CORING LOCATION
- MONITORING WELL LOCATION
- EXISTING WELLS
- ACTUAL EXCAVATION AREA (APPROXIMATE)
- APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'

GRAPHIC SCALE

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 FIGURE NO.: ~~3~~

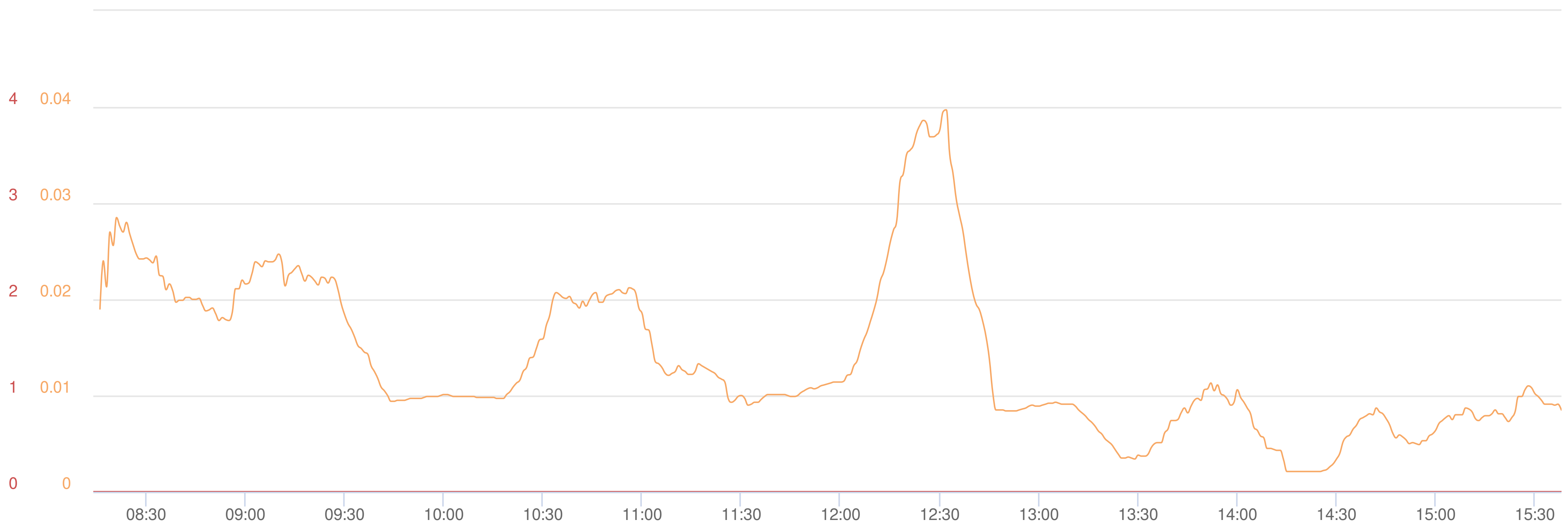
Site Layout 9-23-21

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
September 23, 2021

Thu, 23rd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

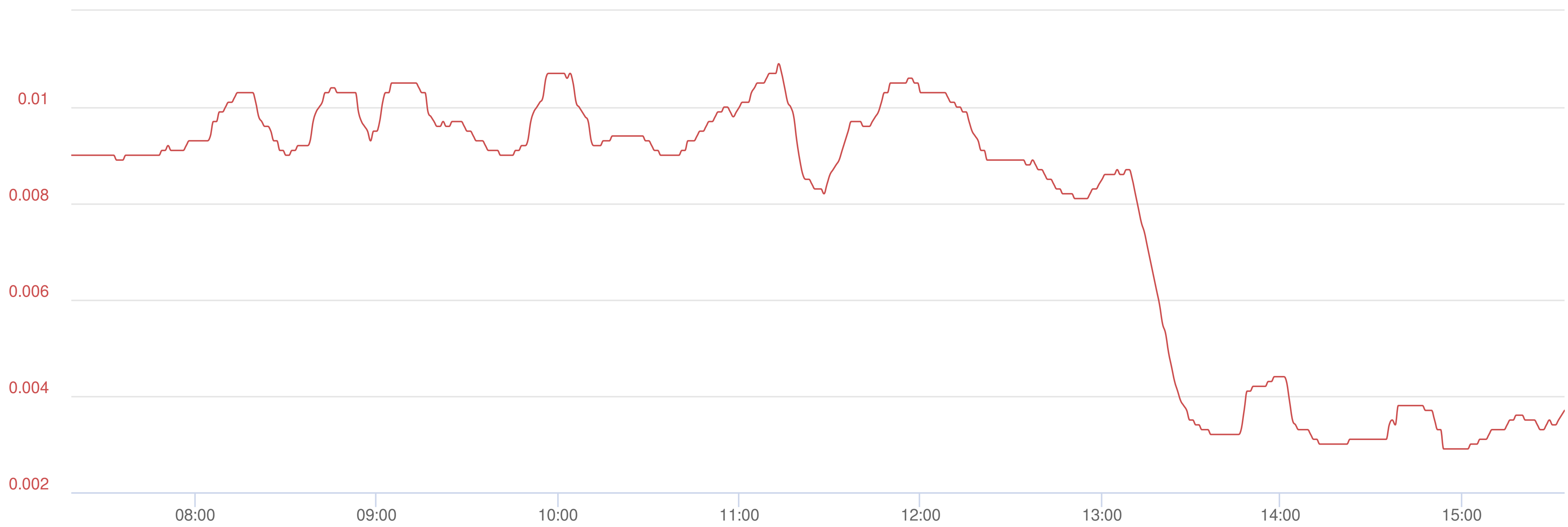
MIN	AVG	MAX
0.0021	0.0136	0.0397

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Thu, 23rd of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0029	**0.0078**	**0.0109**

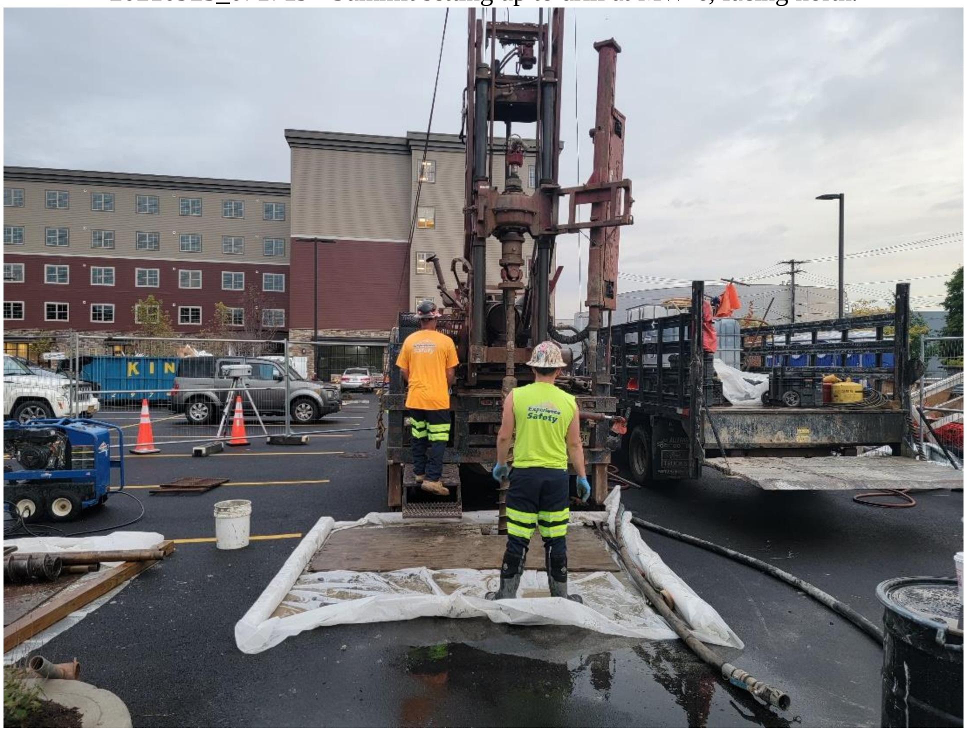
Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG
SEPTEMBER 23, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210923_071719	09-23-2021	Summit setting up to drill at MW-6, facing north.
20210923_074937	09-23-2021	Drilling spoils from the hollow stem auger at MW-6 before bedrock was encountered.
20210923_091141	09-23-2021	The rock core recovered from 15.2 to 20.2 feet at MW-6, top starting from the center of the third row and running to the upper left.
20210923_110949	09-23-2021	The rock core recovered from 10 to 15.2 feet at MW-6, top starting from the right side of the center row and the bottom on the upper left.
20210923_125141	09-23-2021	The rock core recovered from 15.2 to 20.2 feet at MW-6, top starting from the center of the middle third running to the bottom on the upper left.
20210923_140148	09-23-2021	The rock core recovered from 20.2 to 25.4 feet at MW-6, top starting from the lower right.
20210923_144755	09-23-2021	Summit rock coring at MW-6, facing north.
20210923_151257	09-23-2021	The rock core recovered from 25.4 to 30.2 feet at MW-6, top starting from the right side of the second row running towards the bottom on the left.
20210923_153401	09-23-2021	Summit decontaminating equipment to demobilize, facing east.
20210923_185910	09-23-2021	The rock core boxes stored on-Site.
20210923_190104	09-23-2021	Two drums of wastewater from monitoring wells, and three drums of drilling spoils generated from rock coring activities retained on-Site.
20210923_190312	09-23-2021	The work area at the end of the day, facing northeast.

PHOTOGRAPH LOG
SEPTEMBER 23, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210923_071719– Summit setting up to drill at MW-6, facing north.



20210923_074937- Drilling spoils from the hollow stem auger at MW-6 before bedrock was encountered.

PHOTOGRAPH LOG

SEPTEMBER 23, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210923_091141– The rock core recovered from five to ten feet at MW-6, top starting from the lower right and the bottom on the upper left.

20210923_110949– The rock core recovered from 10 to 15.2 feet at MW-6, top starting from the right side of the center row and the bottom on the upper left.

PHOTOGRAPH LOG

SEPTEMBER 23, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210923_125141– The rock core recovered from 15.2 to 20.2 feet at MW-6, top starting from the center of the third row and running to the upper left.

20210923_140148 - The rock core recovered from 20.2 to 25.4 feet at MW-6, top starting from the lower right.

PHOTOGRAPH LOG
SEPTEMBER 23, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210923_144755– Summit rock coring at MW-6, facing north.

20210923_151257 – The rock core recovered from 25.4 to 30.2 feet at MW-6, top starting from the right side of the second row running towards the bottom on the left.

PHOTOGRAPH LOG

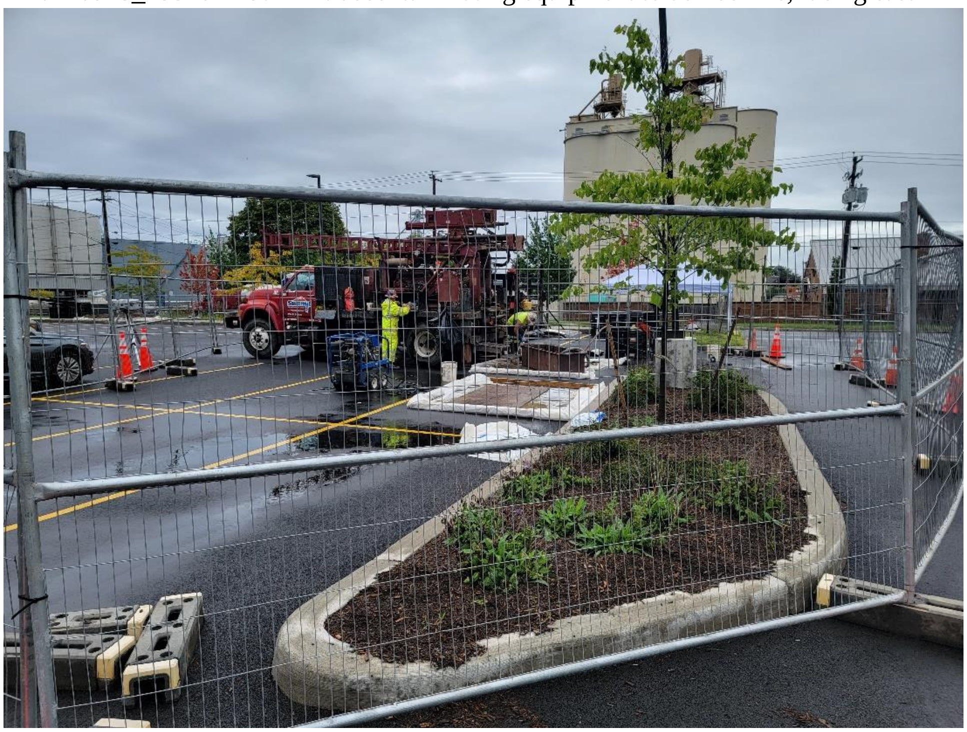
SEPTEMBER 23, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210923_153401– Summit decontaminating equipment to demobilize, facing east



20210923_185910 – The rock core boxes stored on-Site.

PHOTOGRAPH LOG

SEPTEMBER 23, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210923_190104– Two drums of wastewater from monitoring wells, and three drums of drilling spoils generated from rock coring activities retained on-Site.

20210923_190312 – The work area at the end of the day, facing northeast.

D&B ENGINEERS AND ARCHITECTS		DATE: September 27, 2021
		REPORT NO. 210927
		PAGE NO. 1 OF 2
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Clear	13:00	77°F	0.0”	5-10	N
ATTACHMENTS	▪ Health and Safety Plan Acknowledgment and Agreement Form ▪ Photo Log	Cloudy	17:00	74°F	0.0”	5-10	N

SITE CONDITIONS: Dry

WORK GOAL: Mobilize Equipment.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	13:00	17:00
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	16:00	17:00
Andre Williams	Summit	16:00	17:00
John Macriszewski	Summit	16:00	17:00
Johua Cook	NYSDEC	13:35	13:45

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Drill Rig	Diedrich T-650-W II		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒	**HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 27, 2021 **REPORT NO.** 210927 **PAGE NO.** 2 OF 2 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at the Harbor View Square site (the Site) to provide oversight during the mobilization and setup for drilling in support of well installations to be performed at the Site.

Summit reviewed and agreed to the Site-Specific Health and Safety Plan. A signed copy of the Health and Safety Plan Acknowledgment and Agreement Form is attached.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Attachment 7

HEALTH AND SAFETY PLAN ACKNOWLEDGMENT AND AGREEMENT FORM

(All *Synapse* and subcontractor personnel must sign.)

"Zero Tolerance for Incident of ANY Kind. Work Together to Ensure A SAFE and High Quality Project

This Health and Safety Plan has been developed for the purpose of informing Synapse employees of the hazards they are likely to encounter on the project site, and the precautions they should take to avoid those hazards. Sub-contractors and other contractors at the site must develop their own Health and Safety Plan to address the hazards faced by their own employees. Synapse has provided a copy of this Plan to contractors in the interest of full disclosure of hazards of which we may be aware, and to satisfy Synapse's responsibilities under the Occupational Safety and Health Administration (OSHA) Hazard Communication standard. Similarly, contractors are required to inform Synapse of any hazards of which they are aware or that the contractor's work on site might possibly pose to SYNAPSE employees, including (but not limited to) the Material Safety Data Sheets for chemicals the contractor may bring on-site. This plan should NOT be understood by contractors to provide information on all of the hazards to which a contractor's employees may be exposed as a result of their work.

I further certify that I have received training and medical surveillance according to the Health and Safety Plan and the OSHA Standard on Hazardous Waste Operations and Emergency Response (29 CFR 1910.120):

All parties conducting site activities are required to coordinate their activities and practices with the project Site Health and Safety Officer. Your signature below confirms that you have read and understand the hazards discussed in this Plan, and understand that sub-contractors and contractors must develop their own Health and Safety Plan for their employees. You also understand you could be prohibited by the Site Health and Safety Officer or other *Synapse* personnel from working on this project for not complying with any aspect of this Health and Safety Plan.

Name	Title	Signature	Company	Date
Michael Rese	helper	[illegible]	Summit Drilling	9/20/21
Garry Atkinson	Driver	[illegible]	Summit Drilling	9/20/21
FRED Koshwell	DRILLER	[illegible]	Summit	9/27/21
John [illegible]	helper	[illegible]	Summit	9/27/21
Andre Williams	helper	[illegible]	Summit	9/27/21

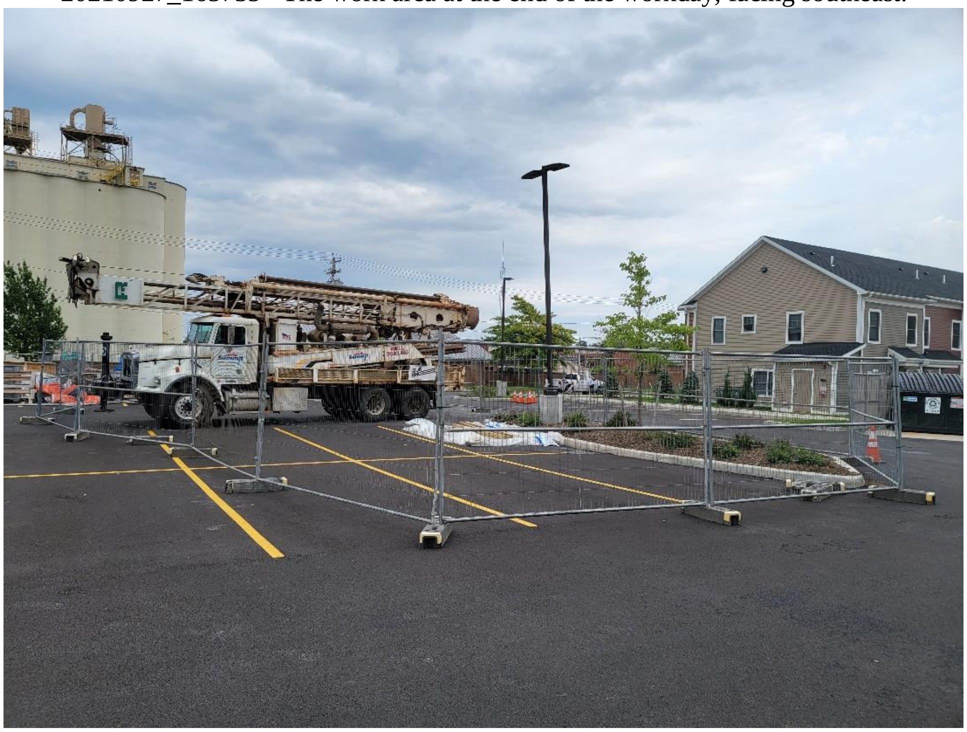
PHOTOGRAPH LOG
SEPTEMBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210927_131712	09-27-2021	The work area at the start of the workday, facing east.
20210927_165735	09-27-2021	The work area at the end of the workday, facing southeast.

PHOTOGRAPH LOG
SEPTEMBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210927_131712– The work area at the start of the workday, facing east.

20210927_165735– The work area at the end of the workday, facing southeast.



D&B ENGINEERS AND ARCHITECTS		**DATE:** September 28, 2021 **REPORT NO.** 210928 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Cloudy	7:00	58°F	0.0”	10-15	N
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout Map ▪ Air Monitoring Report ▪ Photo Log	Cloudy	18:00	60°F	0.0”	10-15	N

SITE CONDITIONS: Dry

WORK GOAL: Install surface casing for MW-7

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	18:15
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	7:30	18:15
Andre Williams	Summit	7:30	18:15
John Macriszewski	Summit	7:30	18:15

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations		Skid Steer	Bobcat T650
PID	MiniRAE 3000+		
Drill Rig	Diedrich T-650-W II		
Hand Auger			
Cut-off saw	STIHL TS-420		
Hot Water Pressure Washer	Mi-T-M HSP-300-MGH		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ — **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 28, 2021
		REPORT NO. 210928
		PAGE NO. 2 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee the installation of the surface casing for monitoring well MW-7 per the Reagent Injection Work Plan and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Work to install these wells was performed by Summit Drilling (Summit). Approximate locations of the wells are shown on the Site Layout Map, attached. The locations of wells IW-1, MW-6, MW-7, MW-8 and MW-9 were offset three feet east from their locations proposed on Figure No. 3 in the Work Plan for Reagent Injection dated August 2021. The chain-link fence used previously to establish the exclusion zone from September 21-23, 2021 was reused for this drilling effort also.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations in accordance with the CAMP. The topic of this day's safety meeting was high wind hazards. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout Map, attached. The air monitoring stations did not detect concentrations of volatile organic compounds exceeding actions levels specified in the CAMP. Dust concentrations detected from air monitoring station D&B #1 exceeded action levels for dust at 9:35 and 12:25. Data recorded from both air monitoring stations is provided in the attached Air Monitoring Report. D&B also observed plumes of dust generated from drilling activities at 9:35 and 12:25 that were visible downwind to approximately 80 feet south from the work area. Summit stopped work immediately after each instance of visible dust at 9:35 and 12:25. The dust plumes were the result of a mechanical failure associated with a water pump on the drill rig used for dust control while drilling at MW-7. During both instances Summit stopped work and D&B informed Summit that dust controls need to be in-place. Summit later repaired the water pump.

Summit installed a containment area around the borehole for MW-7 before starting drilling activities. The containment consisted of polyethylene sheeting placed around the immediate vicinity of the borehole and a metal tub that was placed on top of the polyethylene sheeting. The bottom of the metal tub had a hole cut out of it where the borehole was drilled and the tub was used to catch drilling spoils. Summit installed a similar containment area around the location of MW-9 at the end of the day. Approximate locations of MW-9 and MW-7 are shown on Figure 1, attached.

Summit used a ten-inch diameter tricone roller drill bit to drill through overburden soil to top of bedrock. D&B screened the drilling spoils for volatile organic compounds (VOCs) by measuring headspace VOC concentrations with a photoionization detector (PID). None of the headspace measurements indicated VOC concentrations greater than 0.0 parts-per-million from the overburden. Summit installed a ten-inch diameter conductor pipe in the borehole after reaching the top of bedrock, approximately seven feet bgs. Once the conductor pipe was set, Summit used a ten-inch diameter downhole hammer drill bit to drill through the bedrock to a depth of 10 feet bgs. All drill cuttings and were containerized on-site in metal 55-gallon drums.

Summit installed the six-inch diameter steel casing for MW-7 after completing the ten-inch diameter borehole. Summit seated the casing into bedrock at the bottom of the borehole. After the casing was seated, Summit removed the ten-inch diameter conductor pipe and filled the annular space in the borehole outside of the casing with cement/bentonite grout. Approximately 100 gallons of grout was used to fill the annular space from approximately ten feet bgs to ten inches bgs. The casing for MW-1 was set and grouted in place at 14:00.

After the casing for MW-7 was installed, Summit worked to repair the water pump on the drill rig, and setup to install the casing at MW-9.

To secure the work area, Summit and D&B ensured the work area was enclosed by fencing at the end of the workday.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 28, 2021 **REPORT NO.** 210928 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01I **NYSDEC SITE NO.** C738040

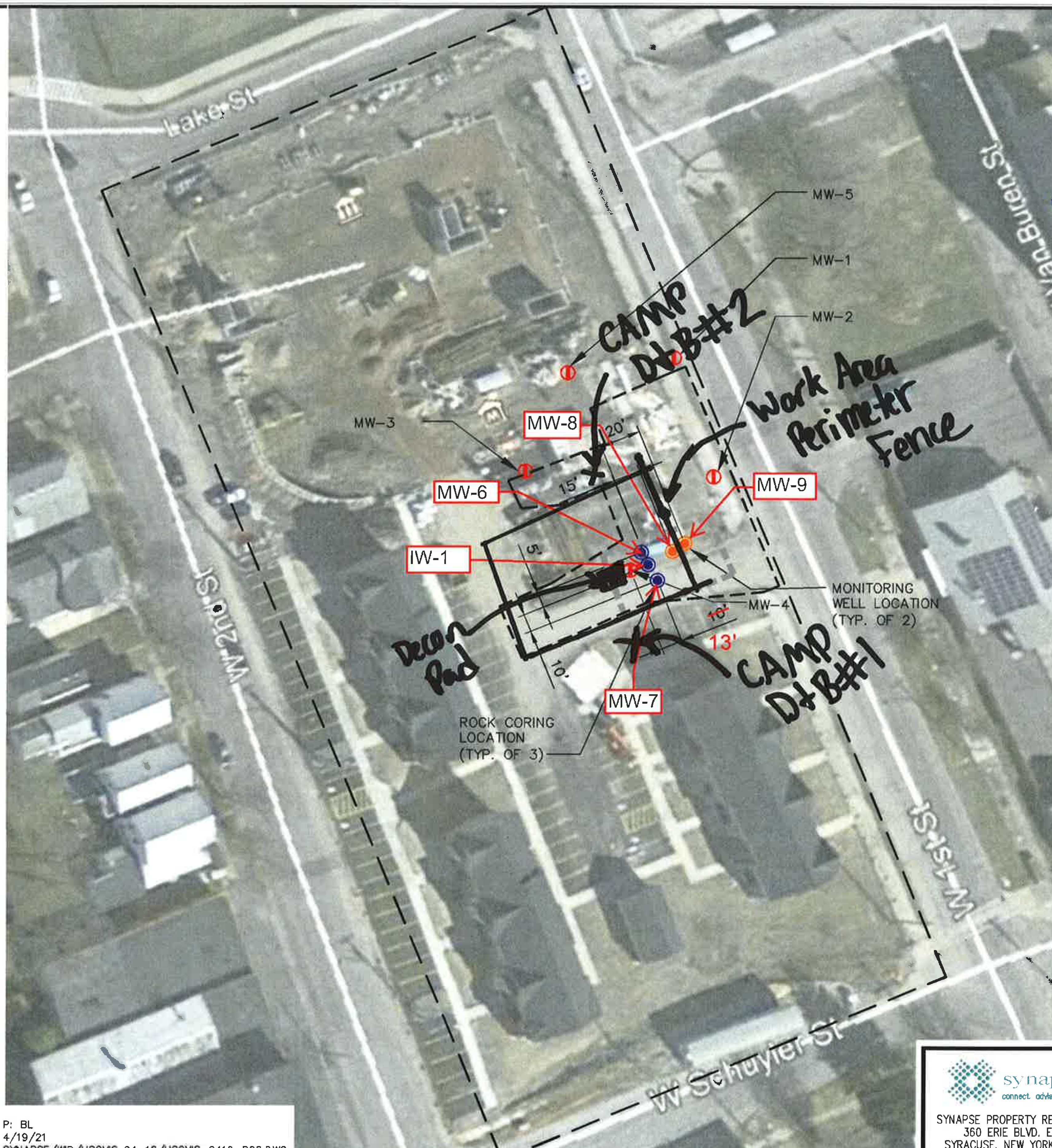
DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt Hoskins
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Attachment 6

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 9-28-21	
Start Time: 7:30	
Issues Discussed:	
1. World safety	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
Andre Williams Summit	[signature]
FRED KISHNER Summit	[signature]
John Morijewski Summit	[signature]
Meeting Conducted by:	
Tracey Garland DHS	
Name (Site Health and Safety Officer)	**Signature** [signature]



LEGEND

APPROXIMATE SITE BOUNDARY

ROCK CORING LOCATION

MONITORING WELL LOCATION

EXISTING WELLS

ACTUAL EXCAVATION AREA (APPROXIMATE)

APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

synapse connect. advise. insure.
SYNAPSE PROPERTY RESOURCES
360 ERIE BLVD. EAST
SYRACUSE, NEW YORK 13202

HARBOR VIEW SQUARE
NYSBCP SITE NO. C738040
68 WEST FIRST STREET
OSWEGO, NEW YORK

~~PROPOSED WELL LOCATIONS~~

PROJECT NO.: HSGVIS-24-16-05
DATE: AUGUST 2021
FIGURE NO.: ~~3~~

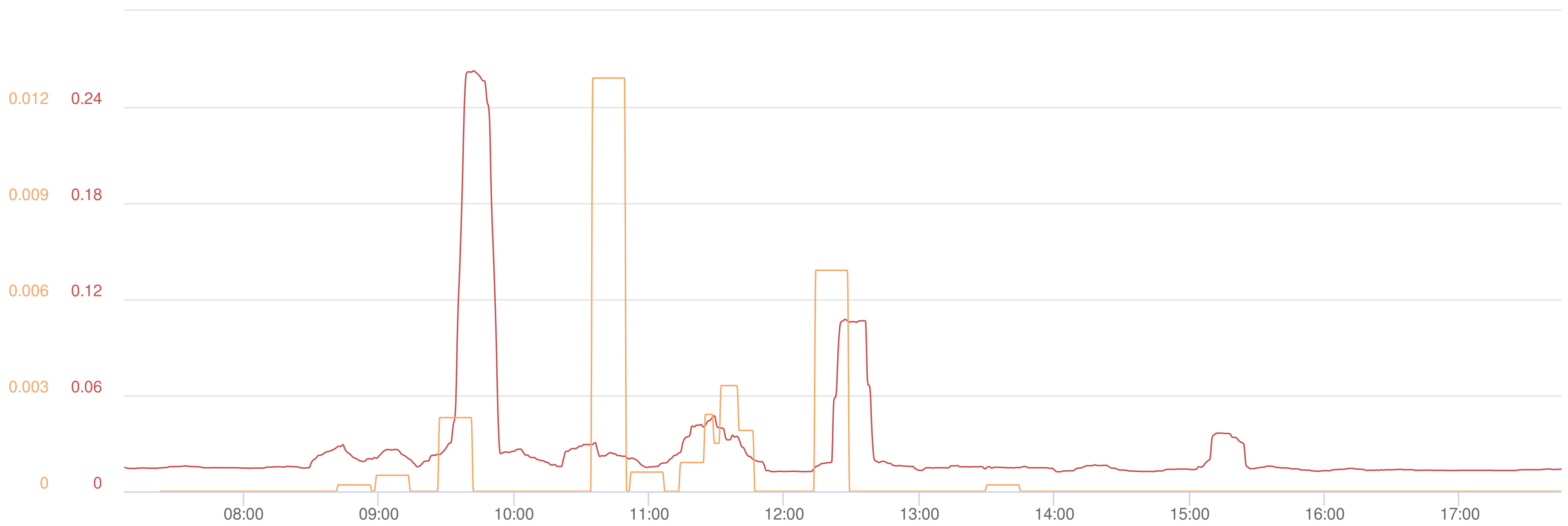
Site Layout 9-28-21

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
September 28, 2021

Tue, 28th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

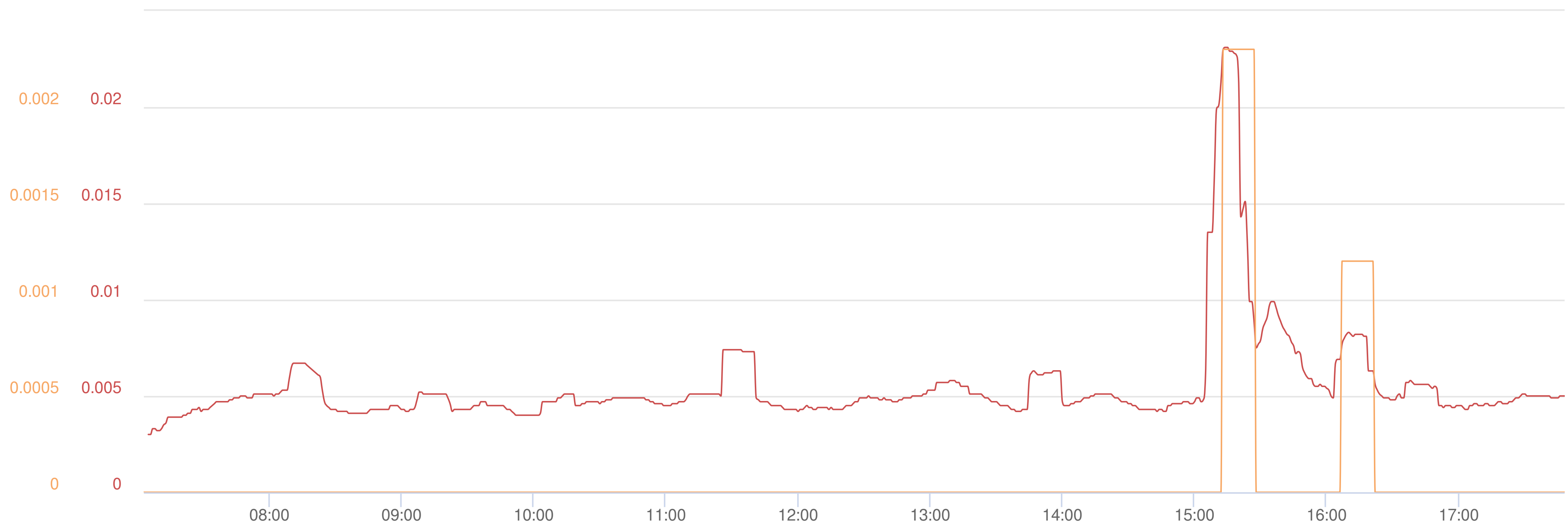
MIN	AVG	MAX
0.0122	**0.0257**	**0.2625**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0.0129**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Tue, 28th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m mg/m³ DustTrak-8530 RS232(C)		
MIN	AVG	MAX
0.003	0.0055	0.0231

VOC ppm AVG 15m ppm miniRAE 3000 RS232(A)		
MIN	AVG	MAX
0	0	0.0023

Name D&B #2
S/N 0B357616
Description (FA04701)
Location 33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG
SEPTEMBER 28, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210928_092630	9-28-2021	Drilling spoils from MW-7
20210928_102415	09-28-2021	Summit installing the conductor pipe for MW-7, facing north.
20210928_102815	09-28-2021	Summit installing the conductor pipe for MW-7, facing north.
20210928_122222	09-28-2021	Dust generated while drilling at MW-7, facing east.
20210928_123823	09-28-2021	Summit installing the surface casing for MW-7, facing north.
20210928_180959	09-28-2021	The work area at the end of the workday, facing northeast.

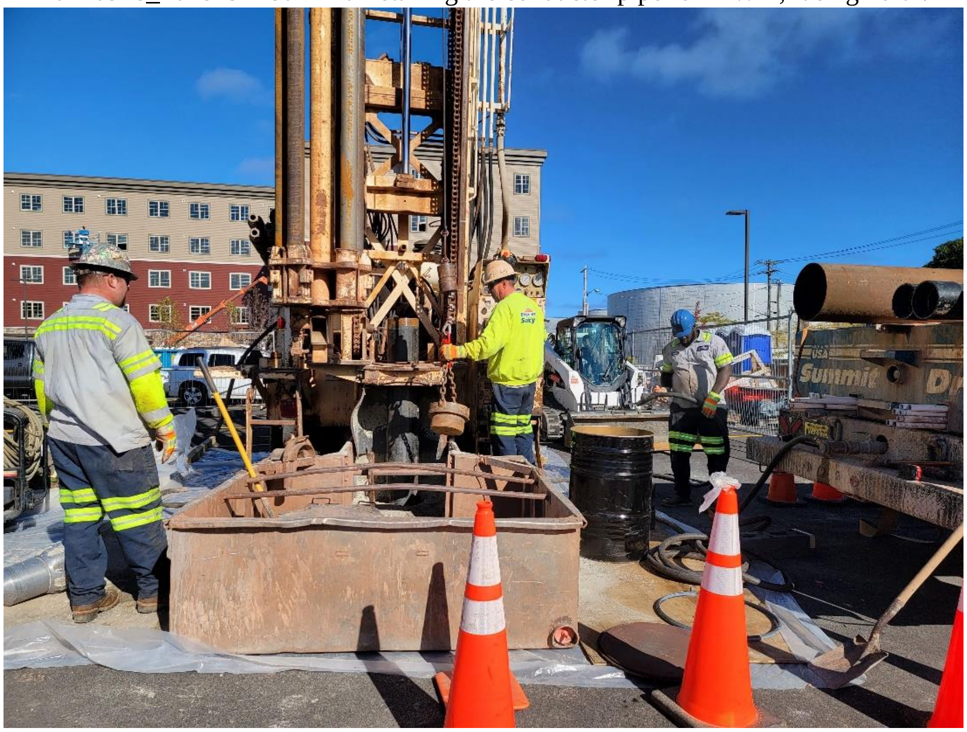
PHOTOGRAPH LOG
SEPTEMBER 28, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210928_092630 - Drilling spoils from MW-7ummit drilling to the install screen and riser for MW-8, facing northwest.

20210928_102415 - Summit installing the conductor pipe for MW-7, facing north.

PHOTOGRAPH LOG
SEPTEMBER 28, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210928_102815 – Summit installing the conductor pipe for MW-7, facing north.



20210928_122222 – Dust generated while drilling at MW-7, facing east.

PHOTOGRAPH LOG

SEPTEMBER 28, 2021

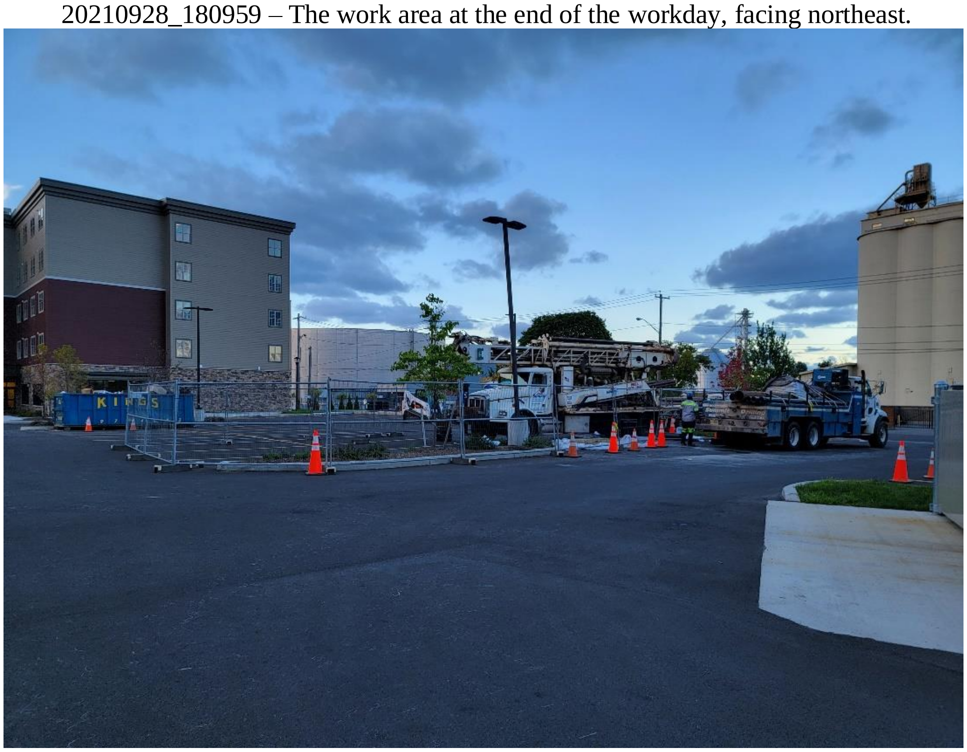
D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210928_123823 – Summit installing the surface casing for MW-7, facing north.

20210928_180959 – The work area at the end of the workday, facing northeast.



D&B ENGINEERS AND ARCHITECTS		**DATE:** September 29, 2021 **REPORT NO.** 210929 **PAGE NO.** 1 OF 2 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Sunny	7:00	54°F	0.0”	0-5	S
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout Map ▪ Air Monitoring Report ▪ Photo Log	Cloudy	5:00	62°F	0.0”	5-10	NW

SITE CONDITIONS: Dry

WORK GOAL: Install casings for monitoring wells MW-6 and MW-9.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	17:30
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	7:00	17:30
Andre Williams	Summit	7:00	17:30
John Macriszewski	Summit	7:00	17:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations		Skid Steer	Bobcat T650
PID	MiniRAE 3000+		
Drill Rig	Diedrich T-650-W II		
Hand Auger			
Cut-off saw	STIHL TS-420		
Hot Water Pressure Washer	Mi-T-M HSP-300-MGH		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 29, 2021
		REPORT NO. 210929
		PAGE NO. 2 OF 2
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee the installation of the surface casing for monitoring wells MW-6 and MW-9 per the Reagent Injection Work Plan and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Work to install these wells was performed by Summit Drilling (Summit). Approximate locations of the wells are shown on the Site Layout Map, attached. The locations of wells IW-1, MW-6, MW-7, MW-8 and MW-9 were offset three feet east from their locations proposed on Figure No. 3 in the Work Plan for Reagent Injection dated August 2021.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations in accordance with the CAMP. The topic of this day's safety meeting was slips trips and falls. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on Figure 1, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) exceeding actions levels specified in the CAMP. Dust concentrations detected from air monitoring station D&B #1 exceeded action levels for dust at 9:16 when Summit began drilling to install the casing for MW-9. Data recorded from both air monitoring stations is provided in the attached Air Monitoring Report. D&B observed a plume of dust generated from drilling activities at 9:16 that was visible downwind to approximately 10 feet north from the work area. Summit stopped drilling work and applied potable water for dust suppression which localized all visible dust to the work area.

Summit removed the decontamination pad that was left on-Site during the previous week and placed its contents into metal 55-gallon drums retained on-Site.

Summit decontaminated all equipment used from the previous boreholes before and between drilling activities at MW-6 and MW-9. Decontamination was performed using a heated pressure washer within the metal tub used to contain drilling spoils and in 55-gallon steel drums. All water used for decontamination, drilling water, overburden soil and rock cuttings were transferred to 55-gallon steel drums between each borehole location and retained on-Site.

After hand clearing was completed, Summit used a ten-inch diameter tricone roller drill bit to extend the borings to top of bedrock, encountered five feet below ground surface elevation (bgs) at MW-6 and three feet bgs at MW-9. Once a conductor pipe was placed to the top of bedrock, Summit used a ten-inch diameter downhole hammer drill bit to drill through bedrock to approximately nine feet bgs at MW-6 and 8.5 feet bgs at MW-9.

Summit installed the six-inch diameter steel surface casings for MW-6 and MW-9 to the bottom of the ten-inch diameter boreholes. After the casings were placed, Summit removed the ten-inch diameter conductor pipe and filled the annular space in the boreholes outside of the casings with cement/bentonite grout. Approximately 40 gallons of grout was used to fill the annular space at MW-9, and approximately 80 gallons of grout was used to fill the annular space at MW-6. The surface casing for MW-9 was set and grouted in place at 10:40, and the surface casing for MW-6 was set and grouted in place at 14:30.

After the casing for MW-6 was installed, Summit setup to install the casing for the injection well IW-1.

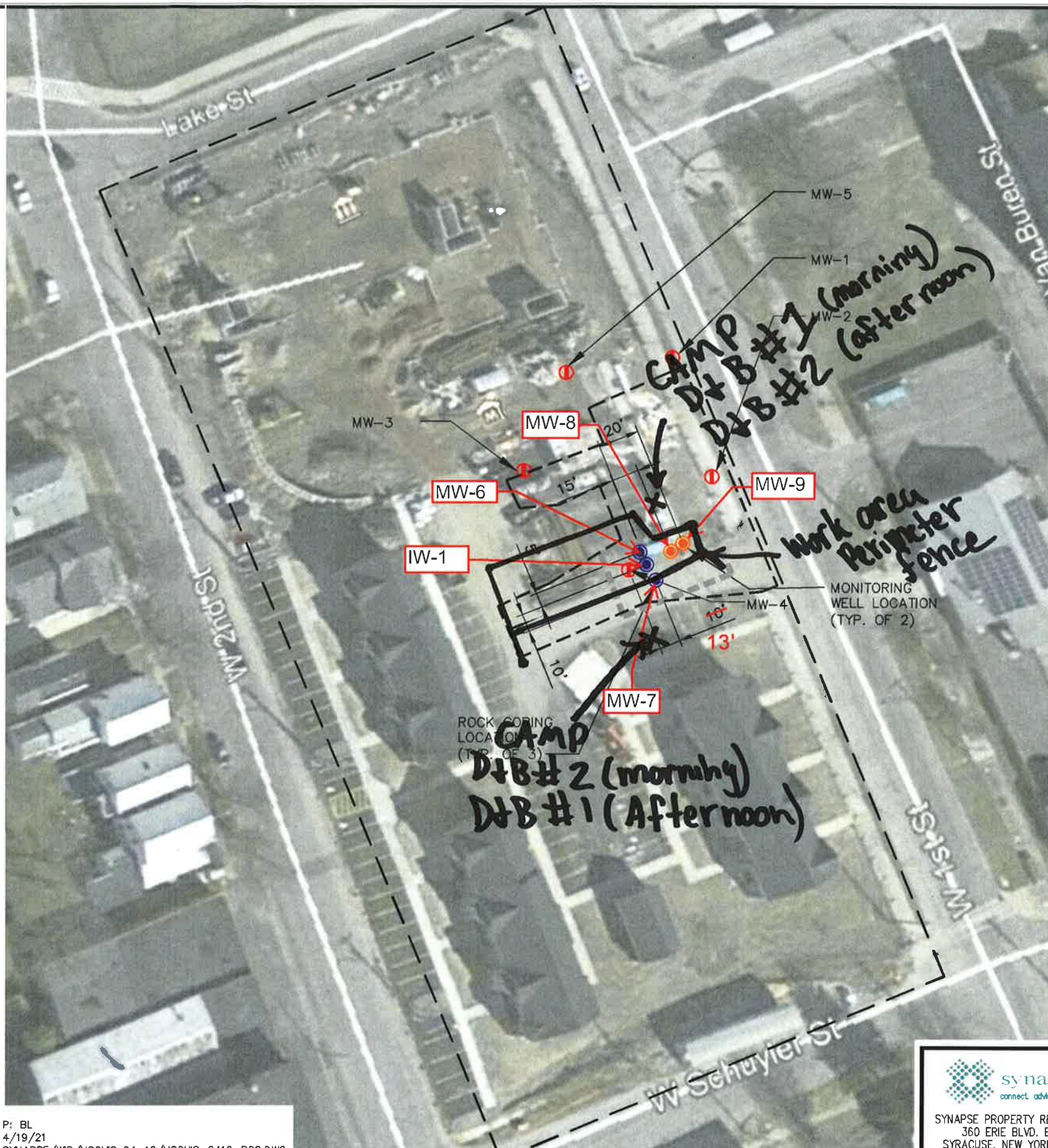
To secure the work area, Summit and D&B ensured the work area was enclosed by fencing at the end of the workday.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt Hoskins
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

~~Attachment 6~~

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 9-29-21	
Start Time: 7:00	
Issues Discussed:	
1. ~~Bein~~ Slips Trips + Falls	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
Andre Williams Summit	
FRED Kishner Summit	
John Macpaski Summit	
Meeting Conducted by:	
Tracey Garland	
Name (Site Health and Safety Officer)	**Signature**



P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

LEGEND

- APPROXIMATE SITE BOUNDARY
- ROCK CORING LOCATION
- MONITORING WELL LOCATION
- EXISTING WELLS
- ACTUAL EXCAVATION AREA (APPROXIMATE)
- APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~	PROJECT NO.: HSGVIS-24-16-05
			DATE: AUGUST 2021
			FIGURE NO.: ~~3~~

Site Layout 9-29-21

F:\5277\dwg\5277-C-SP04_workplan.dwg. 8/5/2021 3:50:48 PM

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
September 29, 2021

Wed, 29th of Sep 2021, 6:00:00 – 22:00:00
(GMT-05:00) Eastern Time (US & Canada)

Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.013	0.02	0.2374

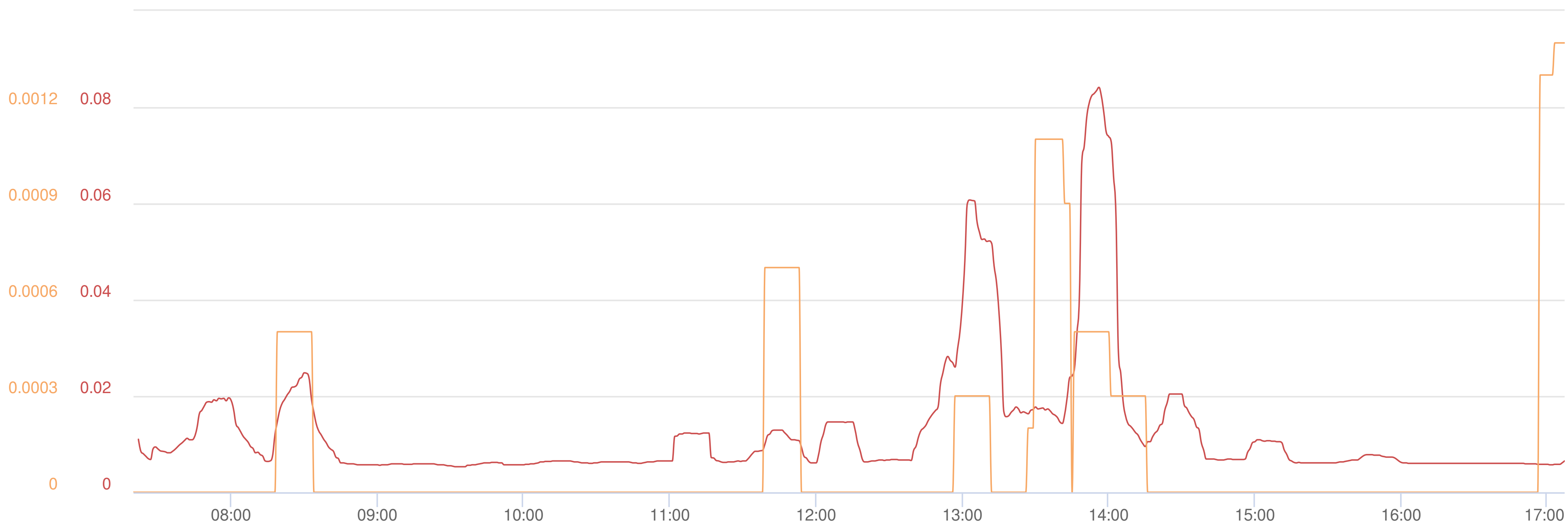
VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0015

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Wed, 29th of Sep 2021, 6:00:00 – 23:00:00

(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0053	0.0127	0.0841

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0.0001	0.0014

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG

SEPTEMBER 29, 2021

D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210929_090021	9-29-2021	Dust generated while drilling MW-9, facing west.
20210929_105800	09-29-2021	Drilling spoils and the casing installed at MW-9.
20210929_142141	09-29-2021	Installing the surface casing for MW-6, facing west.
20210929_172829	09-29-2021	The work area at the end of the day and Summit set up over IW-1, facing south.

PHOTOGRAPH LOG
SEPTEMBER 29, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210929_090021 - Dust generated while drilling MW-9, facing west..

20210929_105800 - Drilling spoils and the casing installed at MW-9.

PHOTOGRAPH LOG
SEPTEMBER 29, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210929_142141 – Installing the surface casing for MW-6, facing west.

20210929_172829 – The work area at the end of the day and Summit set up over IW-1, facing south.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 30, 2021 **REPORT NO.** 210930 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Light Rain	7:00	52°F	0.0"	5-10	NW
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout ▪ Air Monitoring Report ▪ Photo Log	Cloudy	17:00	60°F	0.0"	5-10	NW

SITE CONDITIONS: Dry

WORK GOAL: Install the surface casing for monitoring wells IW-1 and install the screen and riser for MW-7

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	18:00
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	7:00	18:00
Andre Williams	Summit	7:00	18:00
John Macriszewski	Summit	7:00	18:00
Joshua Cook	NYSDEC	9:45	14:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations		Skid Steer	Bobcat T650
PID	MiniRAE 3000+	Hot Water Pressure Washer	Mi-T-M HSP-300-MGH
Drill Rig	Diedrich T-650-W II		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒

HASP? YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee installation of the surface casing for injection well IW-1 and the completion of monitoring well MW-7 per the Reagent Injection Work Plan and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Work to install these wells was performed by Summit Drilling (Summit). Approximate locations of the wells are shown on the Site Layout Map, attached.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was line of fire hazards. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout Map, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

Before drilling the surface casing borehole for IW-1, Summit decontaminated all equipment used within the borehole. Decontamination was performed using a heated pressure washer within the metal tub used to contain drilling spoils and in 55-gallon steel drums. All water used for decontamination, drilling water, overburden soil and rock cuttings were transferred to 55-gallon steel drums between each borehole location and retained on-Site

For IW-1, a ten-inch diameter tricone roller drill bit was used to drill through overburden to top-of-bedrock encountered approximately four feet below ground surface elevation (bgs). Once ten-inch diameter steel conductor pipe was placed to the top of bedrock, Summit used a ten-inch diameter downhole hammer drill bit to drill from the top of bedrock to approximately ten-feet bgs. Summit informed D&B that the bedrock appeared to be weathered from four to seven feet bgs based on relatively lower resistance to penetration compared to bedrock at greater depths. While drilling, the soil and rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust.

Summit installed the six-inch diameter steel surface casings for IW-1 to the bottom of the ten-inch diameter borehole. After the casings were placed, Summit removed the ten-inch diameter conductor pipe and filled the annular space in the boreholes outside of the casings with approximately 50 gallons of cement/bentonite grout. The steel surface casing for IW-1 was grouted in-place at 9:40 am.

The surface casing had previously been installed for MW-7 on September 28, 2021. Before drilling MW-7 to total depth, Summit decontaminated all equipment used within the borehole. A six-inch diameter downhole hammer drill bit was used to drill through bedrock from the bottom elevation of the steel surface casing at approximately ten-feet bgs to approximately 30-feet bgs. Summit informed D&B that the bedrock provided low resistance to penetration by the drill at discrete depths indicating fractures or softer bedrock at approximately 14.5, 17, 20, and 26 feet bgs. While drilling, rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust.

Summit installed the two-inch diameter PVC well screen and riser for MW-7. The screen was placed from approximately 30 feet bgs to 15 feet bgs, consisting of two-inch diameter slotted PVC with a slot size of 0.020-inches. The screen was threaded to a two-inch diameter PVC riser installed from the top of the screen to the ground surface. Gravel pack consisting of No. 2 well filter pack was placed in the annular space outside of the screen and riser from six inches below the screen to two feet above the screen. No. 00 filter pack was placed from the top of the No. 2 filter pack to six inches above the No. 2 filter pack. A bentonite seal, consisting of bentonite pellets and added potable water, was installed in the well annulus from the top of the No. 00 filter pack to two feet above the No. 00 filter pack. The bentonite seal was allowed to hydrate for at least one hour prior to grouting the well annulus with cement/bentonite grout. Approval to install six inches of No. 00 filter pack in the well anulus between the No. 2 filter pack and the bentonite seal for all the wells was provided verbally by Matthew Hoskins of D&B and verbally by Joshua Cook of the New York State Department of Environmental Conservation (NYSDEC).

To secure the work area, at the end of the workday Summit and D&B replaced sections of fencing that were removed.

D&B ENGINEERS AND ARCHITECTS		**DATE:** September 30, 2021 **REPORT NO.** 210930 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01I **NYSDEC SITE NO.** C738040

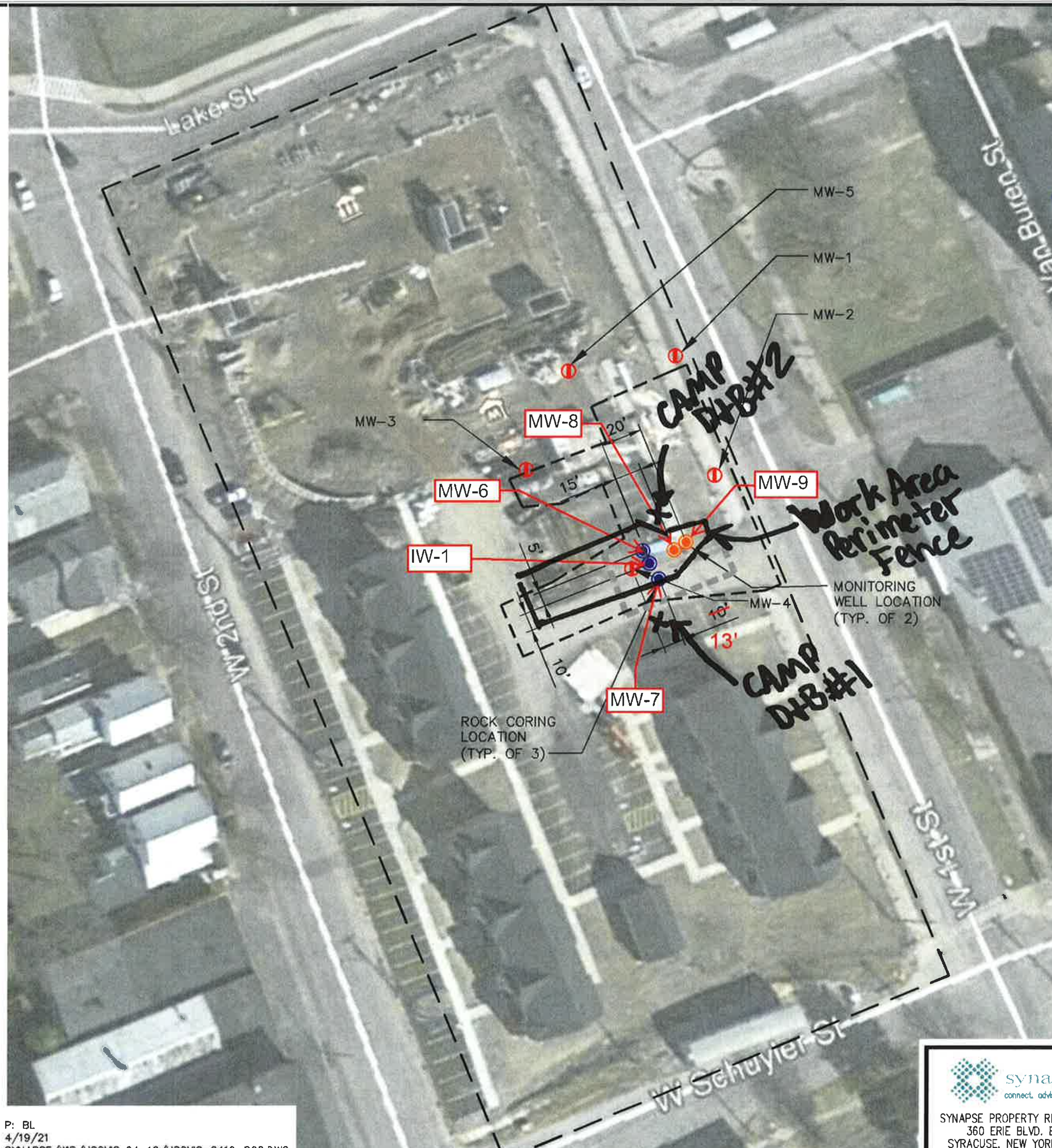
DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt Hoskins
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Attachment 6

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 9-30-21	
Start Time: 7:00	
Issues Discussed:	
1. Pinch	
2. [illegible] line of fire	
3. Pressure Release	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
FRED KUSHNER SUMMIT	[signature]
John Nociewski Summit	[signature]
Andre Williams Summit	[signature]
Meeting Conducted by:	
Tracey Collins	
Name (Site Health and Safety Officer)	**Signature** [signature]



P: BL
4/19/21
SYNAPSE/WP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

LEGEND

APPROXIMATE SITE BOUNDARY

ROCK CORING LOCATION

MONITORING WELL LOCATION

EXISTING WELLS

ACTUAL EXCAVATION AREA (APPROXIMATE)

APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

synapse
connect. advise. insure.

SYNAPSE PROPERTY RESOURCES
360 ERIE BLVD. EAST
SYRACUSE, NEW YORK 13202

HARBOR VIEW SQUARE
NYSBCP SITE NO. C738040
68 WEST FIRST STREET
OSWEGO, NEW YORK

~~PROPOSED WELL LOCATIONS~~

PROJECT NO.: HSGVIS-24-16-05

DATE: AUGUST 2021

FIGURE NO.: 3

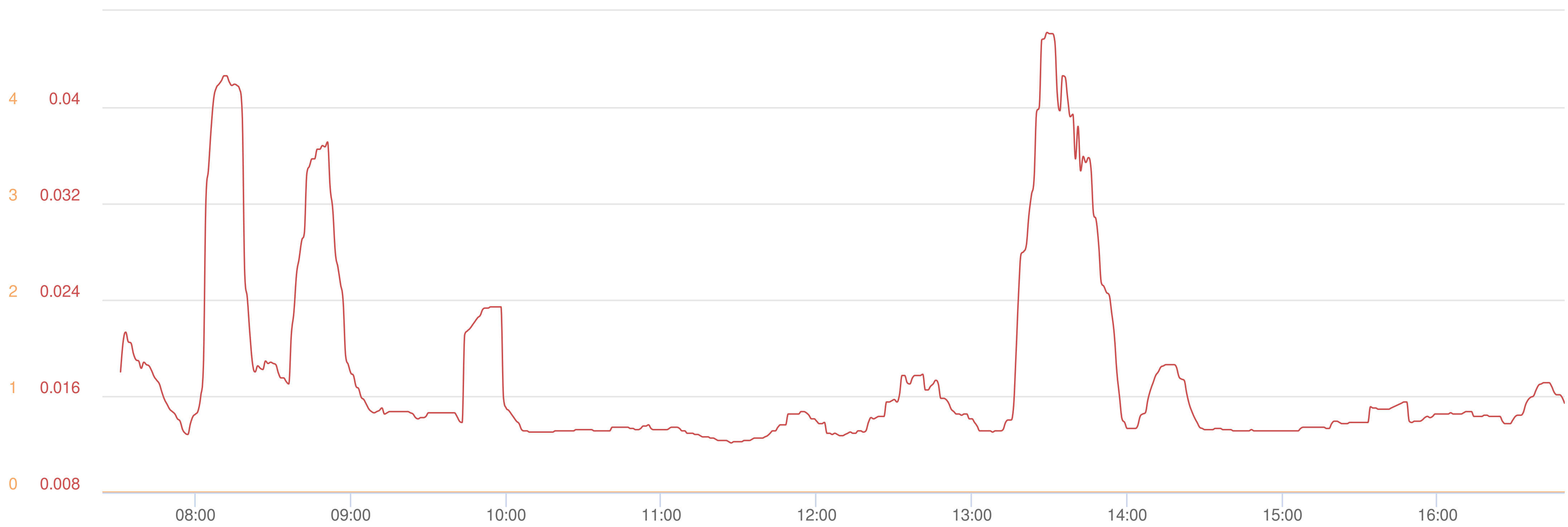
Site Layout 9-30-2021

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
September 30, 2021

Thu, 30th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0121	**0.0175**	**0.0462**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Thu, 30th of Sep 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)

Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0005	0.0031	0.0081

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0061

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG
SEPTEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20210930_075718	9-30-2021	Drilling to install the surface casing for injection well IW-1, facing west.
20210930_091731	09-30-2021	Spoils from drilling to install the surface casing for injection well IW-1.
20210930_124402	09-30-2021	Drilling to complete monitoring well MW-7, facing northwest
20210930_134346	09-30-2021	Rock cuttings and drilling fluid from drilling to complete monitoring well MW-7.
20210930_135034	09-30-2021	Closeup view of pulverized rock cuttings from drilling to complete monitoring well MW-7.
20210930_171524	09-30-2021	The work area at the end of the day, facing northeast.

PHOTOGRAPH LOG
SEPTEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210930_075718 - Drilling to install the surface casing for injection well IW-1, facing west.

20210930_091731 - Spoils from drilling to install the surface casing for injection well IW-1.

PHOTOGRAPH LOG
SEPTEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20210930_124402 – Drilling to complete monitoring well MW-7, facing northwest

20210930_134346 – Rock cuttings and drilling fluid from drilling to complete monitoring well MW-7..

PHOTOGRAPH LOG

SEPTEMBER 30, 2021

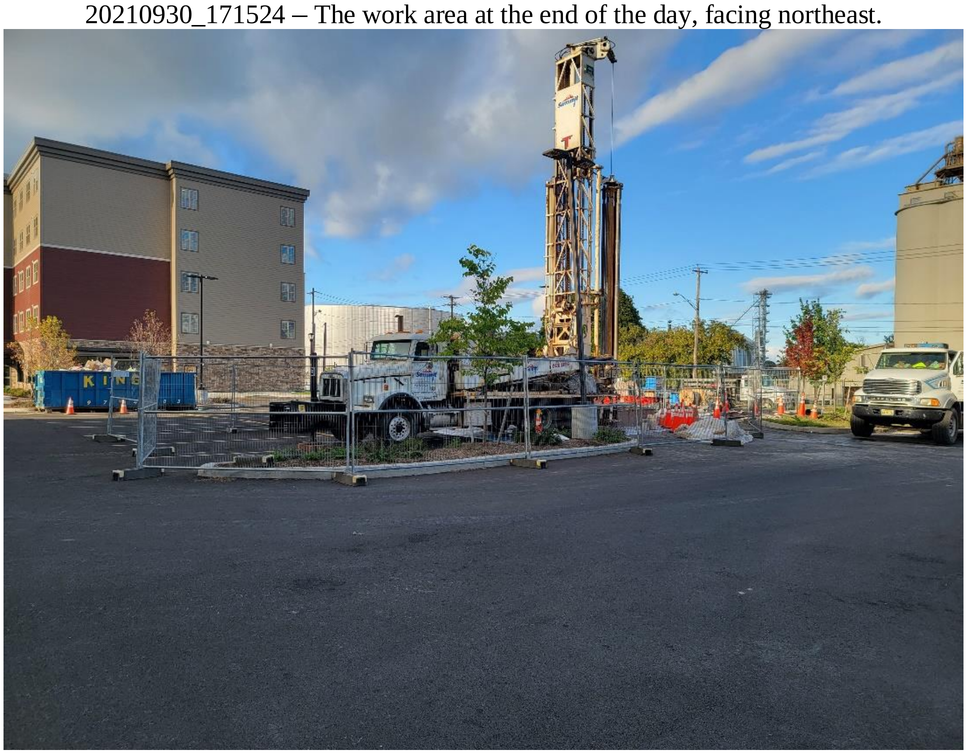
D&B JOB NO. 5277-01-01K

HARBOR VIEW SQUARE

OSWEGO, NEW YORK

20210930_135034 – Closeup view of pulverized rock cuttings from drilling to complete monitoring well MW-7.

20210930_171524 – The work area at the end of the day, facing northeast.



9+

D&B ENGINEERS AND ARCHITECTS		
		DATE: October 01, 2021 **REPORT NO.** 211001 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Cloudy	7:00	50°F	0.0”	0-5	NW
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout ▪ Air Monitoring Report ▪ Photo Log	Clear	17:00	60°F	0.0”	5-10	NW

SITE CONDITIONS: Dry

WORK GOAL: Install screens and risers for monitoring wells MW-6 and MW-9

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	17:30
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	7:00	17:30
Andre Williams	Summit	7:00	17:30
John Macriszewski	Summit	7:00	17:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations		Skid Steer	Bobcat T650
PID	MiniRAE 3000+	Hot Water Pressure Washer	Mi-T-M HSP-300-MGH
Drill Rig	Diedrich T-650-W II		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

![D&B Engineers and Architects]		**DATE:** October 01, 2021
		REPORT NO. 211001
		PAGE NO. 2 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee the completion of monitoring wells MW-6 and MW-9, per the Reagent Injection Work Plan and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Work to install these wells was performed by Summit Drilling (Summit). Approximate locations of the wells are shown on the Site Layout Map, attached.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was respirable dust. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. The upwind dust sensor, D&B #2, stopped reporting data at approximately 9:00 am due to a technical malfunction. D&B did not observe any visible dust from work activities outside of the immediate work area throughout the day. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

Before starting or continuing drilling activities at each well, Summit decontaminated all equipment used within the boreholes and constructed a containment system to contain drilling spoils. The containment system consisted of polyethylene sheeting placed on the ground surface overlain by a metal tub. The metal tub had a hole through its bottom that was placed where the borehole was drilled. All openings at the bottom of the metal tub were sealed with bentonite to ensure all liquids were contained. Decontamination was performed using a heated pressure washer within the metal tub and in 55-gallon steel drums. All water used for decontamination, drilling water, overburden soil and rock cuttings were transferred to 55-gallon steel drums between each borehole location and retained on-Site.

The surface casing for MW-6 was previously installed on September 29, 2021. A six-inch diameter downhole hammer drill bit was used to drill through bedrock from the bottom elevation of the steel surface casing at approximately nine-feet below ground surface elevation (bgs) to approximately 30-feet bgs. Summit informed D&B that the bedrock provided low resistance to penetration by the drill at discrete depths indicating fractures or softer bedrock at approximately 15, 17, 19, 26.5, and 28 feet bgs. While drilling, rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust.

The surface casing for MW-9 was previously installed on September 29, 2021. A six-inch diameter downhole hammer drill bit was used to drill through bedrock from the bottom elevation of the steel surface casing at approximately 8.5-feet bgs to approximately 30-feet bgs. Summit informed D&B that the bedrock provided low resistance to penetration by the drill at discrete depths indicating fractures or softer bedrock at approximately 12, 15.5, 20, 26.5, and 29 feet bgs. While drilling, rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust.

For both MW-6 and MW-9, the screens were placed from approximately 30 feet bgs to 15 feet bgs, consisting of two-inch diameter slotted PVC with a slot size of 0.020-inches. The screens were threaded to two-inch diameter PVC risers installed from the top of the screen to the ground surface. Gravel pack consisting of No. 2 well filter pack was placed in the annular space outside of the screen and riser from six inches below the screen to two feet above the screen. No. 00 filter pack was placed from the top of the No. 2 filter pack to six inches above the No. 2 filter pack. A bentonite seal, consisting of bentonite pellets and added potable water, was installed in the well annulus from the top of the No. 00 filter pack to two feet above the No. 00 filter pack. The bentonite seal was allowed to hydrate for at least one hour prior to grouting the well annulus with cement/bentonite grout.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 01, 2021 **REPORT NO.** 211001 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01I **NYSDEC SITE NO.** C738040

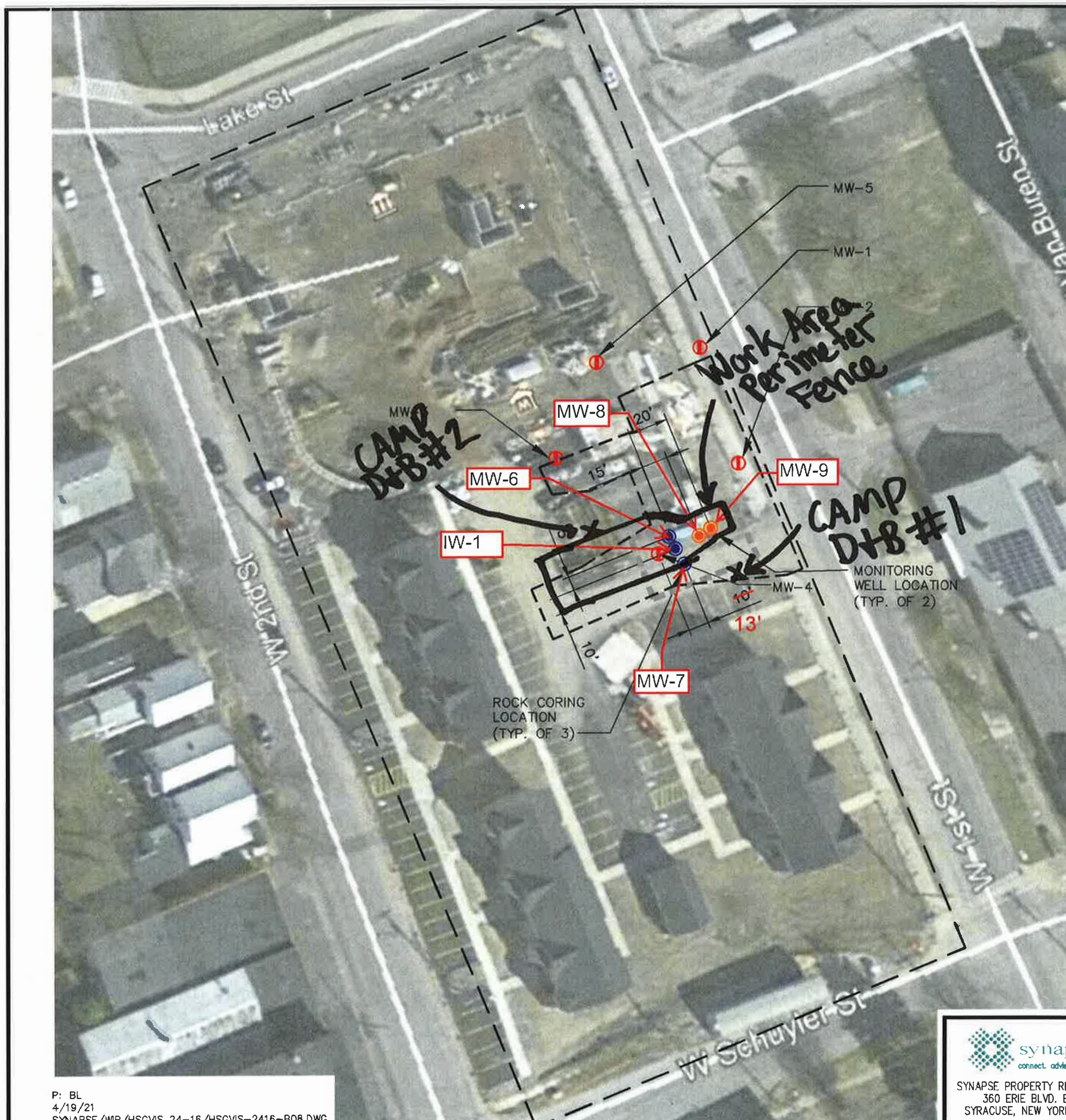
DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt H
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

~~Attachment 6~~

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 10-1-2021	
Start Time: 7:00	
Issues Discussed:	
1. Respirable Dust	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
Andre Williams Summit	Andre Williams
John Macrjewski Summit	[signature]
Fred Kishner Summit	[signature]
Meeting Conducted by:	
Tracey Garland DFB	
Name (Site Health and Safety Officer)	**Signature** [signature]



LEGEND

APPROXIMATE SITE BOUNDARY

ROCK CORING LOCATION

MONITORING WELL LOCATION

EXISTING WELLS

ACTUAL EXCAVATION AREA (APPROXIMATE)

APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'

GRAPHIC SCALE

P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 FIGURE NO.: 3

Site Layout 10-1-2021

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
October 1, 2021

Fri, 1st of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)

Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

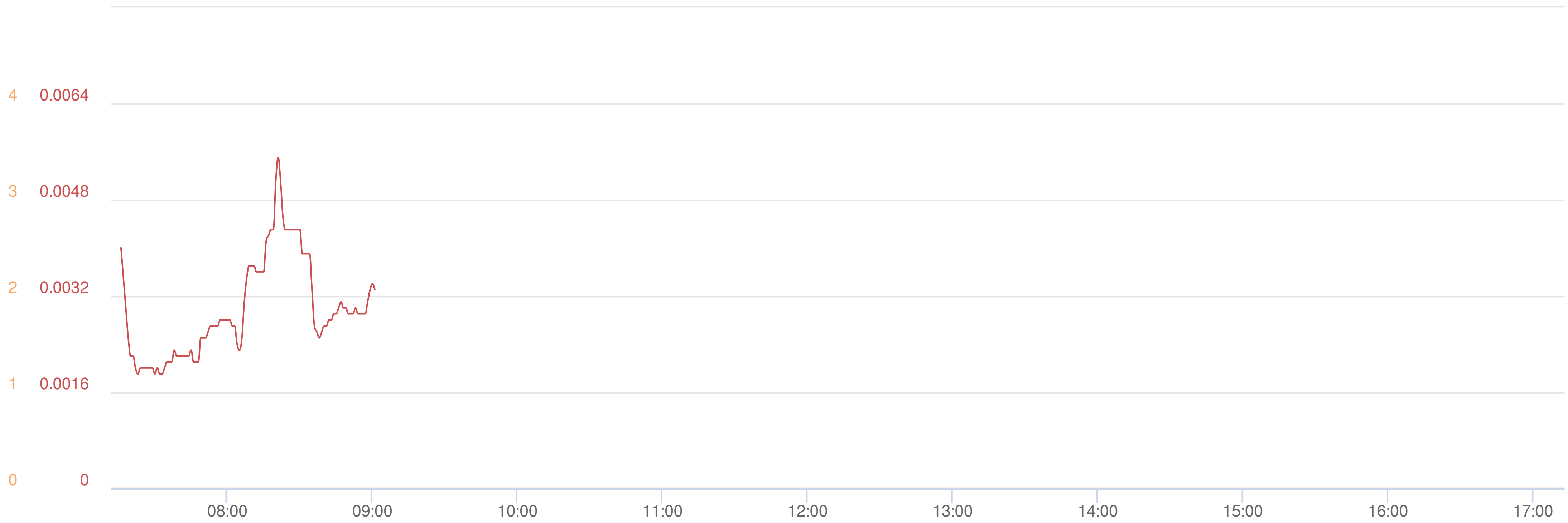
MIN	AVG	MAX
0.012	0.0175	0.0352

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0017

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Fri, 1st of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.0019	**0.003**	**0.0055**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

PHOTOGRAPH LOG
OCTOBER 1, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211001_072511	10-01-2021	The drill rig setup to start drilling at MW-6, facing southeast.
20211001_085243	10-01-2021	Drilling spoils from drilling to install the screen and riser for MW-6.
20211001_144626	10-01-2021	Drilling spoils from drilling to install the screen and riser for MW-9.
20211001_173252	10-01-2021	View of the work area at the end of the workday, facing south.

PHOTOGRAPH LOG
OCTOBER 1, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

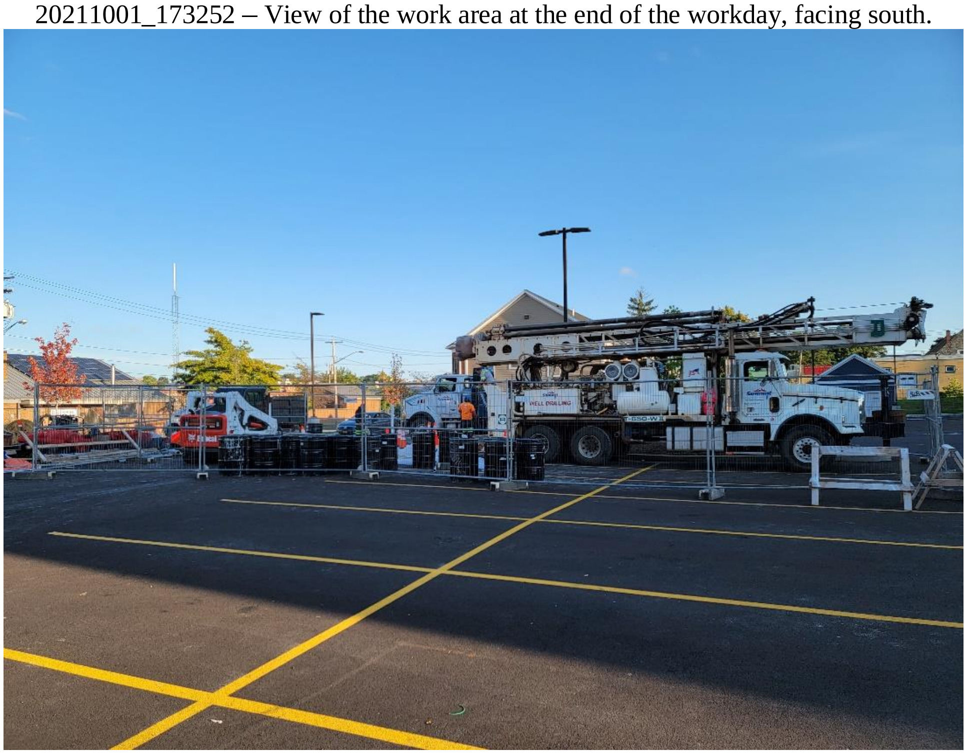
20211001_072511– The drill rig setup to start drilling at MW-6, facing southeast.

20211001_085243- Drilling spoils from drilling to install the screen and riser for MW-6.

PHOTOGRAPH LOG
OCTOBER 1, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211001_144626 – Drilling spoils from drilling to install the screen and riser for MW-9.

20211001_173252 – View of the work area at the end of the workday, facing south.



D&B ENGINEERS AND ARCHITECTS		**DATE:** October 02, 2021 **REPORT NO.** 211002 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Cloudy	7:00	57°F	0.0”	10-15	SE
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout Map ▪ Air Monitoring Report ▪ Falling Head Test Field Data ▪ Photo Log	Cloudy	16:00	68°F	0.0”	0-5	SE

SITE CONDITIONS: Dry

WORK GOAL: Install the screen and riser for IW-1. Install the surface casing for MW-8. Perform a falling head test from IW-1.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	16:30
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	7:00	16:30
Andre Williams	Summit	7:00	16:30
John Macriszewski	Summit	7:00	16:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations		Skid Steer	Bobcat T650
PID	MiniRAE 3000+	Hot Water Pressure Washer	Mi-T-M HSP-300-MGH
Drill Rig	Diedrich T-650-W II		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 02, 2021
		REPORT NO. 211002
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee the completion of injection well IW-1 and the installation of the surface casing for monitoring MW-8, perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP), and perform a falling head test from IW-1 to MW-6 and MW-7. Work to install these wells was performed by Summit Drilling (Summit). Approximate locations of the wells are shown on the Site Layout Map, attached.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was right to refuse unsafe work. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. D&B did not observe any visible outside of the work area from work activities. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

Before drilling IW-1 to total depth and drilling to install the surface casing at MW-8, Summit decontaminated all equipment used within the boreholes. Decontamination was performed using a heated pressure washer within the metal tub used to contain drilling spoils and in 55-gallon steel drums. All water used for decontamination, drilling water, overburden soil and rock cuttings were transferred to 55-gallon steel drums between each borehole location and retained on-Site.

The surface casing had previously been installed for IW-1 approximately 10 feet below ground surface elevation (bgs) on September 30, 2021. A six-inch diameter downhole hammer drill bit was used to drill from the bottom of the steel surface casing to approximately 30-feet bgs. Summit informed D&B that the bedrock provided low resistance to penetration by the drill at discrete depths which indicated fractures or softer bedrock at approximately 12, 18, 20, 26 and 28 feet bgs. While drilling, rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust.

After the borehole was completed and before the screen and riser was installed for IW-1, D&B performed a falling head test from IW-1. Before starting the falling head test, D&B recorded the initial depths to water from IW-1, MW-6, and MW-7. D&B filled IW-1 with approximately 21.25 gallons of water from a garden hose at a rate of approximately five gallons-per-minute, to bring the water level to ground surface elevation. After IW-1 was filled, D&B measured the depth to water from IW-1, MW-6 and MW-7 for approximately one hour. Field data recorded from the falling head test is attached.

While D&B was performing the falling head test, Summit installed the six-inch diameter steel surface casing for MW-8. A ten-inch diameter downhole hammer drill bit was used to drill through overburden to top-of-bedrock at approximately four feet below ground surface elevation (bgs). Summit then placed a ten-inch diameter steel conductor pipe in the borehole from the top of bedrock elevation to the surface. After the conductor pipe was placed, Summit used a ten-inch diameter downhole hammer drill bit to drill from the top of bedrock to approximately ten-feet bgs. Summit informed D&B that the bedrock appeared to be weathered from four to seven feet bgs based on relatively lower resistance to penetration compared to bedrock at greater depths. While drilling, the soil and rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust. After drilling the ten-inch diameter hole, Summit placed the six-inch diameter steel casing to the bottom of the borehole at approximately ten feet bgs to surface elevation. Summit removed the 10-inch diameter conductor pipe and used approximately 50 gallons of cement/bentonite grout to fill the annular space outside of the six-inch diameter casing within the ten-inch diameter borehole. The steel surface casing for MW-8 was grouted in-place at 16:00.

Summit installed the well screen and casing for IW-1 after D&B completed the falling head test. The screen was placed from approximately 30 feet bgs to 15 feet bgs, consisting of two-inch diameter slotted PVC with a slot size of 0.030-inches. The screen was threaded to a two-inch diameter PVC riser installed from the top of the screen to the ground surface. Gravel pack consisting of No. 2 well filter pack was placed in the annular space outside of the screen and riser from six inches below the screen to two feet above the screen. No. 00 filter pack was placed from the top of the No. 2 filter pack to six inches above the No. 2 filter pack. A bentonite seal, consisting of bentonite pellets and added potable water, was installed in the well annulus from the top of the No. 00 filter pack to two feet above the No. 00 filter pack. The bentonite seal was allowed to hydrate for at least one hour prior to grouting the well annulus with cement/bentonite grout.

To secure the work area, at the end of the workday Summit and D&B replaced sections of fencing that were removed.

Type text here

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 02, 2021 **REPORT NO.** 211002 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

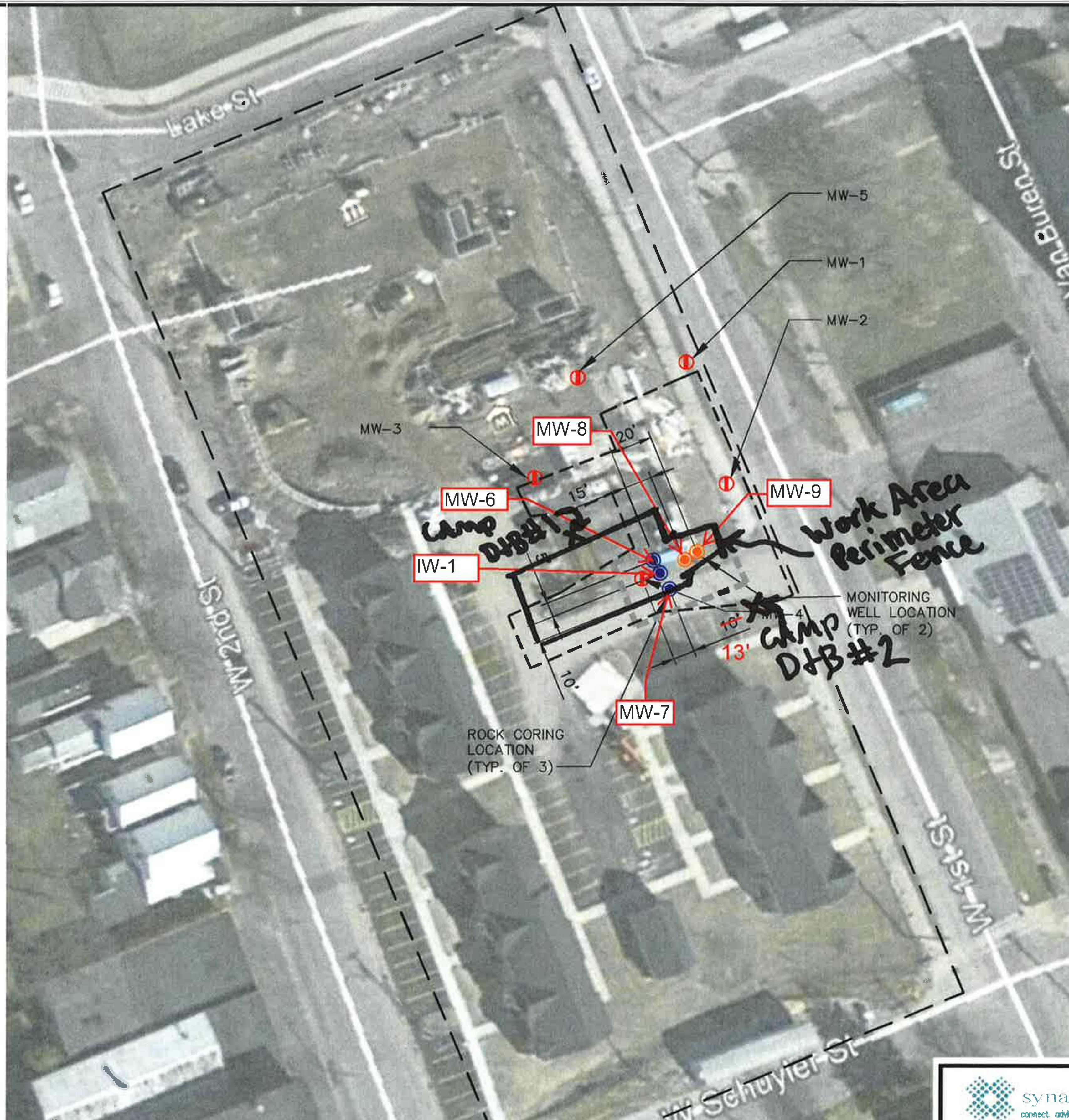
PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt H
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Attachment 6

DAILY PRODUCTION HEALTH AND SAFETY BRIEFING LOG

Date: 10-2-21	
Start Time: 7:00	
Issues Discussed:	
1. Right to refuse unsafe work.	
2.	
3.	
4.	
5.	
Attendees	
Print Name and Company	**Signature**
John Meisenger Summit	[signature]
Andre Williams Summit	[signature]
FRED Kuehner Summit	[signature]
Meeting Conducted by:	
Tracey Garland	
Name (Site Health and Safety Officer)	**Signature** [signature]

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM



P: BL
4/19/21
SYNAPSE/WIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

LEGEND

- APPROXIMATE SITE BOUNDARY
- ROCK CORING LOCATION
- MONITORING WELL LOCATION
- EXISTING WELLS
- ACTUAL EXCAVATION AREA (APPROXIMATE)
- APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

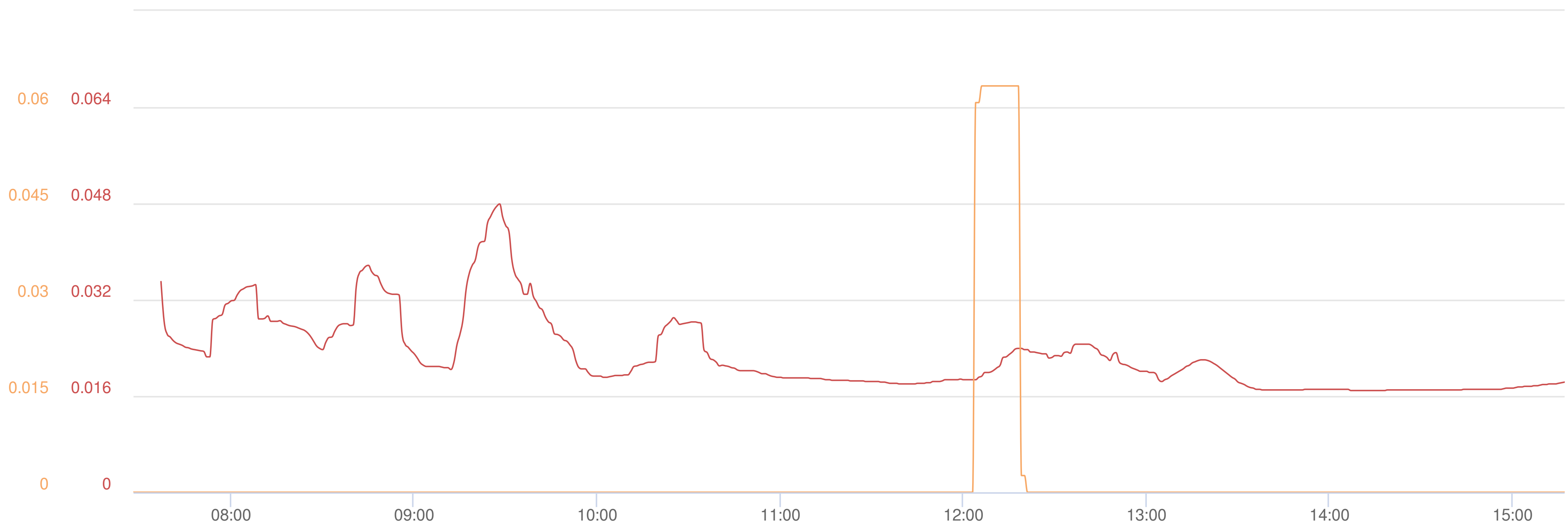
synapse connect. advise. insure. SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 ~~FIGURE NO.:~~ 3

Site Layout 10-2-2021

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
October 2, 2021

Sat, 2nd of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

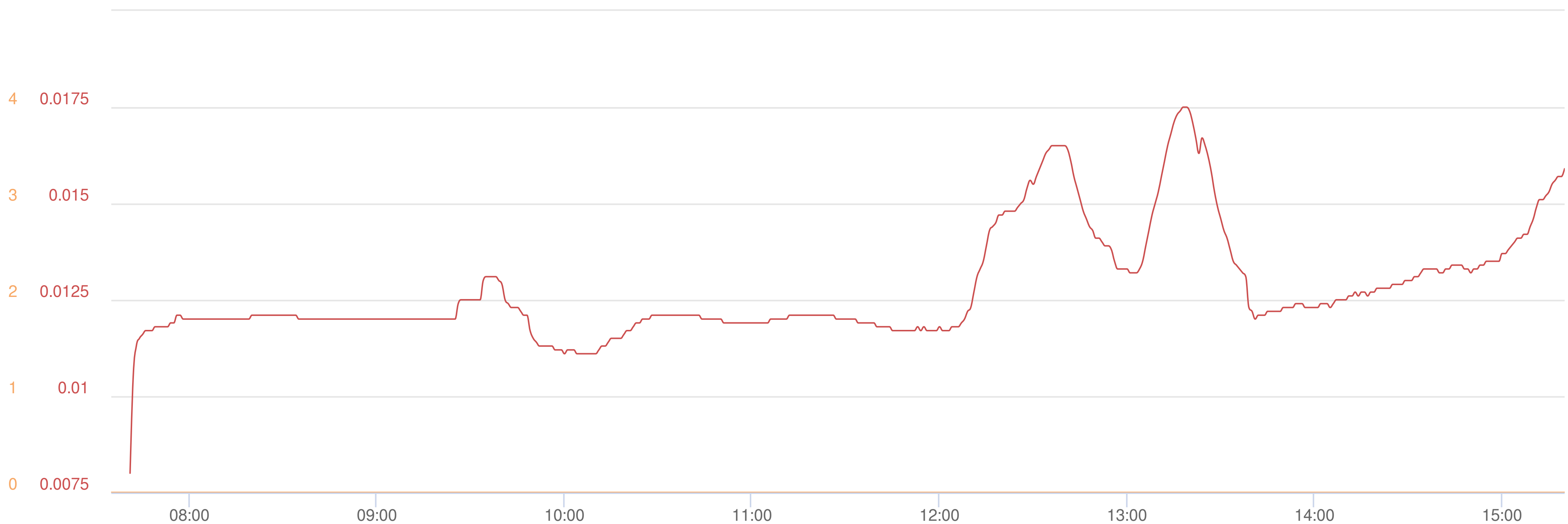
MIN	AVG	MAX
0.0169	0.023	0.0479

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0.0633

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Sat, 2nd of Oct 2021, 6:00:00 – 23:00:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.008	0.0128	0.0175

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name	D&B #2
S/N	0B357616
Description	(FA04701)
Location	33 1st Ave, Oswego, NY 13126, USA

D&B ENGINEERS AND ARCHITECTS

Falling Head Test Data
Harbor View Square
NYSDEC Site No. C738040

Falling Head Test Field Data October 1, 2021

Time	Seconds from filling IW-1 to Surface	IW-1 Depth To Water (Feet Below Ground Surface)	MW-6 Depth To Water (Feet Below Ground Surface)	MW-7 Depth To Water (Feet Below Ground Surface)
13:03:00	-255	11.69 (Before Filling IW-1)	12.19 (Before Filling IW-1)	24.22 (Before Filling IW-1)
13:07:15	0	0.00		
13:08:15	60	1.40		
13:09:15	120	2.37		
13:10:15	180	3.37		
13:11:15	240	4.05		
13:12:15	300	4.90		
13:14:30	435			24.22
13:15:40	505		11.55	
13:17:15	600	7.11		
13:19:30	735			24.2
13:20:40	805		11.08	
13:22:15	900	7.6		
13:25:40	1105		11.25	
13:26:40	1165			24.15
13:27:15	1200	7.95		
13:30:40	1405		10.9	
13:31:40	1465			24.09
13:32:15	1500	8.5		
13:35:40	3505			24.1
13:37:15	1800	8.8		
13:40:40	2005		10.85	
13:41:40	2065			24.1
13:42:15	2100	8.95		
13:45:40	2305		10.7	
13:55:40	2905		10.6	
13:56:55	2980	9.4		
13:58:10	3055			24.12
14:02:15	3300	9.55		
14:03:00	3345		10.6	
14:04:00	3405			24.02

Notes: IW-1 was filled at a rate of approximately five gallons per minute from 13:03:00 to 13:07:15

PHOTOGRAPH LOG
OCTOBER 2, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211002_100812	10-02-2021	Drilling to complete IW-1, facing west.
20211002_101028	10-02-2021	Soil cutting and drilling water from IW-1.

PHOTOGRAPH LOG
OCTOBER 2, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211002_100812 – Drilling to complete IW-1, facing west.

20211002_101028 - Soil cutting and drilling water from IW-1.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 04, 2021 **REPORT NO.** 211004 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Overcast	7:00	64°F	0.0”	0-5	E
ATTACHMENTS	▪ Daily Production Health and Safety Briefing Log ▪ Site Layout Map ▪ Air Monitoring Report ▪ Well Development Information ▪ Photo Log	Light Rain	19:00	61°F	0.0”	5-10	E

SITE CONDITIONS: Start dry. End wet.

WORK GOAL: Install the screen and riser for MW-8. Develop wells. Install flush mount road box covers for the wells.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	19:00
Jon Fitzsimmons	Spoleta	---	---
Fred Kushner	Summit	7:00	19:00
Andre Williams	Summit	7:00	19:00
John Macriszewski	Summit	7:00	19:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
CAMP Stations		Skid Steer	Bobcat T650
PID	MiniRAE 3000+	Hot Water Pressure Washer	Mi-T-M HSP-300-MGH
Drill Rig	Diedrich T-650-W II		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ | **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 04, 2021 **REPORT NO.** 211004 **PAGE NO.** 2 OF 3 **PROJECT NO.** 5277-01-01K **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee the completion of monitoring well MW-8 per the Reagent Injection Work Plan and perform air monitoring in accordance with the Community Air Monitoring Plan (CAMP). Work to install these wells was performed by Summit Drilling (Summit). Approximate locations of the wells are shown on the Site Layout Map, attached.

Before work commenced for the day, D&B held a safety meeting with Summit and set up air monitoring stations. The topic of this day's safety meeting was overhead hazards. Air monitoring station D&B #1 was placed downwind from the work area and air monitoring station D&B #2 was placed upwind from the work area. Approximate locations where the air monitoring stations were placed is shown on the Site Layout Map, attached. The air monitoring stations did not detect concentrations of volatile organic compounds (VOCs) or dust concentrations exceeding the actions levels specified in the CAMP. D&B did not observe any visible dust outside of the immediate work area from work activities. Data recorded from the air monitoring stations is provided in the attached Air Monitoring Report.

The surface casing had previously been installed for MW-8 on October 2, 2021. Before drilling MW-8 to total depth, Summit decontaminated all equipment used within the borehole. Decontamination was performed using a heated pressure washer within the metal tub used to contain drilling spoils and in 55-gallon steel drums. All water used for decontamination, drilling water, overburden soil and rock cuttings were transferred to 55-gallon steel drums between each borehole location and retained on-Site.

A six-inch diameter downhole hammer drill bit was used to drill through bedrock from the bottom elevation of the steel surface casing at approximately ten-feet below ground surface elevation (bgs) to approximately 30-feet bgs. Summit informed D&B that the bedrock provided low resistance to penetration by the drill at discrete depths which indicated fractures or softer bedrock at approximately 12, 15, 17, 20 and 25 feet bgs. While drilling, rock cuttings were purged from the borehole using air, and potable water was used in the borehole to mitigate dust.

Summit installed the two-inch diameter PVC well screen and riser for MW-8. The screen was placed from approximately 15 feet bgs to 30 feet bgs, consisting of two-inch diameter slotted PVC with a slot size of 0.020-inches. The screen was threaded to a two-inch diameter PVC riser installed from the top of the screen to the ground surface. Gravel pack consisting of No. 2 well filter pack was placed in the annular space outside of the screen and riser from six inches below the screen to two feet above the screen. No. 00 filter pack was placed from the top of the No. 2 filter pack to six inches above the No. 2 filter pack. A bentonite seal, consisting of bentonite pellets and added potable water, was installed in the well annulus from the top of the No. 00 filter pack to two feet above the No. 00 filter pack. The bentonite seal was allowed to hydrate for at least one hour prior to grouting the well annulus with cement/bentonite grout.

Summit developed wells IW-1, MW-6, MW-7 and MW-9. Monitoring well MW-8 was not developed because there was no water in this well after it was installed on this date. Summit plans to develop MW-8 on October 5, 2021. D&B measured depth to water and total well depths at each of the wells that were developed before Summit began developing the wells. For each of the wells that were developed, Summit used a submersible pump to the bottom of the wells and purged groundwater greater than five well volumes from them. Water from each of the wells appeared to be clear by the time purging was stopped. All purge water from the wells was discharged into 55-gallon steel drums retained on-site. The total well depths, depths to groundwater before purging, and approximate volumes of purged from each well are provided in the Well Development Information, attached.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 04, 2021
		REPORT NO. 211004
		PAGE NO. 3 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

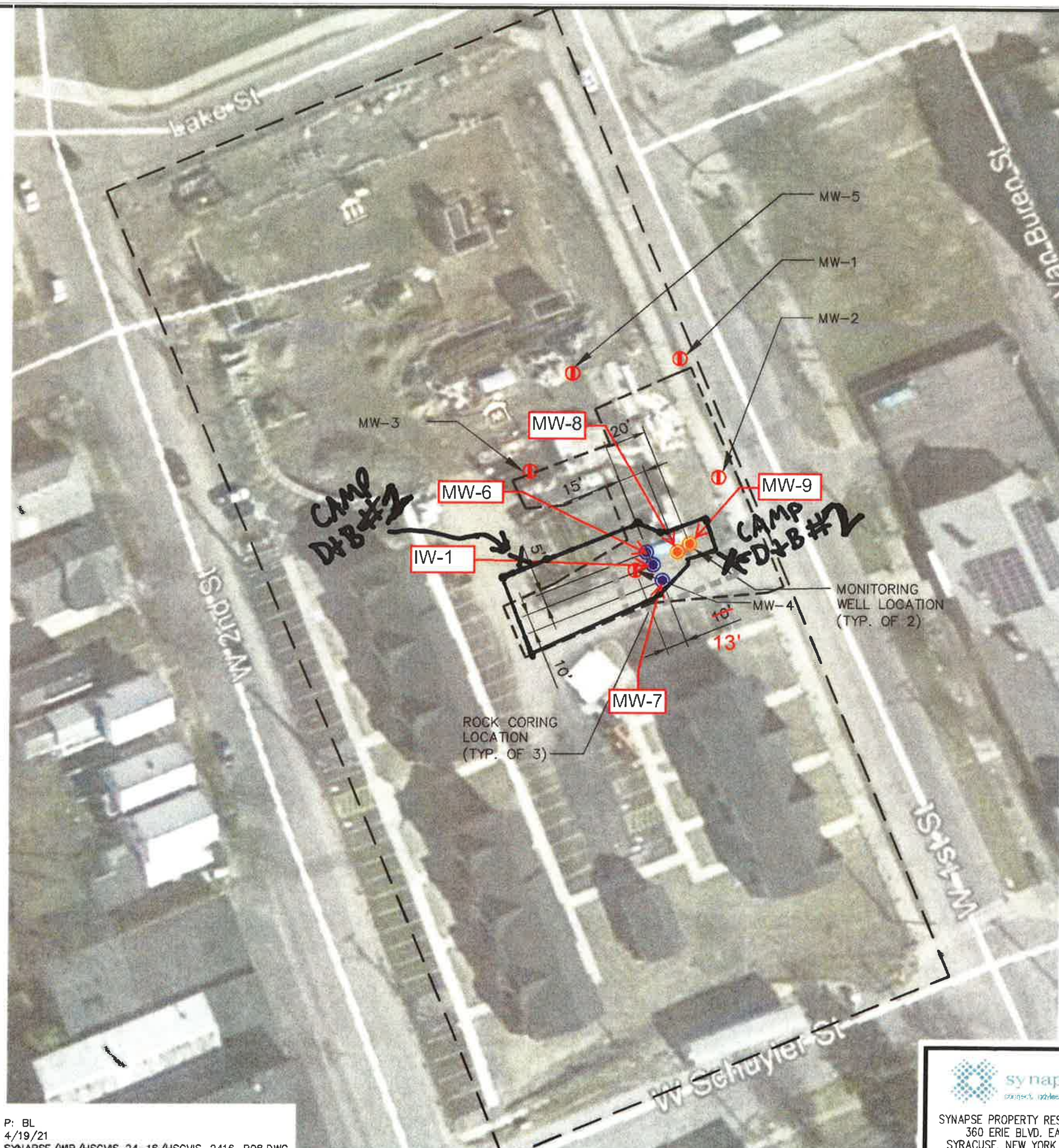
DESCRIPTION OF WORK PERFORMED AND OBSERVED

Summit installed the flush mount steel road box covers for IW-1, MW-6, MW-7, MW-8 and MW-9. The risers for each of the monitoring wells were cut low enough to easily fit J-plugs with locks on them and close the manhole lids. Summit did not cut the riser for IW-1 on this date, as it was sticking above the ground surface, and will cut it lower on October 5, 2021. PVC J-plugs were installed into each of the two-inch PVC risers and secured with locks keyed to lock # 2010. The steel road boxes were set into concrete screeded level with the surrounding ground surface. The tops of road boxes were embedded slightly lower than the surface to prevent potential damage by snowplows. Summit covered each of the road boxes with plastic sheeting at the end of the day to prevent rain from hitting the wet concrete.

Summit and D&B secured the work area with fencing to protect the wet concrete for the road boxes from being tampered with.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME: Matthew H. Hoskins, P.G.
SIGNATURE: Tracey Garland	SIGNATURE: Matt H
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

F:\5277\dwg\5277-C-SP04_workplan.dwg, 8/5/2021 3:50:48 PM



P: BL
4/19/21
SYNAPSE/MIP/HSGVIS 24-16/HSGVIS-2416-B08.DWG

LEGEND

- APPROXIMATE SITE BOUNDARY
- ROCK CORING LOCATION
- MONITORING WELL LOCATION
- EXISTING WELLS
- ACTUAL EXCAVATION AREA (APPROXIMATE)
- APPROXIMATE WORK ZONE AREA

NOTES:

1. 2021 AERIAL PHOTOGRAPH FROM NYSGIS CLEARINGHOUSE WEBSITE.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RESULTS OF ROCK CORINGS WILL BE USED TO SELECT FINAL INJECTION WELL AND MONITORING WELL LOCATIONS.
4. BASED ON THE RESULTS OF THE FIRST 3 ROCK ORINGS, UP TO 2 ADDITIONAL ROCK CORINGS MAY BE COMPLETED AT THE PROPOSED MONITORING WELL LOCATIONS.

0 60' 120'
GRAPHIC SCALE

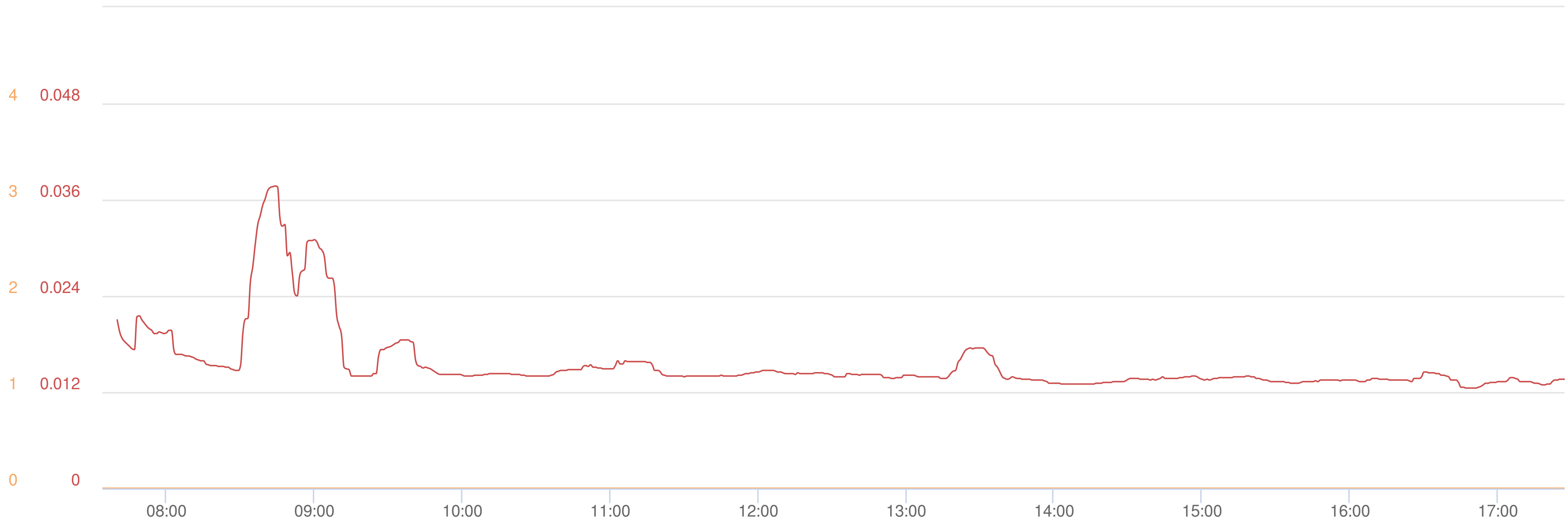
synapse SYNAPSE PROPERTY RESOURCES 360 ERIE BLVD. EAST SYRACUSE, NEW YORK 13202	HARBOR VIEW SQUARE NYSBCP SITE NO. C738040 68 WEST FIRST STREET OSWEGO, NEW YORK	~~PROPOSED WELL LOCATIONS~~ Site layout	PROJECT NO.: HSGVIS-24-16-05 DATE: AUGUST 2021 FIGURE NO.: 3

10-4-2021

Harbor View Square
NYDEC Site No. C738040

Air Monitoring Report
October 4, 2021

Mon, 4th of Oct 2021, 6:00:00 – 17:53:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

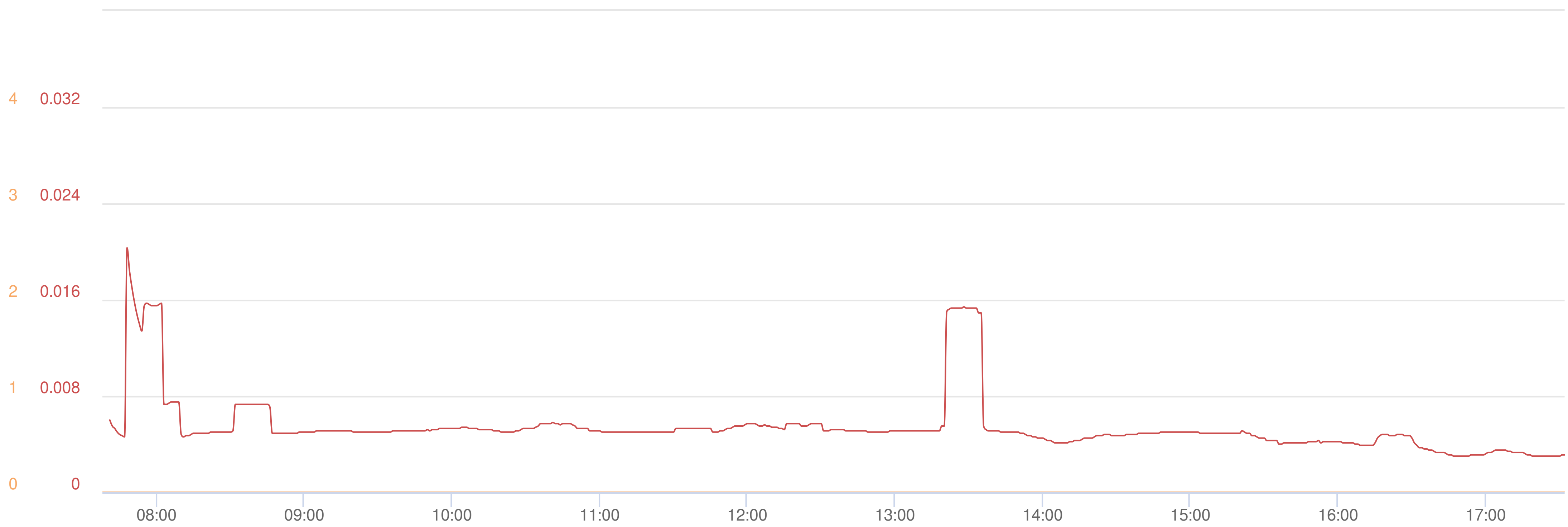
MIN	AVG	MAX
0.0125	**0.0155**	**0.0377**

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	**0**	**0**

Name	D&B #1
S/N	0B425411
Description	(FA04681)
Location	33 1st Ave, Oswego, NY 13126, USA

Mon, 4th of Oct 2021, 6:00:00 – 17:47:00
(GMT-05:00) Eastern Time (US & Canada)



Mass Conc. Total mg/m³ AVG 15m
mg/m³
DustTrak-8530
RS232(C)

MIN	AVG	MAX
0.003	0.005	0.0203

VOC ppm AVG 15m ppm
miniRAE 3000
RS232(A)

MIN	AVG	MAX
0	0	0

Name D&B #2
S/N 0B357616
Description (FA04701)
Location 33 1st Ave, Oswego, NY 13126, USA

D&B ENGINEERS AND ARCHITECTS

Well Developement Information
Harbor View Square
NYSDEC Site No. C738040

Drilling Contractor: Summit Drilling **Date:** 10/4/2021

Well ID	Starting Depth to Water (Feet Below Ground Surface)	Total Well Depth (Feet Below Ground Surface)	Purge Start Time	Purge Stop Time	Starting Well Volume (Gallons)	Approximate Volume Purged (Gallons of Groundwater)	Appearance of Purged Water at Purge Stop Time
IW-1	10.00	30.44	14:33	14:38	3.3358	20	Clear
MW-7	17.62	30.32	14:50	14:56	2.0726	10	Clear
MW-6	10.30	30.00	15:05	15:08	3.215	20	Clear
MW-9	12.34	30.05	15:16	15:21	2.8902	15	Clear

* Summit Drilling plans to develop monitoring well MW-8 on October 5, 2021.

Notes:

PHOTOGRAPH LOG
OCTOBER 4, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211004_083426	10-04-2021	Summit drilling to the install screen and riser for MW-8, facing northwest.
20211004_085759	10-04-2021	Drilling spoils from MW-8, facing north.
20211004_110428	10-04-2021	Summit decontaminating equipment used in MW-8, facing east.
20211004_150801	10-04-2021	Purging to develop monitoring well MW-6, facing northwest.
20211004_184703	10-04-2021	Well IW-1, MW-6, and MW-7 after flush-mount covers were installed, facing northwest.
20211004_184706	10-04-2021	Wells MW-8 and MW-9 after flush-mount covers were installed, facing northeast.
20211004_184714	10-04-2021	Steel drums retained on-Site, facing north.
20211004_185735	10-04-2021	View of the work area at the end of the workday, facing east.

PHOTOGRAPH LOG
OCTOBER 4, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211004_083426– Summit drilling to the install screen and riser for MW-8, facing northwest.

20211004_085759- Drilling spoils from MW-8, facing north.

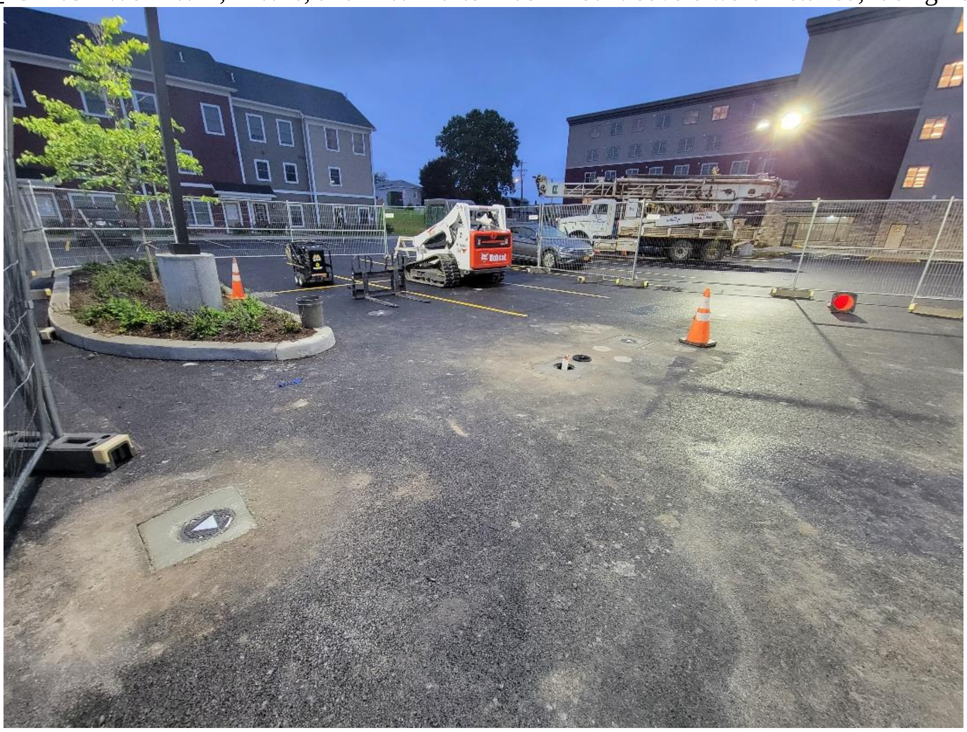
PHOTOGRAPH LOG
OCTOBER 4, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211004_110428– Summit decontaminating equipment used in MW-8, facing east.

20211004_150801– Purging to develop monitoring well MW-6, facing northwest.

PHOTOGRAPH LOG
OCTOBER 4, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

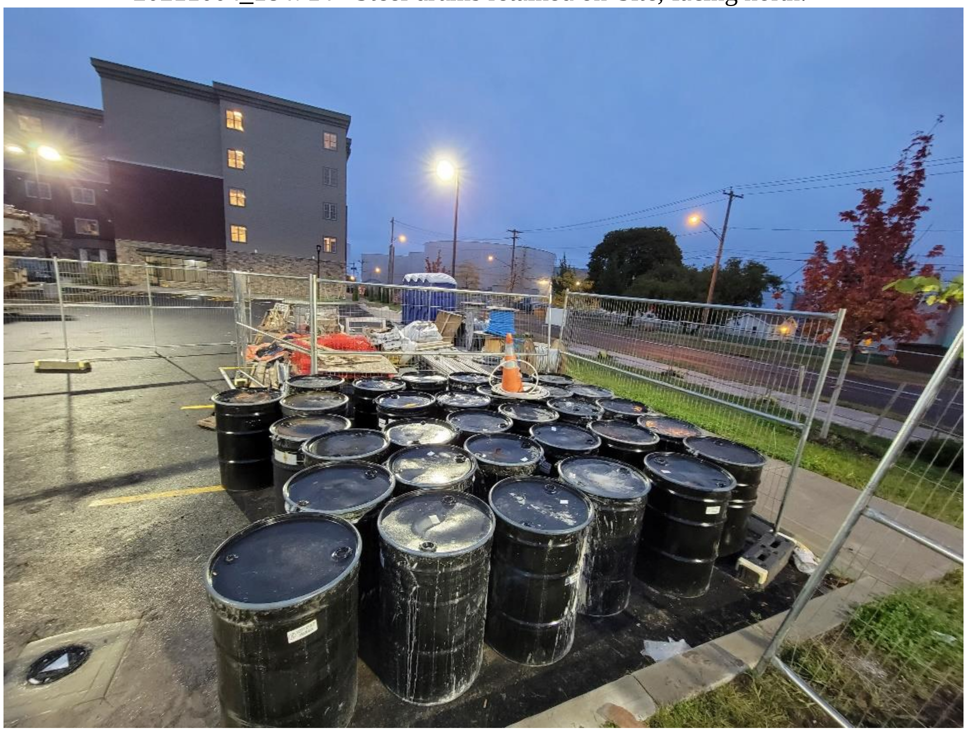
20211004_184703– Well IW-1, MW-6, and MW-7 after flush-mount covers were installed, facing northwest.



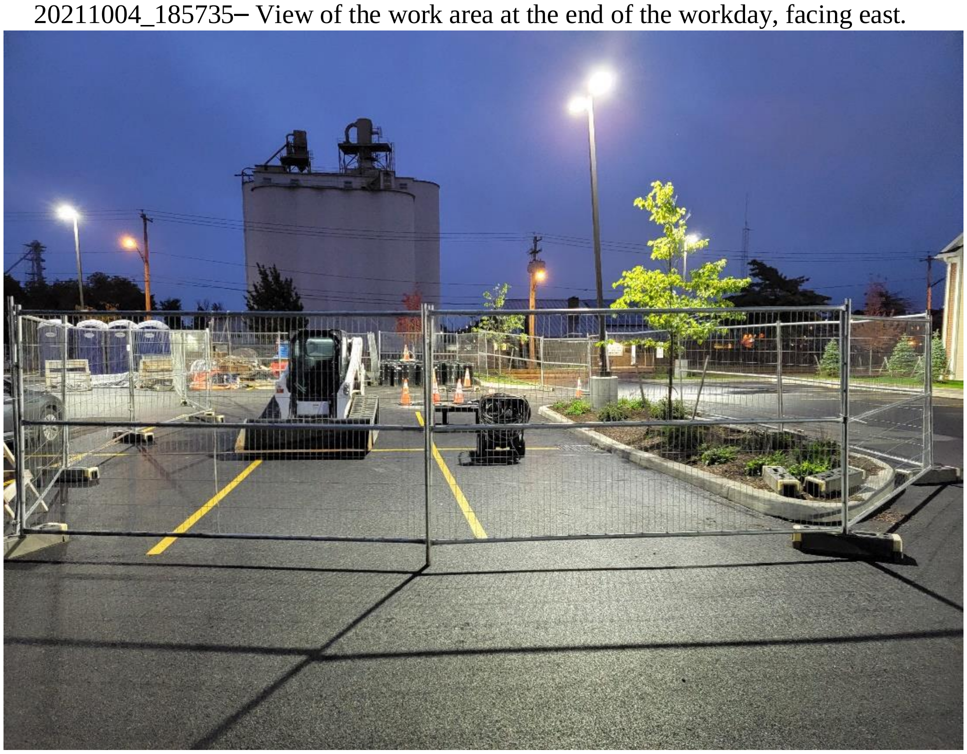
20211004_184706– Wells MW-8 and MW-9 after flush-mount covers were installed, facing northeast..

PHOTOGRAPH LOG
OCTOBER 4, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211004_184714– Steel drums retained on-Site, facing north.



20211004_185735– View of the work area at the end of the workday, facing east.



D&B ENGINEERS AND ARCHITECTS		**DATE:** October 18, 2021 **REPORT NO.** 211018 **PAGE NO.** 1 OF 2 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Cloudy	7:00	52°F	0.0	10-15	N
ATTACHMENTS	▪ Depth to Water and Total Well Depth (Table 1); ▪ Groundwater Sampling Records ▪ Chain of Custody	Rain	18:00	48°F	0.1	10-15	E

SITE CONDITIONS: Wet, Paved.

WORK GOAL: Perform pre-injection groundwater monitoring and sampling.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:00	18:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi Parameter Water Quality Meter	Horiba U-52		
Water Level Meter	Solinist 102 P4		
Nitrogen Tank			
pdCHS sampling manifold and regulator	FLUTe		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		
		DATE: October 18 2021
		REPORT NO. 211018
		PAGE NO. 2 OF 2
		PROJECT NO. 5277-01-01C
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) were at the Harbor View Square site (the Site) to perform pre-injection groundwater monitoring in accordance with the Reagent Injection Work Plan.

D&B measured depth to water and total well depth at injection well IW-1 and monitoring wells MW-6, MW-7, MW-8 and MW-9 before starting sampling activities. Water levels could not be measured from MW-4 because the water level probe could not fit in tubing of the the FLUte positive displacement case hole sampler (pdCHS). The water level meter was decontaminated between each monitoring well location using an Alconox solution and deionized PFAS free water rinse. The depth to water and total well depth measurements are provided in Table 1, attached.

Before groundwater samples were collected from MW-4 greater than 11.4 liters of water was purged from each pdCHS interval in MW-4 with compressed nitrogen air at a regulated pressure of 30 pounds per square inch. The purged water was retained on-Site in 55-gallon steel drums. Water quality field parameters were not measured from MW-4 during this sampling event because the groundwater quality meter's flow through cell could not be filled with the FLUTe pdCHS. The pdCHS intervals in MW-4 were MW-4_1, MW-4_2, MW-4_3, MW-4_4 and MW-4_5. Groundwater samples were collected from MW-4_1, MW-4_2, and MW-4_3 with compressed nitrogen air at a regulated pressure of 16 pounds per square inch. Groundwater samples will be collected from MW-4_4 and MW-4_5 on October 19, 2021.

Groundwater samples were collected from MW-7 and MW-8 using low flow purging and sampling procedures. These wells were purged and sampled using a peristaltic pump with dedicated silicone and high-density polyethylene (HDPE) tubing and groundwater quality field parameters were measured using a Horiba U-52 multi-parameter water quality meter. All water purged from these wells was retained on-Site in a 55-gallon steel drum. Field parameters measured while purging and sampling these wells are provided in the groundwater sampling records, attached. IW-1, MW-6 and MW-9 will be sampled on October 19, 2021.

All of the collected groundwater samples were submitted following standard chain-of-custody protocols to Eurofins/TestAmerica Service Center in Syracuse, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175);
- Alkalinity by USEPA Method 310.2;
- Total organic carbon/dissolved carbon by USEPA Method 9060A;
- Total organic carbon by USEPA Method SM5310D; and
- PFAS by USEPA Method 537.1.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

HARBOR VIEW SQUARE
NYSDEC SITE NO. C738040
DEPTH TO WATER AND TOTAL WELL DEPTH

Date:	3/4/2021		10/18/2021	
Well ID	Static Depth to Water Level (feet below ground surface)	Depth of Interval (feet below ground surface)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)
MW-4_1	9.67	15 to 20	---	---
MW-4_2	11.2	25 to 30	---	---
MW-4_3	11.59	35 to 40	---	---
MW-4_4	11.78	42 to 47	---	---
MW-4_5	13.01	50 to 53	---	---
IW-1	---	---	9.84	30.3
MW-6	---	---	9.22	29.68
MW-7	---	---	13.14	29.86
MW-8	---	---	16.93	29.32
MW-9	---	---	9.98	29.68

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square   DATE: 10-18-21

WELL ID: MW-7   Time On-site: Time Off-site:
SAMPLERS: Tracey Garland

Depth of well (feet from top of casing/riser): 29.86
Initial static water level (feet from top of casing/riser): 12.91
Depth to 15 / 30 of screen (top / bottom)

Purging Method

Airlift   Centrifugal
Bailer ___   Pos. Displ. ___
Peri Pump (dedicated tubing) X HDPE   Disposable Bladder Pump (Low Flow) ___

volume of water removed: 2gal gal.   >3 volumes: yes ___ no X   purged dry? yes ___ no X

Well Volume Calculation:

1 in casing ___ ft. of water x 0.04 = ___ gallons
2 in. casing: 16.95 ft. of water x 0.16 = 2.712 gallons
3 in. casing: ___ ft. of water x 0.37 = ___ gallons
4 in. casing: ___ ft. of water x 0.65 = ___ gallons
5 in. casing: ___ ft. of water x 1.02 = ___ gallons
6 in. casing: ___ ft. of water x 1.47 = ___ gallons

Field Tests Pump is at lowest setting. Tubing disconnected at 11:30

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1100		14.17	11.81	17.48	1.31	0.0	6.55	25
1105		14.82	11.78	17.67	1.30	0.0	5.03	2
1110		15.22	11.74	17.81	1.26	0.0	4.50	-5
1115		15.55	11.61	17.96	1.19	9.8	4.52	-5
1120		15.70	11.52	18.02	1.14	15.0	4.50	-3
1125		15.89	11.43	18.08	1.09	21.0	4.60	-1
1130		16.07	11.34	18.13	1.06	21.6	4.67	2
1135		16.22	10.93	17.63	0.987	~~5~~14.1	4.37	16
11:40		16.40	10.78	17.68	0.974	13.9	4.45	25
11:45		16.58	10.50	17.86	0.967	15.1	4.78	35
11:50		16.71	10.29	17.95	0.963	21.6	4.42	43

Purge Volume: 2gal   Purging Time: 10:55 - 12:15
Purge Rate (gph): 1.50

Sampling

Time of Sample Collection: 12:15

Method:
___ Stainless steel bailer
___ Teflon bailer
___ Disp. Bladder Pump
___ Disposable bailer
X Dedicated pump and tubing

Analyses:
X VOCs
X Metals
X MNA parameters.
X PFAs

12:15 17.94 | 9.51 pH | 18.05 °C | 0.990 ms/cm | 23.3 NTU | 4.01 mg/l | 86 mV

Observations

Well Observations: good condition.
Weather/Temperature: 50°F Rain
Sample description: Clear
Free Product? yes ___ no X describe ___
Sheen? yes ___ no X describe ___
Odor? yes ___ no X describe ___

11:55	16.90	10.00	17.99	0.957	34.3	4.51	56
12:00	17.19	9.72	18.05	0.961	39.5	4.70	70
12:05	17.37	9.58	18.00	0.969	34.7	4.50	77
12:10	17.64	9.56	18.03	~~0.980~~ 0.978	26.2	4.45	80

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square   DATE: 10-18-21

WELL ID: MW-8
SAMPLERS: Tracey Garland
Time On-site: ______   Time Off-site: ______

Depth of well (feet from top of casing/riser) 29.32
Initial static water level (feet from top of casing/riser)........ 15.72

Depth to 15.30 of screen (top / bottom)

Purging Method

Airlift		Centrifugal	
Bailer	___	Pos. Displ.	___
Peri Pump (dedicated tubing)	X HDPE	Disposable Bladder Pump (Low Flow)	___

Well Volume Calculation:

1 in casing	___	ft. of water x 0.04 =	___	gallons
2 in. casing:	13.6	ft. of water x 0.16 =	2.18	gallons
3 in. casing:	___	ft. of water x 0.37 =	___	gallons
4 in. casing:	___	ft. of water x 0.65 =	___	gallons
5 in. casing:	___	ft. of water x 1.02 =	___	gallons
6 in. casing:	___	ft. of water x 1.47 =	___	gallons

volume of water removed: 0.75 gal.   >3 volumes: yes ___ no X   purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1400		16.08	7.63	16.33	1.20	9.6	6.60	171
1405		16.32	7.48	16.54	1.20	5.5	4.24	176
1410		16.50	7.43	16.56	1.20	3.7	3.75	170
1415		16.69	7.40	16.59	1.20	1.4	3.39	152
14:20		16.88	7.35	16.59	1.20	1.0	3.04	139
14:25		17.08	7.39	16.60	1.19	3.4	2.81	136
14:30		17.28	7.40	16.58	1.19	3.1	2.72	137

Purge Volume: Purging Time: 13:55 - 14:30
Purge Rate (gph):

Sampling

Time of Sample Collection: 14:30

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Disp. Bladder Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X VOCs
- X Metal
- X MNA Parameters
- X PFAs
- ___

Observations

Well Observations: Good Condition
Weather/Temperature: Rain 50°F
Sample description: Clear
Free Product? yes ___ no X describe ______
Sheen? yes ___ no X describe ______
Odor? yes ___ no X describe ______

D&B ENGINEERS AND ARCHITECTS, P.C

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

Syracuse #225

eurofins

Client Information	
Client Contact:	Mr. Tracey Garland
Company:	D&B Engineers and Architects, P.C.
Address:	5879 Fisher Road PO BOX 56
City:	East Syracuse
State, Zip:	NY, 13057
Phone:	315-413-1677(Tel)
Email:	tgarland@db-eng.com, labdata@db-eng.com, RCreighton@synapsellc.com
Project Name:	Harborview Square (D&B#5277-1)
Site:	

Sampler:	Tracey Garland
Phone:	315 413 1677
PWSID:	
Due Date Requested:	
TAT Requested (days):	Standard
Compliance Project:	Yes / No
PO #:	Purchase Order not required
WO #:	
Project #:	48023439
SSOW#:	

Lab PM:	Schove, John R
E-Mail:	John.Schove@Eurofinset.com
Carrier Tracking No(s):	
State of Origin:	
COC No:	480-166563-36495.1
Page:	Page 1 of 2
Job #:	

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane,Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	PFC_IDA - PFAS, Standard List (21 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	D	A	A	A	CB	N	N	N	N		
MW-7	10-18-21	12:15	G	Water	Y	N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-8	10-18-21	14:30	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-4_1_(15-20)	10-18-21	14:03	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-4_2_(25-30)	10-18-21	15:40	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-4_3_(35-40)	10-18-21	16:20	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
				Water																
				Water																
				Water																
				Water																
				Water																
				Water																

TJ 10/18/21

480-191067 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify) ASP B

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10-18-21 18:55	D&B	[signature]	10/18/21 1855	ES-SYR
[signature]	10/18/21 1000	ES-SYR			
			[signature]	10/19/21 800	TAB

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.9 #1 ICE

Ver: 06/08/2021

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 19, 2021 **REPORT NO.** 211019 **PAGE NO.** 1 OF 2 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Overcast	5:00	46°F	0.0	10-15	W
ATTACHMENTS	▪ Groundwater Sampling Records ▪ Chain of Custody	Light Rain	17:00	40°F	0.0	15-20	W

SITE CONDITIONS: Wet, Paved.

WORK GOAL: Complete pre-injection groundwater monitoring and sampling.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	5:00	17:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi Parameter Water Quality Meter	Horiba U-52		
Water Level Meter	Solinist 102 P4		
Nitrogen Tank			
pdCHS sampling manifold and regulator	FLUTe		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		DATE: October 19 2021
		REPORT NO. 211019
		PAGE NO. 2 OF 2
		PROJECT NO. 5277-01-01C
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) were at the Harbor View Square site (the Site) to continue pre-injection groundwater monitoring in accordance with the Reagent Injection Work Plan. Groundwater samples from MW-4_1, MW-4_2, MW-4_3, MW-7, and MW-8 were previously collected on October 18, 2021.

Groundwater samples were collected from MW-4_4 and MW-4_5 with compressed nitrogen air at a regulated pressure of 16 pounds per square inch. On October 18, 2021, more than 11.4 liters of water was purged from each pdCHS interval. Water quality field parameters were not measured from MW-4 during this sampling event because the groundwater quality meter's flow through cell could not be filled with the FLUTe pdCHS.

Groundwater samples were collected from IW-1, MW-6 and MW-9 using low flow purging and sampling procedures. These wells were purged and sampled using a peristaltic pump with dedicated silicone and high-density polyethylene (HDPE) tubing, and groundwater quality field parameters were measured using a Horiba U-52 multi-parameter water quality meter. All water purged from these wells was retained on-Site in a 55-gallon steel drum. Field parameters measured while purging and sampling these wells are provided in the groundwater sampling records, attached.

The groundwater samples were submitted following standard chain-of-custody protocols to Eurofins/TestAmerica Service Center in Syracuse, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175);
- Alkalinity by USEPA Method 310.2;
- Total organic carbon/dissolved carbon by USEPA Method 9060A;
- Total organic carbon by USEPA Method SM5310D; and
- PFAS by USEPA Method 537.1.

A field duplicate sample was collected from IW-1 for all the analysis listed above. Matrix spike and matrix spike duplicate samples were collected for all the analysis listed above from MW-9. An equipment blank was collected for PFAS by USEPA Method 537.1 by running PFAS free water through unused HDPE and silicone tubing into the sample container.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 10-19-21

WELL ID: IW-1 Time On-site: ____ Time Off-site: ____
SAMPLERS: Tracey Garland

Depth of well (feet from top of casing/riser) .... 30.30 Depth to 15 / 30 of screen
Initial static water level (feet from top of casing/riser)........ 10.19 (top / bottom)

Purging Method

Airlift ____ Centrifugal ____
Bailer ____ Pos. Displ. ____
Peri Pump (dedicated tubing) X HDPE Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:

1 in casing	ft. of water x 0.04 =	gallons
2 in. casing: 20.11	ft. of water x 0.16 = 3.22	gallons
3 in. casing: ~~20.11~~	ft. of water x 0.37 =	gallons
4 in. casing:	ft. of water x 0.65 =	gallons
5 in. casing:	ft. of water x 1.02 =	gallons
6 in. casing:	ft. of water x 1.47 =	gallons

volume of water removed: 1.75 gal. >3 volumes: yes ____ no X purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1350		10.41	7.85	19.94	1.07	0.0	2.02	140
1355		10.43	7.75	19.85	1.07	0.0	0.61	136
1400		10.45	7.69	19.74	1.08	0.0	0.59	133
1405		10.45	7.56	19.64	1.09	0.0	0.54	132
1410		10.48	7.47	19.55	1.12	0.0	0.49	133
1415		10.48	7.47	19.52	1.13	0.0	0.52	132
1420		10.48	7.47	19.48	1.14	0.0	0.52	132

Purge Volume: 1.75 gal Purging Time: 13:45 – 14:35
Purge Rate (gph): 2.1

Sampling

Time of Sample Collection: 14:35 ~~1420 13~~ DUP-1

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Disp. Bladder Pump
____ Disposable bailer
X Dedicated pump and tubing HDPE

Analyses: IW-1
X VOCs
X Metals
X MNA Parameters
X PFAS
____

Observations

Well Observations: Good condition
Weather/Temperature: 61°F Clear 10-15 West
Sample description: clear
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE ~~3150-45U~~ ~~Sweden-3-Chapman~~ Harbor View Square DATE 10-19-21

WELL ID: MW-6

SAMPLERS: Tracey Garland

Time On-site:

Time Off-site:

Depth of well (feet from top of casing/riser) 29.68

Initial static water level (feet from top of casing/riser)........ 9.54

Depth to 15 / 30 of screen (top / bottom)

Purging Method

Airlift		Centrifugal	
Bailer	____	Pos. Displ.	____
Peri Pump (dedicated tubing) HDPE	X	Disposable Bladder Pump (Low Flow)	____

Well Volume Calculation:

1 in casing	____ ft. of water x 0.04 =	____	gallons
2 in. casing:	20.14 ft. of water x 0.16 =	3.22	gallons
3 in. casing:	____ ft. of water x 0.37 =	____	gallons
4 in. casing:	____ ft. of water x 0.65 =	____	gallons
5 in. casing:	____ ft. of water x 1.02 =	____	gallons
6 in. casing:	____ ft. of water x 1.47 =	____	gallons

volume of water removed: 1 gal.

>3 volumes: yes ____ no X

purged dry? yes ____ no X

Field Tests Purging at lowest pump setting

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
8:20		10.37	9.78	14.64	0.956	0.0	3.48	137
8:25		10.94	10.02	15.54	0.910	0.0	2.58	115
8:30		11.37	10.14	16.00	0.884	0.0	2.60	101
8:35		11.86	10.26	16.42	0.863	0.0	2.53	88
8:40		12.33	10.35	16.81	0.846	0.0	2.55	75
8:45		12.84	10.41	17.13	0.844	0.0	2.49	68
8:50		13.32	10.48	17.39	0.846	0.0	2.44	61
8:55		13.94	10.47	17.71	0.855	0.0	2.40	54

Purge Volume: 1 gal Purging Time: 8:15 — 8:55

Purge Rate (gph):

Sampling

Time of Sample Collection: 8:55

Method:

- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Disp. Bladder Pump
- ____ Disposable bailer
- X Dedicated pump and tubing HDPE

Analyses:

- X ~~VOC List #1~~ VOCs
- X ~~VOC List #2~~ Metals
- X ~~PFAS~~ MNA Parameters.
- X ~~1,4-Dioxane~~ PFAS

Observations

Well Observations: Good condition

Weather/Temperature: Clear 55°F 10-15 N

Sample description: Clear

Free Product? yes ____ no X describe ____

Sheen? yes ____ no X describe ____

Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square   DATE: 10-19-21

WELL ID: MW-9   Time On-site: Time Off-site:
SAMPLERS: T. Garland

Depth of well (feet from top of casing/riser): 29.68
Initial static water level (feet from top of casing/riser): 10.05

Depth to 15 / 30 of screen (top / bottom)

Purging Method

- Airlift
- Centrifugal
- Bailer ____
- Pos. Displ. ____
- Peri Pump (dedicated tubing) X HDPE
- Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:

- 1 in casing ____ ft. of water x 0.04 = ____ gallons
- 2 in. casing: 19.63 ft. of water x 0.16 = 3.14 gallons
- 3 in. casing: ____ ft. of water x 0.37 = ____ gallons
- 4 in. casing: ____ ft. of water x 0.65 = ____ gallons
- 5 in. casing: ____ ft. of water x 1.02 = ____ gallons
- 6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 1.5 gal.   >3 volumes: yes ____ no X   purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
10:35		10.76	7.41	19.82	1.19	0.0	5.01	179
10:40		11.35	7.33	19.18	1.20	0.0	4.22	176
10:45		12.04	7.29	18.98	1.19	0.0	3.31	175
10:50		12.61	7.29	19.00	1.19	0.0	2.89	172
10:55		13.11	7.29	19.11	1.18	0.0	2.32	168
11:00		13.51	7.29	19.10	1.18	0.0	2.33	158
11:05		13.87	7.29	19.09	1.19	0.0	2.27	115
11:10		14.29	7.29	19.15	1.18	0.0	2.20	110

Purge Volume: 1.5 gal   Purging Time: 10:35 - 11:10
Purge Rate (gph):

Sampling

Time of Sample Collection: 11:10

Method:

- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Disp. Bladder Pump
- ____ Disposable bailer
- X Dedicated pump and tubing HDPE

Analyses:

- X VOCs
- X Metal
- X MNA parameters
- X PFAS
- ____

MW-9
MW-9-MS
MW-9_MSD

Observations

Well Observations: good condition
Weather/Temperature: 57°F clear 5-10 N
Sample description: clear
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGI[NEERS] AND ARCH[ITECTS]

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

PFAS → BV T FROM SYR. -RS

Chain of Custody Record

eurofins Environment Testing America

Syracuse #225

Client Information	
Client Contact: Mr. Tracey Garland	Sampler: Tracey Garland
Company: D&B Engineers and Architects, P.C.	Phone: 315 413 1677
Address: 5879 Fisher Road PO BOX 56	PWSID:
City: East Syracuse	Lab PM: Schove, John R
State, Zip: NY, 13057	E-Mail: John.Schove@Eurofinset.com
Phone: 315-413-1677(Tel)	Carrier Tracking No(s):
Email: tgarland@db-eng.com, labdata@db-eng.com, RCreighton@syrapellc.com	State of Origin:
Project Name: Harborview Square (D&B#5277-1)	COC No: 480-166563-36495.2
Site:	Page: ~~Page 2 of 2~~ 1of 1 (T6)
Due Date Requested:	Job #:
TAT Requested (days): Standard	
Compliance Project: Δ Yes Δ No	
PO #: Purchase Order not required	
WO #:	
Project #: 48023439	
SSOW#:	

SHORT HOLD

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane, Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal,	PFC_IDA - PFAS,	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	D	A	A	A	CB	N	N	N	N		
DUP-1	10-19-21	00:00	G	Water		N				X			X					X	6	
MW-4-4 (42-47)	10-19-21	5:48	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-4.5 ~ (50-53)	10-19-21	6:28	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-6	10-19-21	8:55	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-9	10-19-21	11:10	G	Water		Y	X	X	X	X	X	X	X	X	X	X	X	X	57	MS + MSD
IW-1	10-19-21	14:35	G	Water		N	X	X	X	X	X	X	X	X	X	X	X	X	19	
Equipment Blank	10-19-21	15:31	G	Water		N												X	2	
Trip Blank	10-19-21			Water		N							X						2	

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3

480-191096 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify) ASP - B

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Tracey Garland	10-19-21 18:00	D+B	R Creighton	10-19-21, 1800	Syr
R Creighton	10-19-21, 19:00	Syr	C Wallace	10/20/21 0800	TAS

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: #1 2.4 2.8

Ver: 06/08/2021

9+

D&B ENGINEERS AND ARCHITECTS		
		DATE: October 27, 2021
		REPORT NO. 211027
		PAGE NO. 1 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Clear	7:30	45°F	0.0”	5-10	NW
ATTACHMENTS	▪ HASP Acknowledgement and Agreement Form ▪ Depth to Groundwater and Ground Water Field Parameters (Table 1) ▪ Injection Log (Table 2) ▪ Photo Log	Clear	18:00	53°F	0.0”	5-10	W

SITE CONDITIONS: Dry.

WORK GOAL: Oversee reagent injections and monitor groundwater field parameters.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:30	18:30
Ken Dannelkus	AWT	7:30	18:00
Aaron Owens	AWT	7:30	18:00
Matt Crans	Parsons	7:00	18:15
Shamus	Parsons	7:00	18:15
Jim	Parsons	7:00	18:15
Jeff Holt	Holt Consulting	10:30	15:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi-Parameter Water Quality Meter	Horiba U-52	49 HP Air Compressor	Atlas Copco XAS 185 KD7
Water Level Meter	Heron		
Peristaltic Pump	PINE		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee reagent injections and monitor groundwater for field parameters during the reagent injections per the Reagent Injection Work Plan. The reagent injections were performed by AWT Environmental Services, Inc. (AWT). Parsons Corporation was on-Site to observe the reagent injections.

Before the starting work on 10/27/2021 D&B reviewed the Site-Specific Health and Safety Plan (HASP) with AWT. After reviewing the HASP, AWT signed the HASP Acknowledgement and Agreement Form, attached.

Before starting the regent injections AWT set in place a containment liner consisting of black polyethylene sheeting with a perimeter berm below and around an enclosed trailer that contained all stored liquids, tanks, and dilution equipment. Drip pans were placed below the connections of all lines outside of the enclosed trailer.

Before AWT started the injections, D&B measured pre-injection depth to groundwater levels and pre-injection water quality parameters from the injection well IW-1 and the monitoring wells MW-6, MW-7, MW-8, and MW-9. D&B also measured depth to groundwater and groundwater field parameters from these wells throughout the day while the injections were performed. The groundwater field parameters included temperature, pH, oxidation-reduction potential, specific conductivity, turbidity, and dissolved oxygen. These measurements were not performed from MW-4. D&B measured depth to water at each of the wells before measuring the groundwater field parameters. D&B measured groundwater field parameters by purging the groundwater through a flow through cell attached to a Horiba U-52 multi-parameter meter. Groundwater was purged using a peristaltic pump and tubing dedicated to each well. The purged water was retained on-Site in a 55-gallon steel drum. Depths to groundwater and groundwater field parameters recorded by D&B throughout the day are shown on Table 1, attached.

Before injecting reagents, AWT tested the injection system for leaks by running potable water that was supplied on-Site through the system at a pressure of 12 pound per square inch (psi) and no leaks were detected.

AWT began the reagent injections by injecting 3-D Microemulsion (3DMe) and S-MicroZVI (SMZVI) supplied by Regenesis to IW-1. The 3DMe and SMZVI were mixed to a mix design of four gallons of 3DMe, 2.4 gallons of SMZVI and 150 gallons of potable water. The potable water was municipal water supplied from an on-Site source. The 3DMe, SMZVI, and water were mixed inside the enclosed trailer, emulsified using a recirculation line to the mix tank, and pumped to IW-1 using a diaphragm pump. A flow meter and pressure gauge were attached on the line to IW-1 and monitored. AWT reported to D&B the times and volume that the 3DMe and SMZVI mix was injected, as well as the pressures at IW-1 and flow rates to IW-1. The reported injection times, volumes, pressures, and flow rates are provided in Table 2, attached.

At 13:35 D&B observed that the water level in monitoring well MW-9 was less than 1.5 feet below the ground surface and rising, then AWT plugged MW-9 with a packer to prevent water from overflowing to the surface. At 15:28 D&B observed that the water level in monitoring well MW-6 was less than one below the surface and AWT plugged MW-6 with a packer to prevent water from overflowing to the surface.

Parsons was on-Site to observe the injections. Parsons also measured depth to water and groundwater field parameters at monitoring wells MW-6, MW-7, MW-8 and MW-9. Parsons measured groundwater field parameters by lowering a YSI ProDSS meter into the wells.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 27, 2021
		REPORT NO. 211027
		PAGE NO. 3 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

HEALTH AND SAFETY PLAN ACKNOWLEDGMENT AND AGREEMENT FORM

(All *Synapse* and subcontractor personnel must sign.)

"Zero Tolerance for Incident of ANY Kind. Work Together to Ensure A SAFE and High Quality Project

This Health and Safety Plan has been developed for the purpose of informing Synapse employees of the hazards they are likely to encounter on the project site, and the precautions they should take to avoid those hazards. Sub-contractors and other contractors at the site must develop their own Health and Safety Plan to address the hazards faced by their own employees. Synapse has provided a copy of this Plan to contractors in the interest of full disclosure of hazards of which we may be aware, and to satisfy Synapse's responsibilities under the Occupational Safety and Health Administration (OSHA) Hazard Communication standard. Similarly, contractors are required to inform Synapse of any hazards of which they are aware or that the contractor's work on site might possibly pose to SYNAPSE employees, including (but not limited to) the Material Safety Data Sheets for chemicals the contractor may bring on-site. This plan should NOT be understood by contractors to provide information on all of the hazards to which a contractor's employees may be exposed as a result of their work.

I further certify that I have received training and medical surveillance according to the Health and Safety Plan and the OSHA Standard on Hazardous Waste Operations and Emergency Response (29 CFR 1910.120):

All parties conducting site activities are required to coordinate their activities and practices with the project Site Health and Safety Officer. Your signature below confirms that you have read and understand the hazards discussed in this Plan, and understand that sub-contractors and contractors must develop their own Health and Safety Plan for their employees. You also understand you could be prohibited by the Site Health and Safety Officer or other *Synapse* personnel from working on this project for not complying with any aspect of this Health and Safety Plan.

Name	Title	Signature	Company	Date
Ken Dan[illegible]	W Driller Supervisor	[illegible]	AWT	10/27/21
Aaron Owens	Equipment Operator	[illegible]	AWT	10/27/21

Table 1

Depth to Groundwater and Water Quality Parameters
Harbor View Square
NYSDEC Site No. C738040

Well ID	Date	Time	Depth to Water (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turibidity (nephelometric turbidity units)	Dissolved Oxygen (milligrams per liter)	Appearance
IW-1	10/27/2021	8:00	8.61	13.85	9	136	0.895	6.8	3.36	Clear
MW-6	10/27/2021	8:30	9.38	15.58	9.96	14	1.08	2.2	1.93	Clear
MW-6	10/27/2021	10:45	8.88	17.84	10.15	69	0.9	80.7	3.11	
MW-6	10/27/2021	11:49	11.54	17.26	9.89	38	0.998	35.3	2.96	
MW-6	10/27/2021	12:50	10.97	19.34	8.71	86	1.04	2	2.03	
MW-6	10/27/2021	13:08	10.73							
MW-6	10/27/2021	14:05	10.5							
MW-6	10/27/2021	14:11	10.22							
MW-6	10/27/2021	14:33	9.81							
MW-6	10/27/2021	15:02	5.18	19.64	8.62	-157	1.1	1000	0.58	
MW-6	10/27/2021	17:38	0	17.15	8.96	-224	1.79	1000	1.05	Very Dark Turbidity
MW-7	10/27/2021	8:20	9.61	14.78	11.76	-24	1.29	0	5.82	Clear
MW-7	10/27/2021	11:05	11.26							
MW-7	10/27/2021	11:45	11.1	16.92	10.88	36	1.05	61.6	6.32	
MW-7	10/27/2021	12:50	11.38							
MW-7	10/27/2021	13:35	11.23	18.88	11.14	9	1.05	108	5.56	
MW-7	10/27/2021	14:10	11.99	19.46	11.24	-17	1.01	106	4.6	
MW-7	10/27/2021	15:16	12.11	19.64	11.26	-19	0.962	91.1	4	
MW-7	10/27/2021	15:27	13.26							
MW-7	10/27/2021	15:40	12.81							
MW-7	10/27/2021	16:11	12.33							
MW-7	10/27/2021	16:27	11.76							
MW-7	10/27/2021	16:56	11.29	17.57	11.73	-38	1.28	39	4.15	Clear
MW-8	10/27/2021	8:50	11.98	16.08	7.82	142	1.24	283	4.81	Light Colored Turbidity
MW-8	10/27/2021	11:10	11.84							
MW-8	10/27/2021	11:36	10.98	17.26	7.63	115	1.22	143	3.07	
MW-8	10/27/2021	12:50	10.41							
MW-8	10/27/2021	13:25	10.04	19.21	7.72	106	1.18	210	4.03	
MW-8	10/27/2021	14:19	10.3	19.64	8.63	115	1.17	145	3.35	
MW-8	10/27/2021	14:27	9.23							
MW-8	10/27/2021	15:40	9.49							
MW-8	10/27/2021	16:13	8.44							
MW-8	10/27/2021	16:27	7.96							
MW-8	10/27/2021	17:03	6.78	17.59	8.88	79	1.24	136	3.04	White Cloudy
MW-9	10/27/2021	9:15	8.99	15.77	7.85	150	1.2	0	3.03	Clear
MW-9	10/27/2021	11:12	4.89							
MW-9	10/27/2021	11:28	3.38	16.49	8.53	54	1.15	318	2	
MW-9	10/27/2021	12:50	1.49							
MW-9	10/27/2021	13:15	2.23	19.52	8.11	107	1.13	995	2.81	
MW-9	10/27/2021	17:28	0	17.13	7.94	-37	1.34	1000	1.21	Dark Turbidity

Table 2

Injection Log
Harbor View Square
NYSDEC Site No. C738040

Well ID	Date	Time	Volume of 3DME and S-MZVI Mix Design[1] Injected (Gallons)	Flow Rate (Gallons per Minute)	Injection Pressure (pounds per square inch)	Comments
IW-1	10/27/2021	10:38 to 11:20	161	5	12	Pressure increased to 5.2 psi at 11:04
IW-1	10/27/2021	11:56 to 12:51	170	6.4	20	
IW-1	10/27/2021	13:39 to 14:08	154	3.6	18	Flow Rate increased to 8.4 gpm at 13:45
IW-1	10/27/2021	14:31 to 14:58	162	8.16	21	
IW-1	10/27/2021	15:20 to 15:40	150	7.2	25	Flow Rate increased to 8.4 gpm at 15:34
IW-1	10/27/2021	16:02 to 16:25	149	7.36	22	
IW-1	10/27/2021	16:49 to 17:04	153	10.56	28	

[1]**3DME and S-MZVI Mix Design**: 4 gallons of 3DME + 2 gallons of S-MZVI + 150 gallons of potable water.

PHOTOGRAPH LOG
OCTOBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211027_100103	10-27-2021	AWT's mixing trailer, secondary containment, and connection to IW-1, facing northwest.
20211027_102605	10-27-2021	Buckets of SMZVI.
20211027_102625	10-27-2021	Barrel of 3DMe.
20211027_102630	10-27-2021	Inside the barrel of 3DMe.
20211027_103231	10-27-2021	Mixing tanks and lines inside AWT's trailer.
20211027_123922	10-27-2021	Inside the mixing tank for 3DMe and SMZVI.
20211027_155025	10-27-2021	View of MW-8 and MW-9 with a packer placed to plug MW-9, facing southeast.
20211027_155050	10-27-2021	View of the monitoring wells and injection well during the injection, facing west.
20211027_174318	10-27-2021	Dark turbid water purged from MW-6.
20211027_181836	10-27-2021	View of the work area at the end of the day.

PHOTOGRAPH LOG
OCTOBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211027_100103 – AWT's mixing trailer, secondary containment, and connection to IW-1, facing northwest..

20211027_102605- Buckets of SMZVI.

PHOTOGRAPH LOG
OCTOBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211027_102625 – Barrel of 3DMe..

20211027_102630 – Inside the barrel of 3DMe.

PHOTOGRAPH LOG
OCTOBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

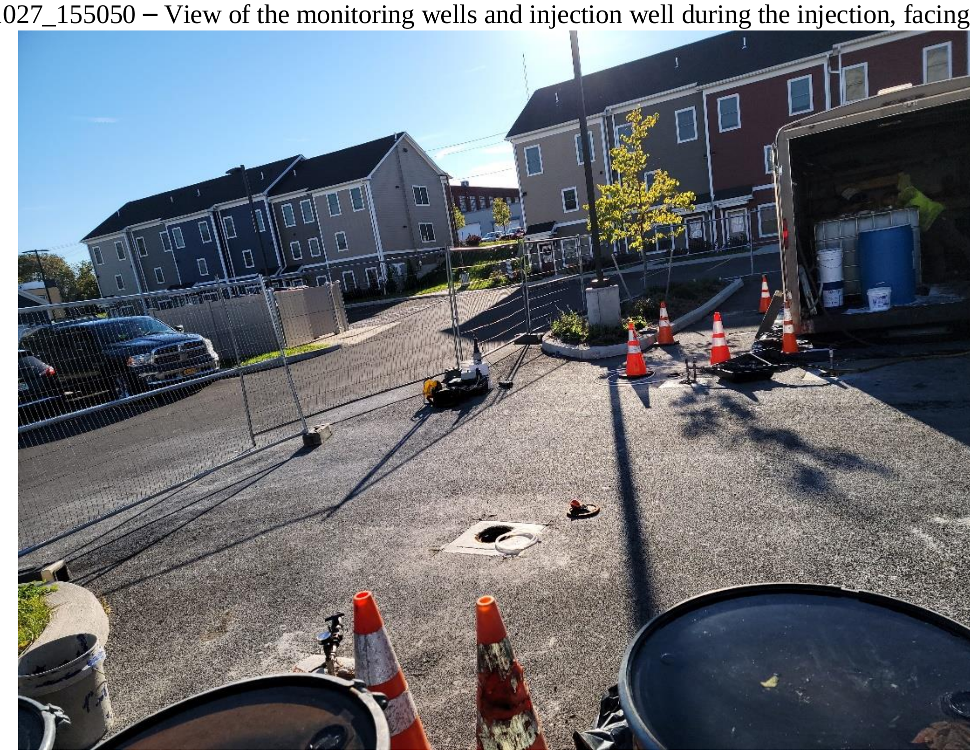
20211027_103231 – Mixing tanks and lines inside AWT's trailer.

20211027_123922 – Inside the mixing tank for 3DMe and SMZVI.

PHOTOGRAPH LOG
OCTOBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211027_155025 – View of MW-8 and MW-9 with a packer placed to plug MW-9, facing southeast..

20211027_155050 – View of the monitoring wells and injection well during the injection, facing west.



PHOTOGRAPH LOG
OCTOBER 27, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211027_174318 – Dark turbid water purged from MW-6.

20211027_181836 – View of the work area at the end of the day.

D&B ENGINEERS AND ARCHITECTS		**DATE:** October 28, 2021
		REPORT NO. 211028
		PAGE NO. 1 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Clear	7:30	38°F	0.0”	0-5	E
ATTACHMENTS	▪ Depth to Groundwater and Ground Water Field Parameters (Table 1) ▪ Injection Log (Table 2) ▪ Photo Log	Clear	15:30	59°F	0.0”	5-10	E

SITE CONDITIONS: Dry.

WORK GOAL: Oversee reagent injections and monitor groundwater field parameters.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	7:30	15:30
Ken Dannelkus	AWT	7:30	14:30
Aaron Owens	AWT	7:30	14:30
Matt Crans	Parsons	7:30	14:15
Shamus	Parsons	7:30	14:15

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi-Parameter Water Quality Meter	Horiba U-52	49 HP Air Compressor	Atlas Copco XAS 185 KD7
Water Level Meter	Heron		
Peristaltic Pump	PINE		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		
		DATE: October 28, 2021
		REPORT NO. 211028
		PAGE NO. 2 OF 3
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) to oversee reagent injections and monitor groundwater for field parameters during the reagent injections per the Reagent Injection Work Plan. The reagent injections were performed by AWT Environmental Services, Inc. (AWT). Parson Corporation was on-Site to observe the reagent injections.

Before AWT started the injections, D&B measured pre-injection depth to groundwater levels and water quality parameters from the injection well IW-1 and the monitoring wells MW-6, MW-7, MW-8, and MW-9. D&B also measured depth to groundwater and groundwater field parameters from these wells throughout the day while the injections were performed. The groundwater field parameters included temperature, pH, oxidation-reduction potential, specific conductivity, turbidity, and dissolved oxygen. These measurements were not performed from MW-4. D&B measured depth to water at each of the wells before measuring the groundwater field parameters. D&B measured groundwater field parameters by purging the groundwater through a flow through cell attached to a Horiba U-52 multi-parameter meter. Groundwater was purged using a peristaltic pump and tubing dedicated to each well. The purged water was retained on-Site in a 55-gallon steel drum. Depths to groundwater and groundwater field parameters recorded by D&B throughout the day are shown on Table 1, attached.

AWT completed injecting 3-D Microemulsion (3DMe) and S-MicroZVI (SMZVI) supplied by Regenesis to the injection well IW-1. The 3DMe and SMZVI were mixed to a mix design of four gallons of 3DMe, 2.4 gallons of SMZVI and 150 gallons of potable water. The potable water was municipal water supplied from an on-Site source. The 3DMe, SMZVI, and water were mixed inside the enclosed trailer, emulsified using a recirculation line to the mix tank, and pumped to IW-1 using a diaphragm pump. A flow meter and pressure gauge were attached on the line to IW-1 and monitored. AWT reported to D&B the times and volume that the 3DMe and SMZVI mix was injected as well as the pressures at IW-1 and flow rates to IW-1. The reported injection times, volumes, pressures, and flow rates are provided in Table 2, attached.

After completing the injections of 3DMe and SMZVI, AWT rinsed their lines and mix tank with 31 gallons of deoxygenated water and injected it into IW-1.

After the lines were rinsed, AWT injected Bio-Dechlor INOCULUM PLUS (BDI) supplied by Regenesis and deoxygenated water into IW-1. This was performed by simultaneously injecting 3 liters of BDI and 10 gallons of deoxygenated water at a time until a total of 18 liters of BDI was used. The BDI was injected at a pressure of 20 pounds per square inch from a temperature-maintained culture keg with nitrogen gas, and the deoxygenated water was injected at a pressure of 18 pounds per square inch from a separate tank. After using all 18 liters of the BDI, AWT injected 99 gallons of deoxygenated water to IW-1.

At 8:49 D&B observed that the water level in monitoring well MW-6 was less than one foot below the ground surface, and AWT plugged MW-6 with a packer to prevent water from overflowing to the ground surface. At 8:53 AWT plugged MW-9 with a packer after D&B observed that the water level in MW-9 was less than five feet below the ground surface and rising. At 12:50 D&B observed that the water level in MW-8 was less than one foot below the ground surface and AWT plugged MW-8 with a packer to prevent water from overflowing to the ground surface.

Parsons was on-Site to observe the injections. Parsons also measured depth to water and groundwater field parameters at monitoring wells MW-6, MW-7, MW-8 and MW-9. Parsons measured groundwater field parameters by lowering a YSI ProDSS meter into the wells.

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Table 1

Depth to Groundwater and Water Quality Parameters
Harbor View Square
NYSDEC Site No. C738040

Well ID	Date	Time	Depth to Water (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turibidity (nephelometric turbidity units)	Dissolved Oxygen (milligrams per liter)	Appearance
IW-1	10/28/2021	8:00	8.68							
IW-1	10/28/2021	15:07	5	17.06	7.94	-206	0.989	146	0.99	Clear
MW-6	10/28/2021	8:00	8.38	18.09	8.44	-319	1.53	1000	2.53	Very Dark Turbidity
MW-6	10/28/2021	14:53	3.16	18.59	8.34	-322	2.23	1000	0.75	Very Dark Turbidity
MW-7	10/28/2021	8:14	9.48	17.42	11.89	-63	1.39	56.3	5.05	Clear
MW-7	10/28/2021	8:30	10.47							
MW-7	10/28/2021	9:58	9.89							
MW-7	10/28/2021	10:50	9.13							
MW-7	10/28/2021	12:12	7.92							
MW-7	10/28/2021	12:48	7.28	18.51	12.01	-71	1.51	1	3.75	
MW-7	10/28/2021	14:10	5.71	18.22	11.85	-164	1.44	194	5.65	White Haze
MW-8	10/28/2021	8:21	7.43	18.2	8.77	92	1.22	57.2	2.18	Tan Cloudy
MW-8	10/28/2021	9:03	7.58							
MW-8	10/28/2021	9:58	5.54	18.58	7.59	120	1.23	59.4	1.8	
MW-8	10/28/2021	10:50	4.4	19.35	7.46	49	1.26	44.9	2.44	
MW-8	10/28/2021	12:40	1.17	19.15	7.35	-3	1.26	145	1.27	
MW-8	10/28/2021	14:36	1	18.03	7.75	-81	1.41	701	0.65	Dark Turbidity
MW-9	10/28/2021	8:21	8.35	17.18	7.9	66	1.17	180	2.63	Clear
MW-9	10/28/2021	14:25	0	18.69	8.54	-100	1.23	1000	0.26	Dark Tubidity and White Haze

Injection Log
Harbor View Square
NYSDEC Site No. C738040

Well ID	Date	Time	Volume of 3DME and S-MZVI Mix Design[1] Injected (Gallons)	Volume of BDI and Deoxygenated Water Mix Design[2] Injected (Gallons)	Volume of Deoxygenated Water Injected (Gallons)	Flow Rate (Gallons per Minute)	Injection Pressure (pounds per square inch)	Comments
IW-1	10/28/2021	8:39 to 8:56	150			10	28	
IW-1	10/28/2021	9:19 to 9:56	194			7	16	Flow rate fell to 2.5 gpm and increased pressure to 25 psi to increase flow rate to 7 gpm at 9:50
IW-1	10/28/2021	10:20 to 10:45	156			8.2	24	
IW-1	10/28/2021	11:07 to 11:37	156			6.4	21	
IW-1	10/28/2021	12:01 to 12:30	150			8.8	25	
IW-1	10/28/2021	12:31 to 12:34			31	8.8	25	
IW-1	10/28/2021	13:05 to 13:20		65			20	
IW-1	10/28/2021	13:20 to 14:03			99		18	

[1]**3DME and S-MZVI Mix Design**: 4 gallons of 3DME + 2 gallons of S-MZVI + 150 gallons of potable water.

[2]**BDI Plus and Deoxygenated Water Mix Design**: 3 liters of BDI Plus + 10 gallons of deoxygenated water.

PHOTOGRAPH LOG
OCTOBER 28, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211028_125302	10-28-2021	Setup for injecting BDI, facing south.

PHOTOGRAPH LOG
OCTOBER 28, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211028_125302 – Setup for injecting BDI, facing south

D&B ENGINEERS AND ARCHITECTS		**DATE:** November 12-13, 2021 **REPORT NO.** 211112 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Rain	8:30, 11/12	51°F	0.2”	5-10	W
ATTACHMENTS	▪ Table 1 – Post Injection Field Water Quality Indicator Parameters ▪ Table 2 – Depths to Water and Total Well Depths ▪ Table 3 – Water Discharged to Sanitary Sewer ▪ Chain of Custody Record ▪ Field Observation Logs ▪ Photo Log	Cloudy	19:30, 11/12	48°F	0.0”	0-5	E
		Rain	13:00, 11/13	41°F	0.1”	15-20	N
		Cloudy	20:00, 11/13	34°F	0.0”	5-10	W

SITE CONDITIONS: Wet. The Site is paved

WORK GOAL: Measure post-injection groundwater quality field parameters, discharge water from drums, collected a soil waste characterization sample from drums.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	8:30 (11/12)	19:30 (11/12)
Joshua Cook	NYSDEC	8:45 (11/12)	11:00 (11/12)
Tracey Garland	D&B	13:00 (11/13)	20:00 (11/13)

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi-Parameter Water Quality Meter	Horiba U-52		
Water Level Meter	Heron		
Peristaltic Pump	Geopump		
2” Submersible Pump			
100 micron filter bags	Pentair Industrial		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** November 12-13, 2021
		REPORT NO. 211112
		PROJECT NO. 5277-01-01K
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at Harbor View Square (the Site) on November 12, 2021 and November 13, 2021 to discharge water from on-Site drums to the City of Oswego's sanitary sewer, collect one composite soil sample from the drums for waste characterization, and measure post-injection groundwater quality field parameters from injection well IW-1 and monitoring wells MW-4, MW-6, MW-7, MW-8 and MW-9.

D&B measured groundwater quality field parameters from each of the five intervals in MW-4 on November 12, 2021. D&B purged water from each interval in MW-4 and measured groundwater quality field parameters from the intervals until appeared that groundwater quality field parameters had stabilized. The groundwater quality field parameters were measured using a Horiba U-52 water quality meter by discharging groundwater water to a calibration cup and inserting the meters' sensors into the calibration cup. Visible turbidity of groundwater purged from MW-4 increased progressively with depth, such that groundwater purged from interval MW-4-_1, 15 to 20 feet below the ground surface (bgs), displayed hazy light brown and turbidity and groundwater purged from MW-4_5, 50 to 53 feet bgs, displayed very dark turbidity, while intervals between MW-4_1 and MW-4_5 displayed intermediate levels of turbidity. The groundwater quality parameters measured while purging and other observations are provided in the Field Observation Logs, attached. The final groundwater quality field parameter measurements and visible appearance of the groundwater are provided in Table 1, attached.

D&B measured groundwater quality field parameters from the injection well IW-1 and monitoring wells MW-6, MW-7, MW-8 and MW-9 on November 13, 2021. D&B measured depth to water and total well depth from these wells before purging from any of these wells. The measured depths to water and total well depth measurements are provided in Table 2, attached. D&B purged water from each of the wells using a peristaltic pump until it appeared that groundwater quality parameters had stabilized. The groundwater quality field parameters were measured from a flow cell using a Horiba U-52 multi parameter water quality meter. The groundwater quality parameters measured while purging and other observations are provided in the Field Observation Logs, attached. The final groundwater quality field parameter measurements and visible appearance of the groundwater are provided in Table 1, attached.

D&B discharged approximately 412 gallons of water from on-Site drums to the City of Oswego's sanitary sewer in accordance with the City of Oswego Wastewater Discharge Permit for Temporary Discharge issued to Harbor View Square, LLC. from November 10-15, 2021. There were thirty-two 55-gallon open top steel drums on-Site that had lids secured by bolted rings, five of the drums contained groundwater that was purged from on-Site wells during previous sampling events and twenty-seven of the drums contained soil, rock cuttings and water generated during on-Site drilling activities performed from September 20, 2021, to October 4, 2021. Before discharging, D&B removed the lids and measured depth of water above solid materials in the drums to calculate the volume water to be discharged, these calculations are shown on Table 3, attached. D&B was not permitted to discharge to the sanitary sewer system until after 14:00 on November 12, 2021, because rain caused stormwater overflow to the City's Excess Flow Management Facility. D&B used a two-inch submersible pump provided by Spoleta Construction to transfer water from the drums to a sanitary sewer manhole located within the Site, as directed by John McGrath, Chief Operator of the City of Oswego West Side Wastewater Treatment Plant (WWTP). D&B used 100-micron filter bags to filter the water discharged to the sanitary sewer manhole. After the water was removed from the drums D&B decontaminated the submersible pump and two-inch hose by running approximately 25 gallons of potable water with Alconox solution and then 30 gallons of potable water without Alconox solution through the pump and hose, this water was discharged to the sanitary sewer manhole. All contents were removed from six of the drums. Twenty-six remaining drums contained rock cuttings, soil, and polyethylene sheeting after water was removed.

After removing water from the 55-gallon drums, D&B collected one composite soil sample from the drums for waste characterization. A stainless-steel trowel was used to transfer equal amounts soil and rock cuttings from each of the twenty-six drums to a stainless-steel bowel. The contents were then mixed in the stainless-steel bowel until the sample was homogenous. The waste characterization sample, labeled SWC_2112_1, was collected on November 12, 2021, to be analyzed by USEPA Methods 9095B for Paint Filter, 6010C and 7470A for TCLP Metals and Mercury, 8260C for TCLP Volatiles, 1010A and 9045D for Flashpoint and pH, and 8082A for TCL PCBs by Eurofins TestAmerica of Buffalo, New York. D&B will relinquish the waste characterization sample following standard chain of custody procedures to the Eurofins TestAmerica Service Center in Syracuse, New York on November 15, 2021. The Chain of Custody Record for this sample is attached. D&B covered the drums with lids at the end of the day on November 12, 2021, and returned to the Site on November 13, 2021, to secure the lids with bolted rings.

PREPARED BY (OBSERVER)	REVIEWED BY
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ ADDITIONAL SHEETS USED	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Table 1
Harbor View Square
Post-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)	Appearance
MW-4_1	11/12/2021	---	14.28	6.75	-97	0.341	22.9	9.47	Hazy Light Brown Turbidity
MW-4_2	11/12/2021	---	14.24	6.74	-92	0.300	28.8	1.26	Hazy Light to Medium Brown Turbidty
MW-4_3	11/12/2021	---	14.51	6.79	-104	0.364	78.5	9.84	Greyish Brown Tubidity with Bacterial Sheen
MW-4_4	11/12/2021	---	14.34	6.02	-104	2.170	428.0	0.00	Dark Grey Turbidty
MW-4_5	11/12/2021	---	14.22	5.93	-78	2.780	884.0	0.10	Very Dark Turbidity
IW-1	11/13/2021	9.40	15.29	7.94	-513	1.580	62.0	0.00	Hazy Green
MW-6	11/13/2021	9.69	14.92	6.39	-459	2.540	523.0	0.00	Dark Turbidity
MW-7	11/13/2021	9.42	14.39	9.00	-287	0.936	0.0	0.00	Clear
MW-8	11/13/2021	5.50	14.40	6.78	-137	1.370	23.1	0.00	Clear
MW-9	11/13/2021	5.23	15.29	6.73	-72	1.230	196.0	0.00	White Haze w/ Some Turbidity

`

Table 2
Harbor View Square
Depths to Water and Total Well Depths

Date:	3/4/2021		10/18/2021		10/27/2021	11/13/2021	
Well ID	Static Depth to Water Level (feet below ground surface)	Depth of Interval (feet below ground surface)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)
MW-4_1	9.67	15 to 20	---	---	---	---	---
MW-4_2	11.2	25 to 30	---	---	---	---	---
MW-4_3	11.59	35 to 40	---	---	---	---	---
MW-4_4	11.78	42 to 47	---	---	---	---	---
MW-4_5	13.01	50 to 53	---	---	---	---	---
IW-1	---	---	9.84	30.3	8.61	9.40	29.22
MW-6	---	---	9.22	29.68	9.38	9.69	29.72
MW-7	---	---	13.14	29.86	9.61	9.42	29.90
MW-8	---	---	16.93	29.32	11.98	5.50	29.65
MW-9	---	---	9.98	29.68	8.99	5.23	29.74

Table 3

Harbor View Square
NYSDEC Site No. C738040
Water Discharged To The Sanitary Sewer on 11/12/2021 and 11/13/2021

Depth of Water in Each Drum (ft)
2.5
2.2
2.2
2.1
2.0
1.9
1.3
1.3
1.0
0.7
0.7
0.6
0.6
0.3
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0

Total of Depth of Water in Each Drum (*h*) (ft):	19.4
Radius of the Drums (*r*) (ft)	0.95

Total Volume Discharged from All Drums (ft^3) = $\pi r^2 h$:	55.1
Total Volume Discharged from All Drums (gal):	412

Gallons of water used for Decontamniation	55

Gallons of Water Purged to Measure Groundwater Quality Field Paramters on 11/13/2021	3

Total Gallons of Water Discharged to the Sanitary Sewer	470

~~FIELD OBSERVATION LOG~~ ~~Purging~~
~~GROUNDWATER SAMPLING RECORD~~

Field observation Log

SITE: Harbor View Square DATE: 11-12-21

WELL ID: MW-4_1
SAMPLERS: Tracey Garland

Time On-site:

Time Off-site:

Depth of well (feet from top of casing/riser)........................

Initial static water level (feet from top of casing/riser) ....

Depth to 15 / 20 of screen top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ___
Pos. Displ. ___
Disposable Bladder Pump (Low Flow)
Flute PdCHS ⊼

volume of water removed: 2 gal.

>3 volumes: yes ____ no ____

purged dry? yes ____ no ____

Well Volume Calculation:

2 in. casing: ________ ft. of water x 0.16 = ________ gallons
3 in. casing: ________ ft. of water x 0.36 = ________ gallons
6 in. casing: ________ ft. of water x 1.47 = ________ gallons

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1023			5.49	13.87	0.297	31.4	2.13	-16
~~1027~~			~~6.63~~	~~14.30~~	~~0.337~~	~~27.6~~	~~1.37~~	~~-100~~ -74.2
1041			6.61	14.05	0.306	19.4	9.96	-81
1103			6.75	14.28	0.341	22.9	9.47	-97

Purge Volume: 2gal Purging Time: 10:20 – 11:03
Purge Rate (gph):

Sampling

Time of Sample Collection: None

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing

Analyses:
____ ~~USEPA Method 8260C TCL VOCs~~
____
____
____
____

Observations

Well Observations:
Weather/Temperature:
Sample description: Cloudy light brown turbidity
Free Product? yes ____ no X describe
Sheen? yes ____ no X describe
Odor? yes ____ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Squar DATE: ~~11-21-21~~ 11-12-21

WELL ID: MW-4-2
SAMPLERS:

Time On-site:

Time Off-site:

Depth of well (feet from top of casing/riser)........................
Initial static water level (feet from top of casing/riser) ....

Depth to 25/30 of screen top / bottom

Purging Method

- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- FLUte pdCHS X

Well Volume Calculation:

2 in. casing: ________ ft. of water x 0.16 = ________ gallons
3 in. casing: ________ ft. of water x 0.36 = ________ gallons
6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed: 2 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1020			4.80	13.92	0.411	74.0	9.74	39
1037			6.63	14.30	0.337	27.60	1.37	-100
1059			6.74	14.24	0.300	28.8	1.26	-92

Purge Volume: 2 gal Purging Time: 10:20 - 10:59
Purge Rate (gph):

Sampling

Time of Sample Collection: None

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing

Analyses:
- ____ ~~USEPA Method 8260C TCL VOCs~~
- ____
- ____
- ____
- ____

Observations

Well Observations:
Weather/Temperature:
Sample description: Cloudy medium brown turbidity to lght
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Square DATE: 11-12-21

WELL ID: MW-4-3
SAMPLERS: Tracey Garland

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ ______
Initial static water level (feet from top of casing/riser) .... ______

Depth to ~~34~~ 35 / ~~39~~ 40 of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow)
Flute ports X

Well Volume Calculation:

2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 2 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1033			6.27	14.04	1.06	59.0	1.32	-108
1054			6.68	14.15	0.470	49.0	5.63	-100
1125			6.79	14.81	0.364	28.5	9.84	-104

Purge Volume: Purging Time: 10:20- 11:25
Purge Rate (gph):

Sampling

Time of Sample Collection: None

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing

Analyses:
~~USEPA Method 8260C TCL VOCs~~

Observations

Well Observations: ______
Weather/Temperature: ______
Sample description: Medium Turbidity
Free Product? yes ____ no ____ describe ______
Sheen? yes X no ____ describe Organic / blocky
Odor? yes ____ no ____ describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Square DATE: 11-12-21

WELL ID: MW-4-4
SAMPLERS: Tracy Grant

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ ______
Initial static water level (feet from top of casing/riser) .... ______

Depth to ~~40~~ 42 / ~~45~~ 47 of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow)
Flute MCHS X

Well Volume Calculation:
2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 2 gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1030			5.72	13.90	2.86	645	0.65	-109
1048			5.97	14.19	2.83	431	0.75	-97
1116			6.02	14.34	2.77	428	0.00	-104

Purge Volume: 2 gal Purging Time: 10:20 - 11:16
Purge Rate (gph):

Sampling
Time of Sample Collection: None

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing

Analyses:
____ ~~USEPA Method 8260C TCL VOCs~~
____
____
____
____

Observations
Well Observations: ______
Weather/Temperature: ______
Sample description: Dark turbidity
Free Product? yes ____ no ____ describe ______
Sheen? yes ____ no ____ describe ______
Odor? yes ____ no ____ describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE Harbor View Square DATE 11-12-21

WELL ID: MW-4_5
SAMPLERS: Tracey Garland

Time On-site:
Time Off-site:

Depth of well (feet from top of casing/riser)........................
Initial static water level (feet from top of casing/riser) ....

Depth to 50 / 53 of screen
top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- Flute ports X

Well Volume Calculation:
- 2 in. casing: ________ ft. of water x 0.16 = ________ gallons
- 3 in. casing: ________ ft. of water x 0.36 = ________ gallons
- 6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed:
2 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1020			5.59	13.79	2.85	931	4.31	-105
1044			5.85	14.21	2.80	910	0.26	-77
1111			5.93	14.22	2.78	884	0.10	-78

Purge Volume: Purging Time: 10:20-11:11
Purge Rate (gph):

Sampling
Time of Sample Collection: Nan

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing

Analyses:
- ____ ~~USEPA Method 8260C TCL VOCs~~

Observations
Well Observations:
Weather/Temperature:
Sample description: Very dark turbidity
Free Product? yes ____ no X describe
Sheen? yes ____ no X describe
Odor? yes ____ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Square DATE: 11-13-21

WELL ID: TW-1
SAMPLERS: Trevez Cabus

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ 0 29.22
Initial static water level (feet from top of casing/riser) 9.34

Depth to 15 / 30 of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) X
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:

2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 0.5 gal.

>3 volumes: yes ____ no ____   purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
17:05	100	~~9.66~~ 9.66	8.01	15.44	1.67	70.3	0.00	-329
17:10	250	9.74	7.94	15.29	1.58	62.0	0.00	-573

Purge Volume: 0.5 gal Purging Time: 17:00 - 17:15
Purge Rate (gph):

Sampling

Time of Sample Collection: None

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing

Analyses:
~~USEPA Method 8260C TCL VOCs~~
____
____
____
____

Observations

Well Observations:
Weather/Temperature:
Sample description: green cloudy
Free Product? yes ____ no X describe ______
Sheen? yes ____ no X describe ______
Odor? yes ____ no X describe ______

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Square DATE: 11-13-21

WELL ID: MW-6
SAMPLERS: Tracy Garlick

Time On-site: Time Off-site:

Depth of well (feet from top of casing/riser)........................ 29.72
Initial static water level (feet from top of casing/riser) 9.41

Depth to 15 / 30 of screen
top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:
- 2 in. casing: ____ ft. of water x 0.16 = ____ gallons
- 3 in. casing: ____ ft. of water x 0.36 = ____ gallons
- 6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 0.75 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
~~17:50~~		~~9.49~~	~~6.05~~	~~10.9~~				
18:00	100	10.69	6.52	12.47	2.81	1000+	0.00	-380
18:05	100	11.16	6.45	14.67	2.67	740	0.00	-442
18:10	100	11.32	6.37	14.92	2.54	523	0.00	-459

Purge Volume: 0.75 gal Purging Time: ~~17:45~~ 17:55 - 18:10
Purge Rate (gph):

Sampling
Time of Sample Collection: None

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing

Analyses:
- ____ ~~USEPA Method 8260C TCL VO~~Cs
- ____ None

Observations
Well Observations: Dark turbidity
Weather/Temperature: Rain 40°F
Sample description:
Free Product? yes ____ no ____ describe ____
Sheen? yes ____ no ____ describe ____
Odor? yes ____ no ____ describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE Harbor View Square DATE 11-13-21

WELL ID: MW-7 Time On-site: Time Off-site:
SAMPLERS:

Depth of well (feet from top of casing/riser)........................ 29.90
Initial static water level (feet from top of casing/riser) 9.32

Depth to 15.30 of screen top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:
- 2 in. casing: ________ft. of water x 0.16 = ________ gallons
- 3 in. casing: ________ft. of water x 0.36 = ________ gallons
- 6 in. casing: ________ft. of water x 1.47 = ________ gallons

volume of water removed: 0.75 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
16:25	75	10.58	8.75	14.00	0.962	11.2	1.25	-172
16:30	75	11.66	8.98	14.30	0.950	2.1	0.12	-113
16:35		12.58	9.00	14.39	0.936	0.0	0.00	-287

Purge Volume: 0.75 gal Purging Time: 16:20 - 16:40
Purge Rate (gph):

Sampling
Time of Sample Collection: None

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing

Analyses:
- ____ ~~USEPA Method 8260C TCL VOCs~~
- ____
- ____
- ____
- ____

Observations
Well Observations:
Weather/Temperature:
Sample description: ~~Green~~ Clear
Free Product? yes ____ no X describe
Sheen? yes ____ no X describe
Odor? yes ____ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Square DATE: 11-13-21

WELL ID: MW-8
SAMPLERS: Tracey Garland

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ 29.65
Initial static water level (feet from top of casing/riser) 6.62

Depth to 15 / 30 of screen
top / bottom

Purging Method

Airlift ___
Bailer ___
Peristaltic Pump (dedicated tubing) X
Centrifugal ___
Pos. Displ. ___
Disposable Bladder Pump (Low Flow) ___

Well Volume Calculation:

2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 0.6 gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
15:55	200	8.05	6.68	14.60	1.40	47.1	0.00	-111
16:00	100	9.00	6.70	14.54	1.39	29.6	0.00	-125
16:05	100	9.97	6.78	14.48	1.37	23.1	0.00	-137

Purge Volume: 0.6 gal Purging Time: 15:50-16:10
Purge Rate (gph):

Sampling

Time of Sample Collection: ______

Method:
___ Stainless steel bailer
___ Teflon bailer
___ Pos. Disp. Pump
___ Disposable bailer
X Dedicated pump and tubing

Analyses:
___ ~~USEPA Method 8260C~~ TCL VOCs
None

Observations

Well Observations: ______
Weather/Temperature: ______
Sample description: ~~6/6~~ Clear
Free Product? yes ____ no X describe ______
Sheen? yes ____ no X describe ______
Odor? yes ____ no X describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
~~GROUNDWATER SAMPLING RECORD~~

SITE: Harbor View Square DATE: 11-13-21

WELL ID: MW-9
SAMPLERS: Tracey Garland

~~T~~ime On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ 29.74
Initial static water level (feet from top of casing/riser) 6.42

Depth to 15 / 30 of screen
top / bottom

Purging Method

- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:

2 in. casing: ________ ft. of water x 0.16 = ________ gallons
3 in. casing: ________ ft. of water x 0.36 = ________ gallons
6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed:
0.5 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1500	250	7.61	6.97	15.54	1.21	392	0.22	-72
1505	↓ ~~0.25~~	8.50	6.78	15.35	1.23	200	0.00	-68
1510	350	9.42	6.73	15.29	1.23	196	0.00	-72

Purge Volume: 0.5gal Purging Time: 14:55 - 1515
Purge Rate (gph):

Sampling

Time of Sample Collection: None

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing

Analyses:
- ____ ~~USEPA Method 8260C TCL VOCs~~
- ____ n
- ____
- ____
- ____

Observations

Well Observations:
Weather/Temperature: 42°F Cloudy
Sample description: Cloudy w/ some dark turbidity
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes X no ~~X~~ describe rotten egg like

D&B ENGINEERS AND ARCHITECTS, P.C.

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information			
Client Contact: Mr. Tracey Garland	Sampler: Tracey Garland	Lab PM: Schove, John R	Carrier Tracking No(s): Syracuse
Company: D&B Engineers and Architects, P.C.	Phone: 315 413 1677	E-Mail: John.Schove@Eurofinset.com	State of Origin: #225
Address: 5879 Fisher Road PO BOX 56	PWSID:		COC No: 480-167722-36741.1
City: East Syracuse	Due Date Requested:		Page: Page 1 of 1
State, Zip: NY, 13057	TAT Requested (days): Standard		Job #:
Phone: 315-413-1677(Tel) RCreighton@synapsellc.com	Compliance Project: Δ Yes Δ No		
Email: tgarland@db-eng.com, labdata@db-eng.com	PO #: 5277-1		
Project Name: Harborview Square (D&B#5277-1)	WO #:		
Site:	Project #: 48023439		
	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9095B - Paint Filter	6010C, 7470A (TCLP Metals / Mercury)	8260C - TCLP Volatiles	1010A, 9045D (Flashpoint / PH)	8082A - TCL PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N	N		
SWC_211112_1	11-12-21	18:50	C	Solid	N	N	X	X	X	X	X	5	

RE- 11-15-21

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

480-192422 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify) ASP-B

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Tracey Garland	Date/Time: 11-15-21 / 10:10	Company: D&B	Received by: [signature] TALSY	Date/Time: 11/15/21 10:10	Company
Relinquished by: [signature]	Date/Time: 11-15-21, 1900	Company: Syr	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 11/16/21 0800	Company: TA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.4 #1

Ver: 06/08/2021

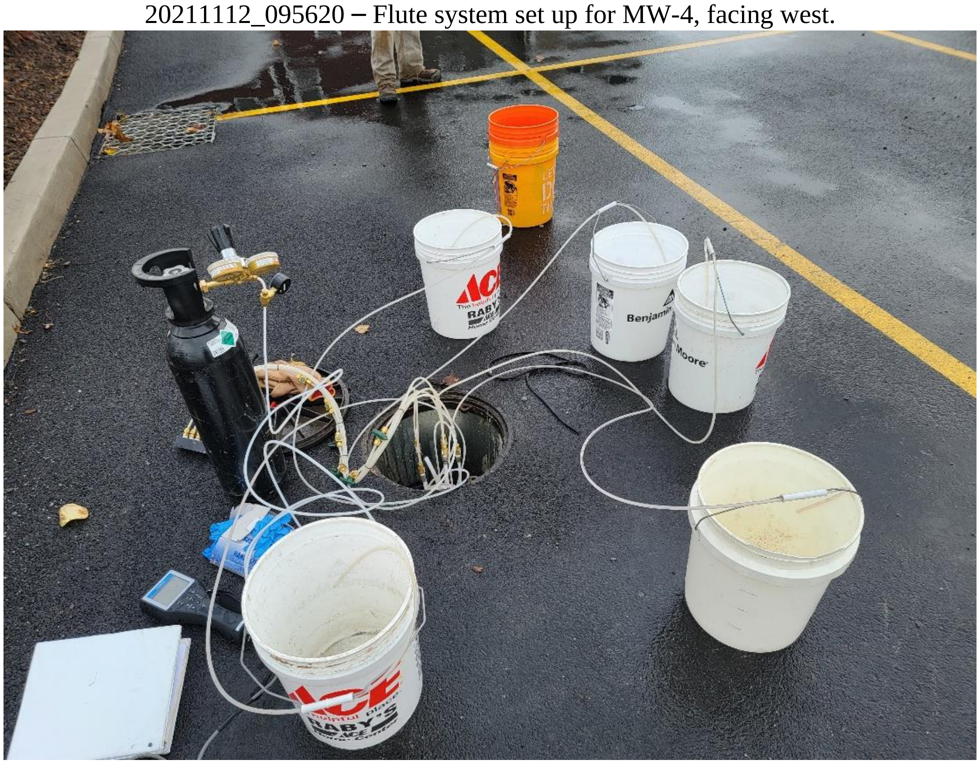
PHOTOGRAPH LOG
NOVEMBER 12-13, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211112_095607	11-12-2021	View of MW-4 with FLUte system connected.
20211112_095620	11-12-2021	Flute system set up for MW-4, facing west.
20211112_114613	11-12-2021	View of MW-4 with FLUte system disconnected.
20211112_114837	11-12-2021	Water purged from MW-4 with intervals increasing in depth from left to right.
20211113_143231	11-13-2021	Drum of drilling cuttings before water was discharged.
20211113_195136	11-13-2021	Drums on-Site with empty drums at front center, facing east.
20211113_195737	11-13-2021	View of the Site, facing north.

PHOTOGRAPH LOG
NOVEMBER 12-13, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211112_095607– View of MW-4 with FLUte system connected.

20211112_095620 – Flute system set up for MW-4, facing west.



PHOTOGRAPH LOG
NOVEMBER 12-13, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

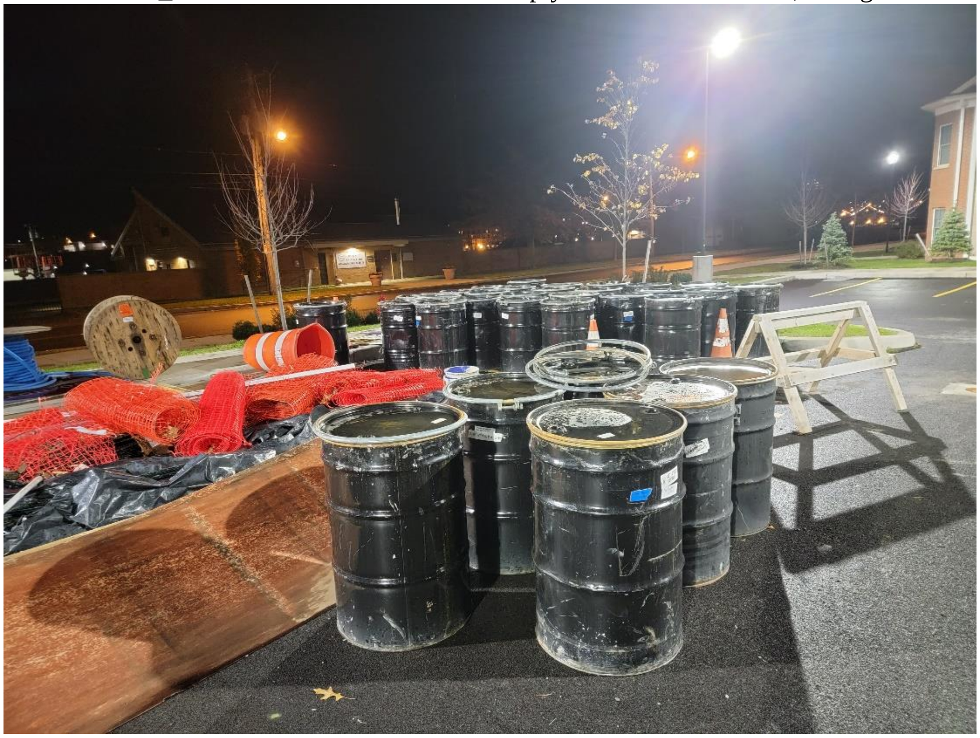
20211112_114613 – View of MW-4 with FLUte system disconnected.

20211112_114837 – Water purged from MW-4 with intervals increasing in depth from left to right.

PHOTOGRAPH LOG
NOVEMBER 12-13, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211113_143231 – Drum of drilling cuttings before water was discharged.

20211113_195136 – Drums on-Site with empty drums at front center, facing east.



PHOTOGRAPH LOG
NOVEMBER 12-13, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211113_195737 – View of the Site, facing north.

D&B ENGINEERS AND ARCHITECTS

DATE:	November 30, 2021
REPORT NO.	211130
PAGE NO.	1 OF 3
PROJECT NO.	5277-01-01C
NYSDEC SITE NO.	C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Light Snow	8:30	34°F	0.0	0-5	S
ATTACHMENTS	▪ Table 1 - Depths to Water and Total Well Depths; ▪ Table 2 – Post Injection Field Water Quality Indicator Parameters; ▪ Groundwater Sampling Records; ▪ Chain of Custody ▪ Figure 1- Radon Test Kit Locations ▪ Photo Log	Light Snow	17:00	34°F	0.0	0-5	S

SITE CONDITIONS: Wet, Paved.

WORK GOAL: Perform 30-day post-injection groundwater monitoring and deploy radon test kits in Building 1.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	8:20	17:00
Gunther Schnorr	D&B	8:20	17:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi Parameter Water Quality Meter	Horiba U-52		
Water Level Meter	Solinist 102 P4		
Nitrogen Tank			
pdCHS sampling manifold and regulator	FLUTe		
PID	MiniRae 3000		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ | **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		**DATE:** November 30, 2021 **REPORT NO.** 211130 **PAGE NO.** 2 OF 3 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at the Harbor View Square site (the Site) to perform 30-day post-injection groundwater monitoring in accordance with the Reagent Injection Work Plan and deploy radon test kits in Building 1.

After removing the J-plugs from IW-1, MW-6, MW-7, MW-8, and MW-9, D&B measured headspace volatile organic compound (VOC) concentrations in the wells using a Mini Rae 3000 photoionization detector (PID). PID VOC measurements were 32.6 parts per million (ppm) from IW-1, 30.1 ppm from MW-6, 10.52 ppm from MW-7, 1.5 ppm from MW-8, and 14.6 ppm from MW-9.

D&B measured depth to water and total well depth at injection well IW-1 and monitoring wells MW-6, MW-7, MW-8, and MW-9 before purging the wells. The water level meter was decontaminated between each monitoring well location using an Alconox solution and rinsed with potable water. The depth to water and total well depth measurements are provided in Table 1, attached.

Before groundwater samples were collected from MW-4, greater than 11.4 liters of water was purged from each pdCHS interval in MW-4 using compressed nitrogen air at a regulated pressure of 30 pounds per square inch. The pdCHS intervals in MW-4 were MW-4_1, MW-4_2, MW-4_3, MW-4_4 and MW-4_5. Groundwater quality field parameters were measured from each pdCHS interval by discharging groundwater water to a calibration cup for the Horiba U-52 multi-parameter water quality meter and inserting the meters' sensors into the calibration cup. Groundwater samples were collected from IW-1, MW-6. MW-7, MW-8, and MW-9 using low flow purging and sampling procedures. These wells were purged and sampled using a peristaltic pump with dedicated silicone and high-density polyethylene (HDPE) tubing and groundwater quality field parameters were measured using a Horiba U-52 multi-parameter water quality meter and flow cell. All water purged from these wells was retained on-Site in a 55-gallon steel drum. The groundwater quality field parameters measured while purging, sample collection times, and other observations are provided in the Groundwater Sampling Records, attached. The final groundwater quality field parameters measured immediately before samples were collected, and the appearances of the groundwater collected are provided in Table 2, attached. Matrix Spike and Matrix Spike Duplicate (MS/MSD) samples were collected from MW-6, and a blind duplicate sample (DUP-1) was collected from MW-8.

The groundwater samples were submitted following standard chain-of-custody protocols to Eurofins/TestAmerica Service Center in Syracuse, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175)
- Alkalinity by USEPA Method 310.2
- Total organic carbon/dissolved carbon by USEPA Method 9060A; and
- Total organic carbon by USEPA Method SM5310D.

D&B deployed two Pro-Lab, Inc Short-Term Radon Test Kits in the lowest floor of Building 1, following the directions provided with the radon test kits. Radon test kit 1 (R1) was deployed in the community room of the first floor of Building 1. Radon test kit 2 (R2) was deployed in the retail space in the northern section of the lowest floor of Building 1. Approximate locations where the test kits were deployed are shown on Figure 1, attached. D&B will return to the Site on December 2, 2021, to collect the radon test kits and mail them to Pro-Lab, Inc. for analysis.

D&B ENGINEERS AND ARCHITECTS		**DATE:** November 30, 2021 **REPORT NO.** 211130 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Table 1
Harbor View Square
Depths to Water and Total Well Depths

Date:	3/4/2021		10/18/2021		10/27/2021	11/13/2021		11/30/2021	
Well ID	Static Depth to Water Level (feet below ground surface)	Depth of Interval (feet below ground surface)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)
MW-4_1	9.67	15 to 20	---	---	---	---	---	---	---
MW-4_2	11.2	25 to 30	---	---	---	---	---	---	---
MW-4_3	11.59	35 to 40	---	---	---	---	---	---	---
MW-4_4	11.78	42 to 47	---	---	---	---	---	---	---
MW-4_5	13.01	50 to 53	---	---	---	---	---	---	---
IW-1	---	---	9.84	30.3	8.61	9.40	29.22	10.58	29.25
MW-6	---	---	9.22	29.68	9.38	9.69	29.72	10.50	29.65
MW-7	---	---	13.14	29.86	9.61	9.42	29.90	10.52	29.89
MW-8	---	---	16.93	29.32	11.98	5.50	29.65	9.38	29.60
MW-9	---	---	9.98	29.68	8.99	5.23	29.74	9.41	29.72

Table 2
Harbor View Square
Post-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)	Appearance/Observations
MW-4_1	11/12/2021	---	14.28	6.75	-97	0.341	22.9	9.47	Hazy Light Brown Turbidity
MW-4_1	11/30/2021	---	11.86	5.84	-153	1.630	13.7	4.36	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_2	11/12/2021	---	14.24	6.74	-92	0.300	28.8	1.26	Hazy Light to Medium Brown Turbidty
MW-4_2	11/30/2021	---	10.66	6.00	-161	1.550	12.5	3.50	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_3	11/12/2021	---	14.51	6.79	-104	0.364	78.5	9.84	Greyish Brown Tubidity with Bacterial Sheen
MW-4_3	11/30/2021	---	10.66	5.92	-158	1.750	25.3	3.92	Medium Turbidity, Moderate Bacterial Sheen, Sour Odor
MW-4_4	11/12/2021	---	14.34	6.02	-104	2.170	428.0	0.00	Dark Grey Turbidty
MW-4_4	11/30/2021	---	11.37	5.91	-165	1.750	18.8	8.04	Dark Turbidity, Heavy Bacterial Sheen, Sour Odor
MW-4_5	11/12/2021	---	14.22	5.93	-78	2.780	884.0	0.10	Very Dark Turbidity
MW-4_5	11/30/2021	---	11.19	5.70	-135	2.050	94.8	2.92	Very Dark Turbidity, Bacterial Sheen, Sour Odor
IW-1	11/13/2021	9.40	15.29	7.94	-513	1.580	62.0	0.00	Hazy Green
IW-1	11/30/2021	10.58	15.50	6.81	-193	1.800	45.0	0.20	Clear, Light Bacterial Sheen, Used Cooking Oil Odor
MW-6	11/13/2021	9.69	14.92	6.39	-459	2.540	523.0	0.00	Dark Turbidity
MW-6	11/30/2021	10.50	15.50	6.81	-193	1.800	45.0	0.20	Clear
MW-7	11/13/2021	9.42	14.39	9.00	-287	0.936	0.0	0.00	Clear
MW-7	11/30/2021	10.52	13.22	10.95	-234	1.140	0.9	0.38	Clear
MW-8	11/13/2021	5.50	14.40	6.78	-137	1.370	23.1	0.00	Clear
MW-8	11/30/2021	9.38	14.95	6.80	-283	1.300	9.5	0.32	Light Grey Turbidity, Light Bacterial Sheen, Used Cooking Oil Odor
MW-9	11/13/2021	5.23	15.29	6.73	-72	1.230	196.0	0.00	White Haze w/ Some Turbidity
MW-9	11/30/2021	9.41	15.66	6.45	-184	1.470	61.7	0.34	Grey Turbidity, Light Bacterial Sheen, Used Cookin Oil Odor

`

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11-30-21

WELL ID: MW-4_1 Time On-site: ____ Time Off-site: ____
SAMPLERS: Tracey Garland

Depth of well (feet from top of casing/riser)........................ —
Initial static water level (feet from top of casing/riser) .... —

Depth to 15 / 20 of screen
top / bottom

Purging Method

- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow) ____
- FLUTe PdC4S X

~~Well Volume~~ Calculation:

~~2 in. casing: ____ ft. of water x 0.16 = ____ gallons~~
~~3 in. casing: ____ ft. of water x 0.36 = ____ gallons~~
~~6 in. casing: ____ ft. of water x 1.47 = ____ gallons~~

volume of water removed: 3.3 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purged gal ~~Rate~~ (~~ml/min~~)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
~~11:32~~	~~2~~	~~--~~	~~4.43~~	~~10.08~~	~~1.68~~	~~15.2~~	~~2.69~~	~~48~~
11:32	2	--	4.77	10.43	1.60	22.4	10.90	-83
11:54	2.9	--	5.54	11.97	1.72	14.9	2.97	-148
12:24	3.3		5.84	11.86	1.63	13.7	4.36	-153

Purge Volume: 3.3 gal Purging Time: 10:25 → 12:24
Purge Rate (gph):

Sampling

Time of Sample Collection: 12:24 MW-4_1_(15-20)

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ ~~Dedicated pump and tubing~~ Flute PdC4S

Analyses:
- X USEPA Method 8260C TCL VOCs Site specific list
- X 6010C, 7470A
- X MNA parameters
- ____
- ____

Observations

Well Observations:
Weather/Temperature: Overcast, 5-10 W, 36°F
Sample description: Some dark turbidity
Free Product? yes ____ no X describe ____
Sheen? yes X no ~~X~~ describe light blocky sheen
Odor? yes X no ~~X~~ describe sour odor.

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11-30-21

WELL ID: MW-4_2
SAMPLERS: Tracey Carlson

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)............ ______
Initial static water level (feet from top of casing/riser) .... ______

Depth to 25 / 30 of screen
top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- Flute PCLLS X

Well Volume Calculation:
- 2 in. casing: ______ ft. of water x 0.16 = ______ gallons
- 3 in. casing: ______ ft. of water x 0.36 = ______ gallons
- 6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 3.3 gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests gal

Time	~~Purge Rate~~ (~~ml/~~min) gal	~~Depth to Water (ft)~~	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
11:36	2.2		5.01	11.61	1.67	19.6	10.60	-117
12:00	3		5.77	12.19	1.76	15.71	10.84	-166
13:02	3.3		6.00	10.66	1.53	12.5	3.50	-161

Purge Volume: 3.3 gal Purging Time: 10:25 - 13:02
Purge Rate (gph):

Sampling
Time of Sample Collection: 13:02 MW-4_2-(25-30)

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing
- X Flute PCLLS

Analyses:
- X USEPA Method 8260C TCL VOCs
- X 6010 C, 7470A
- X MNA parameters
- ____
- ____

Observations
Well Observations:
Weather/Temperature: Overcast, 5-10 W, 36°F
Sample description: Some dark Particles
Free Product? yes ____ no X describe ______
Sheen? yes X no ____ describe Light Blocky sheen
Odor? yes X no ____ describe Sour odor

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11-30-21

WELL ID: MW-4_3 Time On-site: ______ Time Off-site: ______

SAMPLERS: Tracey Garland

Depth of well (feet from top of casing/riser)........................ ______

Initial static water level (feet from top of casing/riser) .... ______

Depth to 35 / 40 of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ ____
~~Disposable~~ ~~Bladder Pump~~ (Low Flow) X
Flute packs

Well Volume Calculation:

2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: ______ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests gal

Time	~~Purge Rate~~ (~~ml/min~~)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
11:40	2.4	~~	5.30	11.42	1.56	25.3	5.69	-128
12:04	3.0		5.79	12.39	1.68	15.1	10.86	-160
13:40	3.8		5.92	10.66	1.75	25.3	3.92	-158

Purge Volume: Purging Time: -13:40

Purge Rate (gph):

Sampling

Time of Sample Collection: 13:40

MW-4_3_(35-40)

Method:

____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing
X Flute packs

Analyses:

X USEPA Method 8260C TCL VOCs
X 6010C, 7470A
X MNA params
____
____

Observations

Well Observations:

Weather/Temperature: Overcast, S-10W, 36°F

Sample description: Some dark turbidity

Free Product? yes ____ no X describe ______

Sheen? yes X no ____ describe Moderate blebs

Odor? yes X no ____ describe Sweet

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11-30-21

WELL ID: MW-4_4
SAMPLERS: Tracey Garland

Time On-site: ____ Time Off-site: ____

Depth of well (feet from top of casing/riser)........ —
Initial static water level (feet from top of casing/riser) .... —

Depth to 42, 47 of screen top / bottom

Purging Method
Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____
Plute pdcus X

Well Volume Calculation:
2 in. casing: ____ ft. of water x 0.16 = ____ gallons
3 in. casing: ____ ft. of water x 0.36 = ____ gallons
6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 3.8 gal.
>3 volumes: yes ____ no ____
purged dry? yes ____ no ____

Field Tests Gal

Time	Purged Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
11:44	2.6		5.42	11.59	1.73	24.2	3.21	-140
12:08	3.1		5.85	12.14	1.82	14.2	3.23	-167
14:15	3.8		5.91	11.37	1.75	18.8	8.04	-165

Purge Volume: 3.8
Purge Rate (gph):
Purging Time: 10:25 - 14:15

Sampling
Time of Sample Collection: 14:15

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
X Dedicated pump and tubing
Plutepdcus

Analyses:
X USEPA Method 8260C TCL VOCs
X 6010C, 7470A
X MNA Parameters
____
____

Observations
Well Observations:
Weather/Temperature: Overcast S-10W 36°F
Sample description: dark turbidy purple
Free Product? yes ____ no ____ describe
Sheen? yes X no ____ describe Heavy Blocky Sheen
Odor? yes X no ____ describe Sour Odor

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11-30-21

WELL ID: MW-4_5
SAMPLERS: Tracey Garland

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........ ______
Initial static water level (feet from top of casing/riser) .... ______

Depth to 50 / 53 of screen
top / bottom

Purging Method

Airlift ___
Bailer ___
Peristaltic Pump (dedicated tubing) ___
Centrifugal ___
Pos. Displ. ___
~~Disposable Bladder Pump (Low-Flow)~~ FLUTE packers X

Well Volume Calculation:

2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 4.5 gal.

>3 volumes: yes ___ no ___ purged dry? yes ___ no ___

Field Tests

Time	Purged gal (~~Rate~~ (ml/min))	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
11:48	2.8		4.95	11.58	2.90	133	2.20	-100
12:15	3.3		5.42	11.91	2.14	47.9	5.18	-114
14:45	4.5		5.70	11.19	2.05	94.8	2.92	-135

Purge Volume: 4.5 gal Purging Time: 10:25 - 14:45
Purge Rate (gph):

Sampling

Time of Sample Collection: 14:45

MW-4_5_ (50-53)

Method:
___ Stainless steel bailer
___ Teflon bailer
___ Pos. Disp. Pump
___ Disposable bailer
X ~~Dedicated~~ pump and tubing Flute Packers

Analyses:
X USEPA Method 8260C TCL VOCs
X 6010C, 7470A
X MWA parameters
___
___

Observations

Well Observations:
Weather/Temperature: Overcast, S-10W, 36°F
Sample description: Very dark purple turbidity
Free Product? yes ___ no X describe ______
Sheen? yes X no ___ describe blacky sheen
Odor? yes X no ___ describe Sour

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11/30/21

WELL ID: IW-1 Time On-site: ______ Time Off-site: ______

SAMPLERS: OTS

Depth of well (feet from top of casing/riser) 29.25

Initial static water level (feet from top of casing/riser) 10.58

Depth to ___/___ of screen (top / bottom)

Purging Method

Airlift		Centrifugal	
Bailer	___	Pos. Displ.	___
Peri Pump (dedicated tubing)	X	Disposable Bladder Pump (Low Flow)	___

Well Volume Calculation:

1 in casing	___ ft. of water x 0.04 =	___	gallons
2 in. casing:	18.67 ft. of water x 0.16 =	2.99	gallons
3 in. casing:	___ ft. of water x 0.37 =	___	gallons
4 in. casing:	___ ft. of water x 0.65 =	___	gallons
5 in. casing:	___ ft. of water x 1.02 =	___	gallons
6 in. casing:	___ ft. of water x 1.47 =	___	gallons

volume of water removed: 1.1 gal. >3 volumes: yes ___ no X purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1440	~150	12.35	8.90	13.70	1.67	5.6	1.28	-108
1445		12.50	8.11	15.44	1.71	5.3	0.44	-275
1450		12.58	7.93	15.48	1.73	4.3	0.36	-297
1455		12.60	7.83	15.79	1.74	4.5	0.31	-311
1500		12.68	7.78	15.70	1.83	5.1	0.28	-333
1505		12.68	7.77	15.29	1.85	4.9	0.28	-339
1510		12.69	7.76	15.09	1.87	5.0	0.27	-343

Purge Volume: 1.1 gal Purging Time: 35

Purge Rate (gph): 1.88

Sampling

Time of Sample Collection: 1510

Method:

- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:

- X USEPA Method 8260C TCL VOCs
- X metals
- X MNA Parameters

Observations

Well Observations: water and tubing

Weather/Temperature: 35 °F overcast, Snow Squalls

Sample description: Clear

Free Product? yes ___ no X describe ______

Sheen? yes ___ no X describe ______

Odor? yes ___ no X describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11/30/21

WELL ID: MW-6 Time On-site: ______ Time Off-site: ______
SAMPLERS: GTS

Depth of well (feet from top of casing/riser) 29.65
Initial static water level (feet from top of casing/riser) 10.50

Depth to ___/___ of screen (top / bottom)

Purging Method

Airlift ___ Centrifugal ___
Bailer ___ Pos. Displ. ___
Peri Pump (dedicated tubing) ___ Disposable Bladder Pump (Low Flow) ___

Well Volume Calculation:

1 in casing ______ ft. of water x 0.04 = ______ gallons
2 in. casing: 19.15 ft. of water x 0.16 = 3.0 gallons
3 in. casing: ______ ft. of water x 0.37 = ______ gallons
4 in. casing: ______ ft. of water x 0.65 = ______ gallons
5 in. casing: ______ ft. of water x 1.02 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 1 gal. >3 volumes: yes ___ no ___ purged dry? yes ___ no ___

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1535		11.55	6.70	14.72	2.06	61.0	1.81	-132
1540		13.65	6.77	15.59	1.90	80.9	0.53	-168
1545		13.90	6.85	15.33	1.84	71.8	0.24	-190
1550		14.10	6.83	15.33	1.83	63.3	0.22	-192
1555		14.10	6.81	15.50	1.85	49.7	0.21	-193
1600		14.12	6.81	15.50	1.80	46.0	0.20	-193

Purge Volume: Purging Time:
Purge Rate (gph): 2 gpm

Sampling

Time of Sample Collection: 1600

Method:
___ Stainless steel bailer
___ Teflon bailer
___ Pos. Disp. Pump
___ Disposable bailer
X Dedicated pump and tubing

Analyses:
X USEPA Method 8260C TCL VOCs
X Metals
X MNA Parameters

Observations

Well Observations: Good, water above J-plug
Weather/Temperature: 34°F 5-10 mph South
Sample description: Clear
Free Product? yes ___ no X describe ______
Sheen? yes X no ___ describe Black
Odor? yes X no ___ describe Used Cooking oil

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square   DATE: 11/30/21

WELL ID: MW-7   Time On-site: ______   Time Off-site: ______
SAMPLERS: GJS

Depth of well (feet from top of casing/riser) 29.89
Initial static water level (feet from top of casing/riser) 10.52

Depth to ___/___ of screen (top / bottom)

Purging Method

Airlift	___	Centrifugal	___
Bailer	___	Pos. Displ.	___
Peri Pump (dedicated tubing)	X	Disposable Bladder Pump (Low Flow)	___

Well Volume Calculation:

1 in casing		ft. of water x 0.04 =	gallons
2 in. casing:	19.37	ft. of water x 0.16 = 3.10	gallons
3 in. casing:		ft. of water x 0.37 =	gallons
4 in. casing:		ft. of water x 0.65 =	gallons
5 in. casing:		ft. of water x 1.02 =	gallons
6 in. casing:		ft. of water x 1.47 =	gallons

volume of water removed: 0.80 gal.   >3 volumes: yes ___ no X   purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1340	150	11.17	9.73	13.37	0.954	2.9	2.07	-170
1345		11.63	10.33	14.49	0.990	2.9	0.97	-199
1350		11.98	10.67	14.52	1.02	2.0	0.60	-219
1355		12.40	10.76	14.43	1.03	1.5	0.47	-225
1400		12.70	10.85	14.27	1.11	1.1	0.35	-229
1405		13.00	10.89	14.00	1.13	1.1	0.36	-231
1410		13.22	10.95	13.80	1.14	0.9	0.38	-234

Purge Volume: 0.8   Purging Time: 35min
Purge Rate (gph): 1.37gph

Sampling

Time of Sample Collection: 1410

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X metals
- X MNA parameters

Observations

Well Observations: water over J-plug, Good
Weather/Temperature: 34°F 10-15 South, Snow flurries
Sample description: Clear

Free Product? yes ___ no X describe ______
Sheen? yes ___ no X describe ______
Odor? yes ___ no X describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11/30/21

WELL ID: MW-8 Time On-site: ____ Time Off-site: ____
SAMPLERS: GTS

Depth of well (feet from top of casing/riser) 29.60
Initial static water level (feet from top of casing/riser) 9.38

Depth to ___/___ of screen (top / bottom)

Purging Method

Airlift		Centrifugal	
Bailer	____	Pos. Displ.	____
Peri Pump (dedicated tubing)	____	Disposable Bladder Pump (Low Flow)	____

Well Volume Calculation:

Casing	ft. of water	Factor	gallons
1 in casing		ft. of water x 0.04 =	gallons
2 in. casing:	20.22	ft. of water x 0.16 =	3.25 gallons
3 in. casing:		ft. of water x 0.37 =	gallons
4 in. casing:		ft. of water x 0.65 =	gallons
5 in. casing:		ft. of water x 1.02 =	gallons
6 in. casing:		ft. of water x 1.47 =	gallons

volume of water removed: 1 gal. >3 volumes: yes ____ no X purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1225		11.45	6.57	14.30	1.34	5.5	1.34	-201
1230		12.40	6.68	15.57	1.29	9.6	0.53	-244
1235		13.47	6.76	15.65	1.30	9.6	0.35	-263
1240		14.40	6.80	15.73	1.29	9.1	0.34	-270
1245		14.95	6.80	15.74	1.30	9.5	0.32	-283

Purge Volume: 1g Purging Time: 25 min
Purge Rate (gph): 2.4gph

*DUP-1 collected at MW-8

Sampling

Time of Sample Collection: 1245

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X Metals
- X MNA Parameters

Observations

Well Observations: Water above J-plug, no Gasket; Good
Weather/Temperature: 35°F overcast, 5-10 South
Sample description: Light Gray, Slight Black Sheen
Free Product? yes ____ no X describe ____
Sheen? yes X no ____ describe Black
Odor? yes X no ____ describe Used Cooking Oil

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 11/30/21

WELL ID: MW-9 Time On-site: ____ Time Off-site: ____
SAMPLERS: GJS

Depth of well (feet from top of casing/riser) 29.72
Initial static water level (feet from top of casing/riser) 9.41

Depth to ___/___ of screen (top / bottom)

Purging Method

Airlift		Centrifugal	
Bailer	___	Pos. Displ.	___
Peri Pump (dedicated tubing)	X	Disposable Bladder Pump (Low Flow)	___

Well Volume Calculation:

1 in casing	___	ft. of water x 0.04 =	___ gallons
2 in. casing:	20.31	ft. of water x 0.16 =	3.25 gallons
3 in. casing:	___	ft. of water x 0.37 =	___ gallons
4 in. casing:	___	ft. of water x 0.65 =	___ gallons
5 in. casing:	___	ft. of water x 1.02 =	___ gallons
6 in. casing:	___	ft. of water x 1.47 =	___ gallons

volume of water removed: 1.1 gal. >3 volumes: yes ___ no X purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1110	2150	10.98	5.30	14.41	2.06	60.7	1.55	-60
1115		12.39	5.51	15.51	1.80	53.7	0.74	-93
1120		13.20	6.13	15.65	1.53	60.3	0.54	-149
1125		14.10	6.40	15.50	1.49	64.0	0.45	-175
1130		14.78	6.45	15.53	1.46	62.7	0.38	-182
1135		14.81	6.45	15.66	1.47	61.7	0.34	-184

Purge Volume: 1.1g Purging Time: 30min
Purge Rate (gph): 2.2gph

Sampling

Time of Sample Collection: 1135

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs (55)
- X Metals
- ✓ MNA Parameters

Observations

Well Observations: Water above J-plug, No rubber gasket; Good
Weather/Temperature: 35°F Cloudy 5-10 South
Sample description: Gray, Slight Blocky Sheen
Free Product? yes ___ no X describe ___
Sheen? yes X no ~~X~~ (M) describe Blocky
Odor? yes X no ___ describe Used Cutting oil

D&B ENGINEERS AND ARCHITECTS, P.C.

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Tracey Garland, Gunther Schnorr	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-168196-36495.1
Client Contact: Mr. Tracey Garland	Phone: 315 413 1677	E-Mail: John.Schove@Eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: D&B Engineers and Architects, P.C.	PWSID:			Job #:
Address: 5879 Fisher Road PO BOX 56	Due Date Requested:			
City: East Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13057	Compliance Project: Δ Yes Δ No			
Phone: 315-413-1677(Tel)	PO #: 5277-1			
Email: tgarland@db-eng.com labdata@db-eng.com RCreighton@Syracuse.llc.com	WO #:			
Project Name: Harborview Square (D&B#5277-1)	Project #: 48023439			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane, Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	~~PFC_IDA - PFAS, Standard List (21 analytes)~~ TG	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	D	A	A	A	CB	N	N	N	N		
MW-4_1-(15-20)	11-30-21	12:24	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_2-(25-30)	11-30-21	13:02	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_3-(35-40)	11-30-21	13:40	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_4-(42-47)	11-30-21	14:15	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_5-(50-53)	11-30-21	14:45	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-6	11-30-21	16:00	G	Water		Y	X	X	X	X	X	X	X	X	X	X	X		51	MS + MSD
MW-7	11-30-21	14:10	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-8	11-30-21	12:45	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-9	11-30-21	11:35	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
EW-1	11-30-21	15:10	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
DUP-1	11-30-21	00:00	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ________ Months

Deliverable Requested: I, II, III, IV, Other (specify) CAT B

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 11-30-21 / 18:00	Company: D&B	Received by: [signature]	Date/Time: 11/30/21 1800	Company: ES-SYR
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Tracey Garland, Gunther Schnur	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-168196-36495.2
Client Contact: Mr. Tracey Garland	Phone: 315-413-1627	E-Mail: John.Schove@Eurofinset.com	State of Origin:	Page: Page 2 of 2
Company: D&B Engineers and Architects, P.C.	PWSID:			Job #:
Address: 5879 Fisher Road PO BOX 56	Due Date Requested:			
City: East Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13057	Compliance Project: Δ Yes Δ No			
Phone: 315-413-1677(Tel) labdata@db-eng.com	PO #: 5277-1			
Email: tgarland@db-eng.com RCreighton@synapsellc.com	WO #:			
Project Name: Harborview Square (D&B#5277-1)	Project #: 48023439			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane,Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	PFC_IDA - PFAS, Standard List (21 analytes)	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N	D	A	A	A	CB	N	N	N	N		
HCl Trip Blank 1	11			Water									X							Trip blank
HCl Trip Blank 2	11			Water									X							Trip blank
				Water																
				Water																
				Water																

11/30/21 AP

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

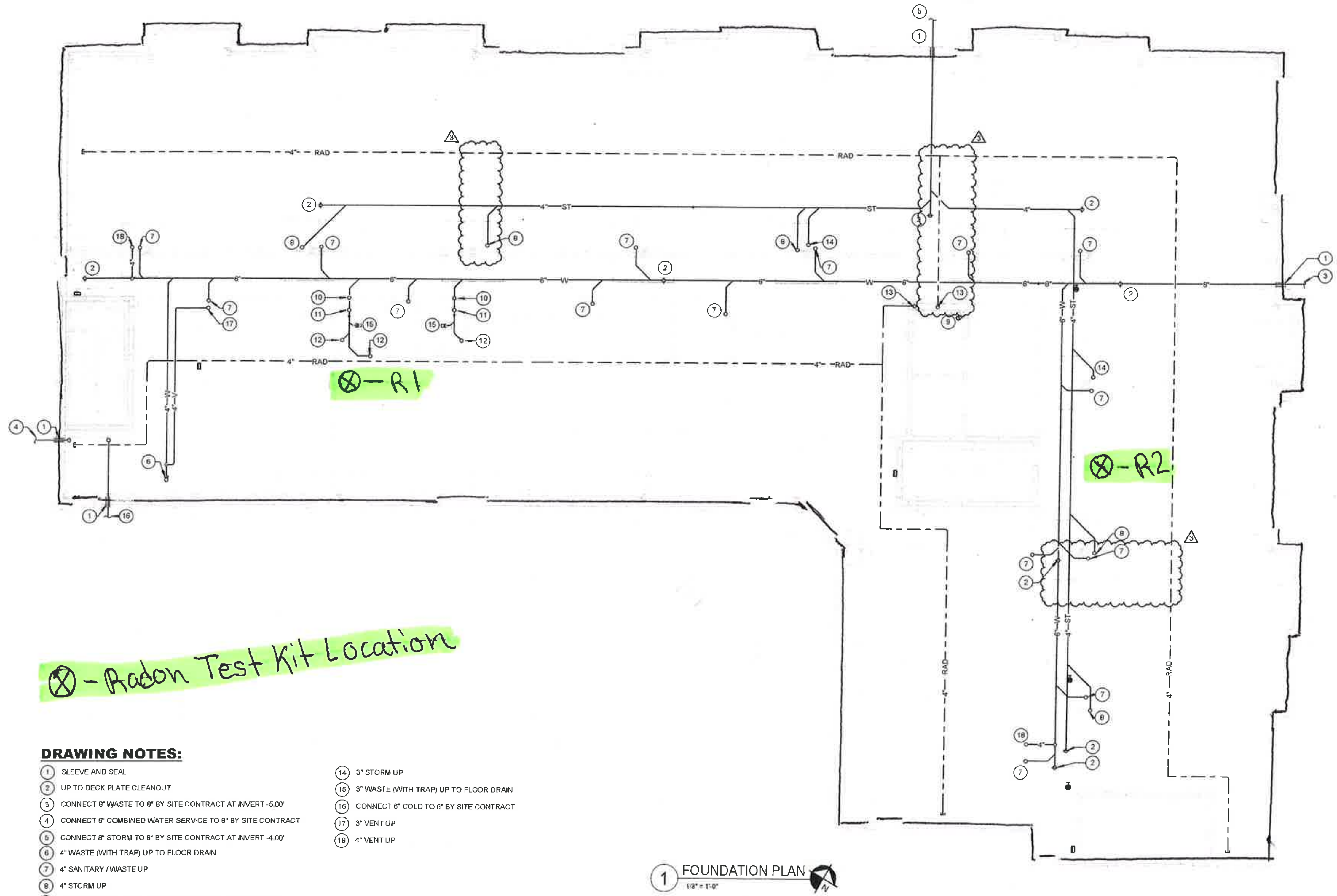
Deliverable Requested: I, II, III, IV, Other (specify) ASP B (CAT B)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 11-30-21 / 18:00	Company: D&B	Received by: [signature]	Date/Time: 11/30/21 1800	Company: ES-SYR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Figure 1 - Radon Test Kit Locations



⊗ - Radon Test Kit Location

DRAWING NOTES:

1. SLEEVE AND SEAL
2. UP TO DECK PLATE CLEANOUT
3. CONNECT 8" WASTE TO 8" BY SITE CONTRACT AT INVERT -5.00'
4. CONNECT 6" COMBINED WATER SERVICE TO 8" BY SITE CONTRACT
5. CONNECT 8" STORM TO 8" BY SITE CONTRACT AT INVERT -4.00'
6. 4" WASTE (WITH TRAP) UP TO FLOOR DRAIN
7. 4" SANITARY / WASTE UP
8. 4" STORM UP
9. ELEVATOR SUMP PUMP REFER TO DETAIL ON DRAWING P-401
10. 2" VENT UP INCREASE TO 3" ON ALL UNDERGROUND PIPING RUNS
11. 4" SANITARY UP TO WATER CLOSET
12. 1-1/2" WASTE UP TO SINK / LAVATORY INCREASE TO 3" WASTE ON ALL UNDERGROUND PIPING RUNS
13. 4" RADON VENT PIPING UP THROUGH ROOF
14. 3" STORM UP
15. 3" WASTE (WITH TRAP) UP TO FLOOR DRAIN
16. CONNECT 6" COLD TO 6" BY SITE CONTRACT
17. 3" VENT UP
18. 4" VENT UP

CONSTRUCTION SET

PASSERO ASSOCIATES engineering architecture

EC4B engineering, p.c.

Client:
HARBOR VIEW SQUARE, LLC
HARBOR VIEW SQUARE ENTERPRISES, LLC

1201 E. Fayette Street
Syracuse, NY 13210

Passero Associates

No.	Date	By	Description
1	6/22/18		Addendum 1
2	10/25/18		REVISED PER HCR COMMENTS
3	1/21/19		Radon System Changes

FOUNDATION PLAN

HARBOR VIEW SQUARE

BUILDING #1

Town/City: Oswego
County: Oswego State: New York

20160101.0001

P-100

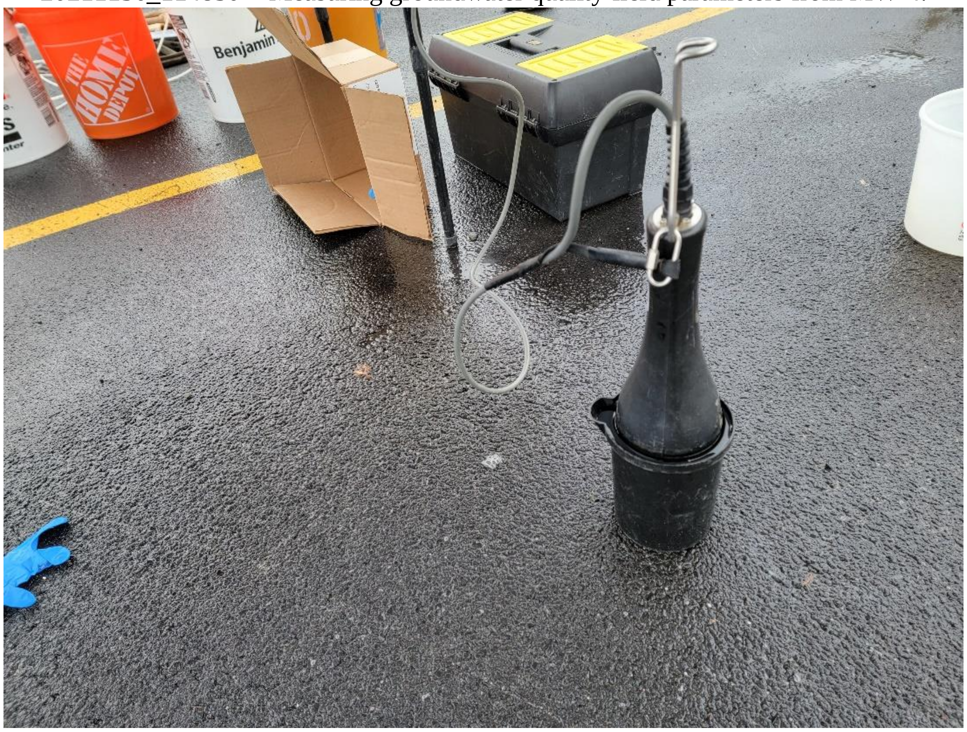
AUGUST 1, 2018

PHOTOGRAPH LOG
NOVEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211130_114850	11-30-2021	Measuring groundwater quality field parameters from MW-4.
20211130_151343	11-30-2021	Water purged from MW-4.
20211130_151357	10-30-2021	Clear water purged from IW-1.
20211130_151429	11-30-2021	FLUte sampling setup at MW-4.
20211130_165853	11-30-2021	One drum containing water purged during groundwater sampling shown on the bottom left. All other drums contain soil. facing east.

PHOTOGRAPH LOG
NOVEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211130_114850 – Measuring groundwater quality field parameters from MW-4.



20211130_151343 - Water purged from MW-4.

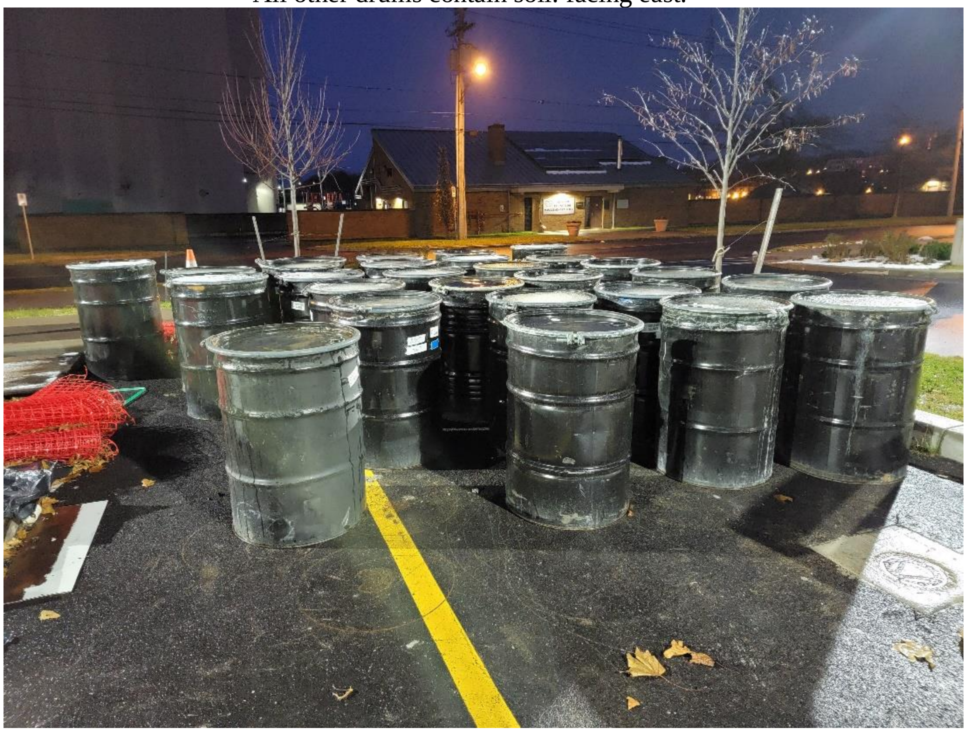
PHOTOGRAPH LOG
NOVEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211130_151357 – Clear water purged from IW-1.

20211130_151429 – FLUte sampling setup at MW-4..

PHOTOGRAPH LOG
NOVEMBER 30, 2021
D&B JOB NO. 5277-01-01K
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211130_165853 – One drum containing water purged during groundwater sampling shown on the bottom left. All other drums contain soil. facing east.



D&B ENGINEERS AND ARCHITECTS		**DATE:** December 28-29, 2021
		REPORT NO. 211228
		PAGE NO. 1 OF 2
		PROJECT NO. 5277-01-01C
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square	Overcast	8:30 (12/28)	39°F	0.0	15-20	SW
LOCATION	Oswego, New York	Overcast	15:00 (12/28)	39°F	0.0	15-20	W
ATTACHMENTS	▪ Table 1 - Depths to Water and Total Well Depths; ▪ Table 2 – Post Injection Field Water Quality Indicator Parameters; ▪ Table 3 – Pre-Injection Field Water Quality Indicator Parameters ▪ Groundwater Sampling Records; ▪ Chain of Custody ▪ Photo Log	Light Rain	7:30 (12/29)	34°F	0.0	0-5	N
		Partly Cloudy	17:00 (12/29)	36°F	0.0	0-5	N

SITE CONDITIONS: Wet, Paved.

WORK GOAL: Perform 60-day post-injection groundwater monitoring.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	8:30 (12/28)	15:00 (12/28)
Tracey Garland	D&B	7:30 (12/29)	17:00 (12/29)

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi Parameter Water Quality Meter	Horiba U-52		
Water Level Meter	Solinist 102 P4		
Nitrogen Tank			
pdCHS sampling manifold and regulator	FLUTe		
PID	MiniRae 3000		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

D&B ENGINEERS AND ARCHITECTS		DATE: December 28-29, 2021
		REPORT NO. 211228
		PAGE NO. 2 OF 2
		PROJECT NO. 5277-01-01C
		NYSDEC SITE NO. C738040

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at the Harbor View Square site (the Site) to perform 60-day post-injection groundwater monitoring in accordance with the Reagent Injection Work Plan.

After removing the J-plugs from IW-1, MW-6, MW-7, MW-8, and MW-9, D&B measured headspace volatile organic compound (VOC) concentrations in the wells using a Mini Rae 3000 photoionization detector (PID). PID VOC measurements were 22.1 parts per million (ppm) from IW-1, 10.6 ppm from MW-6, 13.4 ppm from MW-7, 0.5 ppm from MW-8, and 4.8 ppm from MW-9.

D&B measured depth to water and total well depth at injection well IW-1 and monitoring wells MW-6, MW-7, MW-8, and MW-9 before purging the wells. The water level meter was decontaminated between each monitoring well location using an Alconox solution and rinsed with potable water. The depth to water and total well depth measurements are provided in Table 1, attached.

Before groundwater samples were collected from MW-4, greater than 11.4 liters of water was purged from each pdCHS interval in MW-4 using compressed nitrogen air at a regulated pressure of 30 pounds per square inch. The pdCHS intervals in MW-4 were MW-4_1, MW-4_2, MW-4_3, MW-4_4 and MW-4_5. Groundwater quality field parameters were measured from each pdCHS interval by discharging groundwater water to a calibration cup for the Horiba U-52 multi-parameter water quality meter and inserting the meters' sensors into the calibration cup. Groundwater samples were collected from IW-1, MW-6. MW-7, MW-8, and MW-9 using low flow purging and sampling procedures. These wells were purged and sampled using a peristaltic pump with dedicated silicone and high-density polyethylene (HDPE) tubing and groundwater quality field parameters were measured using a Horiba U-52 multi-parameter water quality meter and flow cell. All water purged from these wells was retained on-site in a 55-gallon steel drum. The groundwater quality field parameters measured while purging, sample collection times, and other observations are provided in the Groundwater Sampling Records, attached. The final groundwater quality field parameters measured immediately before samples were collected, and the appearances of the groundwater collected are provided in Table 2, attached. Matrix Spike and Matrix Spike Duplicate (MS/MSD) samples were collected from MW-8, and a blind duplicate sample (DUP-1) was collected from IW-1.

The groundwater samples were submitted following standard chain-of-custody protocols to Eurofins/TestAmerica Service Center in Syracuse, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175)
- Alkalinity by USEPA Method 310.2
- Total organic carbon/dissolved carbon by USEPA Method 9060A; and
- Total organic carbon by USEPA Method SM5310D.

PREPARED BY (OBSERVER)	REVIEWED BY
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ ADDITIONAL SHEETS USED	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Table 1
Harbor View Square
Depths to Water and Total Well Depths

Date:	3/4/2021		10/18/2021		10/27/2021	11/13/2021		11/30/2021		12/28/2021	
Well ID	Static Depth to Water Level (feet below ground surface)	Depth of Interval (feet below ground surface)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)
MW-4_1	9.67	15 to 20	---	---	---	---	---	---	---	---	---
MW-4_2	11.2	25 to 30	---	---	---	---	---	---	---	---	---
MW-4_3	11.59	35 to 40	---	---	---	---	---	---	---	---	---
MW-4_4	11.78	42 to 47	---	---	---	---	---	---	---	---	---
MW-4_5	13.01	50 to 53	---	---	---	---	---	---	---	---	---
IW-1	---	---	9.84	30.3	8.61	9.40	29.22	10.58	29.25	10.93	29.30
MW-6	---	---	9.22	29.68	9.38	9.69	29.72	10.50	29.65	10.96	29.76
MW-7	---	---	13.14	29.86	9.61	9.42	29.90	10.52	29.89	12.20	29.90
MW-8	---	---	16.93	29.32	11.98	5.50	29.65	9.38	29.60	10.43	29.61
MW-9	---	---	9.98	29.68	8.99	5.23	29.74	9.41	29.72	11.99	29.75

Table 2
Harbor View Square
Post-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)	Appearance/Observations
MW-4_1	11/12/2021	---	14.28	6.75	-97	0.341	22.9	9.47	Hazy Light Brown Turbidity
MW-4_1	11/30/2021	---	11.86	5.84	-153	1.630	13.7	4.36	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_1	12/29/2021	---	10.17	6.86	-156	1.650	10.2	4.62	Clear
MW-4_2	11/12/2021	---	14.24	6.74	-92	0.300	28.8	1.26	Hazy Light to Medium Brown Turbidty
MW-4_2	11/30/2021	---	10.66	6.00	-161	1.550	12.5	3.50	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_2	12/29/2021	---	12.54	6.65	-157	1.940	14.6	5.62	Meduium Turbidity, Medium Sheen
MW-4_3	11/12/2021	---	14.51	6.79	-104	0.364	78.5	9.84	Greyish Brown Tubidity with Bacterial Sheen
MW-4_3	11/30/2021	---	10.66	5.92	-158	1.750	25.3	3.92	Medium Turbidity, Moderate Bacterial Sheen, Sour Odor
MW-4_3	12/29/2021	---	11.93	6.65	-159	1.910	14.9	4.67	Dark Turbidity, Medium Sheen
MW-4_4	11/12/2021	---	14.34	6.02	-104	2.170	428.0	0.00	Dark Grey Turbidty
MW-4_4	11/30/2021	---	11.37	5.91	-165	1.750	18.8	8.04	Dark Turbidity, Heavy Bacterial Sheen, Sour Odor
MW-4_4	12/29/2021	---	11.02	6.56	-153	1.990	15.2	10.80	Dark Turbidity, Heavy Sheen
MW-4_5	11/12/2021	---	14.22	5.93	-78	2.780	884.0	0.10	Very Dark Turbidity
MW-4_5	11/30/2021	---	11.19	5.70	-135	2.050	94.8	2.92	Very Dark Turbidity, Bacterial Sheen, Sour Odor
MW-4_5	12/29/2021	---	12.01	6.12	-110	1.970	17.8	10.21	Very Light Turbidity, Light Sheen
IW-1	11/13/2021	9.40	15.29	7.94	-513	1.580	62.0	0.00	Hazy Green
IW-1	11/30/2021	10.58	15.50	6.81	-193	1.800	45.0	0.20	Clear, Light Bacterial Sheen, Used Cooking Oil Odor
IW-1	12/28/2021	10.93	13.95	7.14	-352	2.050	5.2	1.00	Sheen
MW-6	11/13/2021	9.69	14.92	6.39	-459	2.540	523.0	0.00	Dark Turbidity
MW-6	11/30/2021	10.50	15.50	6.81	-193	1.800	45.0	0.20	Clear
MW-6	12/28/2021	10.96	12.83	6.03	-131	1.720	21.1	0.94	Sheen
MW-7	11/13/2021	9.42	14.39	9.00	-287	0.936	0.0	0.00	Clear
MW-7	11/30/2021	10.52	13.22	10.95	-234	1.140	0.9	0.38	Clear
MW-7	12/28/2021	12.20	14.80	9.60	-368	1.030	9.4	1.18	Clear
MW-8	11/13/2021	5.50	14.40	6.78	-137	1.370	23.1	0.00	Clear
MW-8	11/30/2021	9.38	14.95	6.80	-283	1.300	9.5	0.32	Light Grey Turbidity, Light Bacterial Sheen, Used Cooking Oil Odor
MW-8	12/29/2021	10.43	14.86	7.14	-229	1.540	12.2	0.82	Light Sheen
MW-9	11/13/2021	5.23	15.29	6.73	-72	1.230	196.0	0.00	White Haze w/ Some Turbidity
MW-9	11/30/2021	9.41	15.66	6.45	-184	1.470	61.7	0.34	Grey Turbidity, Light Bacterial Sheen, Used Cooking Oil Odor
MW-9	12/29/2021	11.99	15.80	5.67	-77	1.530	10.5	0.67	Sheen

`

Table 3
Harbor View Square
Pre-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)
MW-4_1	3/4/2021	9.67	11.74	7.77	59	1.86	92.2	7.69
MW-4_1	6/30/2021	----	22.8	7.10	162	1.76	260.0	2.14
MW-4_2	3/4/2021	11.2	11.03	7.63	---	1.81	41.1	6.62
MW-4_2	6/30/2021	----	20.64	7.07	152	1.61	73.4	2.47
MW-4_3	3/4/2021	11.59	10.42	7.60	66	1.57	105.0	8.15
MW-4_3	6/30/2021	----	22.46	7.01	39	1.36	112.0	0.53
MW-4_4	3/4/2021	11.78	9.32	7.93	54	1.44	67.2	5.45
MW-4_4	6/30/2021	----	22.49	6.49	57	1.43	53.5	0.10
MW-4_5	3/4/2021	13.01	9.46	7.94	54	1.43	9.6	6.09
MW-4_5	6/30/2021	----	19.65	7.70	-32	1.7	53.5	0.89
IW-1	10/19/2021	9.84	19.48	7.47	132	1.14	0.0	0.52
IW-1	10/27/2021	8.61	13.85	9.00	136	0.895	6.8	3.36
MW-6	10/19/2021	9.22	17.71	10.47	54	0.855	0.0	2.40
MW-6	10/27/2021	9.38	15.58	9.96	14	1.08	2.2	1.93
MW-7	10/18/2021	13.14	18.05	9.51	86	0.99	23.3	4.01
MW-7	10/27/2021	9.61	14.78	11.76	-24	1.29	0.0	5.82
MW-8	10/18/2021	16.93	16.58	7.40	137	1.19	3.1	2.72
MW-8	10/27/2021	11.98	16.08	7.82	142	1.24	283.0	4.81
MW-9	10/19/2021	9.98	17.71	10.47	54	0.855	0.0	2.40
MW-9	10/27/2021	8.99	15.77	7.85	150	1.2	0.0	3.03

* Groundwater quality parameters were not measured from MW-4 during the October 18-19, 2021 groundwater sampling event.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 12-28-21

WELL ID: TW-1
SAMPLERS: Tracey Garland

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)......... 29.30
Initial static water level (feet from top of casing/riser) 10.93

Depth to 15 / 30 of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) X
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:
2 in. casing: 18.37 ft. of water x 0.16 = ~~27.0~~ 2.94 gallons
3 in. casing: ____ ft. of water x 0.36 = ____ gallons
6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 2 gal. >3 volumes: yes ____ no X purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
11:35		11.95	6.46	13.39	2.12	11.4	0.99	-239
11:40		11.98	6.59	13.47	2.12	10.2	0.91	-253
11:45		12.02	6.68	13.53	2.13	8.2	0.91	-271
11:50		12.10	6.79	13.65	2.12	7.3	0.92	-293
11:55		12.16	6.84	13.74	2.11	6.5	0.93	-300
12:00		12.20	6.89	13.85	2.111	5.9	0.94	-309
12:05		12.28	6.97	13.85	2.08	5.4	0.97	-322
12:10		12.33	7.07	13.93	2.06	5.2	0.99	-336
12:15		12.37	7.11	13.95	2.05	5.2	0.99	-346
12:20		12.46	7.14	13.95	2.05	5.2	1.00	-352

Purge Volume: 2 Purging Time: 11:30 - 12:20
Purge Rate (gph): 1.7

Sampling
Time of Sample Collection: 12:06

TW-1
DUP-1

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
X Dedicated pump and tubing

Analyses:
X USEPA Method 8260C TCL VOCs
X MNA Parameters
X 6010C / 7470A Metals

Observations
Well Observations: PID: 22.1 ppm
Weather/Temperature: 34°F/43°F Overcast
Sample description: Sheen
Free Product? yes ____ no X describe ____
Sheen? yes X no ____ describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 12-28-21

WELL ID: MW-6 Time On-site: Time Off-site:
SAMPLERS: Tracey Garlow

Depth of well (feet from top of casing/riser)........ 29.76 Depth to 15 / 30 of screen top / bottom
Initial static water level (feet from top of casing/riser) 10.96

Purging Method
Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) X
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:
2 in. casing: ~~10.6~~ 18.8 ft. of water x 0.16 = 3 gallons
3 in. casing: ____ ft. of water x 0.36 = ____ gallons
6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 1.25 gal. >3 volumes: yes ____ no X purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
10:30		12.02	5.27	11.92	1.64	34.1	1.11	-64
10:35		12.94	5.81	12.74	1.61	30.8	0.84	-109
10:40		13.03	5.89	12.75	1.64	21.6	0.82	-120
10:45		13.97	5.98	12.82	1.67	21.5	0.97	-127
10:50		13.34	6.03	12.83	1.72	21.1	0.94	-131

Purge Volume: 1.25 gal Purging Time: 10:20 - 10:56
Purge Rate (gph): 2.5

Sampling
Time of Sample Collection: 10:50

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
X Dedicated pump and tubing

Analyses:
X USEPA Method 8260C TCL VOCs - site specific list
X 6010C/7470A Metal
X MNA parameters.

Observations
Well Observations: PID @ 10.6 ppm Dark oily material on WLM
Weather/Temperature: 34°F Overcast
Sample description: ~~Clear~~ Sheen
Free Product? yes ____ no X describe
Sheen? yes X no ~~X~~ describe medium sheen
Odor? yes ____ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square   DATE: 12-28-21

WELL ID: MW-7
SAMPLERS: Tracy Coles

Time On-site:
Time Off-site:

Depth of well (feet from top of casing/riser): 29.90
Initial static water level (feet from top of casing/riser): 12.20

Depth to 15.30 of screen top / bottom

Purging Method
- Airlift ___
- Bailer ___
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ___
- Pos. Displ. ___
- Disposable Bladder Pump (Low Flow) ___

Well Volume Calculation:
- 2 in. casing: 17.7 ft. of water x 0.16 = 2.8 gallons
- 3 in. casing: ___ ft. of water x 0.36 = ___ gallons
- 6 in. casing: ___ ft. of water x 1.47 = ___ gallons

volume of water removed: 1.0 gal.   >3 volumes: yes ___ no X   purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
13:15		13.19	8.59	12.18	1.04	11.2	1.55	-331
13:20		14.14	9.35	12.90	1.03	11.4	1.17	-361
13:25		14.80	9.55	12.98	1.03	10.4	1.19	-366
13:30			9.60	12.95	1.03	9.4	1.18	-368

Purge Volume: 1.0 gal   Purging Time: 13:10 - 13:30
Purge Rate (gph): 3

Sampling
Time of Sample Collection: 13:30

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X Metals 6010C / 7470A
- X MNA Parameters

Observations
Well Observations: PID: 13.4 ppm
Weather/Temperature: Overcast 34°F
Sample description: Clear, ~~Sheen + dark turbidity on surface water level meter~~
Free Product? yes ___ no X describe
Sheen? yes ~~X~~ no X describe ~~medium sheen~~. Clear
Odor? yes ___ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE ~~Harbor View Square~~ Harbor View Square DATE 12-29-21

WELL ID: MW-8
SAMPLERS: Tracey Garland

Time On-site: Time Off-site:

Depth of well (feet from top of casing/riser)........................ 29.61
Initial static water level (feet from top of casing/riser) 10.43

Depth to 15 / 30 of screen
top / bottom

Purging Method
Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) X
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:
2 in. casing: 19.18 ft. of water x 0.16 = 3.07 gallons
3 in. casing: ____ ft. of water x 0.36 = ____ gallons
6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 1 gal.
>3 volumes: yes ____ no X
purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
8:10		11.36	8.35	13.06	1.50	13.0	1.34	-178
8:15		12.81	7.72	13.43	1.52	12.8	0.75	-211
8:20		13.68	7.45	13.23	1.53	12.0	0.70	-220
8:25		14.45	7.31	13.18	1.53	12.2	0.75	-224
8:30		14.85	7.21	13.17	1.53	12.1	0.77	-227
8:35		14.86	7.17	13.16	1.54	12.2	0.81	-228
8:40		14.86	7.14	13.23	1.54	12.2	0.82	-229

Purge Volume: 1 gal Purging Time: 8:05 - 8:40
Purge Rate (gph):

Sampling
Time of Sample Collection: 8:40

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
X Dedicated pump and tubing

Analyses:
X USEPA Method 8260C TCL VOCs
X 6010C/7470A Metals
X MNA Parameters
____
____

Observations
Well Observations: PID: 0.5 ppm
Weather/Temperature: Overcast 34°F 0-5 S
Sample description: Sl. Green
Free Product? yes ____ no X describe
Sheen? yes ~~X~~ no X describe
Odor? yes ____ no X describe ~~[illegible]~~ Clear

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 12-29-21

WELL ID: MW-9 Time On-site: Time Off-site:

SAMPLERS: Tracey Gadard

Depth of well (feet from top of casing/riser): ~~11.49~~ 29.75 Depth to 15.30 of screen top / bottom

Initial static water level (feet from top of casing/riser): 11.49

Purging Method
- Airlift ___
- Bailer ___
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ___
- Pos. Displ. ___
- Disposable Bladder Pump (Low Flow) ___

Well Volume Calculation:
- 2 in. casing: 17.76 ft. of water x 0.16 = 2.84 gallons
- 3 in. casing: ___ ft. of water x 0.36 = ___ gallons
- 6 in. casing: ___ ft. of water x 1.47 = ___ gallons

volume of water removed: 1 gal. >3 volumes: yes ___ no X purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
10:35		12.30	5.86	13.14	2.10	22.4	1.97	-39
10:40		13.68	5.85	13.51	1.67	14.6	0.83	-66
10:45		14.50	5.71	13.46	1.58	13.2	0.81	-66
10:50		15.14	5.59	13.49	1.55	10.2	0.76	-65
10:55		15.50	5.62	13.42	1.53	10.2	0.71	-72
11:00		15.80	5.67	13.38	1.53	10.5	0.67	-77

Purge Volume: 1gal Purging Time: 10:30 - 11:00

Purge Rate (gph): 2

Sampling

Time of Sample Collection: 11:00

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X Metals- 6010C/7470 A
- X MNA Parameters

Observations

Well Observations: PID: 4.8 ppm

Weather/Temperature: Partly Cloudy 36°F

Sample description: Medium Steel

Free Product? yes ___ no X describe

Sheen? yes X no ___ describe Medium Steel

Odor? yes ___ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE Harborview Square DATE 12-29-21

WELL ID: MW-4_1 Time On-site: Time Off-site:
SAMPLERS:

Depth of well (feet from top of casing/riser)........................ Depth to 15 / 20 of screen top / bottom
Initial static water level (feet from top of casing/riser) ....

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- PdCHS X

Well Volume Calculation:
- 2 in. casing: ____ ft. of water x 0.16 = ____ gallons
- 3 in. casing: ____ ft. of water x 0.36 = ____ gallons
- 6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 5 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
15:35			6.71	12.15	1.70	12.1	2.02	-151
15:21			6.86	10.17	1.65	10.2	4.62	-156

Purge Volume: Purging Time: 11:30 - 15:35
Purge Rate (gph):

Sampling
Time of Sample Collection: 15:35

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- X Dedicated pump and tubing PdCHS

Analyses:
- X USEPA Method 8260C TCL VOCs
- X 6010C / 7470A Metals
- X MNA parameters
- ____
- ____

Observations
Well Observations:
Weather/Temperature:
Sample description: Clear
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE Harbor View Square DATE 12-29-21

WELL ID: MW-4_2
SAMPLERS: Tracey Garland

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........ ______
Initial static water level (feet from top of casing/riser) .... ______

Depth to 25 / 30 of screen top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____
pdCHS X

Well Volume Calculation:

2 in. casing: ______ ft. of water x 0.16 = ______ gallons
3 in. casing: ______ ft. of water x 0.36 = ______ gallons
6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: ______ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
15:00			6.68	11.73	1.91	14.5	4.03	-151
15:25			6.65	12.54	1.94	14.6	5.62	-157

Purge Volume: Purging Time:
Purge Rate (gph):

Sampling

Time of Sample Collection: 15:00

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing
X Flute pdCHS.

Analyses:
✓ USEPA Method 8260C TCL VOCs
X 6010C/7470A Metals
X MNA parameters
____
____

Observations

Well Observations:
Weather/Temperature: ______
Sample description: ~~Fed~~ ~~Heavily~~ Med. turb + Sheen
Free Product? yes ____ no ____ describe ______
Sheen? yes X no ____ describe medium
Odor? yes ____ no ____ describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE Harbor View Square DATE 12-29-21

WELL ID: MW-4-3-
SAMPLERS: Tracey Garland

Time On-site: ____ Time Off-site: ____

Depth of well (feet from top of casing/riser)........ ____
Initial static water level (feet from top of casing/riser) .... ____

Depth to 35 / 40 of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____
pdCHS X

Well Volume Calculation:

2 in. casing: ____ ft. of water x 0.16 = ____ gallons
3 in. casing: ____ ft. of water x 0.36 = ____ gallons
6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: ____ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
14:25			6.67	12.24	1.89	15.5	2.48	-160
14:50			6.68	11.93	1.91	14.9	4.67	-159

Purge Volume: Purging Time:
Purge Rate (gph):

Sampling

Time of Sample Collection: 14:25

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing
X FLUTE pdCHS

Analyses:
X USEPA Method 8260C TCL VOCs
X 6010C / 7470A Metals
X MNA parameters
____
____

Observations

Well Observations: ____
Weather/Temperature: ____
Sample description: Medium to dark turbidity, Medium sheen
Free Product? yes ____ no X describe ____
Sheen? yes X no ____ describe medium
Odor? yes ____ no X describe ____

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 12-29-21

WELL ID: MW-4-L1 Time On-site: Time Off-site:

SAMPLERS: Tracey Garland

Depth of well (feet from top of casing/riser)........................

Initial static water level (feet from top of casing/riser) ....

Depth to 42 / 47 of screen top / bottom

Purging Method

- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- pdCHS X

Well Volume Calculation:

- 2 in. casing: ________ ft. of water x 0.16 = ________ gallons
- 3 in. casing: ________ ft. of water x 0.36 = ________ gallons
- 6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed: 3.5 gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
13:50			6.37	12.02	1.94	17.8	6.22	-145
14:10			6.56	11.92	1.94	15.2	10.80	-153

Purge Volume: Purging Time:

Purge Rate (gph):

Sampling

Time of Sample Collection: 13:50

Method:

- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing
- X FLUTE pdCHS

Analyses:

- X USEPA Method 8260C TCL VOCs
- X 6010C/7470A Metals
- X MNA parameters
- ____
- ____

Observations

Well Observations:

Weather/Temperature:

Sample description: Dark Turbidity, Dark Sheen

Free Product? yes ____ no X describe

Sheen? yes X no ____ describe Dark blue

Odor? yes ____ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE Harbor View Square DATE 12-29-21

WELL ID: MW-4_5
SAMPLERS: Tracey Garland

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ ______
Initial static water level (feet from top of casing/riser) .... ______

Depth to 50 / 53 of screen
top / bottom

Purging Method
- Airlift ___
- Bailer ___
- Peristaltic Pump (dedicated tubing) ___
- Centrifugal ___
- Pos. Displ. ___
- Disposable Bladder Pump (Low Flow) ___
- FLUTed CHS X

Well Volume Calculation:
- 2 in. casing: ______ ft. of water x 0.16 = ______ gallons
- 3 in. casing: ______ ft. of water x 0.36 = ______ gallons
- 6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 3.5 gal.

>3 volumes: yes ___ no ___ purged dry? yes ___ no ___

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
13:15			6.06	11.80	1.95	17.5	7.93	-87
13:45			6.12	12.01	1.97	17.8	10.21	-110

Purge Volume:
Purge Rate (gph):
Purging Time: 11:30 - 13:15

Sampling
Time of Sample Collection: 13:15

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- ___ Dedicated pump and tubing
- X FLUTE pdCHS

Analyses:
- X USEPA Method 8260C TCL VOCs
- X 6010C / 7470A metals
- X MNA parameters
- ___
- ___

Observations
Well Observations:
Weather/Temperature:
Sample description: Very light turbidity, light sheen
Free Product? yes ___ no X describe ______
Sheen? yes X no ___ describe light
Odor? yes ___ no X describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Tracey Garland	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-168922-36495.1
Client Contact: Mr. Tracey Garland	Phone: 315-413-1677	E-Mail: John.Schove@Eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: D&B Engineers and Architects, P.C.	PWSID:			Job #:
Address: 5879 Fisher Road PO BOX 56	Due Date Requested:			
City: East Syracuse	TAT Requested (days): 5			
State, Zip: NY, 13057	Compliance Project: Δ Yes Δ No			
Phone: 315-413-1677(Tel) RCreighton@synapseilc.com	PO #: 5277-1			
Email: tgarland@db-eng.com labdata@db-eng.com	WO #:			
Project Name: Harborview Square (D&B#5277-1)	Project #: 48023439			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane, Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	PFC_IDA - PFAS, Standard List (21 analytes)			Total Number of containers	Special Instructions/Note:
							3	1	1	1	/	2	3	1	1	1	1					
				Preservation Code:			A	N	N	D	A	A	A	CB	N	N	N	N				
DUP-1	12-28-21	00:00	G	Water		N	X	X	X	X	X	X	X	X	X	X	X				17	Blind duplicate
IW-1	12-28-21	12:00	G	Water		N	X	X	X	X	X	X	X	X	X	X	X				17	
MW-6	12-28-21	10:50	G	Water		N	X	X	X	X	X	X	X	X	X	X	X				17	
MW-7	12-28-21	1330	G	Water		N	X	X	X	X	X	X	X	X	X	X	X				17	
TRIP BLANK				Water									X								2	VOC Trip Blank
				Water																		
				Water																		
				Water																		
				Water																		
				Water																		
				Water																		

AP 12/28/21

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ________ Months

Deliverable Requested: I, II, III, IV, Other (specify) B

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: Tracey Garland	Date/Time: 12-28-21 / 16:05	Company: D&B	Received by: [signature]	Date/Time: 12/28/21 1605	Company: E3-SYR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Tracey Garland	Lab PM: Schove, John R	Carrier Tracking No(s):
Client Contact: Mr. Tracey Garland	Phone: 315 413 1677	E-Mail: John.Schove@Eurofinset.com	State of Origin:
Company: D&B Engineers and Architects, P.C.	PWSID:		COC No: 480-168922-36495.1
Address: 5879 Fisher Road PO BOX 56	Due Date Requested:		Page: Page ~~1 of 2~~ 1 of 1 (JG)
City: East Syracuse	TAT Requested (days): 5 day		Job #:
State, Zip: NY, 13057	Compliance Project: Δ Yes Δ No		
Phone: 315-413-1677(Tel) labdata@db-eng.com	PO #: 5277-1		
Email: tgarland@db-eng.com RCreighton@	WO #:		
Project Name: Harborview Square (D&B#5277-1) Synapsellc.com	Project #: 48023439		
Site:	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane,Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	PFC_IDA - PFAS, Standard List (21 analytes)	Total Number of containers	Special Instructions/Note:
							3	1	1	1	2	2	3	1	1	1	1			
				Preservation Code:			A	N	N	D	A	A	A	CB	N	N	N	N		
MW-4_1_(15-20)	12-29-21	15:35	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_2_(25-30)	12-29-21	15:00	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_3_(35-40)	12-29-21	14:25	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_4_(42-47)	12-29-21	13:50	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-4_5_(50-53)	12-29-21	13:15	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
MW-8	12-29-21	8:40	G	Water		Y	X	X	X	X	X	X	X	X	X	X	X		51	MS+MSD
~~MW-9~~ MW-9	12-29-21	11:00	G	Water		N	X	X	X	X	X	X	X	X	X	X	X		17	
Trip Blank				Water									X						2	VOC Trip Blank
JG				Water																
				Water																
				Water																
				Water																

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: [signature]	Date/Time: 12-29-21/1805	Company: D&B	Received by: [signature] Date/Time: 12/29/21 1805 Company: ES-SYR
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

PHOTOGRAPH LOG
DECEMBER 28-29, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
20211228_095317	12-28-2021	Dark oily material observed on the water level meter from MW-6.
20211228_121647	12-28-2021	Sheen observed in water purged from MW-1.
20211229_131735	12-29-2021	Measuring water quality field parameters from MW-4.

PHOTOGRAPH LOG
DECEMBER 28-29, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211228_095317 – Dark oily material observed on the water level meter from MW-6.

PHOTOGRAPH LOG
DECEMBER 28-29, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211228_121647 – Sheen observed in water purged from MW-1.

PHOTOGRAPH LOG
DECEMBER 28-29, 2021
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

20211229_131735 – Measuring water quality field parameters from MW-4.

D&B ENGINEERS AND ARCHITECTS		**DATE:** January 26-27, 2022 **REPORT NO.** 220127 **PAGE NO.** 1 OF 3 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

		WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
PROJECT	Harbor View Square						
LOCATION	Oswego, New York	Clear	20:00 (1/26)	-4°F	0.0	5-10	S
ATTACHMENTS	▪ Table 1 - Depths to Water and Total Well Depths; ▪ Table 2 – Post Injection Field Water Quality Indicator Parameters; ▪ Table 3 – Pre-Injection Field Water Quality Indicator Parameters ▪ Groundwater Sampling Records; ▪ Chain of Custody ▪ Photo Log	Clear	23:00 (1/26)	-12°F	0.0	5-10	S
		Cloudy	8:30 (1/27)	3°F	0.0	0-5	S
		Overcast	19:15 (1/27)	28°F	0.0	10-15	S

SITE CONDITIONS: Snow and ice covered.

WORK GOAL: Perform 90-day post-injection groundwater monitoring.

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPARTURE TIME
Tracey Garland	D&B	20:00 (1/26)	23:00 (1/26)
Tracey Garland	D&B	8:30 (1/27)	19:30 (1/27)
Gunther Schnorr	D&B	8:30 (1/27)	19:30 (1/27)

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
Multi Parameter Water Quality Meter	Horiba U-52		
Water Level Meter	Heron Skinny Dipper		
Nitrogen Tank			
pdCHS sampling manifold and regulator	FLUTe		
PID	MiniRae 3000		

HEALTH & SAFETY:

PPE REQUIRED: Level D ☒ **HASP?** YES

SITE SAFETY OFFICER: Tracey Garland

H & S NOTES: Site work performed in Level D PPE.

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B Engineers and Architects (D&B) was at the Harbor View Square site (the Site) to perform 90-day post-injection groundwater monitoring in accordance with the Reagent Injection Work Plan.

D&B was on-Site on January 26, 2022, to observe site conditions prior to sampling. D&B observed that the monitoring wells were covered with snow. Monitoring well MW-4 was covered by a four-foot-tall snowbank and monitoring wells MW-8 and MW-9 were covered by a two-foot-tall snowbank. D&B used a hand shovel to expose the wells. D&B returned to the Site on January 27, 2022, to complete groundwater monitoring and sampling.

Monitoring wells MW-6 and MW-7 were filled with ice; D&B chipped away the ice to access the J-plugs and risers in these wells. The bolts for the cap on MW-6 were weathered and rounded; D&B replaced the bolts on this well with stainless steel bolts.

After removing the J-plugs from IW-1, MW-6, MW-7, MW-8, and MW-9, D&B measured headspace volatile organic compound (VOC) concentrations in the wells using a Mini Rae 3000 photoionization detector (PID). PID VOC measurements were 39.9 parts per million (ppm) from IW-1, 43.8 ppm from MW-6, 4.0 ppm from MW-7, 1.4 ppm from MW-8, and 6.9 ppm from MW-9.

D&B used a Heron Skinny Dipper water level meter to measure depth to water in the tag line of MW-4, but the water level meter could not be inserted greater than 1.1 feet into the line. D&B measured depth to water and total well depth at injection well IW-1 and monitoring wells MW-6, MW-7, MW-8, and MW-9 before purging the wells. The water level meter was decontaminated between each monitoring well location using an Alconox solution and rinsed with potable water. The depth to water and total well depth measurements are provided in Table 1, attached.

Before groundwater samples were collected from MW-4, greater than 11.4 liters of water was purged from each pdCHS interval in MW-4 using compressed nitrogen air at a regulated pressure of 30 pounds per square inch. The pdCHS intervals in MW-4 were MW-4_1, MW-4_2, MW-4_3, MW-4_4 and MW-4_5. Groundwater quality field parameters were measured from each pdCHS interval by discharging groundwater water to a calibration cup for the Horiba U-52 multi-parameter water quality meter and inserting the meters' sensors into the calibration cup. Groundwater samples were collected from IW-1, MW-6. MW-7, MW-8, and MW-9 using low flow purging and sampling procedures. These wells were purged and sampled using a peristaltic pump with dedicated silicone and high-density polyethylene (HDPE) tubing and groundwater quality field parameters were measured using a Horiba U-52 multi-parameter water quality meter and flow cell. All water purged from these wells was retained on-site in a 55-gallon steel drum. The groundwater quality field parameters measured while purging, sample collection times, and other observations are provided in the Groundwater Sampling Records, attached. The final groundwater quality field parameters measured immediately before samples were collected, and the appearances of the groundwater collected are provided in Table 2, attached. Matrix Spike and Matrix Spike Duplicate (MS/MSD) samples were collected from MW-9, and a blind duplicate sample (DUP-1) was collected from IW-1.

The groundwater samples were submitted following standard chain-of-custody protocols to Eurofins/TestAmerica Service Center in Syracuse, New York for the following analysis:

- VOCs by USEPA Method 8260B;
- Metals by USEPA Method 6010/7410;
- Sulfate and Chloride by USEPA Method 300.1;
- Sulfide by USEPA Method 376.2;
- Nitrate and Nitrite by USEPA Method 353.2;
- Ferric Iron by USEPA Method 200.7;
- Ethene, Ethane, Methane, Acetylene by USEPA Method 5021A (RSK Method 175)
- Alkalinity by USEPA Method 310.2
- Total organic carbon/dissolved carbon by USEPA Method 9060A; and
- Total organic carbon by USEPA Method SM5310D.

D&B ENGINEERS AND ARCHITECTS		**DATE:** January 26-27, 2022 **REPORT NO.** 220127 **PAGE NO.** 3 OF 3 **PROJECT NO.** 5277-01-01C **NYSDEC SITE NO.** C738040

DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME: Tracey G. Garland	PRINT NAME:
SIGNATURE: Tracey Garland	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to client– date:	☐ hardcopy to client – date:

Table 1
Harbor View Square
Depths to Water and Total Well Depths

Date:	3/4/2021		10/18/2021		10/27/2021	11/13/2021		11/30/2021	
Well ID	Static Depth to Water Level (feet below ground surface)	Depth of Interval (feet below ground surface)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)
MW-4_1	9.67	15 to 20	---	---	---	---	---	---	---
MW-4_2	11.2	25 to 30	---	---	---	---	---	---	---
MW-4_3	11.59	35 to 40	---	---	---	---	---	---	---
MW-4_4	11.78	42 to 47	---	---	---	---	---	---	---
MW-4_5	13.01	50 to 53	---	---	---	---	---	---	---
IW-1	---	---	9.84	30.3	8.61	9.40	29.22	10.58	29.25
MW-6	---	---	9.22	29.68	9.38	9.69	29.72	10.50	29.65
MW-7	---	---	13.14	29.86	9.61	9.42	29.90	10.52	29.89
MW-8	---	---	16.93	29.32	11.98	5.50	29.65	9.38	29.60
MW-9	---	---	9.98	29.68	8.99	5.23	29.74	9.41	29.72

Date:	12/28/2021		1/27/2022	
Well ID	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)	Static Depth to Water Level (feet below top of riser)	Total Well Depth (feet below top of riser)
MW-4_1	---	---	---	---
MW-4_2	---	---	---	---
MW-4_3	---	---	---	---
MW-4_4	---	---	---	---
MW-4_5	---	---	---	---
IW-1	10.93	29.30	11.35	---
MW-6	10.96	29.76	11.00	---
MW-7	12.20	29.90	13.75	---
MW-8	10.43	29.61	10.55	---
MW-9	11.99	29.75	12.75	---

Table 2
Harbor View Square
Post-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)	Appearance/Observations
MW-4_1	11/12/2021	---	14.28	6.75	-97	0.341	22.9	9.47	Hazy Light Brown Turbidity
MW-4_1	11/30/2021	---	11.86	5.84	-153	1.630	13.7	4.36	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_1	12/29/2021	---	10.17	6.86	-156	1.650	10.2	4.62	Clear
MW-4_1	1/27/2022	---	9.08	7.25	-100	1.510	0.0	0.00	Dark Turbidity
MW-4_2	11/12/2021	---	14.24	6.74	-92	0.300	28.8	1.26	Hazy Light to Medium Brown Turbidty
MW-4_2	11/30/2021	---	10.66	6.00	-161	1.550	12.5	3.50	Medium Turbidity, Light Bacterial Sheen, Sour Odor
MW-4_2	12/29/2021	---	12.54	6.65	-157	1.940	14.6	5.62	Meduium Turbidity, Medium Sheen
MW-4_2	1/27/2022	---	9.69	7.11	-87	1.650	0.0	0.00	Dark Turbidity
MW-4_3	11/12/2021	---	14.51	6.79	-104	0.364	78.5	9.84	Greyish Brown Tubidity with Bacterial Sheen
MW-4_3	11/30/2021	---	10.66	5.92	-158	1.750	25.3	3.92	Medium Turbidity, Moderate Bacterial Sheen, Sour Odor
MW-4_3	12/29/2021	---	11.93	6.65	-159	1.910	14.9	4.67	Dark Turbidity, Medium Sheen
MW-4_3	1/27/2022	---	12.20	6.86	-81	1.650	0.0	0.27	Dark Turbidity
MW-4_4	11/12/2021	---	14.34	6.02	-104	2.170	428.0	0.00	Dark Grey Turbidty
MW-4_4	11/30/2021	---	11.37	5.91	-165	1.750	18.8	8.04	Dark Turbidity, Heavy Bacterial Sheen, Sour Odor
MW-4_4	12/29/2021	---	11.02	6.56	-153	1.990	15.2	10.80	Dark Turbidity, Heavy Sheen
MW-4_4	1/27/2022	---	8.94	7.03	-86	1.660	0.0	1.53	Dark Turbidity
MW-4_5	11/12/2021	---	14.22	5.93	-78	2.780	884.0	0.10	Very Dark Turbidity
MW-4_5	11/30/2021	---	11.19	5.70	-135	2.050	94.8	2.92	Very Dark Turbidity, Bacterial Sheen, Sour Odor
MW-4_5	12/29/2021	---	12.01	6.12	-110	1.970	17.8	10.21	Very Light Turbidity, Light Sheen
MW-4_5	1/27/2022	---	11.50	6.22	18	1.550	0.0	0.43	Dark Turbidity
IW-1	11/13/2021	9.40	15.29	7.94	-513	1.580	62.0	0.00	Hazy Green
IW-1	11/30/2021	10.58	15.50	6.81	-193	1.800	45.0	0.20	Clear, Light Bacterial Sheen, Used Cooking Oil Odor
IW-1	12/28/2021	10.93	13.95	7.14	-352	2.050	5.2	1.00	Sheen
IW-1	1/27/2022	11.35	10.05	7.64	-365	1.830	0.0	0.35	Greenish Yellow
MW-6	11/13/2021	9.69	14.92	6.39	-459	2.540	523.0	0.00	Dark Turbidity
MW-6	11/30/2021	10.50	15.50	6.81	-193	1.800	45.0	0.20	Clear
MW-6	12/28/2021	10.96	12.83	6.03	-131	1.720	21.1	0.94	Sheen
MW-6	1/27/2022	11.00	11.04	6.78	-201	1.390	20.9	0.34	Clear
MW-7	11/13/2021	9.42	14.39	9.00	-287	0.936	0.0	0.00	Clear
MW-7	11/30/2021	10.52	13.22	10.95	-234	1.140	0.9	0.38	Clear
MW-7	12/28/2021	12.20	14.80	9.60	-368	1.030	9.4	1.18	Clear
MW-7	1/27/2022	13.75	10.98	9.60	-283	0.868	0.0	0.46	Slighty Cloudy White
MW-8	11/13/2021	5.50	14.40	6.78	-137	1.370	23.1	0.00	Clear
MW-8	11/30/2021	9.38	14.95	6.80	-283	1.300	9.5	0.32	Light Grey Turbidity, Light Bacterial Sheen, Used Cooking Oil Odor
MW-8	12/29/2021	10.43	14.86	7.14	-229	1.540	12.2	0.82	Light Sheen
MW-8	1/27/2022	10.55	10.50	6.95	-148	1.440	3.9	0.00	Clear
MW-9	11/13/2021	5.23	15.29	6.73	-72	1.230	196.0	0.00	White Haze w/ Some Turbidity
MW-9	11/30/2021	9.41	15.66	6.45	-184	1.470	61.7	0.34	Grey Turbidity, Light Bacterial Sheen, Used Cooking Oil Odor
MW-9	12/29/2021	11.99	15.80	5.67	-77	1.530	10.5	0.67	Sheen
MW-9	1/27/2022	12.75	9.40	6.07	-89	1.430	0.0	0.56	Clear

Table 3
Harbor View Square
Pre-Injection Field Water Quality Indicator Parameters

Well ID	Date	Depth to Static Water Level (feet below top of riser)	Temperature (°C)	pH	Oxidation Reduction Potential (millivolts)	Specific Conductivity (milliSiemens per centimeter)	Turbidity (NTUs)	Dissolved Oxygen (milligrams per liter)
MW-4_1	3/4/2021	9.67	11.74	7.77	59	1.86	92.2	7.69
MW-4_1	6/30/2021	----	22.8	7.10	162	1.76	260.0	2.14
MW-4_2	3/4/2021	11.2	11.03	7.63	---	1.81	41.1	6.62
MW-4_2	6/30/2021	----	20.64	7.07	152	1.61	73.4	2.47
MW-4_3	3/4/2021	11.59	10.42	7.60	66	1.57	105.0	8.15
MW-4_3	6/30/2021	----	22.46	7.01	39	1.36	112.0	0.53
MW-4_4	3/4/2021	11.78	9.32	7.93	54	1.44	67.2	5.45
MW-4_4	6/30/2021	----	22.49	6.49	57	1.43	53.5	0.10
MW-4_5	3/4/2021	13.01	9.46	7.94	54	1.43	9.6	6.09
MW-4_5	6/30/2021	----	19.65	7.70	-32	1.7	53.5	0.89
IW-1	10/19/2021	9.84	19.48	7.47	132	1.14	0.0	0.52
IW-1	10/27/2021	8.61	13.85	9.00	136	0.895	6.8	3.36
MW-6	10/19/2021	9.22	17.71	10.47	54	0.855	0.0	2.40
MW-6	10/27/2021	9.38	15.58	9.96	14	1.08	2.2	1.93
MW-7	10/18/2021	13.14	18.05	9.51	86	0.99	23.3	4.01
MW-7	10/27/2021	9.61	14.78	11.76	-24	1.29	0.0	5.82
MW-8	10/18/2021	16.93	16.58	7.40	137	1.19	3.1	2.72
MW-8	10/27/2021	11.98	16.08	7.82	142	1.24	283.0	4.81
MW-9	10/19/2021	9.98	17.71	10.47	54	0.855	0.0	2.40
MW-9	10/27/2021	8.99	15.77	7.85	150	1.2	0.0	3.03

* Groundwater quality parameters were not measured from MW-4 during the October 18-19, 2021 groundwater sampling event.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1/27/22

WELL ID: MW-4/-1
SAMPLERS: T.G.

Time On-site: ____ Time Off-site: ____

Depth of well (feet from top of casing/riser)........ ____
Initial static water level (feet from top of casing/riser) .... ____

Depth to 15 / 20 of screen
top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- FLUTe pdeus ✓

Well Volume Calculation:
- 2 in. casing: ____ ft. of water x 0.16 = ____ gallons
- 3 in. casing: ____ ft. of water x 0.36 = ____ gallons
- 6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 7 gal.
>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
17:10			7.25	9.08	1.51	0.00	0.00	-100

Purge Volume: Purging Time:
Purge Rate (gph):

Sampling
Time of Sample Collection: 1710

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing
- X FLUTe pdeus

Analyses:
- X USEPA Method 8260C TCL VOCs
- X MNA
- X Metals
- X PFAS
- ____

Observations
- Well Observations: Turbidity in purge water
- Weather/Temperature: 27°F cloudy
- Sample description: Clear
- Free Product? yes ____ no X describe ____
- Sheen? yes ____ no X describe ____
- Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1/27/22

WELL ID: MW-4Z
SAMPLERS: JG.

Time On-site:
Time Off-site:

Depth of well (feet from top of casing/riser).......................
Initial static water level (feet from top of casing/riser) ....

Depth to 25 / 30 of screen
top / bottom

Purging Method
Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) ____
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow)
FLUTe Mem X

Well Volume Calculation:
2 in. casing: ________ ft. of water x 0.16 = ________ gallons
3 in. casing: ________ ft. of water x 0.36 = ________ gallons
6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed: 6 gal.
>3 volumes: yes ____ no ____
purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1536			7.11	9.69	1.65	0.0	0.00	-87

Purge Volume:
Purge Rate (gph):
Purging Time:

Sampling
Time of Sample Collection: 1536

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing
x FLUTe ports

Analyses:
X USEPA Method 8260C TCL VOCs
x MNA
x Metals
x PFAS

Observations
Well Observations: Turbid in Purge Water
Weather/Temperature: 26°F Overcast
Sample description: clear
Free Product? yes ____ no X describe
Sheen? yes ____ no X describe
Odor? yes ____ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE Harbor View Square DATE 1-27-22

WELL ID: MW-4_3
SAMPLERS: T. G.

Time On-site: ____ Time Off-site: ____

Depth of well (feet from top of casing/riser)........ ____
Initial static water level (feet from top of casing/riser) .... ____

Depth to 35 / 40 of screen
top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- FLUTe packers x

Well Volume Calculation:
- 2 in. casing: ____ ft. of water x 0.16 = ____ gallons
- 3 in. casing: ____ ft. of water x 0.36 = ____ gallons
- 6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 5. gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1500			6.86	12.20	1165	0.0	0.27	-81

Purge Volume: 5 gal Purging Time: 10:00 - 15:00
Purge Rate (gph):

Sampling
Time of Sample Collection: 1500

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing
- x Flute packers

Analyses:
- x USEPA Method 8260C TCL VOCs
- x PFAS
- x METALS
- MNA

Observations
Well Observations: Dark turbidity
Weather/Temperature: 25°F Overcast
Sample description: Clear
Free Product? yes ____ no x describe ____
Sheen? yes ____ no x describe ____
Odor? yes ____ no x describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1-27-22

WELL ID: MW-4-4 Time On-site: Time Off-site:
SAMPLERS: T. G.

Depth of well (feet from top of casing/riser)........................
Initial static water level (feet from top of casing/riser) ....

Depth to 42.47 of screen top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) ____
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow)
- FLUTe packs X

Well Volume Calculation:
- 2 in. casing: ____ ft. of water x 0.16 = ____ gallons
- 3 in. casing: ____ ft. of water x 0.36 = ____ gallons
- 6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 4.5 gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
13:40			7.03	8.94	1.66	~~4.56~~ 0.09	1.53	-86

Purge Volume: 4.5 gal Purging Time: 10:00-13:40
Purge Rate (gph):

Sampling

Time of Sample Collection: 13:40

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- ____ Dedicated pump and tubing
- FLUTe packs

Analyses:
- X USEPA Method 8260C TCL VOCs
- X PFAS
- X Metals
- X MNA
- ____

Observations

Well Observations: Dark turbidity at purge water
Weather/Temperature: 23°F Cloudy
Sample description: Clear
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1-27-22

MW-4-5

WELL ID: ~~MW-4-1~~ ~~MW-4-8~~ Time On-site: Time Off-site:
SAMPLERS: T.G.

Depth of well (feet from top of casing/riser)........................ Depth to 50/53 of screen top / bottom
Initial static water level (feet from top of casing/riser) ....

Purging Method

Airlift ____ Centrifugal ____
Bailer ____ Pos. Displ. ____
Peristaltic Pump (dedicated tubing) ____ Disposable Bladder Pump (Low Flow)

Flute pdcys X

Well Volume Calculation:

2 in. casing: ________ ft. of water x 0.16 = ________ gallons
3 in. casing: ________ ft. of water x 0.36 = ________ gallons
6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed: 3.5 ~~8~~ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
~~12:20~~ 12:20			6.22	11.50	1.55	0.0	0.43	18

Purge Volume: 3.5gal Purging Time: 10:00 - 12:20
Purge Rate (gph):

Sampling

Time of Sample Collection: 12:20

Method:
____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
____ Dedicated pump and tubing
Flute Pdcys

Analyses:
X USEPA Method 8260C TCL VOCs site specific list
X MNA parameters
X metals
X PFAS
____

Observations

Well Observations: Dark turbidity in purge water
Weather/Temperature: Cloudy 20°F
Sample description: Clear
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1/27/22

WELL ID: IW-1
SAMPLERS: GJS

Time On-site: ____ Time Off-site: ____

Depth of well (feet from top of casing/riser) 29.3
Initial static water level (feet from top of casing/riser) 11.35

Depth to 15, 30 of screen (top / bottom)

Purging Method

Airlift		Centrifugal	
Bailer	____	Pos. Displ.	____
Peri Pump (dedicated tubing)	X	Disposable Bladder Pump (Low Flow)	____

Well Volume Calculation:

1 in casing		ft. of water x 0.04 =	gallons
2 in. casing:	11.35	ft. of water x 0.16 =	1.81 gallons
3 in. casing:		ft. of water x 0.37 =	gallons
4 in. casing:		ft. of water x 0.65 =	gallons
5 in. casing:		ft. of water x 1.02 =	gallons
6 in. casing:		ft. of water x 1.47 =	gallons

volume of water removed: 1.75 gal.   >3 volumes: yes ____ no ____   purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1615		13.60	8.51	9.02	1.91	80.7	1.74	-227
1620		14.10	7.85	10.97	1.88	41.1	0.58	-286
1625		14.20	7.70	10.97	1.86	1.9	0.47	-303
1630		14.30	7.64	10.47	1.87	0.4	0.43	-316
1635		14.50	7.62	10.52	1.87	0.0	0.41	-328
1640		14.58	7.61	10.76	1.84	0.0	0.36	-346
1645		14.65	7.64	10.65	1.83	0.0	0.35	-365
1650								

Purge Volume: Purging Time:
Purge Rate (gph): 3gph

IW-1
DUP-1 Collected here!

Sampling
Time of Sample Collection: 1645

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X PFAS
- X MNA
- X metals

Observations
Well Observations: Good, Changed tubing as it was Stained
Weather/Temperature: 27°F overcast 10-15 mph South
Sample description: "Mountain Dew" yellow
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: AVM Gowanda DATE: 1/27/22

WELL ID: MW-6 Time On-site: Time Off-site:
SAMPLERS: GTS

Depth of well (feet from top of casing/riser) 29.76
Initial static water level (feet from top of casing/riser)........ 11.00
Depth to 15 / 30 of screen (top / bottom)

Purging Method

- Airlift
- Centrifugal
- Bailer ___
- Pos. Displ. ___
- Peri Pump (dedicated tubing) X
- Disposable Bladder Pump (Low Flow) ___

Well Volume Calculation:

- 1 in casing ___ ft. of water x 0.04 = ___ gallons
- 2 in. casing: 18.76 ft. of water x 0.16 = 3 gallons
- 3 in. casing: ___ ft. of water x 0.37 = ___ gallons
- 4 in. casing: ___ ft. of water x 0.65 = ___ gallons
- 5 in. casing: ___ ft. of water x 1.02 = ___ gallons
- 6 in. casing: ___ ft. of water x 1.47 = ___ gallons

volume of water removed: 1.5 gal. >3 volumes: yes ___ no X purged dry? yes ___ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1750		15.00	6.86	9.77	1.30	99	1.27	-118
1755		15.00	6.87	10.69	1.27	61.8	1.27	-147
1800		15.06	6.87	10.96	1.27	19.4	0.46	-157
1805		15.15	6.83	10.47	1.30	17.3	0.42	-171
1810		15.30	6.83	10.99	1.31	5.3	0.39	-183
1815		15.55	6.81	10.74	1.35	18.5	0.37	-191
1820		15.65	6.80	10.92	1.37	0.0	0.35	-197
1825		15.75	6.78	11.04	1.34	20.9	0.34	-201

Purge Volume: Purging Time:
Purge Rate (gph): 2.25 gph

Sampling

Time of Sample Collection: 1825

Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X MNA
- X Metals
- X PFAS

Observations

Well Observations: Annular Space Completely filled with ICE
Weather/Temperature: 28°F 10-15 mph South
Sample description: Clear
Free Product? yes ___ no X describe
Sheen? yes ___ no X describe
Odor? yes ___ no X describe

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1/27/22

WELL ID: MW-7
SAMPLERS: GJS

Time On-site: ______ Time Off-site: ______

Depth of well (feet from top of casing/riser)........................ 29.90
Initial static water level (feet from top of casing/riser) 13.75

Depth to 15.30 of screen top / bottom

Purging Method

- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:

- 2 in. casing: 16.15 ft. of water x 0.16 = 2.58 gallons
- 3 in. casing: ______ ft. of water x 0.36 = ______ gallons
- 6 in. casing: ______ ft. of water x 1.47 = ______ gallons

volume of water removed: 1.75 gal.

>3 volumes: yes ____ no X

purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1445		15.30	8.93	10.69	0.900	17.9	1.07	-281
1450		15.82	9.88	10.94	0.891	0.0	0.62	-315
1455		16.20	10.07	10.96	0.884	0.0	0.66	-312
1500		17.09	9.98	11.00	0.876	0.0	0.00	-300
1505		17.80	9.84	11.07	0.871	0.0	0.55	-293
1510		18.60	9.66	11.04	0.871	0.0	0.49	-283
1515		19.05	9.60	10.94	0.869	0.0	0.47	-284
1520		19.35	9.60	10.98	0.868	0.0	0.46	-283

Purge Volume:
Purge Rate (gph): 2.6 gpm
Purging Time:

Sampling

Time of Sample Collection: 1520

Method:

- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- X Dedicated pump and tubing

Analyses:

- X USEPA Method 8260C TCL VOCs
- X PFAS
- X Metals
- X MNA

Observations

Well Observations: ~~Was~~ frozen in Block of Ice around ~~pad~~ on top of riser
Weather/Temperature: 23°F 14 mph South
Sample description: Light Milky white (Very light)
Free Product? yes ____ no X describe ______
Sheen? yes ____ no X describe ______
Odor? yes ____ no X describe ______

D&B ENGINEERS AND ARCHITECTS, P.C.

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE: Harbor View Square DATE: 1/27/22

WELL ID: MW-8 Time On-site: Time Off-site:
SAMPLERS: GTS

Depth of well (feet from top of casing/riser)........................ 29.61
Initial static water level (feet from top of casing/riser) 10.55

Depth to 15.80 of screen
top / bottom

Purging Method
- Airlift ____
- Bailer ____
- Peristaltic Pump (dedicated tubing) X
- Centrifugal ____
- Pos. Displ. ____
- Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:
2 in. casing: 19.06 ft. of water x 0.16 = 3.05 gallons
3 in. casing: ________ ft. of water x 0.36 = ________ gallons
6 in. casing: ________ ft. of water x 1.47 = ________ gallons

volume of water removed: ________ gal. >3 volumes: yes ~~____~~ no X purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1330		12.30	6.69	9.25	1.47	66.3	2.37	-114
1335		13.73	6.84	10.27	1.43	6.3	0.91	-128
1340		14.55	6.87	10.46	1.47	0.0	0.71	-134
1345		14.88	6.88	10.57	1.47	0.0	0.63	-137
1350		14.86	6.89	10.62	1.43	0.0	0.60	-142
1355		15.30	6.93	10.57	1.44	2.4	0.60	-146
1340		15.70	6.95	10.50	1.44	3.9	0.60	-148
1345								

Purge Volume: Purging Time:
Purge Rate (gph):

Sampling
Time of Sample Collection: 1340

Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- X Dedicated pump and tubing

Analyses:
- X USEPA Method 8260C TCL VOCs
- X PFAS
- X metals
- X MNA
- ____

Observations
Well Observations: 23°F overcast Good, Some ice
Weather/Temperature: 23°F 10-15mph S
Sample description: Clear
Free Product? yes ____ no X describe ________
Sheen? yes ____ no X describe ________
Odor? yes ____ no X describe ________

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE Harbor View Square DATE 1/27/22

WELL ID: MW-9
SAMPLERS: GJS

Time On-site:

Time Off-site:

Depth of well (feet from top of casing/riser)........................ 29.40
Initial static water level (feet from top of casing/riser) 12.75

Depth to / of screen
top / bottom

Purging Method

Airlift ____
Bailer ____
Peristaltic Pump (dedicated tubing) X
Centrifugal ____
Pos. Displ. ____
Disposable Bladder Pump (Low Flow) ____

Well Volume Calculation:

2 in. casing: 17.15 ft. of water x 0.16 = 2.7 gallons
3 in. casing: ____ ft. of water x 0.36 = ____ gallons
6 in. casing: ____ ft. of water x 1.47 = ____ gallons

volume of water removed: 1.2 gal.

>3 volumes: yes ____ no X

purged dry? yes ____ no X

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]
1040		13.19	5.68	9.89	1.65	3.0	2.13	-35
1045		14.27	5.93	10.11	1.45	0.0	0.96	-70
1050		14.86	5.92	10.22	1.45	0.0	0.73	-73
1055		15.18	5.93	10.15	1.44	0.0	0.66	-76
1100		15.52	5.92	10.19	1.44	0.0	0.62	-80
1105		15.77	5.98	10.16	1.44	0.0	0.58	-82
1110		16.15	6.07	9.90	1.43	0.0	0.56	-89
1115								
1120								

Purge Volume:

Purging Time: 35 min

Purge Rate (gph): 2 gph

Sampling

Time of Sample Collection: 1110

MW-9
MW-9_MS
MW-9_MSD

Method:

____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
X Dedicated pump and tubing

Analyses:

____ USEPA Method 8260C TCL VOCs
X PFAS
X metals
X MNA
____

Observations

Well Observations: Good
Weather/Temperature: 16°F wind, 10-15 South, Sunny
Sample description: Clear
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

D&B ENGINEERS AND ARCHITECTS, P.C.

T:\Syracuse Office\Technical\Updated Groundwater Sampling Record with parameters (002).doc

7

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

PFAS → But from Syn - RE

eurofins | Environment Testing America

480-194530 Chain of Custody

SHORT HOLD

Client Information			
Client Contact: Mr. Tracey Garland	Sampler: Tracey Garland	Lab PM: Schove, John R	Carrier Tracking No(s): Syracuse
Company: D&B Engineers and Architects, P.C.	Phone: 315-413-1677	E-Mail: John.Schove@Eurofinset.com	State of Origin:
Address: 5879 Fisher Road PO BOX 56	PWSID:		COC No: 480-170249-36495.1
City: East Syracuse	Due Date Requested:		Page:
State, Zip: NY, 13057	TAT Requested (days): Standard		
Phone: 315-413-1677(Tel) RCreightone Syracuse.com	Compliance Project: Δ Yes Δ No		
Email: tgarland@db-eng.com labdata@db-eng.com	PO #: 5277-1		
Project Name: Harborview Square (D&B#5277-1)	WO #:		
Site:	Project #: 48023439		
	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane,Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	PFC_IDA - PFAS, Standard List (21 analy	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	D	A	A	A	CB	N	N	N	N		
MW-4_1_(15-20)	1-27-22	17:10	G	Water			X	X	X	X	X	X	X	X	X	X	X	X	19	
MW-4_2_(25-30)	1-27-22	15:36	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-4_3_(35-40)	1-27-22	15:00	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-4_4_(42-47)	1-27-22	13:40	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-4_5_(50-53)	1-27-22	12:20	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-6	1-27-22	18:25	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-7	1-27-22	15:20	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-8	1-27-22	13:40	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
MW-9	1-27-22	11:10	G	Water		Y	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	57	MS + MSD
TW-1	1-27-22	16:45	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	
DUP-1	1-27-22	00:00	G	Water			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	19	Blind duplicate

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify) Cat B

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by: Tracey Garland	Date/Time: 1-27-22 2015	Company: D&B	Received by: R Eiglish		Date/Time: 1-27-22, 2015	Company: Syr
Relinquished by: R Eiglish	Date/Time: 1-28-22, 1900	Company: Syr	Received by: [illegible]		Date/Time: 1/29/22 1000	Company: TAB
Relinquished by:	Date/Time:	Company:	Received by:		Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: #1 2.0, 2.3, 1.8

Ver: 06/08/2021

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Syracuse #225

Client Information	Sampler: Tracey Garland	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-170249-36495.2	
Client Contact: Mr. Tracey Garland	Phone: 315-413-1677	E-Mail: John.Schove@Eurofinset.com	State of Origin:	Page: Page 2 of 2	
Company: D&B Engineers and Architects, P.C.		PWSID:		Job #:	
Address: 5879 Fisher Road PO BOX 56	Due Date Requested:				
City: East Syracuse	TAT Requested (days): Standard				
State, Zip: NY, 13057	Compliance Project: Δ Yes Δ No				
Phone: 315-413-1677(Tel) BCreighton@syngaelc.com	PO #: 5277-1				
Email: tgarland@db-eng.com labdata@db-eng.com	WO #:				
Project Name: Harborview Square (D&B#5277-1)	Project #: 48023439				
Site:	SSOW#:				

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 - Methane, Ethane,Ethene & Acetylene	300.0_28D - Chloride & Sulfate	353.2_Pres - Nitrate-Nitrite	6010C, 7470A	SM5310D - Organic Carbon, Total (TOC)	9060A_Diss - Organic Carbon, Dissolved (DOC)	8260C - VOCs - Site Specific List	SM4500_S2_F - Sulfide, Total	353.2_Nitrite, Nitrate_Calc	310.2 - Alkalinity	3500_Fe+3_D_Cal, 3500_FE_D	PFC_IDA - PFAS, Standard List (21 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	D	A	A	A	CB	N	N	N	N		
Rinse Blank	1-27-22	1745	G	Water														X	2	PFAS Rinse Blank
Trip Blank	1-27-22			Water									X						2	VOC Trip Blank
				Water																
				Water																
				Water																

Tracey Garland

T.G.

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

SHORT HOLD

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal *(A fee may be assessed if samples are retained longer than 1 month)*
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify) Cat B

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 1-27-22/2015	Company: D&B	Received by: R. Creighton	Date/Time: 1-27-22, 2015	Company: Syr
Relinquished by: R. Creighton	Date/Time: 1-28-22, 1900	Company: Syr	Received by: [signature]	Date/Time: 1/29/22 1000	Company: TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

PHOTOGRAPH LOG
JANUARY 27, 2022
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

PHOTO	DATE	DESCRIPTION
IMG_5080	1-27-2022	MW-6 filled with Ice.
IMG_5082	1-27-2022	The snowbank dug out to expose MW-4, facing south.
IMG_5084	1-27-2022	Snow removed to expose MW-8 and MW-9, facing east.
IMG_5092	1-27-2022	The water level meter inserted in the tag line of MW-4 as deep as it will go.
IMG_5094	1-27-2022	New stainless-steel bolts replaced on MW-6.

PHOTOGRAPH LOG
JANUARY 27, 2022
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

IMG_5080– MW-6 filled with Ice.

IMG_5082 – The snowbank dug out to expose MW-4, facing south.

PHOTOGRAPH LOG
JANUARY 27, 2022
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

IMG_5084– Snow removed to expose MW-8 and MW-9, facing east.

IMG_5092– The water level meter inserted in the tag line of MW-4 as deep as it will go.

PHOTOGRAPH LOG
JANUARY 27, 2022
D&B JOB NO. 5277-01-01C
HARBOR VIEW SQUARE
OSWEGO, NEW YORK

IMG_5094 – New stainless-steel bolts replaced on MW-6.

APPENDIX F

BORING AND MONITORING WELL CONSTRUCTION LOGS

D&B ENGINEERS AND ARCHITECTS, P.C.	**Project No.:** 5277 **Project Name:** Harbor View Square	**Boring No.:** BC-1 **Sheet** 1 **of** 2 **Prepared By:** Michael Frangione
Drilling Contractor: Cascade **Drill Rig:** Boart Longyear 100cc MiniSonic **Date Started:** 06/25/2019	**Reviewed By:** Matthew Hoskins, P.G. **Drilling Method:** Air Rotary (AR) **Drive Hammer Weight:** N/A **Date Completed:** 06/26/2019	**Boring Completion Depth:** 60' **Ground Surface Elevation:** --- **Boring Diameter:** 2.5"

Depth (ft.)	No.	Type	Rec.	PID Per 6" (ppm)	Sample Description
0'-10'	N/A	N/A	N/A	N/A	VOID
10'-12'	1	AR	3.05'	0.0 0.0	10.00'-11.70': Concrete and Grout Plug. 11.70'-13.05': Blueish-grey SANDSTONE, fine grained, thinly bedded, with horizontal fracture at 12.70', no staining, no odor.
12'-13'	2	AR	1.1'	0.0 0.0	12.00'-13.00': Blueish-grey SANDSTONE, fine grained, thinly bedded, with mechanical horizontal fractures at 12.15' and 12.20', no staining, no odor. 13.00'-13.10': Recovery was pulverized into a Blueish-grey, clay-like paste, no staining, no odor.
13'-16'	3	AR	3.2'	0.0 0.0	13.00'-13.15': Greenish-grey SANDSTONE rubble, fine grained, thinly bedded, flakey texture, no staining, no odor 13.15' -16.20': Greenish-grey SANDSTONE, fine grained, thinly bedded, horizontal fractures at 13.19', 13.30', 14.07', 15.20',15.46' and 15.67. No staining, no odor.
16'-21'	4	AR	5'	0.0 0.0 0.0	16.00' -17.30': Greenish-grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fracture at 17.10', no staining, no odor. 17.30' -19.10': Blueish-dark grey SANDSTONE, fine grained, medium to thinly bedded, mechanical horizontal fracture at 18.82' with some red clay clasts. 19.10' -21.00': Blueish-light grey SANDSTONE, fine grained, thinly bedded, with vertical cracking or non-continuous fracturing from 19.96' – 20.36', mechanical horizontal fracture at 20.77', no staining, no odor.
21'-26'	5	AR	5.1'	0.0	21.00' -26.10': Greenish-grey SANDSTONE, fine grained, thinly bedded, horizontal mechanical fractures at 21.20', 23.35', and 24.84', horizontal hairline fractures with trace green and red clasts of clay at 25.39', no staining, no odor.
26' -31'	6	AR	5.1'	0.0	26.00' -31.00': Greenish-grey SANDSTONE, fine grained, very thinly bedded, horizontal fractures at 26.75', 27.64', 28.67', and mechanical horizontal fractures at 26.18' and 26.40', no staining, no odor.
31'-36'	7	AR	4.9'	0.0	31.00' -35.90': Blueish-grey SANDSTONE, fine grained, thinly bedded, horizontal fractures at 32.30' and 32.37' with trace grey clay imbedded within fractures, mechanical horizontal fractures at 35.30'and 35.80', no staining, no odor.

D&B ENGINEERS AND ARCHITECTS, P.C.					**Project No.:** 5277 **Project Name:** Harbor View Square	**Boring No.:** BC-1 **Sheet** 2 **of** 2 **Prepared By:** Michael Frangione
36'-41'	8	AR	5.1'	0.0 0.0 0.0	36.00' -38.00': Grey SANDSTONE, fine grained, thinly bedded, horizontal mechanical fractures at 36.13', no staining, no odor. 38.00' -40.00': Grey SANDSTONE, fine grained, thinly bedded, moderate greenish-grey and red clasts of irregular sized clay, horizontal fractures at 38.05', 38.30', 38.97', and 39.60', no staining, no odor. 40.00' -41.10': Grey SANDSTONE, fine grained, thinly bedded, horizontal fracture at 40.14', no staining, no odor.	
41' -44'	9	AR	3.2'	0.0	41.00' -44.20': Blueish-grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fractures at 41.25', 41.77', 42.30', 42.89', 43.20', and 43.41', no staining, no odor	
44' -46'	10	AR	1.2'	0.0	44.00' -45.20': Blueish-grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fractures at 44.09' and 45.05', no staining, no odor	
46' -51'	11	AR	5.2'	0.0 0.0 0.0	46.00' -47.80': Grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fractures at 46.05', 46.24' no staining, no odor 47.80' -48.40': Blueish-grey SANDSTONE, fine grained, thinly bedded, moderate horizontal fracturing with moderate greenish-grey clay and trace red clay clasts, rubble with flakey texture at 48.06' -48.25', no staining no odor. 48.40' -51.20': Greenish-grey SANDSTONE, fine grained, thinly bedded, horizontal fractures at 49.30, 49.40, 49.98', mechanical horizontal fractures at 48.33' and 49.75', no staining, no odor.	
51' -56'	12	AR	4.9'	0.0 0.0 0.0	51.00 -52.50': Blueish-grey SANDSTONE, fine grained, thinly bedded, continuous mechanical vertical fracture, no staining, no odor. 52.50' -53.55': Blueish-grey SANDSTONE, fine grained, thinly bedded, small greenish-grey clay and trace red clay clasts, rubble from 52.50' -52.80', horizontal fracture at 53.12', no staining, no odor. 53.55' -59.90': Blueish-grey SANDSTONE, fine grained, thinly bedded, no staining, no odor.	
56' -60'	13	AR	3.7'	0.0 0.0 0.0	56.00' -57.02': Blueish-grey SANDSTONE, fine grained, thinly bedded, no staining, no odor. 57.02' -58.00': Blueish-grey SANDSTONE, fine grained, thinly bedded, rubble with flakey texture from 57.02' -57.15', drilling rubble from 57.74' -57.93', horizontal fractures at 57.15', 57.30', and 57.45', no staining, no odor. 58.0' -61.0': Blueish-grey SANDSTONE, fine grained, thinly bedded, vertical non-continuous fracturing from 58.28' -58.78', vertical and horizontal fracturing from 58.78' -59.08', horizontal fracture at 59.30', mechanical vertical fracture from 59.36' – 59.70' no staining, no odor.	

Sample Types: **DFN =** CORE Discrete Fracture Network	**NOTES:** Bedrock samples were immediately crushed and extracted with microwave assisted extraction (MAE). Extract was analyzed immediately by the on-site Mobile-Lab using USEPA method 8260C. BC-1 was subsequently renamed VA-RC-1

D&B ENGINEERS AND ARCHITECTS, P.C.	**Project No.:** 5277 **Project Name:** Harbor View Square	**Boring No.:** BC-2 **Sheet** 1 **of** 2 **Prepared By:** Michael Frangione
Drilling Contractor: Cascade **Drill Rig:** Boart Longyear 100cc MiniSonic **Date Started:** 06/26/2019	**Reviewed By:** Matthew Hoskins, P.G. **Drilling Method:** Air Rotary (AR) **Drive Hammer Weight:** N/A **Date Completed:** 06/28/2019	**Boring Completion Depth:** 60' **Ground Surface Elevation:** --- **Boring Diameter:** 2.5"

Depth (ft.)	No.	Type	Rec.	PID Per 6" (ppm)	Sample Description
0.0'- 8.0'	N/A	N/A	N/A	N/A	VOID
8.0'-10.0'	1	AR	2.0'	0.0	8.00'-8.25': Concrete and Grout Plug.
				0.0	8.25'-8.40': Grey SANDSTONE rubble, light brown pulverized rock/sediment, no staining, no odor.
				0.0	8.40'-9.10': Greenish-grey SANDSTONE, fine grained, thinly bedded, horizontal fractures at 8.50', 8.70', 8.88', 9.00', and 9.10', sporadic red clay clasts most notably from 8.90'-9.00', no staining, no odor.
				0.0	9.10'-10.00': Greenish-grey SANDSTONE, fine grained, thinly bedded, no staining, no odor.
10.0'-13.0'	2	AR	3.0'	0.0	10.00'-12.64': Greenish-grey SANDSTONE, fine grained, thinly bedded, horizontal fracture at 10.16', mechanical horizontal fractures at 11.13' and 11.32', hairline horizontal fracture at 11.51', no staining, no odor.
				0.0	12.64'-13.00': Greenish-grey SANDSTONE, fine grained, thinly bedded, with sporadic small to medium sized green and red clay clasts, core is pulverized from 12.93'-13.00', no staining, no odor.
13.0'-14.8'	3	AR	1.6'	0.0	13.00'-13.30': Drilling issues.
				0.0	13.30'-14.60': Greenish-grey SANDSTONE, fine grained, thinly bedded, no staining, no odor.
14.8'-20.0'	4	AR	5.2'	0.0	14.80'-20.00': Greenish-grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fractures at 16.55' and 17.13', no staining, no odor.
20.0'-21.5'	5	AR	1.3'	0.0	20.00'-21.30': Grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fractures at 20.13', 20.68', 20.78', and 21.05' no staining, no odor.
21.5'-24.5'	6	AR	2.8'	0.0	21.50'-24.30': Grey SANDSTONE, fine grained, thinly bedded, mechanical horizontal fractures at 21.86', 22.13', 22.45' and 23.98' no staining, no odor.
24.5'-29.5'	7	AR	5.2'	0.0	24.50'-25.05': Grey SANDSTONE, fine grained, thinly bedded, rubble from 24.60'-24.70', no staining, no odor.
				0.0	25.05'-25.50': Grey SANDSTONE, fine grained, thinly bedded, grey/green/red clay deposits, flakey texture with weathered fractures, horizontal fractures at 25.06', 25.16', 25.35' and 25.40', no staining, no odor.
				0.0	25.50'- 29.70': Greenish-grey SANDSTONE, fine grained, thinly bedded, fracture at 25.95', mechanical horizontal fractures at 26.60', 26.66', 27.60' and 29.40', no staining, no odor.

D&B Engineers and Architects, P.C.					**Project No.:** 5277 **Project Name:** Harbor View Square	**Boring No.:** BC-2 **Sheet** 2 **of** 2 **Prepared By:** Michael Frangione
29.5'-34.0'	8	AR	4.1'	0.0	29.50'-33.60': Grey SANDSTONE, fine grained, thinly bedded, with sporadic small to medium sized green and red clay clasts, horizontal fractures at 29.85' and 31.86', oblique fractures at 30.40' and 32.87', mechanical horizontal fractures at 33.06' and 33.30', no staining, no odor.	
34.0'-37.0'	9	AR	2.6'	0.0	34.00'-36.60': Grey SANDSTONE, fine grained, thinly bedded, horizontal fractures at 34.20' and 34.50', no staining, no odor.	
37.0'-42.0'	10	AR	4.8'	0.0 0.0 0.0	37.00'-39.50': Grey SANDSTONE, fine grained, thinly bedded, horizontal mechanical fracture at 38.03', no staining, no odor. 39.50'-40.10': Grey SANDSTONE, fine grained, thinly bedded, with moderately dense small to medium green and red clay clasts, horizontal fractures at 39.55', 39.72', 39.85', and 40.09', no staining, no odor. 40.10'-41.80': Grey SANDSTONE, fine grained, thinly bedded, with a large greenish-grey clay clast from at 39.77'-39.87', mechanical fracture at 39.85', no staining, no odor.	
42.0'-45.0'	11	AR	3.4'	0.0	42.00'-45.40': Grey SANDSTONE, fine grained, thinly bedded, rubble from 42.20-42.30', horizontal fractures at 44.90' and 45.15', mechanical horizontal fractures at 42.82' and 45.21', no staining, no odor.	
45.0'-47.0'	12	AR	2.1'	0.0	45.00'-47.10': Grey SANDSTONE, fine grained, thinly bedded, horizontal fractures at 45.09', 45.91'and 46.01', thin horizontal red and green clast at 45.41' and 45.92', mechanical horizontal fracture at 45.65', vertical fracturing from 46.02'-46.86', no staining, no odor.	
47.0'-48.0'	13	AR	0.5'	0.0	47.00'-47.50': Grey SANDSTONE, fine grained, thinly bedded, horizontal mechanical fracture at 47.11', rubble from 47.40'-47.50', no staining, no odor.	
48.0'-51.0'	14	AR	3.3'	0.0	48.00'-51.30': Grey SANDSTONE, fine grained, thinly bedded, horizontal fracture at 49.70', horizontal mechanical fracture at 48.35', 49.13', 50.33', and 51.10', large horizontal fractures with weathering and flakey texture with red green clay deposits from 50.40'-50.58', no staining, no odor.	
51.0'-56.0'	15	AR	5.3'	0.0 0.0 0.0	51.00'-52.75': Grey SANDSTONE, fine grained, thinly bedded, no staining, no odor. 52.75'-53.15': Grey SANDSTONE, fine grained, thinly bedded, grey flakey rubble mixed with clay from 52.75'-52.87', grey flakey clay with horizontal fracturing from 53.04'-53.14', no staining, no odor. 53.15'-56.30': Grey SANDSTONE, fine grained, thinly bedded, small moderately dense green clay clasts from 53.78'-54.15', mechanical horizontal fracture at 53.75', horizontal fracture at 54.60', no staining, no odor.	
56.0'-60.0'	16	AR	3.9'	0.0	56.00'-59.9': Grey SANDSTONE, fine grained, thinly bedded, flakey red and green rubble from 57.40'-57.58', horizontal fractures at 56.35', 57.97', 58.09', and 59.00', no staining, no odor.	

Sample Types:
DFN = CORE Discrete Fracture Network

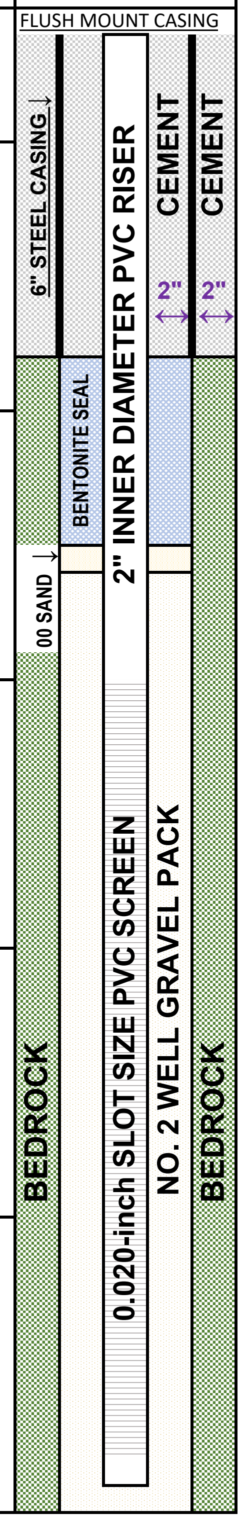
NOTES: Bedrock samples were immediately crushed and extracted with microwave assisted extraction (MAE). Extract was analyzed immediately by the on-site Mobile-Lab using USEPA method 8260C. BC-2 was subsequently renamed to VA-RC-2

D&B ENGINEERS AND ARCHITECTS

D&B Project Number: 5277-01
Date Started: 9/23/2021
Surface Elevation: 262.89 ft. amsl
Logged By: Tracey Garland
Date Completed: 10/01/2021
Top of Riser Elevation: 262.57 ft amsl
Geologist: Matthew Hoskins
Drilling Contractor: Summit

Depth (feet)	Run #	Recovery	PID Headspace (VOC ppm)	Fluid Lost (gal)	RQD	Visual Classification
0, 4, 5	1					- Hollow stem auger to 5.00'. 0.25'-4.00': Brown gravelly clayey SAND, dry. 4.00'-5.00': Bedrock interface, cuttings recovered as fine grained light colored rock flour, dry. - Refusal with hollow stem auger at 5.00'.
6, 7, 8, 9, 10	2	53"/60"	0.0	500	90%	5.00'-9.42': Bluish gray and purple to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Weathered horizontal fractures at 5.3', 5.5', 5.7', 5.8' and 6.9'. - Weathered horizontal fracture at 7.4'. - Mechanical Break at 9.00'.
11, 12, 13, 14, 15	3	62.5"/ 62.5"	0.0	925	90%	10.00'-15.21': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal fractures at 11.15', 11.30', 11.40', and 11.60'. (11.30'-11.40': Purple MUDSTONE, soft.) - Horizontal fracture at 14.60'.
16, 17, 18, 19, 20	4	63"/63"	0.0	450	98%	15.21'-20.46': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Mechanical breaks at 16.25' and 16.60'. - Horizontal fractures at 18.60' and 18.65'. - Mechanical break at 19.10'. - Horizontal fracture at 19.70'.
21, 22, 23, 24, 25	5	60"/60"	0.0	450	92%	20.46'-25.46': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Weathered horizontal fractures at 21.20', 21.25', 21.30' and 21.40'. - Horizontal fracture at 24.70' - Mechanical break at 25.00' and horizontal fracture at 25.20'
26, 27, 28, 29, 30, 30.2	6	58"/58"	0.0	450	95%	25.46'-30.29': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal fractures at 26.20' and 26.40'. - Mechanical break at 26.80'. - Weathered horizontal fractures at 28.20' and 28.30'. - Mechanical break at 29.80'. Weathered horizontal fracture at 30.10'. 30.20': Bottom of core.

MW-6 Well Constructon



Notes: MW-6 was cored using a Diedrich D120 drill rig with a ten-inch diameter hollow stem auger to five feet and an NX-wireline coring system to 30.2 feet on 9/23/2021. MW-6 was installed using a Diedrich T-650-W II drill rig with a ten-inch diameter tricone roller to nine feet on 9/29/2021 and a six-inch diameter down-the-hole hammer to bottom on 10/01/2021. The surface elevation was surveyed by Land Lines Surveying, P.C. on November 5, 2021. D&B calculated the top of riser elevation by subtracting the vertical distance between the top of riser and ground surface from the surface elevation.

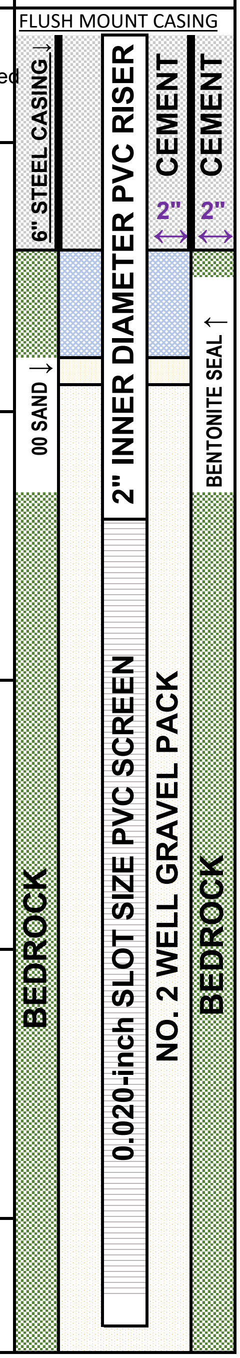
D&B Project Number: 5277-01 **Date Started:** 9/21/2021 **Surface Elevation**: 262.88 ft. amsl

Logged By: = Tracey Garland **Date Completed**: 9/30/2021 **Top of Riser Elevation:** 262.53 ft amsl

Geologist: Matthew Hoskins **Drilling Contractor:** Summit

Depth (feet)	Run #	Recovery	PID Headspace (VOC ppm)	Fluid Lost (gal)	RQD	Visual Classification
0–8						- Hollow stem auger to 8.00'. 0.25'-7.00': Brown gravelly clayey SAND, dry. 7.00'-8.00': Bedrock interface, cuttings recovered as fine grained light colored rock flour, dry. - Refusal with hollow stem auger at 8.00'.
8–13	2	54"/60"	0.0	380	87%	8.00'-12.50': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal Fracture at 8.65'. - Vertical fracture from 8.65 to 10.00'. - Horizontal fractures at 10.00' and 10.05'. - Horizontal fracture at 12.00'. (12.30'-12.40': Purple MUDSTONE, soft) - Mechanical break at 12.29'.
13–18	3	60"/60"	0.0	180	95%	13.00'-18.00': Bluish gray to greenish gray argillaceous SANDSTONE with purple and green mudstone, fine grained, laminated to thinly bedded. - Horizontal fracture at 14.70'. - Mechanical break at 17.80'.
18–23	4	57"/60"	0.0	170	78%	18.00'-22.75': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal fracture at 18.20' - Horizontal fractures at 20.50', 20.60', 20.75', 20.85' and 20.90'. - Mechanical break at 21.10'. - Mechanical break at 22.30'.
23–28	5	60"/60"	0.0	275	100%	23.00'-28.00': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal fracture at 24.25'. - Horizontal fracture at 25.60'. - Horizontal fracture at 26.90' - Mechanical break at 27.60'
28–30.6	6	31"/31"	0.0	175	90%	28.00'-30.60': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Weathered hoizontal fractures at 29.20' and 29.40'. - Mechanical break at 30.00'. 30.60': Bottom of rock core.

MW-7 Well Constructon



Notes: MW-7 was cored using a Diedrich D120 drill rig with a ten-inch diameter hollow stem auger to eight feet and an NX-wireline coring system to 30.6 feet from 9/21/2021 to 9/22/2021. MW-7 was installed using a Diedrich T-650-W II drill rig with a ten-inch diameter tricone roller to ten feet on 9/27/2021 and a six-inch diameter down-the-hole hammer to bottom on 9/30/2021. The surface elevation was surveyed by Land Lines Surveying, P.C. on November 5, 2021. D&B calculated the top of riser elevation by subtracting the vertical distance between the top of riser and ground surface from the surface elevation.

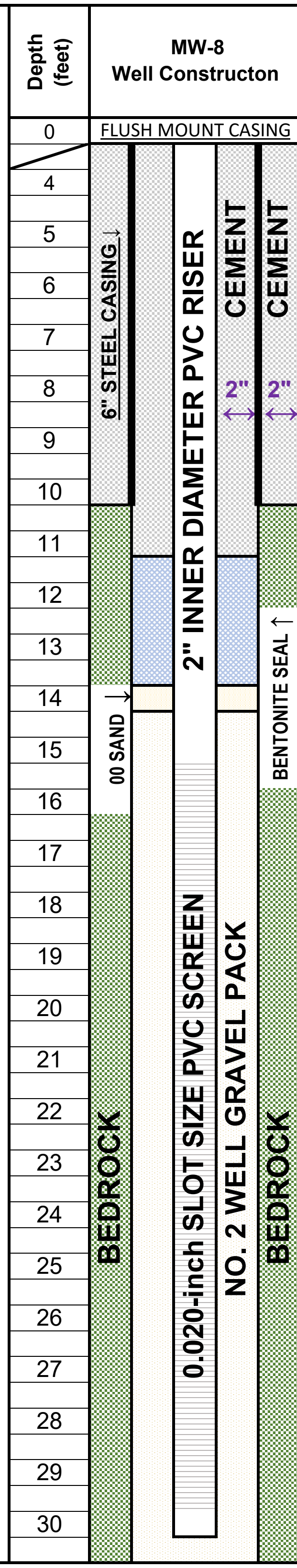
D&B ENGINEERS AND ARCHITECTS

Well Construction Detail
Harbor View Square
NYSDEC Site No. C738040

D&B Project Number: 5277-01
Logged By: Tracey Garland
Geologist: Matthew Hoskins

Date Started: 10/02/2021
Date Completed: 10/04/2021
Drilling Contractor: Summit

Surface Elevation: 263.11 ft. amsl
Top of Riser Elevation: 262.67 ft amsl
Drill Rig: Diedrich T-650-W II



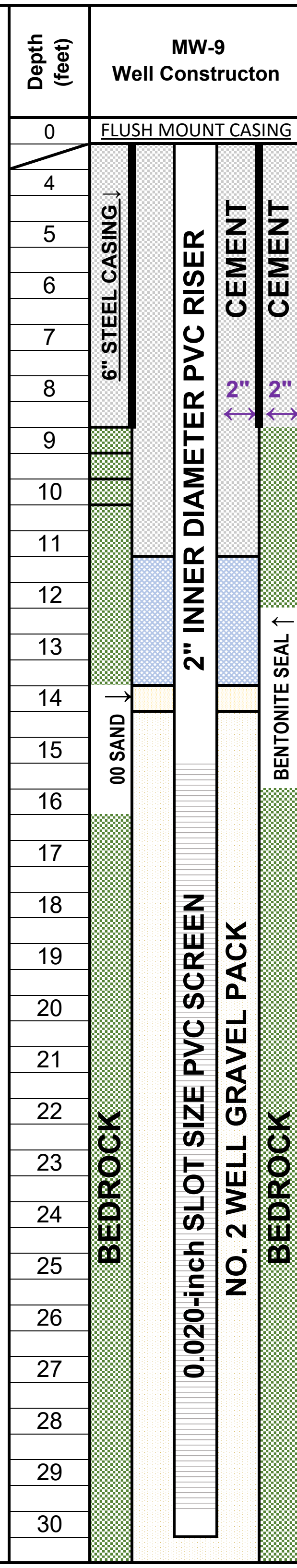
Notes: Top of bedrock was encountered at four feet. It appeared that bedrock was weathered from four to seven feet based on low resistance to drilling with a ten-inch diameter down-the-hole hammer drill bit. Drilling was performed with the ten-inch diamter down-the-hole hammer to ten feet on 10/02/2021. Drilling was completed from ten feet to bottom with a six-inch diameter down-the hole-hammer on 10/04/2021. The bedrock provided low resistance at 12, 15, 17, 20 and 25 feet. The surface elevation was surveyed by Land Lines Surveying, P.C. on November 5, 2021. D&B calculated the top of riser elevation by subtracting the vertical distance between the top of riser and ground surface from the surface elevation.

D&B ENGINEERS AND ARCHITECTS

Well Construction Detail
Harbor View Square
NYSDEC Site No. C738040

Well ID : MW-9

D&B Project Number: 5277-01	**Date Started:** 9/29/2021	**Surface Elevation**: 263.20 ft. amsl
Logged By: Tracey Garland	**Date Completed**: 10/01/2021	**Top of Riser Elevation:** 262.79 ft amsl
Geologist: Matthew Hoskins	**Drilling Contractor:** Summit	**Drill Rig:** Diedrich T-650-W II



Notes: Top of bedrock was encountered at three feet. It appeared that bedrock was weathered from three to five feet based on low resistance to drilling with a ten-inch diameter tricone roller drill bit. Drilling was performed with the ten-inch diameter tricone roller to 8.5 feet on 9/29/2021. Drilling was completed from 8.5 feet to bottom with a six-inch diameter down-the hole hammer on 10/01/2021. The bedrock provided low resistance at 12, 15.5, 20, 26.5 and 29 feet. The surface elevation was surveyed by Land Lines Surveying, P.C. on November 5, 2021. D&B calculated the top of riser elevation by subtracting the vertical distance between the top of riser and ground surface from the surface elevation.

D&B ENGINEERS AND ARCHITECTS

Core Log and Well Construction Detail
Harbor View Square
NYSDEC Site No. C738040

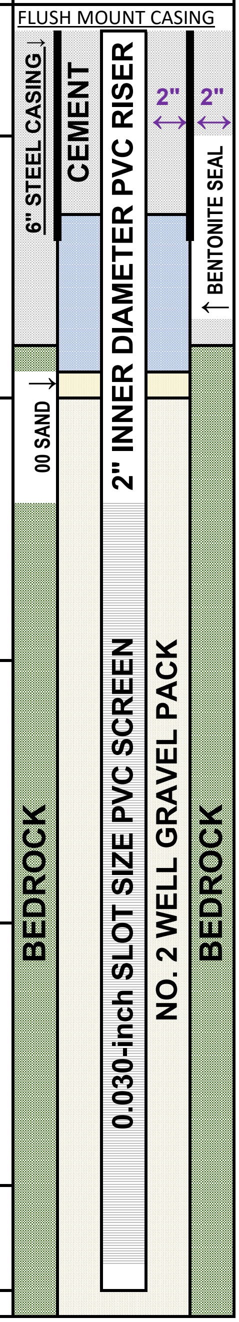
D&B Project Number: 5277-01
Logged By: Tracey Garland
Geologist: Matthew Hoskins

Date Started: 9/22/2021
Date Completed: 10/02/2021
Drilling Contractor: Summit

Surface Elevation: 262.87 ft. amsl
Top of Riser Elevation: 262.55 ft amsl

Depth (feet)	Run #	Recovery	PID Headspace (VOC ppm)	Fluid Lost (gal)	RQD	Visual Classification
0 7 8	1					- Hollow stem auger to 5.00'. 0.25'-7.50': Brown gravelly clayey SAND, dry. 7.50'-8.00': Bedrock interface, cuttings recovered as fine grained light colored rock flour, dry. - Refusal with hollow stem auger at 8.00'.
9 10 11 12 13	2	58"/60"	0.0	550	93%	8.00'-12.83': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Weathered horizontal fractures at 9.03' and 9.05' - Weathered horizontal fracture at 10.50'. - Mechanical break at 11.00'. (12.20'-12.55': Purple MUDSTONE, soft.) - Horizontal fractures at 12.25', 12.30', 12.40' and 12.50'.
14 15 16 17 18	3	60"/ 60"	0.0	500	97%	13.00'-18.00': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Mechanical break at 14.80'. - Mechanical breaks at 17.60', 17.65' and 17.70'.
19 20 21 22 23	4	60"/60"	0.0	380	82%	18.00'-23.00': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal fracture at 19.20'. Weathered horizontal fracture at 19.40'. - Mechanical break at 20.70'. - Horizontal fracture at 21.20'. - Mechanical break at 22.00'. - Horizontal fracture at 22.55'. - Mechanical breaks at 22.75' and 22.90'.
24 25 26 27 28	5	60"/60"	0.0	375	100%	23.00'-28.00': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Weathered horizontal fracture at 23.60'. Mechnical break at 24.60'. -Weathered horizontal fracture at 25.50'. - Horizontal fracture at 27.50' (27.50'-27.80': Green and purple MUDSTONE, soft.)
29 30	6	22"/24"	0.0	80	62%	28.00'-30.00': Bluish gray to greenish gray argillaceous SANDSTONE with purple mudstone, fine grained, laminated to thinly bedded. - Horizontal fractures at 29.30',29.50', 29.75' and 29.90'. Bottom of core at 30'

IW-1 Well Constructon



Notes: IW-1 was cored using a Diedrich D120 drill rig with a ten-inch diameter hollow stem auger to eight feet and an NX-wireline coring system to 30 feet on 9/22/2021. IW-1 was installed using a Diedrich T-650-W II drill rig with a ten-inch diameter tricone roller to ten feet on 9/30/2021 and a six-inch diameter down-the-hole hammer to bottom on 10/02/2021. The surface elevation was surveyed by Land Lines Surveying, P.C. on November 5, 2021. D&B calculated the top of riser elevation by subtracting the vertical distance between the top of riser and ground surface from the surface elevation.