PRE-DESIGN INVESTIGATION WORK PLAN
245-265 & 271 Hollenbeck Street and 50 Balfour Drive
ROCHESTER, NEW YORK
NYSDEC SITE NUMBER: 828188

Prepared for: OBI LLC
245-265 & 271 Hollenbeck Street and 50 Balfour Drive,
Rochester, New York

Prepared by: Day Engineering, P.C.
1563 Lyell Avenue
Rochester, New York

Project No. 5678S-20

Date: November 2020

CERTIFICATION STATEMENT

I, Nathan Simon, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Pre-Design Investigation Work Plan was prepared in substantial accordance with applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

_____ NYSPE

November 20, 2020

_____DATE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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January 15, 2021

Mr. Mike McAlpin
OBI, LLC
255 Hollenbeck Street
Rochester, New York 14621

Dear Mr. McAlpin;

Re: OBI, LLC Site #828188
Pre-Design Investigation Work Plan
November 2020
245-265 & 271 Hollenbeck Street and 50 Balfour Drive
City of Rochester, Monroe County

The New York State Departments of Environmental Conservation (NYSDEC) and Health, collectively referred to as the Departments, have completed their review of the document entitled *"Pre-Design Investigation Work Plan"* (the Work Plan) dated November 2020 and prepared by Day Engineering, P.C. for the OBI, LLC site. In accordance with 6 NYCRR Part 375-1.6, the Departments have determined that the Work Plan, with the following modifications, substantially address the requirements of the Order-on-Consent:

- The community air monitoring plan (CAMP) will be implemented during all ground-intrusive activities. All CAMP data will be shared with the Departments daily and the Departments will be made aware of any exceedences to the CAMP as soon as that data becomes available.

With the understanding that the Departments' modifications are agreed to, the modified Work Plan is hereby approved. With the exception of the CAMP, this approval does not extend to the Health and Safety Plan (HASP). While HASPs are required, they are not approved by the Departments.

If OBI, LLC chooses not to accept the modified Work Plan, you are required to notify this office within 20 days after receipt of this letter. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

This letter shall be attached to the final document and a copy of the approved document is required to be kept in the document repository located at the Lincoln Branch Library.

Per the schedule in the Work Plan, the first phase of field activities consisting of well installation and development is scheduled to be completed within two weeks of the date of this letter. Please notify me at least seven days in advance of the start of field activities.

Please contact me via email at frank.sowers@dec.ny.gov if you have any questions regarding these comments.

Sincerely,

Frank Sowers, P.E.
Professional Engineer 1

ec:

D. Pratt	J. Frazer
J. Nealon	B. Kline
D. Loew	N. Simon
J. Deming	H. McLennan
M. Cruden	

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1.0 INTRODUCTION

This Pre-Design Investigation Work Plan (PDIWP) was prepared by Day Engineering, P.C. (DAY) on behalf of OBI LLC for the three contiguous parcels identified as 245-265 Hollenbeck Street, 271 Hollenbeck Street, and 50 Balfour Drive, Rochester, New York (Site). The Site is currently owned by OBI LLC. A Project Locus map is included as Figure 1.

The New York State Department of Environmental Conservation (NYSDEC) has issued a Record of Decision (ROD) for the Site summarizing the remedial alternative to be implemented at the Site. The remedial alternative will be implemented in phases with the goal of obtaining the Remedial Action Objectives (RAOs) established for the Site. The first phase of remediation includes, but is not limited to, groundwater extraction, on-site treatment of extracted groundwater and permitted discharge of treated groundwater to the sewer system. The primary objective of this first remedial phase is to address chlorinated volatile organic compound (CVOC)-impacted groundwater identified in the apparent source areas of the Site and to ensure contaminated groundwater does not migrate off-site. A secondary objective of this first phase of remediation is removal and treatment of cyanide, light non-aqueous phase liquids (LNAPL) and Per and Polyfluoroalky Substances (PFAS). As warranted by field observations and groundwater modeling, additional groundwater extraction wells will be installed, as necessary, to prevent off-site migration of Site Contaminants of Concern (COCs). This PDIWP identifies the data needed to complete the initial design of the groundwater extraction and treatment system, and the proposed methods to collect the needed data.

1.1 Site Description

The three parcels comprising the Site cover approximately 6.4 acres of land and are developed with two buildings. The Main Building is approximately 134,000 square feet in size and is located at 50 Balfour Drive. The Main Building is currently used for electroplating and metal stamping. The second building is an approximate 8,000 square foot building located at 245-265 Hollenbeck Street. This building is currently used as a warehouse and equipment storage facility. The 271 Hollenbeck Street parcel currently has a roadway on it. The surrounding parcels are currently used for a combination of commercial, residential and industrial purposes. The nearest residential area is adjacent to the Site to the South.

1.2 Site History

The Site was developed in 1923 for various industrial/manufacturing operations that included printing, lithographing, appliance manufacturing, metal plating, sheet metal fabrication and metal stamping. Prior activities that may have contributed to Site contamination included a trichloroethene (TCE) degreaser that was used at the Site until approximately 1992.

1.3 Previous Environmental Studies

Based upon the test borings advanced on the Site to date, historic fill material is present beneath, at, or near the ground surface to depths up to 7.5 ft. below ground surface (bgs) with an average thickness of 2.9 ft. This fill material typically consists of reworked soils (sand, silt, gravel and clay) with lesser amounts of rock, asphalt, organics/wood, metal, glass, coal, slag, ash, cinders, brick, ceramic, crushed

stone, and concrete. Indigenous lacustrine deposits, generally encountered beneath the historic fill material, included alternating layers or lenses of brown and gray silts and sands with lesser amounts of intermixed gravels, clays and fractured rock. Occasional clay lenses were observed at some test locations. The lacustrine deposits were occasionally mottled, and also had colors of red, orange, green, and/or black. Soil types generally became coarser with depth (i.e., fine sands transitioned to coarse sands, and amounts of gravel and fractured rock increased), which may be indicative of an underlying layer of glacial till above the top of bedrock at the Site.

The deeper test borings advanced at the Site indicated that the Rochester Shale bedrock is first encountered at depths ranging between approximately 11.5 ft. bgs and 12.5 ft. bgs, which are the depths where auger refusals were encountered. The Rochester Shale encountered primarily consisted of: fine-grained dolomitic mudstone with horizontal micro-line fractures; occasional vertical, angular and multidirectional fractures; some fossiliferous lenses and layers; and trace amounts of vugs and weathered lenses. Rock quality designation (RQD) values ranged between 0% and 98%. In general, RQDs increased to some extent with depth over the approximate 15-foot-thick intervals of bedrock that were cored at select locations. Overburden groundwater flow was determined to be generally to the east to northeasterly. Bedrock groundwater generally flows northernly to northeasterly on the western portion of the Site and northeasterly on the eastern portion of the Site.

Test boring logs, monitoring well installation diagrams, and summary tables of analytical data are provided in the Site's Remedial Investigation/Feasibility Study (RI/FS) Report.

1.4 Applicable Project Standards, Criteria, Guidance and Reference Documents

Applicable standards, criteria, and guidance (SCG) values and reference documents that will be used for this project are outlined below:

- Appropriate Soil Cleanup Objectives (SCOs) and other guidance as set forth in 6 NYCRR Part 375-2 Inactive Hazardous Waste Disposal Program dated December 14, 2006. Appropriate SCOs for this Site are the Protection of Groundwater SCOs and Restricted Industrial Use SCOs.

- Appropriate Soil Cleanup Levels (SCL) and other guidance as set forth in NYSDEC CP-51 Soil Cleanup Guidance dated October 21, 2010.

- Guidelines referenced in the NYSDEC document titled "DER-10 Technical Guidance for Site Investigation and Remediation" dated May 10, 2010.

- Appropriate water quality standards and guidance values (WQS/GV) as set forth in the NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" dated June 1998, and amended by a January 1999 Errata Sheet, an April 2000 Addendum, and a June 2004 Addendum.

- Appropriate guidelines, procedures and attachments as set forth in the Day Environmental, Inc. “Remedial Investigation/Remedial Alternatives Analysis Work Plan, 962, 966, 972-974 East Main Street, Rochester, New York” dated December 2018.

- Appropriate guidelines, procedures and attachments as set forth in this PDIWP (i.e., Health and Safety Plan, CAMP, QAPP).

- Monroe County Pure Waters (MCPW) Sewer Use Permit requirements.

- Appropriate guidelines, procedures and requirements as set forth in the NYSDEC Record of Decision (ROD), OBI LLC, State Superfund Project, Rochester, Monroe County, Site #828188, dated March 2020.

The work described in this PDIWP will be performed in accordance with the SCGs and reference documents listed above.

2.0 SITE CONCEPTUAL MODEL, STUDY OBJECTIVES AND REQUIRED REMEDIAL INVESTIGATION DATA

This section summarizes the apparent groundwater CVOC source areas at the Site, the conceptual model to address these apparent source areas, and means and methods to collect the data required to complete the design of the groundwater extraction and treatment system at the Site.

Following installation and development of the proposed piezometers and extraction wells, pump testing will be completed to assess hydraulic parameters, pumping rates, static water level drawdown, and the apparent radius of influence (ROI) created by the pumping. It is recognized that the effective capture zone may be less than the radius of influence, and cannot be easily delineated using a single method. The effective capture zone will be estimated using multiple lines of converging evidence including observed ROI, groundwater potentiometric surface modeling, and width of capture zone calculations. To aid in the evaluation of the capture zone shape and magnitude, two transects of piezometers/monitoring wells will be established in proximity to EW-1 and monitored during the pump tests. The data collected (i.e., hydrogeologic data, pump test results, etc.) will be evaluated during the design of the groundwater extraction and treatment system and included in the RD/RAWP.

Throughout the startup period, and on an as needed basis thereafter, the effective capture zone will be evaluated on a periodic and iterative basis with the goal of documenting groundwater plume containment at the Site. If additional groundwater extraction wells are warranted, the location and design specifications of these wells will be approved by the NYSDEC prior to commencing with the well installation work. Well installation procedures for these additional extraction wells (if required) will be completed in accordance with this work plan unless approval from the NYSDEC is provided for alternative means and/or methods.

The extracted groundwater generated during implementation of this PDIWP will be managed as an investigation derived waste (IDW) in accordance with Section 3.7 of this PDIWP. It is anticipated that during full scale operation the extracted groundwater will be treated in an on-site treatment system prior to being discharged to the MCPW sewer system in accordance with applicable MCPW permit requirements. Based on the existing data for the Site, it is anticipated that the groundwater treatment system will include particulate filtration followed by activated carbon filtration prior to discharge to the MCPW sewer system. The location and design of the treatment system will be identified in the Remedial Design/Remedial Action Work Plan (RD/RAWP), with consideration given to the potential for off-gassing of CVOCs from treatment system components and media (e.g., potential approaches to address off-gassing of CVOCs include locating the treatment system outside of the manufacturing building; installation of a dedicated treatment system venting and vapor collection system; etc.).

Subsequent to completing the field activities presented herein, further refinement of the site conceptual model and additional data collection may be necessary to complete the groundwater extraction and treatment system design. Such data collection could include installation of additional groundwater monitoring wells and/or completion of additional pumping tests to address hydraulic data gaps. If it is determined that additional data collection is deemed necessary, the NYSDEC will be notified and consulted.

2.1 Groundwater Site Conceptual Model

The primary contaminants of concern (COCs) for the Site are TCE and its associated degradation products [e.g., cis-1,2-dichloroethene (DCE), vinyl chloride, etc.] in groundwater. The highest concentration of total CVOCs in the overburden groundwater at the Site was at monitoring well MW-5 [42,975 parts per billion (ppb)], which also had the highest detected concentration of cis-1,2-DCE (40,500 ppb). This area of the Site was designated as the primary plume area (refer to Figure 2). The highest concentrations of TCE (286 ppb) and trans-1,2-DCE (30.8 ppb) in the overburden groundwater at the Site were detected at monitoring well MW-16, which is centrally located in the Main Building. The highest concentration of PCE (18.5 ppb) in the overburden groundwater at the Site was detected at monitoring well MW-P, which is to the east of the Hollenbeck Building. The highest concentration of vinyl chloride (3,880 ppb) in the overburden groundwater at the Site was detected at monitoring well MW-FF, which is located in the northern portion of the Main Building. Additional secondary overburden TCE source areas are present under the central and eastern portions of the main building as well as outside the northwest portion of the main building adjacent to a high voltage electric line and bulk welding gas storage tanks.

LNAPL was detected on top of the overburden groundwater in a localized area in proximity to monitoring well MW-17 located under the eastern portion of the main building. LNAPL was measured at thicknesses ranging from 0.1 to 0.6 inches during the RI. The LNAPL was determined to be Number 2 Fuel Oil.

PFAS compounds are also present in the primary plume area. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported at concentrations of up to 40 and 43 parts per trillion (ppt), respectively, exceeding the 10 ppt screening levels for groundwater for each. No other individual PFAS exceeded the 100 ppt screening level. The total concentration of PFAS, including PFOA and PFOS, were reported at concentrations of up to 180 ppt, below the 500 ppt screening level for total PFAS in groundwater.

The highest concentration of CVOCs in the bedrock groundwater at the Site was in bedrock monitoring well MW-7R, located closest to overburden monitoring wells MW-5 and MW-8. The CVOC concentration in bedrock monitoring well MW-7R was 1,173 ppb during the 2016 Supplemental RI groundwater sampling event, and it also contained the highest detected concentration of cis-1,2-DCE (543 ppb) and TCE (400 ppb). The highest concentration of PCE (5 ppb) in the bedrock groundwater at the Site was detected at monitoring well MW-3R, and the highest concentration of vinyl chloride (314 ppb) in the bedrock groundwater at the Site was detected at monitoring well MW-10R.

Based on off-site groundwater monitoring performed to date, off-site migration of site contaminants in groundwater does not appear to be significant at this time. Site contaminants were detected in groundwater at the site boundary, but not in downgradient off-site groundwater.

To address the CVOC concentrations identified in the overburden groundwater at the MW-5 area (the area of highest CVOC concentrations measured to date and the apparent primary plume area of the CVOC-impact), groundwater extraction will be completed to remove CVOC mass and contain the existing CVOC plume. Additional groundwater extraction will also be completed in secondary source areas to aid in groundwater plume containment.

2.2 Data Required for Remedial Design/Remedial Action Work Plan Development

Provided below is a summary of select field activities and data acquisition requirements associated with this PDIWP. Additional details and information on the sampling and testing procedures associated with the tasks is presented in Section 3.

Extraction Well Installation: One bedrock interface extraction well (EW-1) constructed of four-inch diameter schedule 40 PVC casing and screen materials will be installed. [Note: a bedrock interface extraction well is being proposed in lieu of paired extraction wells (i.e., one bedrock and one overburden in close proximity to one another) to preclude the potential of a dedicated bedrock extraction well promoting vertical contaminant migration that could compromise bedrock groundwater quality. It is anticipated that a bedrock interface well will mitigate this concern by capturing the overburden groundwater above the bedrock extraction zone before vertical contaminant migration can occur. Further it is anticipated that pumping from the bedrock interface well will enhance the upward vertical gradient from the bedrock into the interface zone. A comparison of measured hydraulic conductivities and static water levels from the overburden and bedrock (e.g., dedicated overburden groundwater monitoring well MW-8 and dedicated bedrock groundwater monitoring well MW-7R) prior to, and during, the bedrock interface well pump testing, will aid in estimating the proportional flow from the two zones and confirm interface pumping will enhance vertical gradient from the bedrock into the interface zone. Refer to Figure 2 for extraction well EW-1 location and Figure 3 for EW-1 design specifications. Two overburden groundwater extraction wells (EW-2 and EW-3) will also be installed using a four-inch diameter, schedule 40 PVC casing and screen materials. Refer to Figure 2 for the location of the overburden extraction well EW-2 and EW-3 locations and Figure 4 for design specifications.

- Monitoring Well Installation: If feasible without incurring drilling costs beyond the budgeted amount, one overburden groundwater monitoring well (designated MW-LL) will be installed to the top of bedrock using two-inch diameter, Schedule 40 PVC casing and screen materials. This monitoring well will be installed in proximity to the former temporary monitoring well ROW-9 location using rotary drilling technology and procedures. Refer to Figure 2 for the location of the overburden groundwater monitoring well MW-LL and Figure 5 for groundwater monitoring well MW-LL design specifications.

- Piezometer Installation: Eight piezometers (designated P-1 through P-8) will be installed to equipment refusal depths using direct push technology and procedures. Piezometer locations are presented on Figure 6 and Figure 7 presents piezometer design specifications.

- Groundwater Sampling: A groundwater sampling event will be completed during the PDIWP using passive diffusion bags (PDBs) sampling procedures to establish background conditions prior to the initiation of pumping. It is anticipated that the RD/RAWP will be developed using the analytical laboratory results from this groundwater sampling event, the hydraulic parameters discussed in this PDIWP, and the RI data.

- Physical Characterization: Slug tests will be conducted in select overburden wells (MW-5, MW-6, MW-16, MW-17, MW-B, MW-M, MW-II, and MW-FF,) and the three extraction wells (EW-1,

EW-2 and EW-3) installed as part of this PDIWP. Pumping tests will also be conducted in extraction wells EW-1, EW-2 and EW-3 and the surrounding well field will be monitored for responses (i.e., changes in static water level) to the pumping tests.

2.3 Pre-Design Investigation Work Plan Objectives

This PDIWP has been developed to present the scope of work necessary to obtain the data required for the completion of the groundwater extraction and treatment system design. Following completion of the scope of work presented in this PDIWP, a detailed design (i.e., RD/RAWP) for the groundwater extraction and treatment system will be completed. The RD/RAWP Work Plan will be reviewed, approved and signed by a Professional Engineer licensed to practice in New York State.

The objectives of this PDIWP are described below.

- Produce data of sufficient quantity and quality for RD/RAWP development.
- Develop a groundwater flow model calibrated to the Site groundwater level data for use as a baseline condition.
- Evaluate the influences of groundwater extraction on groundwater flow and static groundwater levels relative to the baseline condition.
- Define hydrogeological factors (e.g., groundwater flow, response of the groundwater extraction, depth to the saturated zone, hydrologic gradients, and hydraulic conductivity).

3.0 PRE-DESIGN SCOPE

One bedrock interface groundwater extraction well (designated EW-1), two top-of-rock groundwater extraction wells (designated EW-2 and EW-3) and eight piezometers (designated P-1 through P-8) will be installed and developed in accordance with this work plan and associated QAPP. It is assumed that the extraction wells and piezometers will be available for use during select field activities described in this PDIWP. The implementation of the scope defined in this PDIWP will follow the site-specific Health and Safety Plan, and the Community Air Monitoring program (CAMP) included as Attachment A. The HASP was prepared by DAY and includes the necessary elements and procedures for the implementation of the scope of work developed in this PDIWP and the Site's regulatory status as a Class 2 Inactive Hazardous Waste Disposal Site. The HASP outlines the policies and procedures to protect workers and the public from potential environmental hazards during activities that have the potential to disturb contaminated materials. The HASP includes a Community Air Monitoring Plan (CAMP) that is required for intrusive activities at the Site during this project, and also an Emergency Contingency Plan (ECP) should unanticipated emergencies occur.

The Site's Quality Assurance Project Plan (QAPP) included in Appendix B describes the procedures to be used during collection of field data and analytical laboratory data. The QAPP includes the following information:

- specific information pertaining to the collection and handling of samples;
- analytical methods to be used;
- Quality Assurance/Quality Control (QA/QC) procedures to be followed;
- analytical laboratory reporting limits;
- documentation procedures;
- project organization;
- decontamination procedures;
- sampling procedures, and
- a sampling and analysis plan.

As described in the QAPP, analytical laboratory results will be provided in an EQUIS database format in accordance with the Electronic Data Deliverable (EDD) requirements of the NYSDEC.

3.1 Installation of Overburden/Bedrock Groundwater Extraction Wells

One bedrock interface extraction well (designated EW-1) and two overburden extraction wells (designated EW-2 and EW-3) will be installed in the approximate locations presented on Figure 2; however, the field location of the extraction wells will depend on access requirements, buried utilities, etc. The NYSDEC will be notified and consulted if the location of extraction wells will be significantly different (i.e., more than 15 feet) than that presented on Figure 2.

Bedrock interface extraction well EW-1 will be advanced approximately 5 feet beyond auger refusal (i.e., into competent bedrock). As such, it is expected that the bedrock interface extraction well will be

advanced approximately 15 to 20 feet bgs. Refer to Figure 3 for extraction well EW-1 design specification. The overburden extraction wells (EW-2 and EW-3) will be advanced to the top of rock. As such, it is expected that these overburden extraction wells will be advanced approximately 10 to 15 ft bgs. Refer to Figure 4 for extraction well EW-2 and EW-3 design specifications.

DAY will retain the services of a subcontractor to provide a rotary drill-rig, crew and materials to install extraction wells EW-1, EW-2 and EW-3. The extraction wells will be drilled using 6.25-inch inside diameter (ID) hollow stem augers (HSA) to advance the boring, and overburden samples will be collected ahead of the augers using a split spoon sampling device driven with a 140-pound hammer free-falling 30 inches in general conformance with ASTM 1586. The borings will be sampled to auger refusal, which is expected to occur 10-15 ft. bgs. Subsequently, the extraction well EW-1 boring will be advanced an additional approximate five feet into bedrock using appropriately sized rock coring equipment to achieve a final depth ranging approximately 15 ft to 20 ft bgs and an approximate open rock core diameter of 4 inches. Extraction well EW-1 will be completed using 4-inch diameter PVC, with 5-10 ft of flush-coupled No. 20 slot screen beginning at the bottom of the overburden/bedrock interface borehole with PVC risers extending to ground surface. Groundwater extraction wells EW-2 and EW-3 will be completed with a 4-inch ID flush-coupled PVC well with a 5 to 10-foot-long Number 20 slot well screen installed to the top of grade. The annulus around the well screens will be filled with a washed and graded silica sand pack that will be placed at least two feet above the top of the screened interval. A minimum two-foot thick bentonite seal will be placed above the sand pack and hydrated with potable water. Following hydration of the bentonite, the remaining annulus will be filled with cement/bentonite grout consisting of approximately 96% Portland type 1 (or similar) cement and 4% granular bentonite mixture, and water. The cement/bentonite grout will be tremied into the well annulus to approximately one foot below grade. A curb box with locking cap will be placed over the extraction wells and cemented in-place.

If feasible without incurring additional drilling time costs, overburden groundwater monitoring well MW-LL will be installed using the rotary drilling procedures described herein, constructed of 2-inch diameter well materials and completed in the location presented on Figure 2. Refer to Figure 5 for monitoring well MW-LL design specifications.

DAY will retain the services of a subcontractor to provide a direct-push drill-rig (i.e., Geoprobe Model 6610dt, or similar), crew and materials to install piezometers P-1 through P-8. The piezometers will be installed within a 2.25-inch diameter borehole advanced by direct-push drill rig equipment in the locations presented on Figure 6. The borings will be completed to equipment refusal, which is expected to be 10-15 ft bgs. Piezometers will be completed using 1-inch diameter PVC, with 5-10 ft of flush-coupled No. 20 slot screen beginning at the bottom of the overburden borehole with PVC risers extending to ground surface. The annulus around the well screens will be filled with a washed and graded silica sand pack that will be placed at least two feet above the top of the screened interval. A minimum two-foot thick bentonite seal will be placed above the sand pack and hydrated with potable water. Following hydration of the bentonite, the remaining annulus will be filled with cement/bentonite grout consisting of approximately 96% Portland type 1 (or similar) cement and 4% granular bentonite mixture, and water. The cement/bentonite grout will be tremied into the well annulus to approximately one foot below grade. A curb box with locking cap will be placed over the piezometers and cemented in-place.

Information recorded during the advancement of extraction, monitoring and piezometer wells will include:

- Date, boring identification, and project identification.
- Name of individual developing the log.
- Name of drilling company.
- Drill make and model.
- Identification of any alternative drilling methods used.
- Depths recorded in feet and fractions thereof (tenths of feet) referenced to ground surface.
- The length of the sample interval and percentage of sample recovered.
- The depth of the first encountered water table, along with the method of determination, referenced to the ground surface.
- Drilling and borehole characteristics.
- Sequential stratigraphic boundaries.
- Photoionization Detector (PID) screening results of ambient headspace air above selected samples.
- Amount of water (if any) lost in a borehole during coring.

A temporary decontamination pad will be constructed to decontaminate “in-hole” drilling equipment by steam cleaning. The decontamination liquids will be pumped into NYSDOT-approved 55-gallon drums, 275-gallon totes or similar, or a holding tank, that are labeled and staged on-site in accordance with applicable regulations for future treatment/disposal by OBI LLC. In addition, the soils, drilling liquids, and decontamination pad will also be containerized in NYSDOT-approved 55-gallon drums that are labeled and staged on site in accordance with applicable regulations for future treatment/disposal by OBI LLC.

3.2 Development of Groundwater Extraction Wells

At least two days following installation, the extraction wells will be developed in accordance with the protocols outlined in the QAPP in preparation for subsequent sampling and testing. Refer to Appendix B for a copy of the QAPP developed for the Site.

The development water from extraction wells EW-1, EW-2, EW-3 and monitoring well MW-LL (if installed) will be containerized, labeled and staged on-site in accordance with applicable regulations for treatment/disposal by OBI LLC. Dependent on the volume of water introduced during the well installation, development will continue until a comparable volume of water is removed from the well. Alternatively, if the amount of water introduced during the well installation is too great, DAY may wait three to four weeks for the water to dissipate into the aquifer prior to performing well development.

3.3 Groundwater Sampling

Following the development of groundwater monitoring well MW-LL, if installed, groundwater samples will be collected from MW-LL and existing groundwater monitoring wells MW-5, MW-9, MW-12, MW-16, MW-18, MW-B, MW-H, MW-P, MW-Q and MW-FF (i.e., a total of 11 overburden monitoring wells [if MW-LL is installed] and bedrock monitoring well MW-7R, refer to Figure 2). Groundwater monitoring wells will be sampled using passive diffusion bags (PDBs). PDBs will be filled with deionized water obtained from the analytical laboratory, deployed into the water column of the monitoring well, and

retrieved a minimum of 14 days following deployment. To the extent possible for the existing monitoring wells, the center of the PDB will be located at a similar depth as the intake of the bladder pump established at each well during the low-flow sampling previously completed or at a similar depth of previous PDB sampling depths. [Note: if an insufficient water column is present in a monitoring well to fully submerge the PDB, the NYSDEC Project Manager will be contacted to discuss possible alternate sampling methods.] If groundwater sampling at a specific location has not been previously conducted, the target PDB depth will be the center of the screened interval; however, keeping the PDB submerged at least 1 ft below the static water level will be maintained.

To obtain groundwater samples most representative of groundwater extraction conditions (i.e., in general, contaminant concentrations are lower during sustained pumping conditions when compared to static conditions measured during typical groundwater sampling events) groundwater samples will be collected from groundwater extraction wells EW-1, EW-2 and EW-3 immediately following the pump test (refer to Section 3.5). Groundwater samples will be collected from the extraction pump effluent or using a bailer if warranted by observed field conditions (i.e., extraction well is dry, VOC concentrations appear compromised by entrained air, etc.).

The groundwater samples collected will be submitted for analytical laboratory testing of Target Compound List (TCL) volatile organic compounds (VOCs) and tentatively identified compounds (TICs) using United States Environmental Protection Agency (USEPA) Method 8260.

3.4 Hydraulic Conductivity Testing

Subsequent to development and a return to steady-state static water level conditions, in-situ hydraulic conductivity testing will be completed in the extraction wells (EW-1, EW-2, and EW-3) and select monitoring wells (MW-5, MW-6, MW-16, MW-17, MW-B, MW-M, MW-II, and MW-FF). The results of this testing will be used to assist in the selection of appropriate pumping rates and to compare the hydraulic conductivity measured in other site monitoring wells. In the event that the wells recharge at a rate too great for slug testing, a pump test may be used to determine hydraulic conductivity.

Slug tests will be conducted by both inserting and removing the slug. Each slug test will be conducted by instantaneously changing the water level in a monitoring well by the introduction (“slug in”), and subsequent removal (“slug out”), of a non-reactive solid and sealed PVC pipe, (“the slug”), and measuring the aquifer’s response to the changing water-level over time. Removal of the slug will be conducted only after the well had receded to 95% of the original measured static water level. The slug test procedures are described in: Bouwer, H., 1989; “The Bouwer and Rice Slug Test-An Update”, Groundwater, vol. 27, no. 3, pp. 304-309; and the original Bouwer, H and R.C. Rice 1976 article in the Water Resources Research Journal.

The slug-in and slug-out test data (groundwater levels over time) will be recorded using a Level TROLL 700 data logger or similar, or by recording groundwater levels over time using a stopwatch and a Heron H.Oil Oil/Water Interface probe. The slug test data will be imported to SuperSlug software, or similar, to calculate hydraulic conductivities at each well. The hydraulic conductivity data will be used to evaluate the local groundwater velocity combined with potentiometric data gathered at the Site.

3.5 Pumping Test

The goal of the step drawdown pumping test described herein is to evaluate the associated radius of influence that can be achieved at various pumping rates to assist in identifying the placement and number of extraction wells required to contain the on-site groundwater plume.

Initially, static water levels will be recorded for extraction wells EW-1, EW-2, and EW-3,nearby monitoring wells (e.g., MW-1, MW-3, MW-6, MW-7, MW-8, MW-9, MW-10, MW-12, MW-17, MW-18, MW-B, MW-D MW-G, MW-H, MW-M, MW-Q, MW-FF, MW-II, etc.) and piezometers P-1 through P-8 to establish background conditions. Thereafter, a discrete step drawdown pumping test will be performed at each extraction well (i.e., EW-1, EW-2, and EW-3). Discharge rates from the extraction well under evaluation will be slowly increased until an approximate 5-foot drawdown is maintained or the water column has been reduced by approximately 50% of the initially measured (i.e., background) saturated zone thickness. Thereafter pumping rates will be increased (i.e., stepped up) depending upon the drawdowns measured in the extraction well and the nearby monitoring locations. The maximum pumping rate will be achieved when the pump is installed in proximity to the bottom of the well and stabilized static water level conditions are maintained less than 12-inches above the pump intake without reducing the static water level below the pump intake. It is anticipated that each discharge rate will be maintained during the pumping test for a minimum of two hours; however, modifications may be made in the field with concurrence from the NYSDEC site representative. The water level at the extraction well, nearby existing monitoring wells and piezometers will be measured every fifteen minutes during each pump test. The pumping tests will be evaluated to estimate the amount of groundwater that can be extracted from each well and the maximum pumping rate that can be achieved under constant pumping conditions. Information collected during the pumping test will include:

- Date
- Location of well
- Person performing test
- Initial static water levels in extraction and monitoring wells
- Drawdown measurements, time of measurements and flow rate
- Static water levels and time of measurement after groundwater extraction
- Estimated characteristics of the aquifer and assessment of effects

The static water level meter, the interface probe and other reusable well monitoring equipment will be decontaminated prior to being used at any given location by implementing the following procedures: 1) initial wash in tap water; 2) wash in mixture of tap water and alconox soap or equivalent; 3) double rinse with tap water and 4) air dry and/or dry with clean paper towel.

The water extracted from the groundwater extraction wells will be placed in NYSDOT-approved 55-gallon drums, 275-gallon totes, a collection tank, etc. (depending upon the amount of water collected during the pumping test) that are labeled and staged on-site in accordance with applicable regulations for future treatment/disposal by OBI LLC.

3.6 Surveying and Groundwater Potentiometric Surface Evaluation

The location and elevation of extraction wells EW-1, EW-2, and EW-3, overburden groundwater monitoring well MW-LL, if installed, and piezometers P-1 through P-8 will be established using GPS and/or swing tie measurements in accordance with NYSDEC EQuIS EDD requirements. The elevation of extraction wells EW-1, EW-2, and EW-3, groundwater monitoring well MW-LL and piezometers P-1 through P-8 will be measured in reference to an existing monitoring well. During applicable field activities static groundwater measurements will be collected using an electronic static water level meter or an oil/water interface meter. Static water-level measurements may also be obtained during other portions of the PDIWP scope, such as during the hydraulic conductivity testing activities. Groundwater elevations will be calculated and corresponding potentiometric groundwater contour maps will be prepared illustrating the approximate groundwater elevations and groundwater flow direction(s).

3.7 Investigation Derived Wastes

It is anticipated that solid and liquid study-derived wastes will be generated during the PDIWP. IDW will be managed in general accordance with the applicable provisions set forth of DER-10 Section 3.3(e). The method for handling, characterization, and disposal of IDW is described below.

- Potentially contaminated liquid wastes will likely include: decontamination water, drilling water, well development water, purge water and water extracted during pumping test. Storage of liquid IDW will be generally collected in NYSDOT-approved 55-gallon drums, 275-gallon totes or a collection tank, which will be stored on the Site in a secure location. Liquids that are grossly contaminated or suspected to contain NAPL will be placed in separate NYSDOT-approved 55-gallon drums, stored in an area with secondary containment, and labeled accordingly. It is anticipated that liquid IDW will be discharged to the Monroe County sanitary sewer system under a sewer use permit; however, management of liquid IDW may be modified after review of the data generated as part of the PDIWP.

- Obtaining a sewer use permit may require sampling the IDW for parameters of concern. Sampling results of IDW necessary to obtain a sewer use permit will be incorporated into the RD/RAWP, as needed. A copy of the sewer use permit will be provided to the NYSDEC prior to any discharge to the sanitary sewer system, and will also be included in the RD/RAWP. Drummed liquid IDW that is grossly contaminated or suspected to contain NAPL will also be characterized using the investigation test results and other sampling data as necessary in order to dispose or treat the material in accordance with applicable regulations.

- Potentially contaminated solid wastes will likely include disposable sampling equipment and personal protective equipment (PPE), soil samples that were collected but not selected for analytical laboratory testing, and soil cuttings from rotary drilling operations. It is anticipated that the solid IDW will be placed in NYSDOT-approved 55-gallon drums. Solids that are grossly contaminated or suspected to contain NAPL will be placed in separate drums and labeled accordingly. The IDW solids will be characterized and disposed off-site in accordance with applicable regulations.

3.8 Data Evaluation and Design

The data collected during the pumping test will be compiled and reviewed to determine the pumping rate necessary to achieve the optimum radius of influence to contain the COC plume and remove/contain the apparent source areas of groundwater impact. In addition, the results of the testing presented herein will be evaluated to determine various hydraulic parameters (e.g., groundwater velocity, hydraulic conductivity, etc.), which will be useful in assessing groundwater and dissolved contaminant flow characteristics. This evaluation will also determine if additional extraction wells are required, and, if so, the optimum location and pumping rates of those additional extraction wells.

Once sufficient and acceptable data is generated, an RD/RAWP will be developed. The primary objective of the groundwater extraction and treatment system RD/RAWP will be to provide containment and treatment of the COC groundwater plume. In addition, the RD/RAWP will consider the removal and treatment of cyanide, LNAPL, and PFAS, but these are secondary to removal, containment and treatment of chlorinated VOCs.

The RD/RAWP will include a description of the work completed to address data gaps (i.e., hydraulic conductivity results, pump test results, etc.). The RD/RAWP will also include a discussion of optimal pumping rates and the anticipated radius of influence that will be achieved at the Site; the design of the pump and treat system, including treatment system specifications (e.g., pump sizes, treatment train sequence, component sizing, etc.); the proposed location and installation of the groundwater pumping system; treatment effectiveness monitoring; and, documents associated with the maintenance and operation of the wastewater treatment system (i.e., Operations and Maintenance Manual, etc.).

4.0 PERMITS OR OTHER AUTHORIZATIONS

This section describes the federal, state and local permits required for implementation of the PDIWP scope of work.

4.1 Property Access Agreements

Parcels of land owned by third-party private entities are not located within the areas subject to investigation or ground intrusive work. Therefore, site access agreements will not be necessary prior to implementation of PDIWP activities.

4.2 Federal, State and Local Permits

PDIWP activities at the Site are being performed under the order-on-consent program and the NYSDEC. Required federal and/or state permits have not been identified for implementation of the scope of work associated with this PDIWP.

Depending on the volume of study derived water generated during implementation of field activities associated with this PDIWP, a sewer discharge permit may be obtained from Monroe County Pure Water for the disposal of the liquid IDW in accordance with permit requirements. Alternatively, the generated water will be containerized and, subsequent to testing, be transported off-site for disposal.

5.0 SCHEDULE

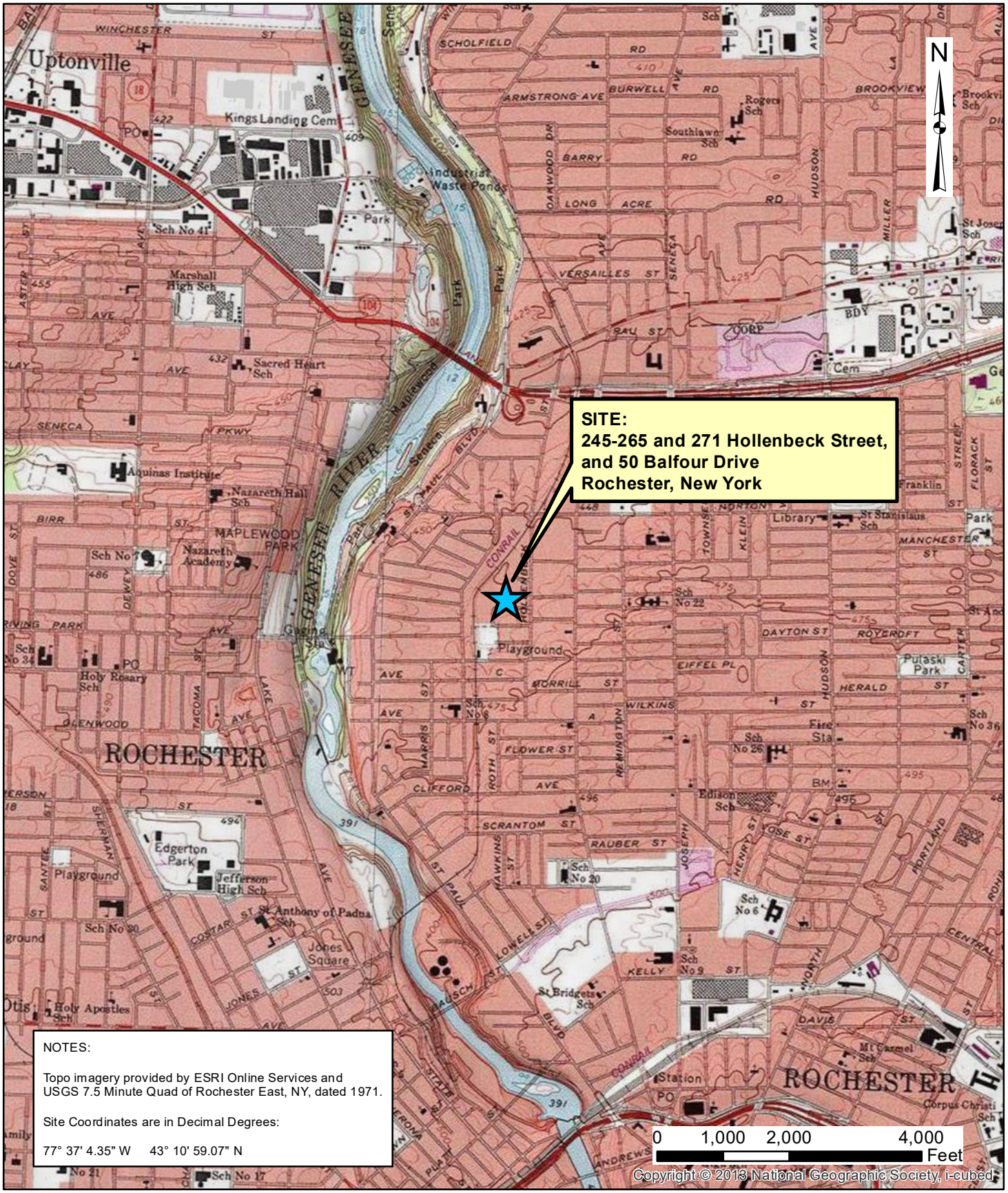
The project schedule for the scope of work described in this PDIWP is summarized below.

Task	Duration (weeks)	Completion Date *
PDIWP Investigation		
Contractor Selection and Well Installation and Development.	2	2
Groundwater Sample Lab Analyses	4	6
Groundwater Sampling, Slug Tests, Site Survey, Step Draw-Down Pump Test	6	12
RD/RAWP		
Prepare and Submit 95% RD/RAWP Plan to the NYSDEC for Review	12	24

* Weeks following NYSDEC approval of the PDIWP.

Adherence to this schedule will be monitored and the status of the work will be described in monthly progress reports that will be submitted to NYSDEC. The NYSDEC will be notified and consulted regarding any deviations from this schedule.

Figures



Date: 07-13-2020 Drawn By: CPS Scale: AS NOTED	**DAY ENGINEERING, P.C.** Environmental Engineering Consultants Rochester, New York 14606 New York, New York 10170	Project Title: OBI, LLC SITE 245 - 265 AND 271 HOLLENBECK ST, AND 50 BALFOUR DR ROCHESTER, NEW YORK NYSDEC SITE NO. 828188 Drawing Title: Project Locus Map	Project No. 5678S-20 FIGURE 1

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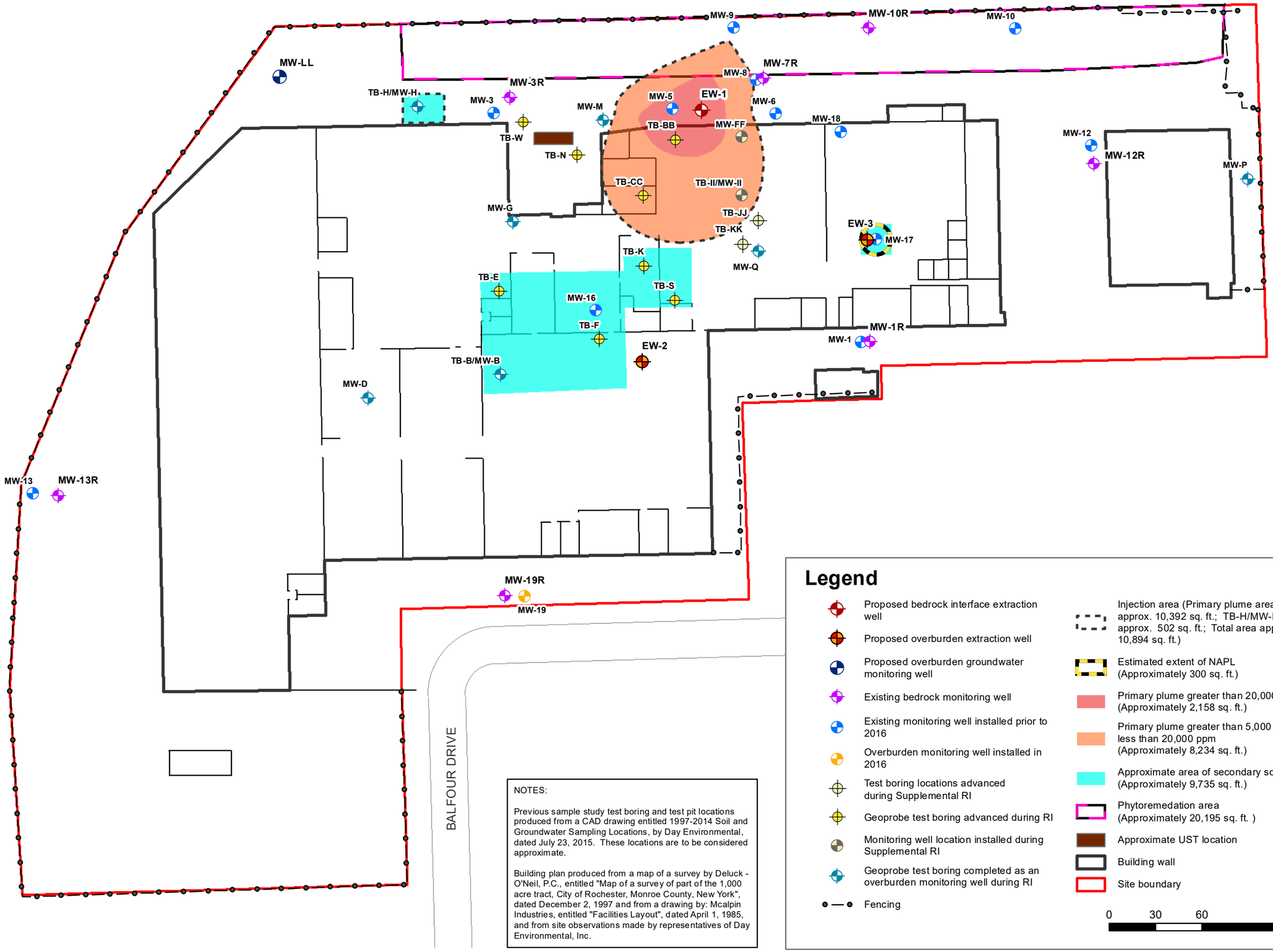


Legend

- Proposed bedrock interface extraction well
- Proposed overburden extraction well
- Proposed overburden groundwater monitoring well
- Existing bedrock monitoring well
- Existing monitoring well installed prior to 2016
- Overburden monitoring well installed in 2016
- Test boring locations advanced during Supplemental RI
- Geoprobe test boring advanced during RI
- Monitoring well location installed during Supplemental RI
- Geoprobe test boring completed as an overburden monitoring well during RI
- Fencing
- Injection area (Primary plume area approx. 10,392 sq. ft.; TB-H/MW-H area approx. 502 sq. ft.; Total area approx. 10,894 sq. ft.)
- Estimated extent of NAPL (Approximately 300 sq. ft.)
- Primary plume greater than 20,000 ppm (Approximately 2,158 sq. ft.)
- Primary plume greater than 5,000 ppm less than 20,000 ppm (Approximately 8,234 sq. ft.)
- Approximate area of secondary sources (Approximately 9,735 sq. ft.)
- Phytoremedation area (Approximately 20,195 sq. ft.)
- Approximate UST location
- Building wall
- Site boundary

N

0 30 60 120 Feet

NOTES:

Previous sample study test boring and test pit locations produced from a CAD drawing entitled 1997-2014 Soil and Groundwater Sampling Locations, by Day Environmental, dated July 23, 2015. These locations are to be considered approximate.

Building plan produced from a map of a survey by Deluck - O'Neil, P.C., entitled "Map of a survey of part of the 1,000 acre tract, City of Rochester, Monroe County, New York", dated December 2, 1997 and from a drawing by: Mcalpin Industries, entitled "Facilities Layout", dated April 1, 1985, and from site observations made by representatives of Day Environmental, Inc.

Last Date Saved: 11 Nov 2020 Document Path: E:\GIS Mapping\Mcalpin\5678R-20\Bld\WP\5678S-02-IWP- Pre-Design IWP.mxd

PROJECT MANAGER	RLK
DRAWN BY	CPS
SCALE	AS NOTED
DATE	07-2020
DATE DRAWN	07-2020
DATE ISSUED	07-21-2020

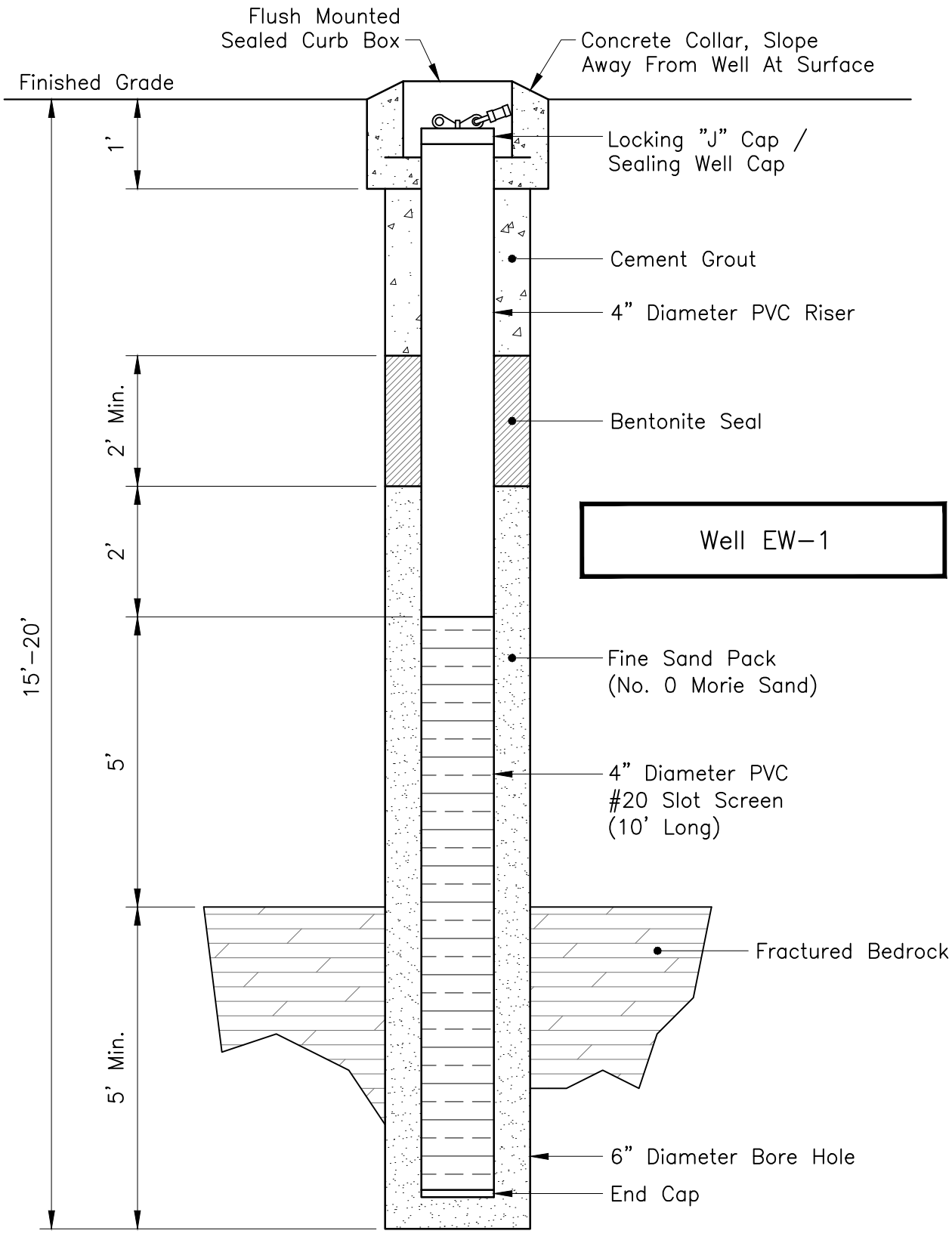
day
DAY ENGINEERING, P.C.
Environmental Engineering Consultants
Rochester, New York 14606
New York, New York 10170

Project Title
OBI, LLC SITE
245 - 265 AND 271 HOLLENBECK ST,
AND 50 BALFOUR DR
ROCHESTER, NEW YORK
NYSDEC SITE NO. 828188

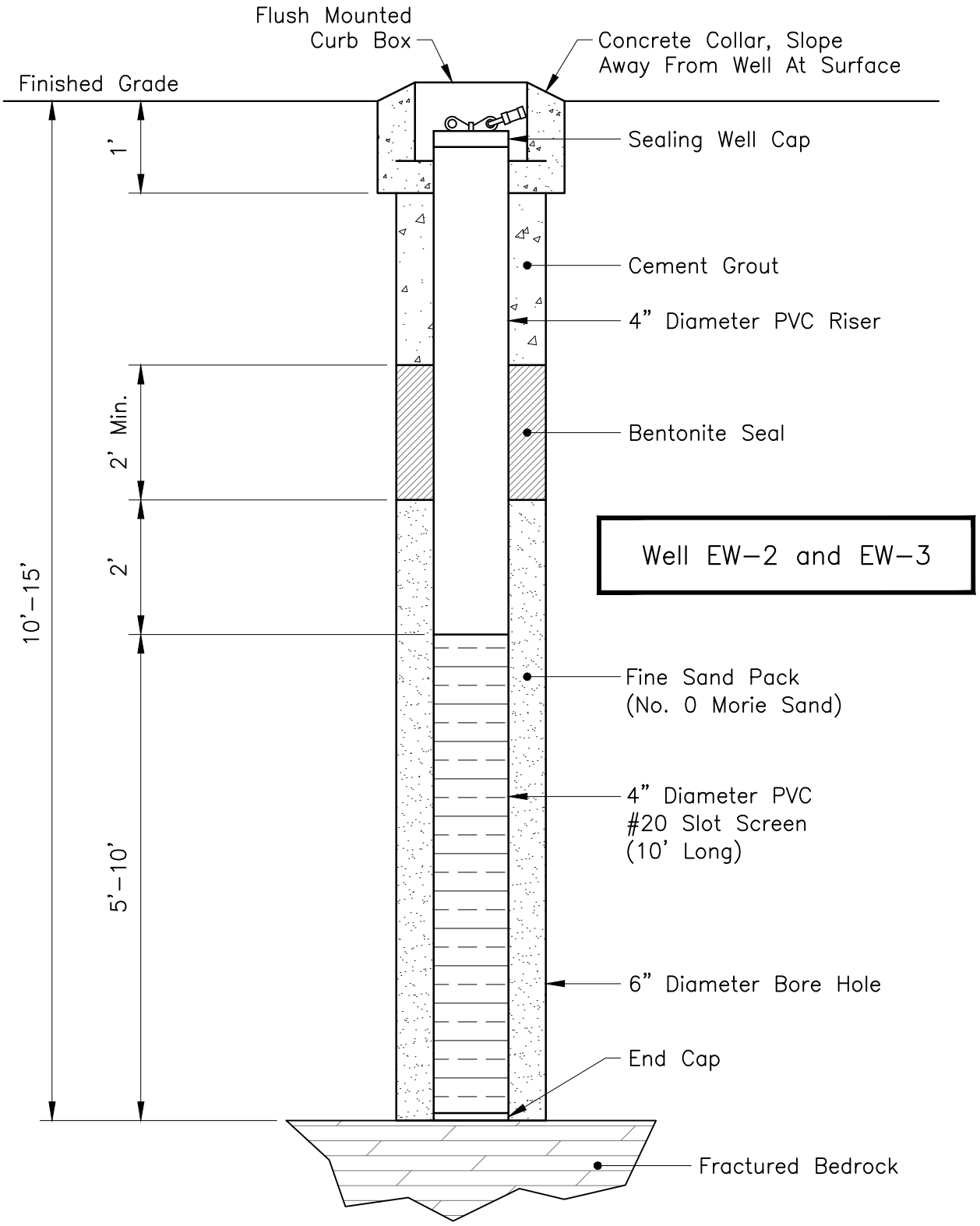
Drawing Title
Site Plan - Remedial Investigation Test Location with Proposed Extraction Well Locations

Project No.
5678S-20

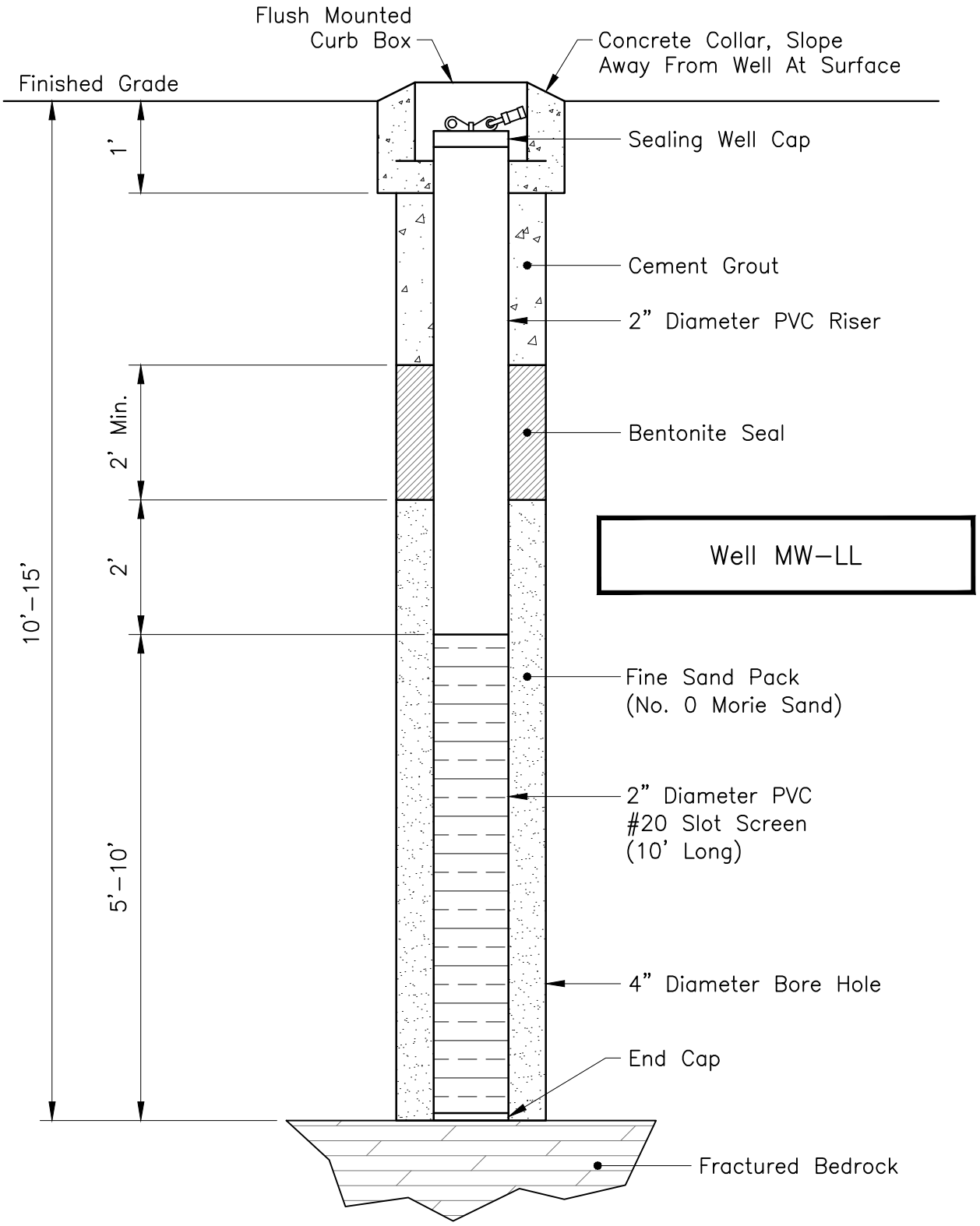
FIGURE 2



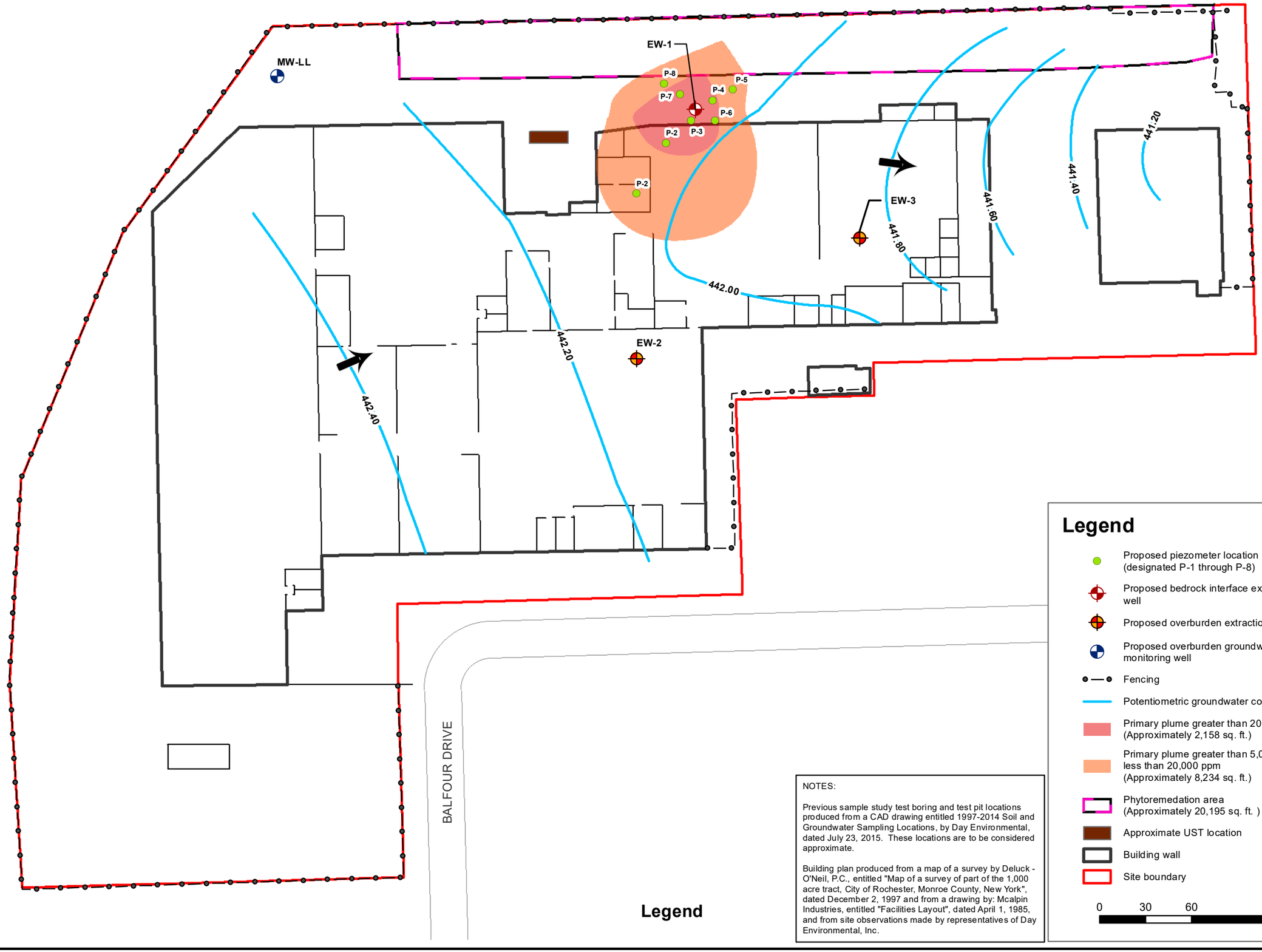
DATE: 11-5-2020 DRAWN BY: RJM SCALE: No Scale	day DAY ENGINEERING, P.C. ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK 14606 NEW YORK, NEW YORK 10170	PROJECT TITLE OBI LLC Site 245-265 & 271 Hollenbeck St & 50 Balfour Dr Rochester, New York Pre-Design Investigation Work Plan DRAWING TITLE NYCDEC Site No. 828188 Extraction Well EW-1 Well Diagram	PROJECT NO. 5678R-20 **FIGURE 3**



DATE 11-5-2020 DRAWN BY RJM SCALE No Scale	DAY ENGINEERING, P.C. ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK 14606 NEW YORK, NEW YORK 10170	PROJECT TITLE OBI LLC Site 245-265 & 271 Hollenbeck St & 50 Balfour Dr Rochester, New York Pre-Design Investigation Work Plan DRAWING TITLE NYCDEC Site No. 828188 Extraction Well EW-2 & EW-3 Well Diagram	PROJECT NO. 5678R-20 **FIGURE 4**



DATE: 11-5-2020 DRAWN BY: RJM SCALE: No Scale	DAY ENGINEERING, P.C. ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK 14606 NEW YORK, NEW YORK 10170	PROJECT TITLE OBI LLC Site 245-265 & 271 Hollenbeck St & 50 Balfour Dr Rochester, New York Pre-Design Investigation Work Plan DRAWING TITLE NYCDEC Site No. 828188 Monitoring Well MW-LL Well Diagram	PROJECT NO. 5678R-20 **FIGURE 5**



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Building plan produced from a map of a survey by Deluck - O'Neil, P.C., entitled "Map of a survey of part of the 1,000 acre tract, City of Rochester, Monroe County, New York", dated December 2, 1997 and from a drawing by: Mcalpin Industries, entitled "Facilities Layout", dated April 1, 1985, and from site observations made by representatives of Day Environmental, Inc.

PROJECT MANAGER	RLK
DATE	11-2020
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DATE DRAWN	11-2020
SCALE	AS NOTED
DATE ISSUED	11-09-2020

DAY ENGINEERING, P.C.
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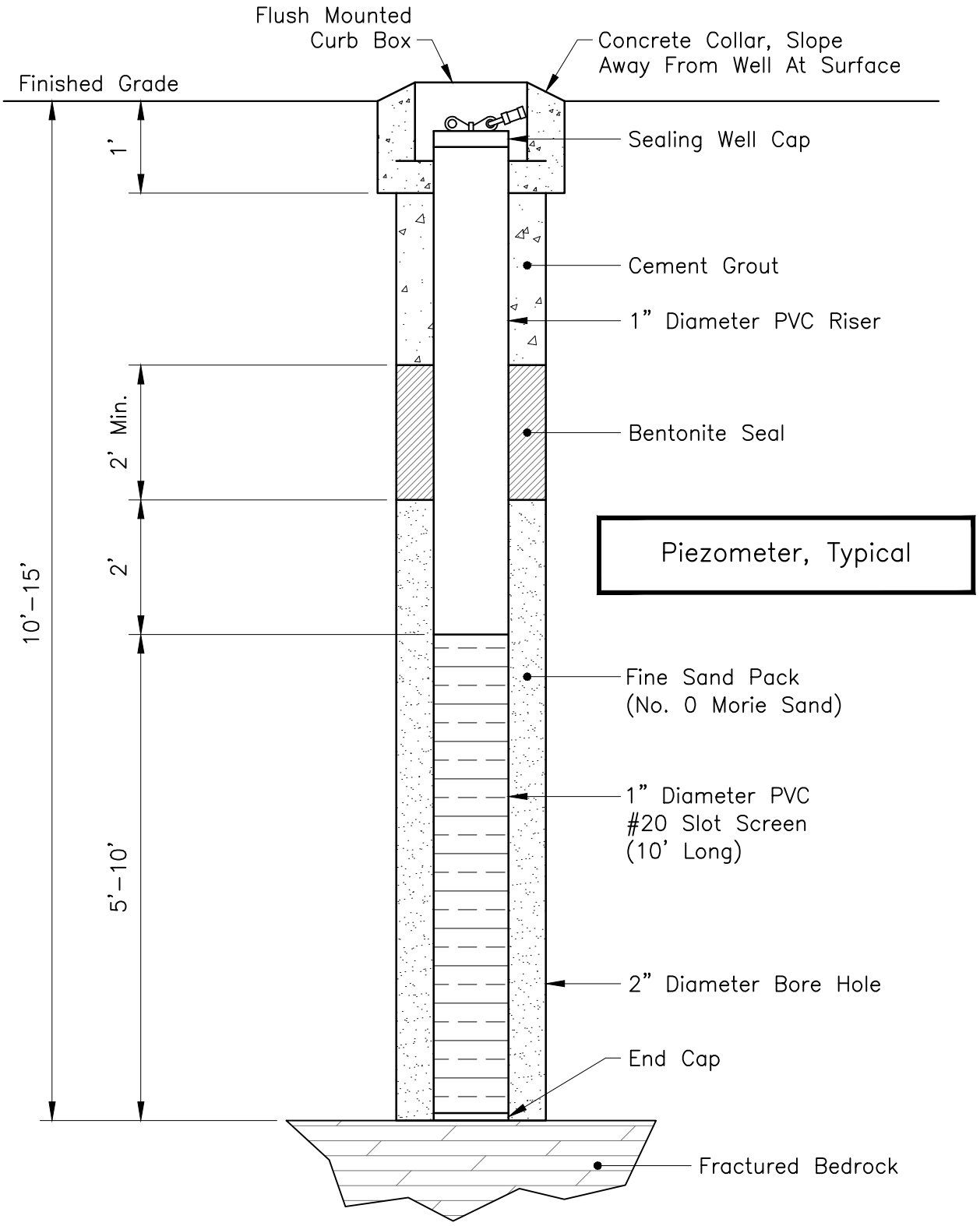
Project Title
OBI, LLC SITE
245 - 265 AND 271 HOLLENBECK ST,
AND 50 BALFOUR DR
ROCHESTER, NEW YORK
NYSDEC SITE NO. 828188

Drawing Title
Site Plan - Piezometer and Transect Layout

Project No.
5678S-20

FIGURE 6

Last Date Saved: 11 Nov 2020 Document Path: E:\GIS Mapping\Mcalpin\5678R-20Obi\MP\5678S-03-IWP- Pre-Design IWP Rev20201029.mxd



DATE 11-5-2020 DRAWN BY RJM SCALE No Scale	DAY ENGINEERING, P.C. ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK 14606 NEW YORK, NEW YORK 10170	PROJECT TITLE OBI LLC Site 245-265 & 271 Hollenbeck St & 50 Balfour Dr Rochester, New York Pre-Design Investigation Work Plan DRAWING TITLE NYCDEC Site No. 828188 Typical Piezometer Well Diagram	PROJECT NO. 5678R-20 **FIGURE 7**

Appendix A

Health and Safety Plan with Community Air Monitoring Program

HEALTH AND SAFETY PLAN

REMEDIAL DESIGN INVESTIGATION/CORRECTIVE ACTIONS
245-265 & 271 HOLLENBECK STREET AND 50 BALFOUR DRIVE
ROCHESTER, NEW YORK

NYSDEC SITE #828188

Prepared by: Day Environmental, Inc.
1563 Lyell Avenue
Rochester, New York 14606

Project No.: 5678R-15

Date: July 2020

TABLE OF CONTENTS

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1.0 INTRODUCTION

Day Environmental, Inc. (DAY) prepared this Health and Safety Plan (HASP) to outline policies and procedures to protect workers and the public from potential environmental hazards during the remedial design investigation and corrective actions to be conducted at, and in the vicinity of, the property addressed 245-265, 271 Hollenbeck Street, and 50 Balfour Drive, City of Rochester, County of Monroe, New York (the Site). The Project Locus map presented as Figure 1 shows the general location of the Site.

Although the HASP focuses on the specific work activities planned for the Site, it must remain flexible due to the nature of this work. Conditions may change and unforeseen situations can arise that require deviations from the original HASP.

1.1 Site Location and Description

The Site consists of three parcels (245-265 Hollenbeck Street, 271 Hollenbeck Street, and 50 Balfour Drive) totaling approximately 6.4 acres, and it is located in an urban area in Rochester, Monroe County, New York. The Site is currently developed with an approximate 134,000 square foot, combined one-story and two-story concrete block building currently used for electroplating and metal stamping, with two attached one-story metal buildings that house a sheet metal fabrication, stamping and assembly business (50 Balfour Drive). A second, approximate 8,000 square foot, one-story, brick building is also located on the Site, and this building is currently used as a warehouse and equipment storage facility (245-265 Hollenbeck Street). The 271 Hollenbeck Street parcel is currently vacant land covered with a gravel access roadway and vegetation. The remaining portions of the Site are currently vacant land covered with asphalt-paved parking areas, a gravel roadway and/or vegetation (grass and trees).

1.2 Background

The Site was developed in 1923 for various industrial/manufacturing operations that included printing, lithographing, appliance manufacturing, metal plating, sheet metal fabrication and metal stamping. Prior activities that may have contributed to Site contamination include a trichloroethene (TCE) degreaser that was used at the Site until approximately 1992.

OBI, LLC entered in an Order on Consent and Administrative Settlement Index #B8-0515-13-10 (Consent Order) with the New York State Department of Environmental Conservation (NYSDEC) dated November 16, 2013. DAY prepared a Remedial Investigation / Feasibility Study (RI/FS) Report dated August 24, 2017 (revised November 26, 2019) for the Site on behalf of OBI, LLC. An Interim Site Management Plan (ISMP) dated February 11, 2019 was conditionally approved by the NYSDEC in a letter dated March 5, 2019. The RI portion of the RI/FS report was conditionally approved by the NYSDEC in a letter dated February 19, 2020. The Record of Decision (ROD) issued by the NYSDEC on March 26, 2020 selected the remedial measures to be implemented at the Site.

1.3 Planned Activities Covered by HASP

This HASP is intended to be used during intrusive remedial activities and/or additional environmental studies conducted at the Site that have the potential to encounter contaminated materials. Currently, identified activities to be completed at the Site that have the potential to encounter contaminated materials include:

- Site Preparation Activities
- Advancement of test borings and installation of groundwater monitoring and/or extraction wells (both overburden and bedrock)
- Well development
- Aquifer characterization (e.g., slug tests, pumping tests, etc.)
- Soil, Groundwater, and Soil Vapor sample collection
- Management of Investigation Derived Waste (IDW)
- Underground Storage Tank (UST) closure activities

This HASP can be modified to cover other site activities as deemed appropriate. Site personnel implementing work the work described above must have the appropriate level of training required by OSHA including 40-hour HAZWOPER training and current 8-hour refresher training. The owner of the property, its contractors, and other workers at the Site will be responsible for the development and/or implementation of health and safety provisions associated with Site activities.

2.0 KEY PERSONNEL AND MANAGEMENT

The Project Manager (PM) and Site Safety Officer (SSO) are responsible for formulating health and safety requirements and implementing the HASP.

2.1 Project Manager

The PM has the overall responsibility for the project and will coordinate with the SSO to ensure that the goals of the project are attained in a manner consistent with the HASP requirements.

2.2 Site Safety Officer

The SSO has responsibility for administering the HASP relative to site activities and will be in the field while activities are in progress. The SSO's operational responsibilities will be monitoring, including personal and environmental monitoring, ensuring personal protective equipment (PPE) maintenance, and identification of protection levels. The air monitoring data obtained by the SSO will be available for review by regulatory agencies and other on-site personnel.

2.3 Employee Safety Responsibility

Each employee is responsible for personal safety as well as safety of others in the area. The employee will use the equipment provided in a safe and responsible manner as directed by the SSO.

2.4 Key Safety Personnel

The following individuals are anticipated to share responsibility for health and safety of DAY representatives at the Site.

DAY Project Manager	Raymond Kampff and/or David Day, P.E.
DAY Site Safety Officer	Heather McLennan, Nathan Simon, Hanna Miller, or Catalin Demian

3.0 SAFETY RESPONSIBILITY

Contractors, consultants, state or local agencies, or other parties, and their employees, involved with this project will be responsible for their own safety while on-site. Their employees will be required to understand the information contained in this HASP and must follow the recommendations that are made in this document. As an alternative, contractors, consultants, state or local agencies, or other parties, and their employees, involved with this project can utilize their own health and safety plan for this project as long as it is found acceptable to the New York State Department of Health (NYSDOH), NYSDEC and/or the Monroe County Department of Public Health (MCDPH).

4.0 JOB HAZARD ANALYSIS

There are many hazards associated with environmental work on a site, and this HASP discusses some of the anticipated hazards for this Site. The hazards listed below deal specifically with those hazards associated with the management of potentially contaminated media (e.g. soil, fill, groundwater, etc.).

4.1 Chemical Hazards

Chemical substances can enter the unprotected body by inhalation, skin absorption, ingestion, or injection (i.e., a puncture wound, etc.). A contaminant can cause damage to the point of contact or can act systemically, causing a toxic effect at a part of the body distant from the point of initial contact.

A list of selected constituents that have been detected at the Site at concentrations that exceed soil or groundwater standards, criteria and guidance (SCG) values are presented below. This list also presents the Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs), National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (RELs), and NIOSH immediately dangerous to life or health (IDLH) levels.

CONSTITUENT	CAS NO.	OSHA PEL	NIOSH REL	IDLH
Tetrachloroethene (PCE)	127-18-4	678 mg/m^3	Minimize workplace exposure concentrations	1,017 mg/m^3
Trichloroethene (TCE)	79-01-6	537 mg/m^3	134.25 mg/m^3	5,370 mg/m^3
Trans-1,2- Dichloroethene (trans-1,2-DCE)	540-59-0	790 mg/m^3	790 mg/m^3	3,970 mg/m^3
cis-1,2- Dichloroethene (cis- 1,2-DCE)	540-59-0	790 mg/m^3	790 mg/m^3	3,970 mg/m^3
Vinyl Chloride	75-01-4	2.56 mg/m^3	NA	NA
Acetone	67-64-1	2,380 mg/m^3	595 mg/m^3	5,950 mg/m^3
2-Hexanone	591-78-6	410 mg/m^3	4.10 mg/m^3	6,560 mg/m^3
Methylene chloride	75-09-2	86.75 mg/m^3	NA	7,981 mg/m^3
n-Butylbenzene	104-51-8	NA	NA	NA
n-Propylbenzene	103-65-1	NA	NA	NA
Isopropylbenzene	98-82-8	245 mg/m^3	245 mg/m^3	4,428 mg/m^3
1,2,4-Trimethylbenzene	526-73-8	NA	125 mg/m^3	NA
Naphthalene	91-20-3	50 mg/m^3	50 mg/m^3	1,310 mg/m^3
Toluene	108-88-3	754 mg/m^3	375 mg/m^3	1,885 mg/m^3

Total Xylenes[1]	95-47-6 106-42-3 1477-55-0	435 mg/m^3	435 mg/m^3	3,906 mg/m^3
Lead	7439-92-1	0.05 mg/m^3	0.05 mg/m^3	100 mg/m^3
Mercury	7439-97-6	0.1 mg/m^3	0.05 mg/m^3	10 mg/m^3
Zinc oxide	1314-13-2	5 mg/m^3	5 mg/m^3	500 mg/m^3

NA = Not Available

The potential routes of exposure for these analytes and chemicals include inhalation, ingestion, skin absorption and/or skin/eye contact. The potential for exposure through any one of these routes will depend on the activity conducted. The most likely routes of exposure for the anticipated environmental activities at the Site include inhalation and skin/eye contact.

4.2 Physical Hazards

There are physical hazards associated with this project, which might compound the chemical hazards. Hazard identification, training, adherence to the planned environmental measures, and careful housekeeping can prevent many problems or accidents arising from physical hazards. Potential physical hazards associated with this project and suggested preventative measures include:

- Slip/Trip/Fall Hazards – Some areas may have wet or frozen surfaces that will greatly increase the possibility of inadvertent slips. Caution must be exercised when using steps and stairs due to slippery surfaces in conjunction with the fall hazard. Good housekeeping practices are essential to minimize the trip hazards.
- Small Quantity Flammable Liquids – Small quantities of flammable liquids will be stored in "safety" cans and labeled according to contents.
- Electrical Hazards – Electrical devices and equipment shall be de-energized prior to working near them. All extension cords will be kept out of water, protected from crushing, and observed regularly to ensure structural integrity. Temporary electrical circuits will be protected with ground fault circuit interrupters. Only qualified electricians are authorized to work on electrical circuits. Heavy equipment (e.g., excavator, backhoe, drill rig) shall not be operated within 10 feet of high voltage lines, unless proper protection from the high voltage lines is provided by the appropriate utility company.
- Noise – Work around large equipment often creates excessive noise. The effects of noise can include:

- Workers being startled, annoyed, or distracted.
- Physical damage to the ear resulting in pain, or temporary and or/permanent hearing loss.

[1] Exposure limits for Total Xylenes was based on the lowest limits among the Xylene isomers (o-Xylene, m-Xylene, p-Xylene).

- Communication interference that may increase potential hazards due to the inability to warn of danger and proper safety precautions to be taken.

Proper hearing protection will be worn as deemed necessary. In general, feasible administrative or engineering controls shall be utilized when on-site personnel are subjected to noise exceeding an 8-hour time weighted average (TWA) sound level of 90 decibels on the A-weighted scale (dBA). In addition, whenever employee noise exposures equal or exceed an 8-hour TWA sound level of 85 dBA, employers shall administer a continuing, effective hearing conservation program as described in the OSHA Regulation 29 Code of Federal Rules (CFR) Part 1910.95.

- Heavy Equipment – Each morning before start-up, heavy equipment will be checked to ensure safety equipment and devices are operational and ready for immediate use.
- Subsurface and Overhead Hazards – Before any excavation activity, efforts will be made to determine whether underground utilities and potential overhead hazards will be encountered. Underground utility clearance must be obtained prior to subsurface work.

4.3 Environmental Hazards

Environmental factors such as weather, wild animals, insects, snakes and irritant plants can pose a hazard when performing outdoor tasks. The SSO shall make reasonable efforts to alleviate these hazards should they arise.

4.3.1 Heat Stress

The combination of warm ambient temperature and protective clothing increases the potential for heat stress. In particular,

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

Site workers will be encouraged to increase consumption of water or electrolyte-containing beverages such as Gatorade® when the potential for heat stress exists. In addition, workers are encouraged to take rests whenever they feel any adverse effects that may be heat-related. The frequency of breaks may need to be increased upon worker recommendation to the SSO.

4.3.2 Exposure to Cold

With outdoor work in the winter months, the potential exists for hypothermia and frostbite. Protective clothing greatly reduces the possibility of hypothermia in workers. However, personnel will be instructed to wear warm clothing and to stop work to obtain more clothing if they become too cold. Employees will also be advised to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation.

5.0 SITE CONTROLS

To prevent migration of contamination caused through tracking by personnel or equipment, work areas, and personal protective equipment staging/decontamination areas will be specified prior to beginning operations.

5.1 Site Zones

In the area where contaminated materials present the potential for worker exposure (work zone), personnel entering the area must wear the mandated level of protection for the area. A "transition zone" shall be established where personnel can begin and complete personal and equipment decontamination procedures. This can reduce potential off-site migration of contaminated media. Contaminated equipment or clothing will not be allowed outside the transition zone (e.g., on clean portions of the Site) unless properly containerized for disposal. Operational support facilities will be located outside the transition zone (i.e., in a "support zone"), and normal work clothing and support equipment are appropriate in this area. If possible, the support zone should be located upwind of the work zone and transition zone.

5.2 General

The following items will be requirements to protect the health and safety of workers during implementation of activities that disturb contaminated material.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increased the probability of hand to mouth transfer and ingestion of contamination shall not occur in the work zone and/or transition zone during disturbance of contaminated material.
- Personnel admitted in the work zone shall be properly trained in health and safety techniques and equipment usage.
- No personnel shall be admitted in the work zone without the proper safety equipment.
- Proper decontamination procedures shall be followed before leaving the Site.

6.0 PROTECTIVE EQUIPMENT

This section addresses the various levels of PPE, which are or may be required at this job site. Personnel entering the work zone and transition zone shall be trained in the use of the anticipated PPE to be utilized.

6.1 Anticipated Protection Levels

The following table summarizes the protection levels (refer to Section 6.2) anticipated for tasks to be implemented during this project.

TASK	PROTECTION LEVEL	COMMENTS/MODIFICATIONS
Site mobilization	D	
Site preparation	D	
Intrusive work	C/Modified D/D	Based on air monitoring, and SSO discretion.
Decontamination Area	Modified D/D	
Site breakdown and demobilization	D	

It is anticipated that work conducted as part of this project will be performed in Level D or modified Level D PPE. If conditions are encountered that require Level A or Level B PPE, the work will immediately be stopped. The appropriate government agencies (e.g., NYSDEC, NYSDOH, MCDPH, etc.) will be notified and the proper health and safety measures will be implemented (e.g., develop and implement engineering controls, upgrade in PPE, etc.). If conditions are encountered that require Level C PPE, the work will be temporarily suspended, and the work site will be evaluated to limit exposure prior to implementing Level C PPE.

6.2 Protection Level Descriptions

This section lists the minimum requirements for each protection level. Modifications to these requirements can be made upon approval of the SSO. If Level A, Level B, and/or Level C PPE is required, Site personnel that enter the work zone and/or transition zone must be properly trained and certified in the use of those levels of PPE.

6.2.1 Level D

Level D consists of the following:

- Safety glasses
- Hard hat when working with heavy equipment
- Steel-toed or composite-toed work boots

- Protective gloves during sampling or handling of potentially contaminated media
- Work clothing as prescribed by weather

6.2.2 Modified Level D

Modified Level D consists of the following:

- Safety glasses with side shields
- Hard hat when working with heavy equipment
- Steel-toed or composite-toed work boots
- Protective gloves during sampling or handling of potentially contaminated media
- Outer protective wear, such as Tyvek coverall [Tyveks (Sarans) and polyvinyl chloride (PVC) acid gear will be required when workers have a potential to be exposed to impacted liquids or impacted particulates]

6.2.3 Level C

Level C consists of the following:

- Air-purifying respirator with appropriate cartridges
- Outer protective wear, such as Tyvek coverall [Tyveks (Sarans) and PVC acid gear will be required when workers have a potential to be exposed to impacted liquids or particulates]
- Hard hat when working with heavy equipment
- Steel-toed or composite-toed work boots
- Nitrile, neoprene, or PVC overboots, if appropriate
- Nitrile, neoprene, or PVC gloves, if appropriate
- Face shield (when projectiles or splashes pose a hazard) and/or safety glasses with side shields.

6.2.4 Level B

Level B protection consists of the items required for Level C protection with the exception that an air-supplied respirator is used in place of the air-purifying respirator. Level B PPE is not anticipated to be required during this project. If the need for level B PPE becomes evident, activities in the affected area will be stopped until conditions are further evaluated, and any necessary modifications to the HASP have been approved by the PM and SSO. Subsequently, the appropriate safety measures (including Level B PPE) must be implemented prior to commencing site activities.

6.2.5 Level A

Level A protection consists of the items required for Level B protection with the addition of a fully encapsulating, vapor-proof suit capable of maintaining positive pressure. Level A PPE is not anticipated to be required during this project. If the need for level A PPE becomes evident, activities in the affected area will be stopped until conditions are further evaluated, and any necessary modifications to the HASP have been approved by the PM and SSO. Subsequently, the appropriate safety measures (including Level A PPE) must be implemented prior to commencing site activities.

6.3 Respiratory Protection

Any respirator used will meet the requirements of the OSHA 29 CFR 1910.134. Both the respirator and cartridges specified shall be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910). Air purifying respirators shall not be worn if contaminant levels exceed designated respirator cartridge use concentrations. The workers will wear respirators with approval for: organic vapors less than 1,000 ppm; and dusts, fumes, and mists with a TWA less than 0.05 milligrams per cubic meter (mg/m^3).

No personnel who have facial hair, which interferes with respirator sealing surface, will be permitted to wear a respirator and will not be permitted to work in areas requiring respirator use.

Only workers who have been certified by a physician as being physically capable of respirator usage shall be issued a respirator. Personnel unable to pass a respiratory fit test or without medical clearance for respirator use will not be permitted to enter or work in areas that require respirator protection.

7.0 DECONTAMINATION PROCEDURES

This section describes the procedures necessary to ensure that both personnel and equipment are free from contamination when they leave the work site.

7.1 Personnel Decontamination

Personnel involved with activities that involve disturbing contaminated media will follow the decontamination procedures described herein to ensure that material which workers may have contacted in the work zone and/or transition zone does not result in personal exposure and is not spread to clean areas of the Site. This sequence describes the general decontamination procedure. The specific stages can vary depending on the Site, the task, and the protection level, etc.

1. Leave work zone and go to transition zone
2. Remove soil/debris from boots and gloves
3. Remove boots
4. Remove gloves
5. Remove Tyvek suit and discard, if applicable
6. Remove and wash respirator, if applicable
7. Go to support zone

7.2 Equipment Decontamination

In order to reduce the potential for cross-contamination of samples collected during this project, the following procedures will be implemented to ensure that the data collected (primarily the laboratory data) is acceptable.

It is anticipated that most of the materials used to assist in obtaining samples will be disposable one-time use materials (e.g., sampling containers, bailers, rope, pump tubing, latex gloves, etc.). However, when equipment must be re-used (e.g., drill rigs, static water level indicator, split spoon samplers, etc.), it will be decontaminated by at least one of the following methods:

- Steam clean the equipment within a dedicated decontamination area; or
- Rough wash in tap water; wash in mixture of tap water and Alconox-type soap; double rinse with tap water; and air dry and/or dry with clean paper towel.

The decontamination area will be set-up in a location to minimize disturbance to properties surrounding the work area.

7.3 Disposal

Disposable clothing will be disposed in accordance with applicable regulations. Liquids (e.g., decontamination water, etc.) or solids (e.g., soil) generated by remedial activities will be disposed in accordance with applicable regulations.

8.0 AIR MONITORING

During activities that have the potential to disturb contaminated soil, fill material, or groundwater, air monitoring will be conducted in order to determine airborne particulate and contamination levels. This ensures that respiratory protection is adequate to protect personnel against the chemicals that are encountered and that chemical contaminants are not migrating off-site. Additional air monitoring may be conducted at the discretion of the SSO. Readings will be recorded and be available for review.

The following chart describes the direct reading instrumentation that will be utilized and appropriate action levels.

Monitoring Device	Action Level	Response/Level of PPE
PID Volatile Organic Compound Meter	< 1 ppm in breathing zone, sustained 5 minutes	Level D
	1-25 ppm in breathing zone, sustained 5 minutes	Cease work, implement measures to reduce air emissions when the work is performed, etc. If levels can not be brought below 1 ppm in the breathing zone, then upgrade PPE to Level C
	26-250 ppm in breathing zone, sustained 5 minutes	Level B, Stop work, evaluate the use of engineering controls, etc.
	>250 ppm in breathing zone	Level A, Stop work, evaluate the use of engineering controls, etc.
RTAM Particulate Meter	< 100 $\mu g/m^3$ over an integrated period not to exceed 15 minutes.	Continue working
	> 100 $\mu g/m^3$	Cease work, implement dust suppression, change in way work performed, etc. If levels can not be brought below 150 $\mu g/m^3$, then upgrade PPE to Level C

8.1 Particulate Monitoring

During activities where contaminated materials (e.g., soil, fill, etc.) may be disturbed, air monitoring will include real-time monitoring for particulates using a real-time aerosol monitor (RTAM) particulate meter at the perimeter of the work zone in accordance with the Final DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) dated May 2010. DER-10 uses an action level of 100 $\mu g/m^3$ (0.10 mg/m^3) over background conditions for an integrated period not to exceed 15 minutes. If the action level is exceeded, or if visible dust is encountered,

then work shall be discontinued until corrective actions are implemented. Corrective actions may include dust suppression, change in the way work is performed, and/or upgrade of personal protective equipment.

8.2 Volatile Organic Compound Monitoring

During activities where contaminated materials may be disturbed, a PID will be used to monitor total VOCs in the ambient air. The PID will prove useful as a direct reading instrument to aid in determining if current respiratory protection is adequate or needs to be upgraded. The SSO will take measurements before operations begin in an area to determine the concentration of VOCs naturally occurring in the air. This is referred to as a background level. Levels of VOCs will periodically be measured in the air at active work sites, and at the transition zone when levels are detected above background in the work zone.

8.3 Community Air Monitoring Plan

During activities that have the potential to disturb contaminated soil, fill material, or groundwater, this Community Air Monitoring Plan (CAMP) will be implemented. The CAMP includes real-time monitoring for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when activities with the potential to release VOCs or dust are in progress at the Site. This CAMP is based on the NYSDOH Generic CAMP included as Appendix 1A DER-10. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences/businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of project activities.

Continuous monitoring will be conducted during ground intrusive activities involving potentially contaminated soil, fill material or groundwater. Ground intrusive activities include, but are not limited to, test pitting or trenching, advancement/installation of test borings or monitoring wells, etc.

Periodic monitoring for VOCs will be conducted during non-intrusive activities involving potentially contaminated soil, fill material or groundwater where deemed appropriate (e.g., during collection of soil samples or groundwater samples, etc.).

8.3.1 VOC Monitoring, Response Levels, and Actions

VOCs must be monitored at the downwind perimeter of the immediate work area (i.e., the work zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities must be temporarily halted and monitoring must be continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source or vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 feet), is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

The 15-minute readings must be recorded and made available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

8.3.2 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind perimeter of the work zone at temporary particulate monitoring stations. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate

concentration to within 150 μg/m^3 of the upwind level and in preventing visible dust migration.

Readings will be recorded and made available for review upon request.

9.0 EMERGENCY CONTINGENCY PLAN

This section presents the emergency contingency plan (ECP) describing the procedures to be performed in the event of an emergency (e.g., fire, spill, tank/drum release, etc.). To provide first-line assistance to field personnel in the case of illness or injury, the following items will be made immediately available on the Site:

- First-aid kit;
- Portable emergency eye wash; and
- Supply of clean water.

9.1 Emergency Telephone Numbers

The following telephone numbers are listed in case there is an emergency at the Site:

Fire/Police Department:	911
Poison Control Center:	(800) 222-1222
NYSDEC	
Region 8: Environmental Remediation	(585) 226-5349
Spill Hotline	(800) 457-7362
NYSDOH	
Public Health Duty Officer	(866) 881-2809
MCDPH	
Public Health Engineering	(585) 753-5476
OBI, LLC	
Michael McAlpin	(585) 509-1594
DAY ENVIRONMENTAL, INC.	
Nathan Simon	(585) 454-0210 x109
Raymond Kampff	(585) 454-0210 x108
NEAREST HOSPITAL:	Rochester General Hospital 1425 Portland Avenue, Rochester, NY 14621 (585) 922-4000 (Main) (585) 922-2000 (Emergency Department)
Directions to the Hospital:	Head east on Balfour Drive toward Hollenbeck Street for approximately 0.1 miles. Turn left on Hollenbeck Street and proceed approximately 0.3 miles. Turn right on Norton Street and proceed approximately 1.2 miles and then turn left on Carter Street. Turn right into Rochester General Hospital after approximately 0.3 miles (Figure 1).

9.2 Evacuation

During activities involving potential disturbance of contaminated soil, fill material, or groundwater, a log of each individual entering and leaving the Site will be kept for emergency accounting practices. Although unlikely, it is possible that a site emergency could require evacuating personnel from the Site. If required, the SSO will give the appropriate signal for site evacuation (i.e., hand signals, alarms, etc.).

All personnel shall exit the Site and shall congregate in an area designated by the SSO. The SSO shall ensure that all personnel are accounted for. If someone is missing, the SSO will alert emergency personnel. The appropriate government agencies will be notified as soon as possible regarding the evacuation, and any necessary measures that may be required to mitigate the reason for the evacuation.

9.3 Medical Emergency

In the event of a medical emergency involving illness or injury to one of the on-site personnel, Emergency Medical Services (EMS) and the appropriate government agencies should be notified immediately. The area in which the injury or illness occurred shall not be entered until the cause of the illness or injury is known. The nature of injury or illness shall be assessed. If the victim appears to be critically injured, administer first aid and/or cardio-pulmonary resuscitation (CPR) as needed. If appropriate, instantaneous real-time air monitoring shall be done in accordance with air monitoring outlined in Section 8.0 of this HASP.

9.4 Contamination Emergency

It is unlikely that a contamination emergency will occur; however, if such an emergency does occur, the specific work area shall be shut down and immediately secured. If an emergency rescue is needed, notify Police, Fire Department, and EMS units immediately. Advise them of the situation and request an expedient response. The appropriate government agencies shall be notified immediately. The area in which the contamination occurred shall not be entered until the arrival of trained personnel who are properly equipped with the appropriate PPE and monitoring instrumentation as outlined in Section 8.0 of this HASP.

9.5 Fire Emergency

In the event of a fire on-site, all non-essential site personnel shall be evacuated to a safe, secure area. The Fire Department will be notified immediately and advised of the situation and the identification of any hazardous materials involved. The appropriate government agencies shall be notified as soon as possible.

The four classes of fire along with their constituents are as follows:

Class A: Wood, cloth, paper, rubber, many plastics, and ordinary combustible materials.

Class B: Flammable liquids, gases and greases.

Class C: Energized electrical equipment.

Class D: Combustible metals such as magnesium, titanium, sodium, potassium.

Small fires on-site may be actively extinguished; however, extreme care shall be taken while in this operation. Approaches to the fire shall be done from the upwind side if possible. Distance from on-site personnel to the fire shall be close enough to ensure proper application of the extinguishing material but far enough away to ensure that the personnel are safe. The proper extinguisher shall be utilized for the Class(es) of fire present on the site. If possible, the fuel source shall be cut off or separated from the fire. Care must be taken when performing operations involving the shut-off of valves and manifolds, if present.

Examples of proper extinguishing agent as follows:

Class A: Water
Water with 1% AFFF Foam (Wet Water)
Water with 6% AFFF or Fluorprotein Foam
ABC Dry Chemical

Class B: ABC Dry Chemical
Purple K
Carbon Dioxide
Water with 6% AFFF Foam

Class C: ABC Dry Chemical
Carbon Dioxide

Class D: Metal-X Dry Powder

No attempt shall be made against large fires, these shall be handled by the Fire Department.

9.6 Spill or Air Release

In the event of a spill or air release of hazardous materials on-site, the specific area of the spill or release shall be shut down and immediately secured. The area in which the spill or release occurred shall not be entered until the cause can be determined and site safety can be evaluated. Non-essential site personnel shall be evacuated to a safe and secure area. The appropriate government agencies shall be notified as soon as possible. The spilled or released material shall be immediately indentified and appropriate containment measures shall be implemented, if

possible. Real-time air monitoring shall be implemented as outlined in Section 8.0 of this HASP. If the materials are unknown, Level B protection is mandatory. If warranted, samples of the materials shall be acquired to facilitate identification.

9.7 Locating Containerized Waste and/or Underground Storage Tanks

In the event that unanticipated containerized waster (e.g., drums) and/or underground storage tanks (USTs) are located during investigation and/or subsequent remedial activities, the work must be stopped in the specific area until site safety can be evaluated and addressed. Non-essential Site personnel shall not work in the immediate area until conditions including possible exposure hazards are addressed. The appropriate government agencies shall be notified as soon as possible. The SSO shall monitor the area as outlined in Section 8.0 of this HASP.

Prior to handling, unanticipated containers will be visually assessed by the SSO to gain as much information as possible about their contents. As a precautionary measure, personnel shall assume that unlabelled containers and/or tanks contain hazardous materials until their contents are characterized. To the extent possible based upon the nature of the containers encountered, actions may be taken to stabilize the area and prevent migration (e.g., placement of berms, etc.). Subsequent to initial visual assessment and any required stabilization, properly trained personnel will sample, test, remove, and dispose of any containers and/or tanks, and their contents. After visual assessment and air monitoring, if the material remains unknown, Level B protection (or higher) is mandatory.

10.0 ABBREVIATIONS

AFFF	Aqueous Film Forming Foams
bgs	Below Ground Surface
CAMP	Community Air Monitoring Program
CFR	Code of Federal Regulations
cis 1,2-DCE	cis 1,2-dichloroethene
CPR	Cardio-Pulmonary Resuscitation
DAY	Day Environmental, Inc.
dBA	Decibels on the A-Weighted Scale
ECP	Emergency Contingency Plan
EMS	Emergency Medical Service
ESA	Environmental Site Assessment
HASP	Health and Safety Plan
IDLH	Immediately Dangerous to Life or Heath
IDW	Investigative Derived Waste
MCDPH	Monroe County Department of Public Health
mg/m^3	Milligram Per Meter Cubed
NIOSH	National Institute for Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PCE	Tetrachloroethene
PEL	Permissible Exposure Limit
Phase I ESA	Phase I Environmental Site Assessment
PID	Photoionization Detector
PM	Project Manager
PM-10	Particulate Matter Less Than 10 Micrometers In Diameter
PPE	Personal Protection Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
REC	Recognized Environmental Condition
REL	Recommended Exposure Limit
RTAM	Real-Time Aerosol Monitor
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethene
TIC	Tentatively Identified Compound
TCL	Target Compound List
Trans 1,2 DCE	trans 1,2-dicloroethene
TPH	Total Petroleum Hydrocarbons
TWA	Time-Weighted Average

UST	Underground Storage Tank
$\mu g/m^3$	Micrograms Per Meter Cubed
VC	Vinyl Chloride
VOC	Volatile Organic Compound

ATTACHMENT 1

Figure 1 – Route for Emergency Services

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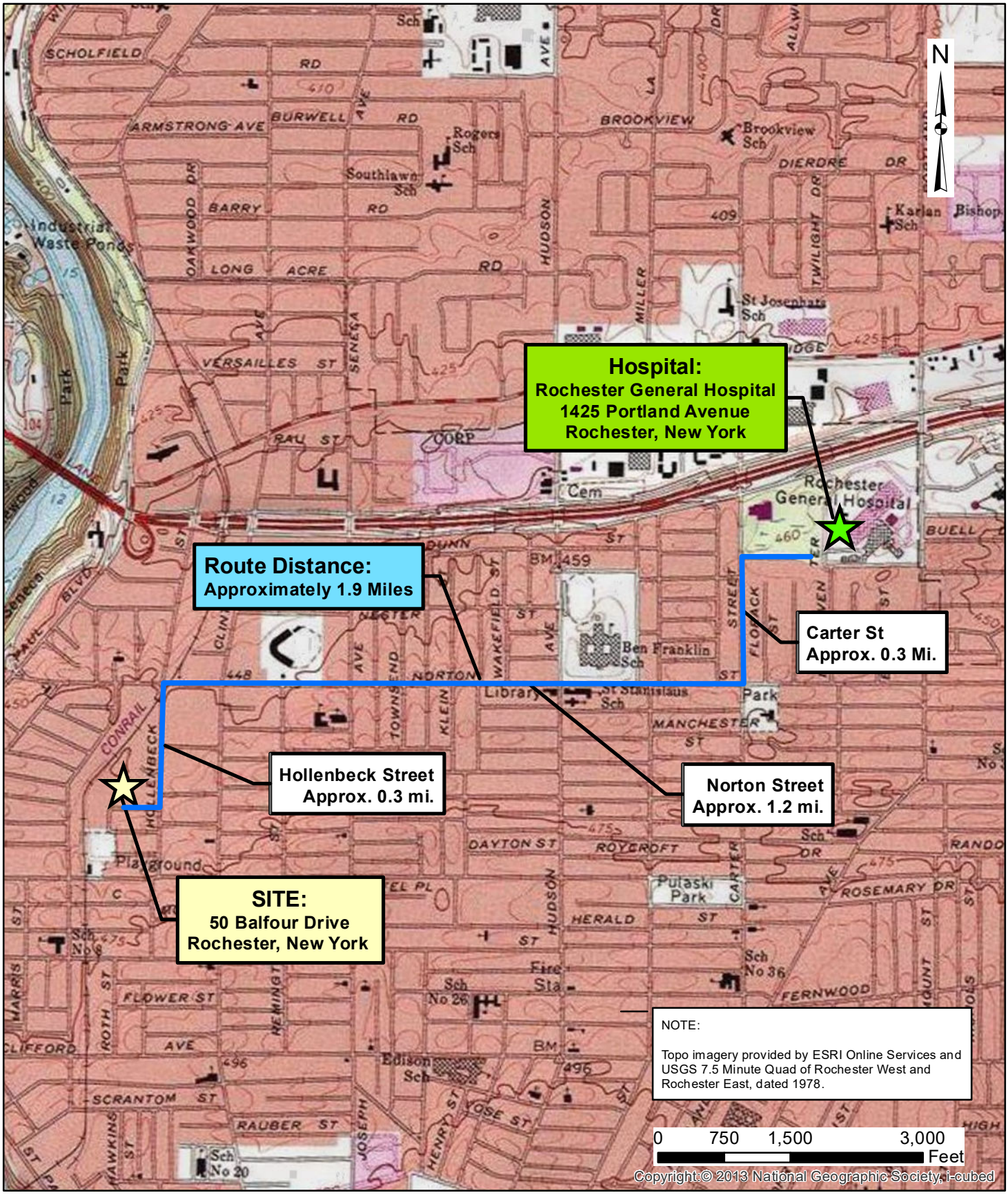

Date: 07-28-2020 Drawn By: RJM Scale: AS NOTED	day **DAY ENVIRONMENTAL, INC.** Environmental Consultants Rochester, New York 14606 New York, New York 10170	Project Title: 245-265 & 271 HOLLENBECK STREET AND 50 BALFOUR DRIVE ROCHESTER, NEW YORK HEALTH AND SAFETY PLAN Drawing Title: Route to Emergency Services	Project No. 5678R-20 FIGURE 1

Appendix B
Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN
PRE-PRE-DESIGN INVESTIGATION WORK PLAN

245-265 & 271 HOLLENBECK STREET AND 50 BALFOUR DRIVE
ROCHESTER, NEW YORK

NYSDEC SITE #828188

Prepared by: Day Environmental, Inc.
1563 Lyell Avenue
Rochester, New York

Project No.: 5678R-20

Date: November 2020

Table of Contents

1.0 INTRODUCTION

This project-specific Quality Assurance Project Plan (QAPP) was prepared in accordance with Section 2.4 of the New York State Department of Environmental Conservation (NYSDEC) Technical Guidance, For Site Investigation and Remediation DER-10 dated May 2010. This QAPP provides quality assurance/quality control (QA/QC) protocols and guidance that are to be followed when implementing the Pre-Design Investigation Work Plan (PDIWP) for 245-265 Hollenbeck Street, 271 Hollenbeck Street, and 50 Balfour Drive, Rochester, New York (Site) to ensure that data of a known and acceptable precision and accuracy are generated. The QAPP also provides a summary of the project, identifies personnel responsibilities, and provides procedures to be used during sampling of environmental media, other field activities, and the analytical laboratory testing of samples. The components of the QAPP are provided herein.

1.1 PROJECT SCOPE AND PROJECT GOALS

The QAPP applies to the aspects of the project associated with the collection of field data, the collection and analytical laboratory testing of field samples and QA/QC samples, and the evaluation of the quality of the data that is generated. Specifically, the activities will include subsurface soil sampling (soil borings) and groundwater sampling. Detailed discussions of the project scope and project goals are provided in the PDIWP . In general, the project goal is to obtain sufficient information to produce data of sufficient quantity and quality for Remedial Design / Remedial Action Work Plan development.

2.0 PROJECT/TASK ORGANIZATION

Project organization and tentative personnel to implement the work are outlined in this section of the QAPP.

2.1 DAY ORGANIZATION

Information regarding key personnel for Day Environmental, Inc. (DAY) is provided below, and resumes of key personnel are included in Attachment 1.

DAY Principal in Charge

The Principal in Charge is responsible for such things as the review of project documents and ensuring that the project is completed in accordance with relative work plans. Mr. David D. Day, P.E. will serve as DAY's Principle-in-Charge on this project.

DAY Project Manager

The DAY Project Manager has the overall responsibility for implementing the project and ensuring that the project meets the objectives and quality standards as presented in this QAPP. Mr. Raymond Kampff will serve as DAY's Project Manager on this project, and will serve as DAY's primary point of contact and control for the project.

DAY Quality Assurance Officer

The Quality Assurance Officer is responsible for QA/QC on this project. The Quality Assurance Officer's responsibilities on this project are not as a project manager or task manager involved with project productivity or profitability as job performance criteria. Mr. Barton Kline will serve as DAY's Quality Assurance Officer on this project. The Quality Assurance Officer may conduct audits of the operations at the Site to ensure that work is being performed in accordance with the QAPP.

DAY Technical Staff

DAY's technical staff for this project consists of experienced professionals (e.g., professional engineers, engineers-in-training, scientists, technicians, etc.) that possess the qualifications necessary to effectively and efficiently complete the project tasks. The technical staff will be used to gather and analyze data, prepare various project documentation, etc.

2.2 ANALYTICAL LABORATORIES

A New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory will be utilized to provide analytical laboratory services associated with this project. The specific analytical laboratory has not yet been selected but the laboratory utilized will meet the NYSDOH ELAP criteria. A copy of the Lab's Quality Assurance Plan (QAP) can be provided upon request. The selected analytical laboraotry will be requsted to meet a minimum reporting limit of 1.0 Micrograms per liter for groundwater samples.

3.0 QUALITY ASSURANCE/QUALITY CONTROL

As part of this QAPP, QA/QC protocol and procedures have been developed and are described below. The objective of the QA/QC protocol and procedures is to ensure that the information, data, and decisions associated with this project are technically sound and properly documented. The QA/QC protocol and procedures also pertain to the collection, evaluation, and review of activities and data that are part of this project. These QA/QC protocol and procedures will be modified in supplemental work plans when deemed appropriate.

3.1 OPERATION AND CALIBRATION OF ON-SITE MONITORING EQUIPMENT

On-site monitoring equipment will play a significant role in meeting the PDIWP objectives and to determine the appropriate personal protective equipment (PPE) as noted in the Site's Health and Safety Plan (HASP). The on-site, monitoring equipment includes volatile organic compound (VOC) monitors, real-time aerosol monitors (RTAMs), oil/water interface probes, an electronic static water level indicator, water quality monitors, and global position system (GPS). Operation and calibration of on-site monitoring equipment that are anticipated for use during the PDIWP are discussed below.

3.1.1 VOC Monitoring Equipment

Real-time monitoring for VOCs will be conducted to evaluate the nature and extent of petroleum- or solvent-type discharges at the Site and to determine the appropriate PPE as noted in the HASP. The primary field instrument for monitoring VOCs during the PDIWP will be a photoionization detector (PID). It is anticipated that a Minirae 3000 PID (or equivalent) equipped with a 10.6 eV lamp will be used during this project. An accredited firm/testing laboratory will calibrate the equipment on a yearly basis. During fieldwork, the PID will be calibrated on a daily basis in accordance with the manufacturer's specifications. Isobutylene gas will be used to calibrate the PID prior to use and as necessary during fieldwork. Measurements will be collected before operations begin in an area to determine the amount of VOCs naturally occurring in the air (i.e., background concentrations).

3.1.2 Particulate Monitoring Equipment

Particulate monitoring will be conducted during intrusive activities as noted in the Community Air Monitoring Plan (CAMP) portion of the HASP. It is anticipated that the particulate air monitoring will be conducted using a RTAM particulate meter. Prior to fieldwork, the particulate meter will be zeroed in accordance with the manufacturer's specifications. Measurements will be collected along the upwind perimeter of the intrusive investigation activities to determine the amount of particulates naturally occurring in the air (i.e., background concentrations) as per the requirements of the CAMP.

3.1.3 Global Positioning System Equipment

A GPS unit will be used to obtain the precise locations of sampling points and significant site features. It is anticipated that a Trimble GeoXH will be used during this project. The GPS location accuracy of <1 horizontal foot is the data quality objective for this project. The GPS unit will be calibrated as needed in accordance with the manufacturer's

specifications. The GPS location data will conform to Rochester's GIS coordinate system (NAD 1983 State Plane New York West).

3.1.4 Miscellaneous Field Monitoring Equipment

Several other pieces of miscellaneous field monitoring equipment will be used as part of the project. It is anticipated that the other field monitoring equipment utilized during portions of the project include:

- An electronic static water level indicator;
- An oil/water interface meter, and;
- A YSI Pro-DSS (or similar) water quality meter that measures pH, specific conductivity, temperature, dissolved oxygen, oxygen-reduction potential, and turbidity.

These meters will be calibrated, operated, and maintained in accordance with the manufacturer's instructions.

3.3 GENERAL SOIL SCREENING AND LOGGING

A qualified DAY representative will: document visual observations; screen the split spoon and/or macro-core samples with a PID; collect selected portions of the samples for possible laboratory analysis; collect other portions of the samples (and process and screen the headspace of these selected samples with a PID); photograph soil collection activities; and, prepare logs that provide pertinent field information.

Pertinent information will be recorded on test boring/well logs, and will include:

- Date, boring/well identification, and project identification;
- Name of individual developing the log;
- Name of drilling contractor;
- Drill make and model, and auger size;
- Identification of alternative drilling methods used and justification thereof;
- Depths recorded in feet and fractions thereof (tenths of inches) referenced to ground surface;
- Standard penetration test (ASTM D-1586) blow counts (if applicable);
- The length of the sample interval and the percentage of the sample recovered;
- Description of soil type using the Unified Soil Classification System;
- The depth of the first encountered water table (if encountered), along with the method of determination, referenced to ground surface;
- Drilling and borehole characteristics;
- Sequential stratigraphic boundaries and soil types consistent with logging performed on other project elements;
- Well specifications (materials; screened interval; amount of Portland cement, bentonite and water used to mix grout; etc.); and
- PID screening results of ambient headspace air above selected soil samples for the entire length of the split spoon/sleeve.

Bedrock logging will include the pertinent information included on the the overburden log in additiona to the following bedrock core characteristics:

- Bedrock type and lithology;
- Core Recovery Calculations and Rock Quality Determinations (RQDs);
- Bedrock color and texture;
- Becrock degree of decomposition, weathering, and disintegration;
- Bedrock fracture types (e.g., vertical, laterial, diagonal, mechanical), density and fracture infilling; and
- The anticipated formation name.

3.4 SOIL SAMPLE HEADSPACE SCREENING

The recovered soil samples will be visually examined by a DAY representative for evidence of suspect contamination (e.g., staining, unusual odors) and screened with a PID. Ambient soil sample PID screening will be completed for the entire length of the soil in the split spoon/sleeve by making small cracks in the soil and placing the PID intake near each crack and loosely covering with a gloved hand. Portions of the recovered soil samples may be placed in containers for possible analytical laboratory testing. Different portions of the soil samples will be placed in sealable Ziploc®-type plastic baggies, and will be field screened the same day they are collected. Each sample will be agitated and homogenized for at least 30 seconds and allowed to equilibrate for at least three minutes. The ambient headspace air inside the baggie above each sample will be screened for total VOC vapors with the PID equipped with a 10.6 eV lamp. The sampling port for the PID will be placed in the ambient air headspace inside the bag by opening a corner of the "locked" portion of the bag. The PID will monitor air inside the baggie for a period of at least 15 seconds and the peak readings measured will be recorded on a log sheet or log book.

3.5 NAPL SCREENING SHAKE TEST

Field evidence of suspect non-aqueous phase liquid (NAPL) will be confirmed in the field utilizing a hydrophobic dye shake test. Field evidence of suspect NAPL include, but not limited to, elevated PID readings [i.e., >1,000 parts per million (ppm)], saturated soil with petroleum or solvent odors or significant staining, and apparent free phase or residual NAPL. The NAPL screening shake test is applicable for both light non-aqueous phase liquid (LNAPL) and dense non-aqueous phase liquid (DNAPL). If field evidence suggests the presence of LNAPL or DNAPL, the DAY will perform a shake test on an aliquot of the corresponding soil sample using hydrophobic dye. The sample aliquot will be mixed with approximately two ounces potable water, and a pinch of Sudan IV or equivalent hydrophobic dye will be placed in a sealable plastic baggie, agitated for approximately 10 seconds, and then noted for pigment staining. If organic NAPL is present, the Sudan IV Pigment should result in pigment staining. The NAPL screening shake test results will be documented and if possible photographed for documentation purposes. The hydrophobic dye will be handled with care using a new pair of disposable gloves. Following the shake test, the plastic baggie containing the soil-dye moisture and associated PPE should be managed as investigation derived waste (IDW). Soils containing hydrophobic dye and PPE will not be used for confirmatory analytical analyses or headspace readings.

3.6 WELL DEVELOPMENT

Monitoring wells will be developed by utilizing either a new dedicated disposable bailer with dedicated cord, and/or a pump and dedicated disposable tubing depending on the field conditions. No fluids will be added to the wells during development without prior approval of the NYSDEC, and well development equipment will be decontaminated prior to development of each well.

The well development procedure is listed below:

- Obtain pre-development static water level and oil/water interface reading for presence of LNAPL or DNAPL using a Heron Model HO1.L oil/water interface probe or similar instrument;
- Calculate water/sediment volume in the well;
- Obtain initial field water quality measurements (e.g., pH, specific conductivity, turbidity, temperature, and PID readings). The pH, specific conductivity, turbidity and temperature readings will be obtained using YSI Pro-DSS water quality meter (or similar equipment);
- Select development method and set up equipment depending on method used;
- Alternate water agitation methods (e.g., moving a bailer or pump tubing up and down inside the screened interval) and water removal methods (e.g., pumping or bailing) in order to suspend and remove solids from the well;
- Obtain field water quality measurements for every two to five gallons of water removed. Record water quantities and rates removed;
- Stop development when the following water quality criteria are met or at least 5 well volumes have been removed;
    - Water is clear and free of sediment and turbidity is less than 50 nephelometric turbidity units (NTUs);
    - pH is ±0.1 standard unit between readings;
    - Specific conductivity is ±3% between readings, and;
    - Temperature is ±10% between readings.
- Obtain post-development water level readings; and
- Document development procedures, measurements, quantities, etc.

The volume of water lost during well installation of bedrock wells will be measured and recorded. At a minimum, the volume of water lost plus an additional five well volumes will be removed during developmnet. Alternatively, if the amount of water introduced during the well installation is too great, DAY may wait three to four weeks for the water to dissipate into the aquifer prior to performing well development.

Pertinent information for each well will be recorded on well development logs.

3.7 INVESTIGATION DERIVED WASTE CHARACTERIZATION SAMPLING

IDW will be managed in general accordance with the applicable provisions set forth in DER-10, Section 3.3(e). Supplemental sampling of the IDW is anticipated in order to obtain approvals

from appropriate disposal and/or recycling at an authorized solid waste management facility or publicly owned wastewater treatment works (liquids). The following protocols likely apply to IDW sampling:

- The objective of IDW sampling is to characterize a substantial mass of waste requiring disposal. Consequently, the sample should be collected in a manner that is representative of the entire waste mass and not limited to a specific zone of concern or observed contamination.
- Grab samples may be composited to form one sample for analytical analyses.

4.0 EQUIPMENT DECONTAMINATION PROCEDURES

In order to reduce the potential for cross-contamination of samples collected during this project, the following procedures will be implemented to ensure that the data collected (primarily the laboratory data) is acceptable.

It is anticipated that most of the materials used to assist in obtaining samples will be disposable one-time use materials (e.g., sampling containers, bailers, rope, pump tubing, latex gloves, etc.). However, when equipment must be re-used (e.g., drill rigs, static water level indicator, split spoon samplers, etc.), it will be decontaminated by at least one of the following methods:

- Steam clean the equipment within a dedicated decontamination area; or
- Rough wash in tap water; wash in mixture of tap water and Alconox-type soap; double rinse with tap water; and air dry and/or dry with clean paper towel.

The effectiveness of the equipment decontamination of non-dedicated sampling equipment such as split-spoon samplers will be evaluated via analytical laboratory testing of field blanks (e.g., rinsate samples). Decontamination liquids, disposable equipment, and PPE will be containerized and left on-site until a proper disposal method is determined. The location of a dedicated decontamination area at, or in the vicinity of the Site will be determined, with NYSDEC input, prior to the commencement of the PDIWP field activities.

5.0 SAMPLE HANDLING AND CUSTODY REQUIREMENTS

During sampling activities, personnel will wear disposable latex or nitrile gloves. Between collection of samples, personnel performing the sampling will discard used latex gloves and put on new gloves to preclude cross-contamination between samples. As few personnel as possible will handle samples or be in charge of their custody prior to shipment to the analytical laboratory.

New laboratory-grade sample containers will be used for each sample collected. Sufficient volume will be collected to ensure that the laboratory has adequate sample volume to perform the specified analyses. Samples will be collected in accordance with United States Environmental Protection Agency (USEPA) Method 5035 when VOC analysis is going to be performed. Samples to be tested for per-and polyfluorinated alkyl substances (PFAS) will be collected and tested in accordance with the NYSDEC document titled *Guidelines for Sampling and Analysis of PFAS* dated January 2020. Samples will be kept on ice in a cooler for shipment to the analytical laboratory.

Samples will be preserved as specified by the analytical laboratory for the type of parameters and matrices being tested. The required amount of preservatives will be added by the analytical laboratory to the sample containers prior to delivery to the Site.

Chain-Of-Custody

Samples that are collected for subsequent testing as part of this project will be handled using chain-of-custody control. Chain-of-custody documentation will accompany samples from their inception to their analysis, and copies of chain-of-custody documentation will be included with the laboratory's report. The chain-of-custody will include the date and time the sample was collected, the sample identity and sampling location, the requested analysis, and any request for accelerated turnaround time.

Sample Labels

Sample labels for field samples and QC samples with adhesive backing will be placed on sample containers in order to identify the sample. Sample information will be clearly written on the sample labels using waterproof ink. Sufficient sample information will be provided on the label to allow for cross-reference with the field sampling records or sample logbook.

The following information will be provided on each sample label:

Name of company;
Initials of sampler;
Date and time of collection;
Sample identification;
Intended analyses; and
Preservation required.

Custody Seals

Custody seals are preprinted adhesive-backed seals that are designed to break if disturbed. Seals will be signed and dated before being placed on the shipping cooler. Seals will be placed on one or more location on each shipping cooler as necessary to ensure security. Shipping tape will be

placed over the seals on the coolers to ensure that the seals are not accidentally broken during shipment. Sample receipt personnel at the laboratory will check and document whether the seals on the shipping coolers are intact when received.

Sample Identification

The following format will be used on the labels affixed to sample containers to identify samples:

Each sample will be numbered in succession using a 3 digit identifer and starting with sample 001. The sample test location will also be provided after the sample number using the following test location designations:

SS	Surface Soil Sample
TP-x (x-x)	Test pit excavation soil sample with depth interval below ground surface in tenths of a foot (x – x).
TB-xx (x-x)	Boring soil sample with depth interval in parentheses below ground surface in tenths of a foot (x – x)
MW-X	Overburden Groundwater sample with monitoring well letter
BRMW-X	Bedrock Groundwater sample with monitoirng well letter
EW-X	Extraction Well sample with well number
TBxx/xx/xx	Trip Blank sample with day/month/year
FBxx/xx/xx	Field Blank sample (rinsate) with day/month/year

As an example, assuming the first project sample is a soil sample collected from a test pit TP-1 at a depth of 10 feet, the sample will be designated as 001/TP-1(1).

Transportation of Samples

Samples will be handled, packaged and shipped in accordance with applicable regulations, and in a manner that does not diminish their quality or integrity. Samples will be delivered to the laboratory in a timely manner so that they may be processed/tested by the laboratory within the applicable method holding times.

6.0 ANALYTICAL QUALITY ASSURANCE/QUALITY CONTROL

Analytical laboratory test results will be reported in NYSDEC Analytical Services Protocol (ASP) Category B deliverable reports. Analytical laboratory test results for soil samples will be reported on a dry-weight basis. The analytical laboratory will make every effort to analyze the samples using the lowest practical quantitation limits (PQLs) possible for soil and groundwater samples. The analytical laboraotry will be requsted to meet a minimum reporting limit of 1.0 Micrograms per Liter for groundwater samples. In addition, analytical laboratory results will be provided to the NYSDEC using the NYSDEC's Equis Format.

The analytical laboratory will provide internal QA/QC checks that are required by NYSDEC ASP and/or USEPA contract laboratory protocol (CLP) protocol, such as analyses performed, spike blanks, internal standards, surrogate samples, calibration standards, and reference standards. Laboratory reports will be reviewed as outlined in the laboratories QAP. Laboratory results will be compared to data quality indicators in accordance with the laboratory's QAP and the NYSDEC ASP.

In order to provide control over the collection, analysis, review, and interpretation of analytical laboratory data, the following QA/QC samples will be included as part of this project.

- During groundwater monitoring for VOCs, one trip blank will be included per set of 20 liquid samples with a minimum of one trip blank per sample shipment. The trip blanks will be analyzed for target compound list (TCL) VOCs.
- One matrix spike/matrix spike duplicate (MS/MSD) for each sample matrix, for each sampling event of 20 samples, or per shipment if less than 20 samples, within a seven-day period. Specific parameters that MS/MSD samples will be tested for is dependent upon the test parameters of the field samples that are being analyzed.
- One field blank (i.e., rinsate sample) will be collected from reusable sampling equipment for each sampling event of 20 samples, or per shipment if less than 20 samples. The field blank(s) will be tested for the suite parameters of the samples obtained using the subject re-useable sampling equipment (i.e. split spoon samplers).

Data Usability Summary Report

Currently it is anticipated that Jodi R. Zimmerman (Vali-Data of Western NY) will complete a data usability summary report (DUSR) on the Category B deliverables analytical laboratory data that is generated as part of the scope of work in the RI/RAA work plan. The DUSR will be conducted in accordance with the provisions set forth in Appendix 2B of DER-10 Technical Guidance for Site Investigation and Remediation dated May 2010. The findings of the DUSR will be incorporated in the Remedial Design/Remedial Action Work Plan for the Groundwater Extaction and Treatment system. A copy of Ms. Zimmerman's curriculum vitae is included in Attachment 2.

Reporting

Analytical and QC data will be included in the Remedial Design/Remedial Action Work Plan. The work plan will summarize the environmental work and provide evaluation of the data that is generated, including the validity of the results in the context of QA/QC procedures.

7.0 RECORD KEEPING AND DATA MANAGEMENT

DAY will document project activities in a bound field book on a daily basis. Information that will be recorded in the field book will include:

- Dates and time work is performed;
- Details on work being performed;
- Details on field equipment being used;
- Field evidence of contamination such as staining, odors, degree of saturation, etc.
- Field meter measurements collected during monitoring activities;
- Sampling locations and depths measured in tenths of feet;
- Measurements of sample locations, and test locations, excavations, etc.;
- Personnel and equipment on-site;
- Weather conditions; and
- Other pertinent information as warranted.

In addition, the field notes will be converted into logs for each soil test boring and monitoring well completed as part of the PDIWP.

Differential GPS, swing ties from existing surveyed site structures, and/or a licensed surveyor will be used to collect spatial data. The spatial data will be plotted using integrated GIS and/or computer-aided design (CAD) mapping. Electronic and hard copy files will be maintained by DAY.

As noted above, DAY will utilize its Trimble Geo-XH sub-foot accuracy GPS with ESRI ArcPad installed software with GIS shape files that have been developed for the Site.

8.0 ACRONYMS

ASP	Analytical Services Protocol
CAD	Computer-Aided Design
CAMP	Community Air Monitoring Plan
CLP	Contract Laboratory Protocol
DAY	Day Environmental, Inc.
DNAPL	Dense Non-Aqueous Phase Liquid
DUSR	Data Usability Summary Report
EDV	Environmental Data Validation, Inc.
ELAP	Environmental Laboratory Approval Program
GPS	Global Positioning System
HASP	Health and Safety Plan
IDW	Investigation-Derived Waste
LNAPL	Light Non-Aqueous Phase Liquid
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAPL	Non-Aqueous Phase Liquid
NTU	Nephelometric Turbidity Units
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PID	Photoionization Detector
PPE	Personal Protective Equipment
PQL	Practical Quantitation Limit
PVC	Polyvinyl Chloride
QAP	Quality Assurance Plan
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RI/RAA	Remedial Investigation/Remedial Alternatives Analysis
RTAM	Real-Time Aerosol Monitor
SOP	Standard Operating Procedure
SOQ	Statement of Qualification
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

ATTACHMENT 1

Resumes of Key Personnel

DAVID D. DAY, P.E.

EXPERIENCE

Day Engineering, P.C./Day Environmental, Inc.: 1985 to present
Years with Other Companies: 10 years

AREAS OF SPECIALIZATION

-Environmental Due Diligence for Mergers or Acquisitions
-Environmental Restoration/Remediation
-Environmental Site Assessment
-Environmental Compliance

EDUCATION

University of Michigan, M.S. Environmental Engineering, 1975
Michigan State University, B.S. Civil/Sanitary Engineering, 1974

REGISTRATION/AFFILIATIONS

Licensed Professional Engineer in New York
40-Hour OSHA Hazardous Waste Site Worker Training
8-Hour OSHA Hazardous Waste Site Supervisor Training
8-Hour OSHA Hazardous Waste Site Worker Refresher Training

Water Environment Federation
Rochester Engineering Society, Inc.
National Society of Professional Engineers

RESPONSIBILITIES AND PROJECT EXPERIENCE

President of Day Engineering, P.C. and Day Environmental, Inc. (DAY). As a founder and principal of these firms, Mr. Day is responsible for their overall management and operation. He also provides technical guidance and support to the Industrial Compliance Group, Phase I Assessment Group, and the Phase II/Remediation Group. In addition, he periodically serves as Project Manager on some of the firm's larger or more complicated projects.

Mr. Day has about 40 years of experience working on environmental projects for industry or as a consultant. Examples of the types of environmental projects that he has worked on are described below.

Due Diligence for Mergers or Acquisitions, Primarily in New York State. Principal for a variety of projects associated with the merger or acquisition of manufacturing and/or industrial operations. These projects involved representing the buyers of the operations, as well as working with the buyer's lenders and environmental legal counsel. The work entailed such things as obtaining and generating environmental information and data, evaluating the information and data, developing opinion-of-probable costs for addressing environmental issues, assessing environmental risks in relation to the client's merger or acquisition, and working with the environmental legal counsel to develop environmental risk management programs (e.g., indemnifications, escrow accounts, environmental liability insurance, deal structure, etc.).

Environmental Management Services for the Operation of Commuter Rail Facilities, Maryland and Florida. Principal for projects to assist an operator of major transportation systems in establishing environmental programs at commuter railway facilities in Maryland and Florida. The work includes such things as establishing compliance and permitting needs; developing the plans and programs needed for compliance; preparing the needed permits for submission to appropriate regulatory authorities; developing an Environmental Services Work Plan (Work Plan); and assisting the operator in implementing the Work Plan.

Environmental Services for Scrap Yard Operations, New York State. Principal of projects to assist scrap yard operations in complying with applicable state and Federal regulations. DAY has worked with a variety of scrap yard operations over a 20+ year period. The work has entailed such things as investigation and remediation of spills of petroleum/gasoline products and PCBs; preparing environmental plans and programs for the scrap facilities (e.g., SPCC Plans, Best Management Plans, etc.); assisting in stormwater and wastewater discharge issues (e.g., meeting SPDES permit or Multi-Sector General Permit requirements); assisting with the characterization and disposal of waste materials (e.g., auto fluff and contaminated soil); and, compliance audits.

Brownfield Assistance Program, City of Rochester. Principal for a project to assist the City of Rochester (City) in implementing its EPA funded Brownfield Assistance Program (BAP). The project has involved working with the City's Department of Environmental Services and Department of Economic Development to evaluate potential sites as candidates for the BAP program. DAY has conducted and/or prepared Phase I Environmental Site Assessments, Phase I confirmational intrusive studies, environmental management plans, and health and safety plans for this project at under-utilized sites within the City. This work has led to the redevelopment of BAP sites into active, tax-producing sites.

Investigation/Remediation of Former Department of Defense Site, Rochester, NY. Principal for a project to conduct investigation/remediation at a site that was formerly used by the Department of Defense (DOD) for the production of ocean-going ships, and missiles. DAY negotiated with the New York State Department of Environmental Conservation (NYSDEC) to conduct this work under a Voluntary Clean-Up Agreement. Soil, groundwater, and wetlands in the vicinity of the site are contaminated with a variety of contaminants including volatile organic compounds, metals, and PCBs. The work included investigation and delineation of contamination, and the design and implementation of interim remedial measures.

Remediation at a Former Printed Circuit Board Facility, Rochester, NY. Principal for a project to conduct remedial activities at a NYSDEC listed inactive hazardous waste disposal site. The remediation is being conducted under the Brownfield Cleanup Program (BCP). DAY completed a Remedial Investigation/Feasibility Study (RI/FS), and a remedial alternative was proposed for the site. The NYSDEC approved the proposed remedial alternative, and remedial activities are currently being implemented. After remedial activities are completed, operation of a groundwater remedial system and on-going monitoring will continue for 20+ years.

Phase I/Phase II/Remediation Services, City of Rochester, NY. Principal for a contract to conduct Phase I, Phase II, and remediation services for the City of Rochester on an as-needed basis. These services have been provided on a variety of different types of sites within the City.

Slag and Fill Management Project, Greece and Rochester, NY. Principal for a project to coordinate and oversee the removal of 25,000+ yards of slag-contaminated fill material from a residential site in Greece, NY. The fill material was contaminated with slag that came from a site that was being redeveloped in the City of Rochester. The contaminated fill material was removed from the residential site to a site within the City, where the fill material was screened, and the separated slag was transported to a solid waste facility for disposal. DAY worked closely with City officials, the NYSDEC, contractors, the public, and other regulatory authorities on this project.

Compliance Audits at Various Industrial Facilities in New York. Project Manager/Principal for compliance audits conducted at industrial facilities. The compliance audits encompassed the following types of environmental issues: air pollution, water pollution, hazardous and solid waste management, tank management, and petroleum handling and storage. The compliance audits have been conducted at a variety of different types of facilities including: plating facilities, auto dealerships, heat treating facilities, packaging/printing facilities, power generating facilities, tool and die operations, and other types of manufacturing operations.

Phase I Assessments Throughout New York State. Principal to review 2,000+ environmental assessments conducted for the purpose of real estate transactions. These assessments were conducted on a variety of different types of facilities, including industrial sites, manufacturing operations, and former railroad properties.

Electric Utility SPCC Plan Implementation, Western, New York. Project Manager/Principal and certifying professional engineer for a Spill Prevention Control and Countermeasures (SPCC) Plan covering 162 electrical substations located throughout western New York. The project involved identifying potential spill pathways at each of the substations, and ranking the potential for a spill to impact navigable water (i.e., low, medium or high risk). When needed, recommendations were also developed to reduce the risk of navigable water impact. The approach utilized on this project was very cost effective and resulted in the certification of one SPCC plan for 162 electrical substations.

Hazardous Waste and Hazardous Material Compliance Audit at a Major Railroad Yard Facility. Project Manager/Principal for conducting a compliance audit at a Railroad Yard facility to assess hazardous waste and hazardous material handling and storage. The audit report outlined recommendations for improving the handling and storage of hazardous materials and wastes.

RCRA Training For a Major Railroad Operation in New York and Connecticut. For several years, provided training to over 400 railroad personnel on handling and storage of hazardous waste as required by the Resource, Conservation, and Recovery Act (RCRA).

Hazardous Waste Tank Certification Project at Large Industrial Facility, Rochester, NY. Project Manager/Principal responsible for developing tank certification reports for 50 hazardous waste storage tanks as required by the New York State hazardous waste regulations.

Remedial Investigation on a New York State Inactive Hazardous Waste Site, Clarendon, NY. Project Manager/Principal for a $300,000 remedial investigation at a site where groundwater was contaminated by volatile organic compounds. Worked with client's attorney to secure funding of this project by insurance companies. The project was completed as required by the New York State Department of Environmental Conservation (NYSDEC) Order-on-Consent.

Drain Study at a Major Manufacturing Facility, New York. Project Manager/Principal for conducting a $200,000+ investigation to determine the discharge location (i.e., sanitary sewer, storm sewer, drywells, subsurface, etc.) of the various operations (i.e., processes, floor drains, hub drains, roof drains, sumps, scrubber drains, sinks, etc.) at a 5 million square foot manufacturing facility that contained over 40 buildings. A database was established to identify and track the discharge sources and locations to ensure compliance with local, State, and federal regulations.

Remediation at a Scrap Yard, Olean, NY. Project Manager/Principal for investigation and remediation of several hundred drums and containers that were abandoned at a scrap yard. The drums and containers contained a variety of types of hazardous wastes. The investigation and clean-up was conducted and completed under an USEPA Order-On-Consent.

RAYMOND L. KAMPFF

EXPERIENCE

Day Environmental, Inc.: May 1994 to present
Years with Other Firms: 18 years

AREAS OF SPECIALIZATION

- Environmental Site Assessment
- Environmental Restoration
- Geology

EDUCATION

University of Rochester, B. A. Geology 1974
Monroe Community College, Civil Engineering Technology 1976
Various continuing education courses/seminars in environmental regulations, remediation techniques and other technical issues

REGISTRATION/AFFILIATIONS

- 40-Hour OSHA Hazardous Waste Site Worker Training
- 8-Hour OSHA Hazardous Waste Site Supervisor Training
- 8 Hour OSHA Hazardous Waste Site Worker Refresher Training

RESPONSIBILITIES AND PROJECT EXPERIENCE

Mr. Kampff has over 38 years of professional experience and is currently responsible for the overall technical and administrative direction of DAY's Site Evaluation/Environmental Restoration Group. Mr. Kampff's experience includes environmental studies and remediation at inactive hazardous waste sites, industrial facilities, petroleum spill sites, Brownfield sites and municipal properties. Some of his representative projects are described below.

Environmental Site Assessment

Environmental Site Assessment for a Manufacturing Facility: Olean, New York. Responsible for a Phase I Environmental Site Assessment (ESA) and a Limited Phase II ESA for this 14-acre site currently developed with a 280,000 square foot industrial facility. The site was originally developed in the 1890s, and historically it has been used for various purposes including the manufacture of chemicals, metal furniture and industrial coatings. These studies were done to characterize the site in sufficient detail to prepare an application to enter the New York State Brownfield Cleanup Program (BCP).

Site Evaluation and Assessment of PCB Impact: Innis-Arden Golf Course. Reviewed documents and evaluated analytical laboratory data presented as part of a claim that discharges from a nearby railroad line operated by Metro-North Railroad (MNR) caused PCB-impact identified within ponds and streams on the golf course. The evaluation completed determined that nearby industrial facilities, and not MNR, were the responsible for the PCB contamination on the golf course.

Environmental Evaluation, Precast Concrete Facility, Manchester, New York. Responsible for the environmental evaluation of this 105-acre former railroad yard that was re-developed with an approximate 70,500 square foot structure in the late 1980s for use as a pre-cast concrete manufacturing facility. The site assessment studies conducted included testing of soil, groundwater and soil vapors to evaluate areas of potential environmental concern pursuant to the sale of the property. These studies included the delineation of an area of the site impacted with petroleum that resulted in the New York State Department of Environmental Conservation (NYSDEC) opening a spill file, and another area on the site where groundwater impacted with chlorinated solvents was identified.

Petroleum Spills

Petroleum Spill Remediation and Closure: Metro-North Railroad's Brewster Yard, North White Plains Yard and Harmon Yard in New York. Assisted MNR with the assessment and remediation of various petroleum spills at these railroad yards where petroleum impact from historic operations resulted in the accumulation of several feet of free product in some locations. The work included the design and construction of a combination of active and passive removal systems, design and operation of long-term monitoring networks to document the effectiveness of remedial efforts and, the preparation of status reports for submittal to the NYSDEC to document remedial efforts pursuant to spill closure.

Seneca-Cayuga ARC Spill Remediation: Waterloo, New York. Responsible for site characterization studies to assess the nature and extent of historic petroleum releases resulting from leaking tanks and discharges into septic systems. Subsequently, designed and implemented a remedial action plan to address petroleum impacts and to mitigate vapors in an adjacent building under construction. The remedial activities included the removal of underground storage tanks and petroleum-impacted soil/groundwater, the installation of a sub-slab depressurization system, and the preparation of a Site Management Plan (SMP) to address future impacts (if encountered).

Remedial Action Plan Development and Implementation: Mott Haven Yard, Bronx, New York. Completed site characterization studies to define the nature and extent of petroleum spills resulting from a combination of leaking tanks and discharges from railroad equipment. Based on the findings of the characterization studies, a removal of soil impacted with free product was conducted in accessible areas and systems were designed and implemented to preclude future discharges (e.g., installation of state-of the art fueling system, development of SPCC plans, construction of secondary containment systems). Subsequently, a Remedial Action Plan (RAP) describing methods to be implemented to collect residual free product from the groundwater was prepared for submittal to the NYSDEC.

York Oil Superfund Site RI/FS: Moira, New York. Managed several studies to evaluate on-site contamination and off-site pathways at this former waste oil recycling facility where large quantities of PCB and solvent-laden oils spilled onto the ground and migrated into adjacent wetlands.

Brownfield and RI/FS Projects

Interim Remedial Measure (IRM) Construction, Confidential Industrial Client: Akron, New York. Responsible for construction oversight during the implementation of IRM activities at an approximate 3-acre former waste disposal area used to dispose of hazardous and industrial wastes. Work included construction oversight during waste consolidation and capping activities, coordination with the NYSDEC, implementation of design modifications and preparation of various closure reports. Also, responsible for long term monitoring and the preparation of Periodic Review Reports.

Dry Cleaners: Jamestown, New York: Responsible for studies completed to evaluate the extent of chlorinated solvents in the soil and groundwater at this dry cleaning facility that has operated for the past 50 years. Also developed and implemented remediation system to actively remove more than 200 gallons of Dense Non-Aqueous Liquid (DNAPL), the design and construction of a permeable reactive barrier to preclude off-site migration, and the implementation of in-situ bioremediation to address residual impacts.

Harmon Railroad Yard Former Wastewater Lagoon: Croton-on-Hudson, New York. Responsible for the preparation of the Site Management Plan (SMP), long-term monitoring, preparation of status and Periodic Review Report reports, and implementation of corrective actions for Operation Units OU-I and OU II at this NYSDEC Inactive Hazardous Waste Site.

Manufacturing Facility: Rochester, New York. Responsible for the Remedial Investigation conducted at this facility where groundwater is impacted with elevated concentration of chlorinated solvents and heavy metals. Work includes studies designed to assess the nature and extent of impact with the soil, groundwater and soil vapor (including sub-slab studies within on-site structures and assessment of potential off-site impacts). Studies also included the design and implementation of pilot studies to evaluate bioaugmentation and phytoremediation as potential long-term remedial options.

Environmental Restoration Projects

Remediation of Petroleum Contaminated Soils, DePaul Community Facilities: Rochester, New York. Responsible for the design and construction of a combined active and passive soil vapor extraction system at this facility constructed on the site of a former gasoline station.

Track Platform Assessment and Encapsulation, Grand Central Terminal: New York, New York. Project Manager for a testing program designed to define the extent of PCB contamination and develop a comprehensive remedial program consisting of the initial cleaning of the impacted track area following by a double epoxy coating was required for this site. Due to the location of the site, care was taken to limit potential exposure to the public during remedial activities

Former Dry Cleaners: Canandaigua, New York. Responsible for site characterization studies to define subsurface conditions and the nature and extent of chlorinated solvent impact (tetrachloroethene and breakdown products), implementation of a soil removal interim remedial measure (IRM), installation of a sub-slab vapor mitigation system and implementation of biostimulation to address residual contamination.

Former Gasoline Station: Hornell, New York. Responsible for the completion of site investigations and the development and implementation of remedial options including source removal with the subsequent installation of an air sparging system augmented the injection of microbes designed to expedite the remediation process.

ATTACHMENT 2

Resume of Jodi R. Zimmerman of
Vali-Data of Western NY

Jodi R. Zimmerman
1514 Davis Rd.
West Falls, NY 14170
(716) 655-6530

EDUCATION:

B.S. Chemistry, William Smith College, Geneva, NY
Graduated June 1990
Chemistry GPA 3.41, Overall GPA 2.94
Research Topic: 'Kinetics and Mechanism of Electrophilic Substitution Reactions Involving Fe, Co, Ni, Cu and Zn Ions in Meso-tetraphenylporphyrins.'

PhD Candidate in Chemistry, Pennsylvania State University,
University Park, PS
June 1990 – August 1991
Bioinorganic Chemistry
Research Topic: Energy Transfer of Europium Chelates Using Lanthanide Luminescence

PROFESSIONAL EXPERIENCE:

Owner/Data Validator – Vali-Data of WNY, LLC, West Falls, NY (February 2008 to present)

Formed a Limited Liability Corporation and became a Woman-Owned Business in September 2009.

Responsibilities include the assessment of project data, determination of its usability and documentation of the findings in accordance with project requirements. Have completed several projects for consulting firms and/or laboratories requiring the preparation of Data Usability Summary Reports (DUSRs) for NYSDEC projects. Analytical suites validated have included, but are not limited to, TCL Volatile Organics, TCL Semi-Volatile Organics, Pesticides/PCBs, TAL Metals, Wet Chemistry for soil and water samples, and TO-15 and TO-17 Volatile Organics analysis for soil gas/vapor intrusion samples.

Analytical Chemist – Elf Atochem North America, Inc., King of Prussia, PA (1992 to 1994).

Responsibilities included chemical analysis of process samples via NMR Spectroscopy and the formulation of analytical methodologies. Performed analyses, and provided QA/QC of process intermediates and products to manufacturing and research facilities.

GC Analyst/Laboratory Technician – Centre Analytical Laboratories, Start College, PA (1991 to 1992)

Analytical chemist performing analyses of environmental samples.

HONORS:

Honors in Chemistry

Bioinorganic chemistry research conducted from June 1988 – June 1990. Requirements included: one year of research, written and oral examinations and a written thesis.