DRAFT

Former AB Dick Facility Site

MONROE COUNTY

TOWN OF HENRIETTA, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: BCP #C828148

USEPA ID # NYR00060143

Prepared for:

811 Jefferson Partners, LLC
90 Goodway Drive
Rochester, New York 14623

Prepared by:

Leader Professional Services, Inc.
271 Marsh Road, Suite 2
Pittsford, New York 14534
585-248-2413

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CERTIFICATION STATEMENT

I MICHAEL RUMRILL certify that I am currently a NYS Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

 [QEP]

09/27/2021 DATE

Table of Contents

LIST OF TABLES ..... **I**
LIST OF FIGURES ..... **I**
LIST OF APPENDICES ..... **I**
LIST OF ACRONYMS ..... **II**
ES EXECUTIVE SUMMARY **1**
1.0 INTRODUCTION **4**
1.1 General 4
1.2 Revisions 5
1.3 Notifications 5
2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS **8**
2.1 Site Location and Description 8
2.2 Physical Setting 8
2.2.1 Land Use 8
2.2.2 Geology 8
2.2.3 Hydrogeology 9
2.3 Investigation and Remedial History 9
2.3.1 Past Use and Ownership 9
2.3.2 Site Features 10
2.3.3 Remedial Investigation 10
2.3.4 Soil Removal IRM 12
2.3.5 Remedial Alternatives Analysis 13
2.3.6 Remedial Actions 13
2.3.6.1 ISCR Injection 13
2.3.6.2 Excavation 14
2.3.6.3 Post Remediation Groundwater Monitoring 15
2.4 Remedial Action Objectives 16
2.5 Groundwater 16
2.5.1 RAOs for Public Health Protection 16
2.5.3 RAOs for Environmental Protection 16
2.6 Soil 17

2.6.1 RAOs for Public Health Protection....17
2.6.2 RAOs for Environmental Protection....17
2.7 Soil Vapor....17
2.7.1 RAOs for Public Health Protection....17
2.8 Remaining Contamination....17
2.8.1 Soil....17
2.8.2 Groundwater....17
2.8.3 Soil Vapor....18
3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN....19
3.1 General....19
3.2 Institutional Controls....19
3.3 Engineering Controls....20
3.1 Cover....20
3.3.2 SSDS Installation....21
4.0 MONITORING AND SAMPLING PLAN....23
4.1 General....23
4.2 Site–wide Inspection....23
4.3 Post-Remediation Media Performance Monitoring and Sampling....24
4.4 Soil Vapor Intrusion Sampling....28
4.5 Monitoring and Sampling Protocol....29
5.0 OPERATIONS AND MAINTENANCE PLAN....30
5.1 General....30
6.0 PERIODIC ASSESSMENTS/EVALUATIONS....32
6.1 Climate Change Vulnerability Assessment....32
6.2 Green Remediation Evaluation....33
6.3 Remedial System Optimization....33
7.0 REPORTING REQUIRMENTS....34
7.1 Site Management Report....34
7.2 Periodic Review Report....34
7.2.1 Certification of Institutional and Engineering Controls....35
7.3 Corrective Measures Work Plan....36
7.4 Remedial Site Optimization Report....37

LIST OF TABLES

Table I	Notifications
Table II	ISCR Long-Term Monitoring and Sampling Requirements and Schedule
Table III	Monitoring Well Construction Details
Table IV	Groundwater Elevation Data
Table V	Soil Confirmation Analytical Results
Table VI	Summary of Groundwater Analytical Results

LIST OF FIGURES

Figure 1	Site Location
Figure 2	Site Plan As-Built Drawing
Figure 3	Groundwater Contour Map
Figure 4	Area 1A Excavation – Confirmation Sample Locations
Figure 5	Area 2 Excavation – Confirmation Sample Locations
Figure 6	Post Construction Monitoring Well Network
Figure 7	Pre-Construction Monitoring Well Network
Figure 8	On-site and Off-site Groundwater Concentrations
Figure 9	Potential Soil Exceedance Areas
Figure 10	Area 1A Excavation Cross Section
Figure 11	Area 2 Excavation Cross Section
Figure 12	Site Wide Existing Cover System Plan

LIST OF APPENDICES

Appendix A	Environmental Easement and the Remedial and Site Management Access License
Appendix B	List of Site Contacts
Appendix C	Well Construction Logs
Appendix D	January 2020 Monitoring Well Decommissioning and Replacement Plan
Appendix E	Terracon SSDS Design Work Plan
Appendix F	Terracon 2020 Annual OM&M Inspection Report
Appendix G	Terracon Operation Monitoring and Maintenance Plan/Health and Safety Plan
Appendix H	Excavation Work Plan
Appendix I	Community Air Monitoring Plan
Appendix J	Quality Assurance Project Plan
Appendix K	Site Management Form
Appendix L	Field Sampling Plan
Appendix M	Health and Safety Plan
Appendix N	Responsibilities of Owner and Remedial Party
Appendix O	Remedial System Optimization Report Outline

LIST OF ACRONYMS

AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BGS	Below Ground Surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
CVOC	Chlorinated Volatile Organic Compound
DCE	Dichloroethene
DER	Division of Environmental Remediation EC Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCE	Tetrachloroethene
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract

SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SDS	Safety Data Sheet
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-Slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan ("SMP"):

Site Identification: Brownfield Cleanup Program Site #C828148, Former AB Dick Facility Site, 811 Jefferson Road, Henrietta, Monroe County, New York 14623

Institutional Controls	1. The property may be used for "Commercial Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(iii) and/or "Industrial Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(iv); and shall not be used for "Unrestricted Use" as defined in 6 NYCRR Part 375-1.8(g)(1)(i), "Residential Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(i) and/or "Restricted-Residential Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(ii). 2. The Environmental Easement in Appendix A provides that: The use of groundwater underlying the Site is prohibited without necessary water quality treatment as determined by the NYSDOH or the Monroe County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the New York State Department of Environmental Conservation (NYSDEC). Groundwater and other environmental or public health monitoring must be performed as defined in this SMP; Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP; All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP; Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;

	Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP; Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
	3. All ECs must be inspected at a frequency and in a manner defined in the SMP.
	4. Access and entry to the Affected Area of the Unither property to the south of the Area 2 ditch and around UCB-MW-3 and MW-76 for the implementation of this SMP is granted to Participant by the Remedial and Site Management Access License made and entered as of May 4, 2016 by and between Unither Manufacturing, LLC, UCB Technologies, Inc. and Participant, a copy of which is provided in Appendix A.
	5. Prior to the construction of new structures on-site, a pre-construction soil vapor intrusion (SVI) evaluation will be performed or an SVI mitigation system will be installed as part of the new structure without first conducting an investigation, as described in Section 4.4 of this SMP.
	6. If changes observed in the long-term groundwater monitoring results warrant collection of additional environmental soil vapor intrusion data off-site on the Affected Area of the Unither property, an SVI evaluation will be performed for Unither Building 3, or an SVI mitigation will be installed in Unither Building 3 without first conducting an SVI evaluation, as described in Section 4.4 of this SMP.
	7. Prior to the construction of new structures located off- site on the Affected Area of the Unither property, SVI mitigation will be installed as an element of the building foundation without first conducting an investigation, and an appropriate SVI evaluation will be completed to confirm the system is operating effectively, in accordance with NYSDOH guidance, as described in Section 4.4 of this SMP.

Engineering Controls	1. Cover System 2. Sub Slab Depressurization System ("SSDS")
Inspections	Frequency
1. Cover Inspection	Annually
2. SSDS Maintenance Inspection and Monitoring	Routine maintenance inspections and monitoring to be conducted quarterly. OM&M personnel will record sub-slab vacuum readings. Vacuum measurements should be greater than 0.02 in. WC (5 pascals). Submit OM&M Checklist quarterly with OM&M report with PRR annually. Review Report after 5-years of operation.
Monitoring	
1. Groundwater Monitoring Program	Semi-annually
Reporting	
2. Periodic Review Report	Annually

Further descriptions of the above requirements are provided in detail in this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan ("SMP") is a required element of the remedial program for the Former AB Dick Facility Site, No. C818148, located at 811 Jefferson Road, Henrietta, Monroe County, New York ("Site"). See Figure 1. The Site is currently in the New York State Brownfield Cleanup Program ("BCP") which is administered by New York State Department of Environmental Conservation ("NYSDEC").

The previous Site owner, 811 Jefferson Rd, LLC entered into a Brownfield Cleanup Agreement ("BCA") on October 5, 2007 with the NYSDEC to remediate the Site in accordance with the BCP. 811 Jefferson Rd, LLC received a Certificate of Completion ("COC") for the completion of the remedial program from NYSDEC dated December 27th, 2017. On November 20th, 2019, the Site was acquired by 811 Jefferson Partners LLC ("811 JP"). The BCA and COC were transferred to 811 JP.

811 JP commenced redevelopment of the Site on February 3, 2020 with the initial site activities for the construction of a 55,000 square feet retail store, asphalt parking lot and preparation of two additional development pads. The Hobby Lobby store opened in September 2020.

After completion of the remedial work, some contamination was left at the Site, which is hereafter referred to as "remaining contamination." Institutional and Engineering Controls ("ICs and ECs") have been incorporated into the Site remedy to prevent exposure to remaining contamination and to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Monroe County Clerk, requires compliance with this SMP and operation and maintenance of the ECs and ICs employed at the Site.

Upon acquisition, 811 JP subdivided the Site into two parcels: Lot RA-1, which covers 11.879 acres, and Lot RA-2, which covers a linear 0.334-acre drainage swale along the south side of the property. RP811JEFF, LLC is the owner of Lot RA-2.

In August 2020, Lot RA-1 was subdivided to form Lot RA-1A (3.875-acres) and RA-1B (8.004-acres). On March 31, 2021, Agree Central, LLC purchased Lot RA-1A from 811 JP. Lot RA-1A is currently developed as a Hobby Lobby retail store and improved parking lot. 811 JP maintains ownership of Lot RA-1B and is responsible for the implementation of this SMP.

A revised instrument survey was conducted for the sub-divided parcels of the Site in August 2020 by Passero Associates, P.C. The instrument survey provided the boundaries and features of Lots RA-1A, RA-1B and RA-2. The instrument survey (Site Plan) is provided as Figure 2. The boundaries of the Site are more fully described in the Site metes and bounds description that is part of the Environmental Easement provided in Appendix A.

This SMP was prepared to provide procedures and manage the ECs, ICs and remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This SMP was prepared with the approval of NYSDEC and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP provides the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA Index # B8-0745-07-06, Site #C828148 for the site, and thereby subject to applicable penalties.

All reports and plans associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix B of this SMP.

This SMP was prepared by Leader Professional Services, on behalf of 811 Jefferson Partners LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation, May 2010), and the requirements provided by NYSDEC. The SMP addresses the procedures and means for implementing the ICs and/or ECs required by the Environmental Easement for the Site.

1.2 Revisions

All revisions to this SMP will be proposed in writing to NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following: a change in media monitoring requirements, upgrades to or shutdown of the remedial system, post-remedial removal of contaminated sediment or soil or other significant changes to the Site conditions. Revisions may also be provided by the NYSDEC. In accordance with the Environmental Easement for the Site, the NYSDEC will provide notice of any approved changes to the SMP and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with DER-10 for the following reasons:

- 60-day advance notice of any proposed changes in site use or ownership that are required under the terms of the BCA, 6 NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.

- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Brownfield Cleanup Agreement and all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table I includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table I: Notifications*

Name	**Contact Information**
Danielle Miles, NYSDEC Project Manager	Division of Environmental Remediation NYSDEC, Region 8 6274 East Avon-Lima Rd Avon, NY 14414 (585) 226-5349 danielle.miles@dec.ny.gov
Andrew Guglielmi, Esq. NYSDEC Attorney	Office of General Counsel NYSDEC 625 Broadway Albany New York 12233-5500
Site Control Section	Division of Environmental Remediation NYSDEC 625 Broadway Albany, NY 12233

Name	Contact Information
Mark Sergott, NYSDOH	New York State Department of Health Bureau of Environmental Exposure Investigation Empire State Plaza Corning Tower Room 1787 Albany, New York 12237 (518)402-7860 beei@health.ny.gov

* Note: Notifications are subject to change and will be updated as necessary. Whenever notice to NYSDEC (other than the annual certification) is required, the party providing such notice shall identify the Controlled Property by referencing the following information: "Former AB Dick Facility Site; County: Monroe County; NYSDEC Site Number: C828148; Brownfield Cleanup Agreement Index : B8-0745-07-06; and Monroe County tax map number 162.09-1-3."

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The Site is located in Henrietta, Monroe County, New York and is identified as Section 162.9 Block 1 and Lot 3 on the Monroe County Tax Map. The Site is an approximately 12.2-acre area and is bounded by Jefferson Road to the north, Unither Manufacturing, LLC (Unither) to the south and west, and Clay Road to the east (see Figure 2 – Site Plan). The boundaries of the Site are more fully described in Appendix A – Environmental Easement. Upon acquisition, 811 JP subdivided the Site into two parcels: Lot RA-1, which covers 11.879 acres, and Lot RA-2, which covers a linear 0.334-acre drainage swale along the south side of the property. RP811JEFF, LLC is the owner of Lot RA-2.

In August 2020, Lot RA-1 was subdivided to form Lot RA-1A (3.875-acres) and RA-1B (8.004-acres). On March 31, 2021, Agree Central, LLC purchased Lot RA-1A from 811 JP. Lot RA-1A is currently developed as a Hobby Lobby retail store and improved parking lot. 811 JP maintains ownership of Lot RA-1B and is responsible for the implementation of this SMP. The owners of the Site parcels at the time of issuance of this SMP is: 811 Jefferson Partners, LLC and as of March 31, 2021, Agree Central, LLC owns Lot RA-1A.

2.2 Physical Setting

2.2.1 Land Use

The Site consisted of an undeveloped lot throughout its main remediation phase until Imburgia Brothers Holdings, a division of Team FSI General Contractors ("FSI"), began development of the Minotti Crossings Plaza featuring retail space and multiple pad sites within the 12.2-acre Site in February 2020. The site is currently occupied by a new 55,000 square feet retail store, paved parking surface and two improved pad sites pending development. The Site is zoned industrial (allowing for use of the property as commercial and/or industrial) and is referred to as Minotti Crossings Plaza.

The properties adjoining the Site and, in the neighborhood, surrounding the Site primarily include commercial properties. The properties immediately south and west of the Site is a manufacturing property, Unither Manufacturing, LLC ("Unither"); the properties immediately north and east of the Site are commercial properties.

2.2.2 Geology

The Site is relatively flat and slopes gently down to the west. Regional mapping of overburden geology indicates that the Site is underlain by glacial till, with lacustrine sediments. The Site is located on a topographic high within a till plain feature located at or just above the margins of a former glacial lakebed that deepen gradually to the west and south. Site soils consist of several feet of fill material followed by red-brown upper glacial till to a depth of approximately 17 ft bgs. Below the upper glacial till are gray- brown silts and clay glacial till down to approximately 57 ft bgs. A clayey unit with some silt is present from approximately 57 ft bgs to approximately 64 ft bgs. The thickness of the overburden soils overlying competent shale bedrock beneath the Site is estimated to extend to approximately 70 to 76 ft bgs**.**

The groundwater-bearing units beneath the Site consist of interbedded silty sand, silts and clays. The vadose zone extends to approximately 5 feet bgs and consists of clayey silt.

2.2.3 Hydrogeology

Groundwater generally occurs within 1 foot to 5 feet bgs. The Site's topographic high is a drainage divide between the Red Creek/Genesee River watershed on the west and the Allen Creek/Irondequoit Creek watershed on the east. The position on a drainage divide is reflected in the water table elevations measured at the Site, which indicate that shallow groundwater flows radially toward the north, east, south and west from water table high points in the center of the Site. However, Site topography and engineered surface water drainage features combine to direct stormwater runoff from all but a small portion of the northeast corner of the Site to the municipal sewer system.

A groundwater contour map is shown in Figure 3. Groundwater elevation data is provided in Table IV. Groundwater monitoring well construction logs are provided in Appendix C.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

2.3.1 Past Use and Ownership

Between 1955 and 2005 the Site was used to manufacture photocopy imaging equipment. Operators included the AB Dick Company, Itek Corporation, Photostat Corporation and Silver Acquisition Corp, Inc. (also known as ABDI International, Inc.). Past operations that appear to have led to Site contamination include chemical stripping, material storage including an underground storage tank, and discharges to drainage ditches.

In 1971, AB Dick notified the Town of Henrietta that industrial wastewater that should have gone to the sanitary sewer was discharged to a storm sewer catch basin.

In 1998, contaminated soil was encountered during removal of an underground concrete tank that was connected to a floor drain in the building's hazardous material storage room. The former tank was located adjacent to the south wall of the hazardous materials storage room addition at the southwest corner of the facility building. A spill notification was submitted to the Department. AB Dick completed a follow-up subsurface investigation in 1998 and determined that residual subsurface impacts from the release at the tank appeared to be limited to the top two feet of soil and in the immediate area of the tank excavation. Impacted soils were excavated, and the spill was closed.

2.3.2 Site Features

Previously, the main Site features included an asphalt parking lot and an approximately 167,200 sq. ft. slab on grade manufacturing building that was constructed in 1955-1956 with additions in 1968 and 1979. The building was demolished, and all waste and demolition debris were removed in early 2007. A portion of the former building slab and a contiguous portion of the asphalt parking lot pavement, which together cover about 3 acres in the southwest corner of the Site, were left in place. An approximately 0.3-acre strip of land, purchased by the Participant in 2017, contains a stormwater drainage ditch which the former AB Dick Company discharged contaminants. The remainder of the Site was vacant until FSI began construction of the Minotti Crossings Plaza with a retail store and multiple commercial pad sites on the 12.2-acre Site in February 2020. In September 2020, a 55,000-square-foot retail store began operations. Two pad sites have been prepared for future development at the Site.

2.3.3 Remedial Investigation

Stantec Consulting Services Inc. ("Stantec") conducted a Remedial Investigation ("RI") in 2008 and a Supplemental RI in 2010 to characterize the nature and extent of the contamination. Both the Revised RI Report (Stantec, October 2010) and the Supplemental RI Report (Stantec, October 2010) that delineated the on-Site and off-Site environmental conditions were approved by the Department in November 2010. The RI and Supplemental RI identified impacts to soil and groundwater from a number of constituents related to former activities at the Site. As summarized in the NYSDEC's Decision Document (Decision Document; NYSDEC, 2016) for the Site, based on the results of the RI, the following were identified as contaminants of concern at this Site:

- silver
- cadmium
- copper
- zinc
- benzo(b)fluoranthene
- benzo(a)pyrene
- benzo[k]fluoranthene
- dibenz[a,h]anthracene
- indeno(1,2,3-CD)pyrene
- PCB aroclor 1254
- xylene (mixed)
- toluene
- trichloroethene (TCE)
- tetrachloroethene (PCE)
- ethylbenzene
- 1,1 dichloroethene
- vinyl chloride

The two primary areas of concern were identified at the Site as Area 1 and Area 2. Area 1 is located near the southwest corner of the former building in the vicinity of industrial cleaning operations, storage areas including a former AB Dick underground tank, and sub- floor piping. Area 2 is the drainage ditch located at the southern boundary of the Site. The ditch collects stormwater runoff from the central, south and west portions of the Site. Roof drains from the former building were also piped to this ditch. The primary contaminants of concern for Area 1 include the non-chlorinated VOCs xylene, and ethylbenzene and the chlorinated VOCs trichloroethene (TCE) and tetrachloroethene (PCE). The primary contaminants of concern for Area 2 include chlorinated VOCs, several poly-aromatic hydrocarbons (PAHs) (benzo(b)fluoranthene, benzo(a)pyrene, benzo[k]fluoranthene, dibenz[a,h]anthracene and indeno(1,2,3-CD)pyrene), PCB aroclor 1254, and several metals (cadmium, copper, silver and zinc).

Area 1 Soil – Non-chlorinated VOCs were found in shallow soil while the chlorinated VOCs were found in both the shallow and deeper soils. The concentrations of xylene found in Area 1 (up to approximately 1,100 ppm) significantly exceeded the soil cleanup objective (SCO) for unrestricted use (0.26 ppm). Concentrations of toluene found on in Area 1 (up to approximately 5 ppm) moderately exceeded the SCO for unrestricted use (0.7 ppm). Concentrations of ethylbenzene found in Area 1 (up to approximately 230 ppm) significantly exceeded the SCO for unrestricted use (1 ppm). Concentrations of TCE found in Area 1 (up to 1,400 ppm) significantly exceeded the SCO for unrestricted use (0.47 ppm). Concentrations of PCE found in Area 1 (up to 16 ppm) moderately exceeded the SCO for unrestricted use (1.3 ppm).

Area 1 Groundwater – Chlorinated and non-chlorinated VOCs were found in groundwater significantly exceeding groundwater standards (typically 5 ppb), with a maximum total non-chlorinated VOC concentration of about 5,300 ppb and a maximum total chlorinated VOC concentration of 669,000 ppb. Chlorinated VOCs were estimated to have migrated about 300 feet downgradient to the west to the area of the Unither property around MW-76 and UCB-MW-3 near the property boundary. The non-chlorinated solvents do not appear to have migrated significantly beyond the source area. Vertically, significant groundwater impacts were present to depths of 77 feet below ground. Chlorinated VOCs were not detected in an off-site downgradient well located approximately 50-ft from the Site boundary.

Area 2 Soil –PCBs, PAHs and metals were found in shallow soil while chlorinated VOCs were found in both the shallow and deeper soils. Concentrations of TCE found in Area 2 (up to 6,900 ppm) significantly exceeded the SCO for unrestricted use (0.47 ppm). Concentrations of PCE found in Area 2 (up to 28 ppm) moderately exceeded the SCO for unrestricted use (1.3 ppm). Concentrations of PCBs found in Area 2 (up to approximately 7 ppm) moderately exceeded the SCO for unrestricted use (0.1 ppm). Concentrations of cadmium found in Area 2 (up to approximately 55 ppm) moderately exceeded the SCO for unrestricted use (2.5 ppm). Concentrations of copper found in Area 2 (up to approximately 803 ppm) moderately exceeded the SCO for unrestricted use (50 ppm). Concentrations of silver found in Area 2 (up to approximately 91 ppm) moderately exceeded the SCO for unrestricted use (2 ppm). Concentrations of several PAHs in Area 2 exceeded the SCO for unrestricted use (typically 1 ppm) with a maximum total PAH concentration of approximately 369 ppm.

Area 2 Storm Water – The drainage ditch does not contain continuously flowing water. Rather, there are areas where storm water pools between precipitation events. Surface water samples from the drainage ditch indicated the potential presence of several metals exceeding Class D surface water standards. Concentrations of cadmium (up to approximately 18 ppb) moderately exceeded the Class D surface water standard (9.2 ppb). Concentrations of copper (up to approximately 354 ppb) moderately exceeded the Class D surface water standard (28 ppb). Concentrations of silver (up to approximately 22 ppb) moderately exceeded the Class D surface water standard (16 ppb). Concentrations of zinc (up to approximately 1,970 ppb) moderately exceeded the Class D surface water standard (160 ppb). Results from a subsequent surface water sampling event for these metals, however, did not exceed any of the surface water standards.

Area 2 Groundwater – Chlorinated VOCs associated with Area 2 were also found in groundwater significantly exceeding groundwater standards (typically 5 ppb), with a maximum total chlorinated VOC concentration of 890,000 ppb. Chlorinated VOCs have migrated from the drainage ditch about 140 feet down-gradient to the southwest. The drainage ditch is located off-Site with additional impacted groundwater located on a portion of the Unither property bounded on the west by the eastern face of Unither Building 3, on the north by the common boundary line between the Site and the Unither property, on the east by Clay Road, and on the south by a line one hundred and ninety feet (190') to the south of and paralleling the current common boundary line ("Affected Area"). Vertically, slight groundwater impacts were present to depths of 74 feet below ground.

Soil Vapor – The RI included an assessment of the potential for vapor intrusion by VOC-containing soil vapor. That vapor intrusion assessment did not indicate a significant potential for such conditions to exist. This conclusion was confirmed by indoor air sampling conducted by the Participant at the nearest building located on the Unither property, i.e., Unither Building 3, based on an Indoor and Outdoor Air Sampling Program Work Plan (Haley & Aldrich, 2015) conditionally approved by the NYSDEC in conjunction with the NYS Department of Health the letter dated 4 March 2015.

2.3.4 Soil Removal IRM

Prior to the issuance of the Decision Document, the petroleum containing soils were remediated to the satisfaction of the NYSDEC in an Interim Remedial Measure (IRM- Haley & Aldrich, 2013). In April 2013, approximately 29 tons of soil and asphalt debris were excavated from a small area where soil was stained and had a petroleum odor. The Area 3 excavation area was located in the eastern portion of the Site and about midway north to south. Excavated material consisted of fill soils along with asphalt debris and a distinct buried asphalt layer likely the result of prior Site development and various building/infrastructure modifications. Confirmation samples from the sides and bottom of the excavation met Unrestricted Use SCOs. The excavated material was properly disposed of off-site and the excavation was backfilled with clean fill.

In addition, an 8-inch cast iron pipe was uncovered during the excavation. Historical drawings indicate that this pipe may have been associated with roof drains from the former AB Dick manufacturing building. Liquid in the pipe was tested and was found to be not impacted. The pipe ends were plugged with bentonite. Three test pits were completed along the pipe to further assess pipe bedding soil conditions. Soil samples collected from the test pits met the Unrestricted Use SCOs.

2.3.5 Remedial Alternatives Analysis

An Alternatives Analysis Report (AAR; H&A, 2013) was prepared to document the remedial action alternatives analysis process and the Site management planning necessary to attain and maintain conditions protective of public health and the environment for the current and reasonably anticipated commercial/industrial use of the Site. The remedy selected to address the contaminants of concern in and downgradient of Area 1 and Area 2 at the Site is documented in the NYSDEC Decision Document.

The selected remedy for the Site was Track 4: restricted commercial use with site-specific SCOs. The selected remedy included excavation, off-site disposal of source area soils, injection of amendments to treat the residual source area and groundwater impacts and maintenance of a cover barrier across the Site.

2.3.6 Remedial Actions

Remedial actions were implemented during the spring of 2017 in accordance with the Remedial Action Work Plan (RAWP; H&A, 2017) and are reported in the Final Engineering Report (FER; H&A, 2017).

2.3.6.1 ISCR Injection

Remedial injections of in-situ chemical reduction ("ISCR") amendment were performed at the Site and the Affected Area of the Unither property to the south of Area 2 between March 27 and May 26, 2017. The materials injected included ISCR reductant zero valent iron ("ZVI"), emulsified vegetable oil (EVO), and emulsified zero valet iron ("EZVI"). Injections began at on-site Area 1B. More than the amount of EVO estimated in the RAWP was delivered to the Area 1B target zone. ZVI and EVO were injected into Area 1A in the amount estimated in the RAWP. The amount of EVO estimated in the RAWP was delivered to the Area 1C target zone.

Off-site in the vicinity of MW-54 in the Affected Area on the Unither property, the amount of EVO and ZVI estimated in the RAWP was delivered to the target zone. Prior to the start of injections in the Unither access road, TCE dense non-aqueous phase liquid ("DNAPL") was discovered in monitoring well MW-38 which is located on the south side of the on-site Area 2 ditch directly across from the outlet of the stormwater pipe from the former AB Dick facility. Because of the presence of DNAPL, a more robust ISCR designed for DNAPL destruction, EZVI, was used. In addition, the planned line of 5 injection points along the south edge of the access road was supplemented with a second line of 7 injection points near the middle of the road (and closer to the location of the DNAPL detection).

Injections were halted after observations of surfacing of EZVI occurred at previously closed injection points in the road, through the annular space of active injection points, in the Area 2 ditch through various points on the south slope, and around the road boxes of the monitoring wells on the south side of the ditch, and MW-38 was inadvertently filled with EZVI via injections located 10 to 15 feet away. In total, 1,991 gallons of the more robust EZVI was injected. Approximately 796 gallons of vegetable oil and 1,792 pounds of iron were delivered through the application of EZVI. The amounts of vegetable oil and iron were calculated from the percentages of each in the EZVI product. According to the safety data sheet (SDS), the technical specification sheet, and the vendor, EZVI is approximately 40% vegetable oil, 10% iron and 50% emulsifiers and water by volume.

In the on-site Area 2 ditch, EZVI was also used due to its proximity to the DNAPL observed in MW-38 in lieu of the planned 995 gallons of EVO and 1,950 pounds of ZVI estimated in the RAWP. A line of 5 planned injection points along the north edge of the Unither access road as originally planned was supplemented with 3 additional points placed between the original injection points to reduce the radius of influence required for better coverage of the target zone. In addition, a second line of 4 points in the middle of the ditch as originally planned was supplemented with an additional point on the north side of the ditch. Injections continued until surfacing of EZVI was observed seeping out of small cracks within the access road, at previous injection points on the south side of the ditch and inside of the road box of MW-62 (at elevations up to 7 feet above the bottom of the ditch). In total, 1,219 gallons of EZVI, which is approximately 488 gallons of EVO and 1,098 pounds of ZVI, were injected through the thirteen injection points which was somewhat less than the amount of oil and iron planned in the RAWP.

The ISCR injection program using EZVI was expanded across the entire Unither Access Road / Area 2 ditch in recognition that it was a single target treatment zone. Therefore, emphasis was placed on injecting in the two lines of points in the Unither Access Road and the southern line of Area 2 points (north edge of the Unither Access Road) to maximize delivery of EZVI to the target zone containing the greatest concentrations of contaminants of concern.

2.3.6.2 Excavation

In Area 1, impacted soils were excavated to up to 10 ft bgs, and 367.75 tons of soils co-mingled with concrete was removed and disposed at approved disposal facilities. Excavation confirmation sample results were below Restricted Use Commercial SCOs. Confirmation sample results are summarized in Table V and locations are shown on Figure 4. A demarcation layer was placed at 12 inches bgs because the area was finished with a soil/gravel cover. The excavation was backfilled with clean imported gravel and on-site soil with concentrations below Restricted Use Commercial SCOs and approved for reuse by NYSDEC. The surface was restored to grade and finished with clean imported gravel.

In Area 2, impacted soils were excavated within the storm water drainage ditch from between 1 to 5 ft bgs, and 828.96 tons of soils was removed and disposed off-site at approved disposal facilities. Excavation confirmation sample results were below Restricted Use Commercial SCOs. Confirmation sample results are summarized in Table V and locations are shown on Figure 5. A demarcation layer was placed 12 inches bgs in Area 2B because the area was finished with a soil cover, and the past presence of DNAPL in the groundwater quality sample from MW-38 indicates that TCE may still be present at depth. In accordance with the RAWP, an ISCR amendment was mixed into the bottom two to three feet of the excavation prior to backfilling the excavation with clean imported gravel. The surface was restored with clean imported topsoil and seeded.

Due to the onset of cold weather conditions after placement of the demarcation layer and replacement of 12 inches of clean backfill, sufficient vegetation stabilization in Area 2B may not be reached until Spring 2018. Until sufficient vegetation for erosion and sedimentation control can be achieved, inspections of the cover soil will be performed monthly or when a rainfall event greater than 0.5 inches has occurred. Repair of the cover soil layer will be implemented if erosion damage is noted during inspection. Once sufficient vegetation stabilization in Area 2B has been achieved, the NYSDEC will be notified and termination of these inspections will be requested.

2.3.6.3 Post Remediation Groundwater Monitoring

A performance groundwater monitoring program was implemented in accordance with the RAWP to monitor the effectiveness of the ISCR amendment injections and the remedial excavations. Before the implementation of the ISCR injections and excavation, a pre-remediation groundwater sampling event was completed in March 2017 to compile baseline groundwater concentrations from the performance groundwater monitoring well network established in the RAWP (see Figure 6). The monitoring network included wells within the Area 1A and Area 2 source areas, in Areas 1B and 1C, and in areas upgradient, downgradient, and cross-gradient of Area 1 and Area 2.

Post-remediation groundwater sampling events were conducted by H&A in July, August and September 2017. As required by the RAWP, analyses included chlorinated volatile organic compounds (CVOCs), such as cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), PCE, TCE, vinyl chloride, and geochemical parameters, total organic carbon (TOC), sulfate, total and dissolved iron, ethene and chloride. Nineteen wells were sampled including five replacement wells (MW-1IR, MW-2R, MW-8R, MW-22R, and MW-27R) which were replaced between the March baseline and the first post-remedial sampling event due to well integrity, well construction or well placement within excavation limits.

Performance monitoring wells were: MW-1R, MW-2R, MW-5DR, MW-8R, MW-22R, MW-27R, MW-38, MW-54, MW-55, MW-58, MW-62, MW-63, MW-69, MW-70, MW-74, MW-76, MW-77, MW-78, and UCB-MW-03. The performance groundwater monitoring network and a posting map summarizing detections of CVOCs are shown on Figure 7. Performance groundwater sampling results are summarized on Table VI.

Groundwater sampling results from the performance wells showed evidence of reductive dechlorination following ISCR injection activities in Areas 1, Area 2 and the affected Area on the Unither property. The data provided multiple lines of evidence that the quality of the groundwater in and around the performance wells was being positively affected by the injections, i.e., that reductive dechlorination was accelerated and was progressing to completion. This was shown by a decrease in TCE concentrations and/or an increase in concentrations of breakdown products cis-1,2-DCE and vinyl chloride. The presence of ethene also indicated reductive dechlorination was progressing to completion; ethene degrades quickly and would not likely be detected if it was not being constantly produced. Results from sentinel wells located outside and downgradient of the ISCR injection areas indicated stable CVOC concentrations.

In February 2020, Leader Professional Services under a NYSDEC approved Monitoring Well Decommissioning and Replacement Plan (See Appendix D) decommissioned eleven (11) monitoring wells at the Site. The wells were decommissioned in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures". The decommissioned wells were: MW-2R, MW-1IR, MW-8R, MW-28, MW-33, MW-3I, MW-4I, MW-6I, MW-69, MW-70, MW-74 and an unidentified vapor monitoring point. Two (2) of monitoring wells (MW-1IR and MW-33) were replaced outside the finished Hobby Lobby building footprint, but at an angle to allow access to groundwater beneath the Hobby Lobby store. MW-69 and MW-70 were also replaced due to structural damage during construction and renamed MW-69R and MW-70R.

Leader performed semi-annual sampling of eight (8) on-Site monitoring wells and six (6) off-site monitoring wells on September 2020 and January 2021. The results of these sampling events were compared to sample results from the same wells by H&A in October 2019.

The analytical comparison of the three (3) sampling events demonstrated continued improvement in most of the monitoring wells, but in general some contaminants continue to exceed NYSDEC groundwater quality criteria. The sampling of monitoring wells MW-38 and MW-62 in remediation source Area 2 was hampered by the continued presence of EZVI inoculum. Further discussion with the NYSDEC to effectively monitor the status of groundwater within Area 2 is necessary to determine the future groundwater status within the treated area. MW-54 and MW-58 could not be accessed during the January 2021 sampling session due to the presence of large snow piles. Increased concentrations of chlorinated compounds were reported in the 2020 analysis from MW-54. Leader prepared a Corrective Measures Report ("CMR"), which summarizes the three sampling events from October 2019, September 2020, and January 2021.

Future bi-annual sampling to be conducted in July and October 2021 will be used to better quantify the environmental status of groundwater from the on-Site and off0Site monitoring wells.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated October 2017 are as follows:

2.5 Groundwater

2.5.1 RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

2.5.3 RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.

- Remove the source of ground or surface water contamination

2.6 Soil

2.6.1 RAOs for Public Health Protection

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

2.6.2 RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

2.7 Soil Vapor

2.7.1 RAOs for Public Health Protection

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

2.8 Remaining Contamination

2.8.1 Soil

Refer to Section 2.3 for a summary of the remedial activities preformed to remove source area impacted soils and reduce the contaminant source where removal was not feasible. Figure 8 summarizes areas on-site below the cover that potentially exceed the Commercial Use SCOs at the Site, and off-site locations within the Affected Area on the Unither property to the south of the Area 2 ditch where contaminants of concern potentially exceed the Unrestricted Use SCOs after completion of remedial action. Remaining contamination in Area 1A and Area 2 are presented in Figure 9 and Figure 10.

2.8.2 Groundwater

Post-remediation groundwater performance monitoring results are discussed in Section 2.3.6.3. Leader performed semi-annual sampling of eight (8) on-Site monitoring wells and six (6) off-site monitoring wells in September 2020 and January 2021.

As of the last groundwater monitoring event completed in January 2021 TCE concentrations in groundwater within Area 1 were below 5 ug/L from MW-1IRR and MW-33R. However, increased concentrations of Acetone (2,800 ug/l) and 2-Butanone (3,900 ug/l) were detected in the upper water column of MW-33R. Area 2 TCE concentrations were 7.1 ug/L at MW-5DR and below NYSDEC groundwater values at MW-63. MW-38 and MW-62 were not sampled due to the presence of EZVI inoculum in these wells. TCE and its degradation compounds were either non-detect or below NYSDEC groundwater values in off-site downgradient wells MW-76 and UCB-MW3. Down gradient wells MW-54 and MW-55 located at the Unither loading dock driveway could not be accessed during the January 2021 sampling event to to snow pile cover. MW-55 however was sampled and no VOCs were detected. Based on the September 2020 TCE concentration of 19,000 ug/l in MW-54, it is possible TCE and its degradation compounds remain present above NYSDEC groundwater values from this well.

2.8.3 Soil Vapor

The RI program included an assessment of the potential for vapor intrusion by VOC-containing soil vapor. The vapor intrusion assessment did not reportedly indicate a significant potential for such conditions to exist. This conclusion was confirmed by indoor air sampling conducted by the Participant at the nearest building located on the Unither property, (i.e., Unither Building 3), based on an Indoor and Outdoor Air Sampling Program Work Plan (Stantec 2010/Haley & Aldrich, 2015) Although the RI program did not indicate a significant potential for vapor intrusion to exist, a Sub-slab Depressurization System (SSDS) was installed by Terracon Consulting Engineers and Scientists ("Terracon") prior to the construction of the Hobby Lobby building (See Section 3.3.2, SSDS Installation). The potential for soil vapor will be evaluated for any future proposed building(s) to be constructed on the Site or on the Affected Area of the Unither property to the south of the Area 2 ditch in the area impacted by contaminants of concern.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the Site, Institutional Controls ("ICs") and Engineering Controls ("ECs") are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the Site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYDEC project manager. The plan provides:

- A description of all IC/ECs on the Site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix H) and the ISCR/Excavation Performance Monitoring Plan (as provided in Section 4.0), for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the Site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the Site to commercial and/or industrial uses only. Adherence to these ICs on the Site is required by the Environmental Easement and will be implemented under this SMP. Access and entry to the Affected Area of the Unither property to the south of the Area 2 ditch and around UCB MW-3 and MW- 76 for the implementation of this SMP is granted to Participant by the Remedial and Site Management Access License made and entered as of May 4, 2016 by and between Unither Manufacturing, LLC, UCB Technologies, Inc. and Participant, a copy of which is provided in Appendix A. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

- The property may be used for: commercial and/or industrial use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.

- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Monroe County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Operation, Monitoring, and Maintenance (OM&M) and reporting of the SSDS system installation underlying the Hobby Lobby store, in addition to any future building development at the Site shall be defined in this SMP;
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement; and
- The Site shall not be used for "Unrestricted Use" as defined in 6 NYCRR Part 375-1.8(g)(1)(i), "Residential Use" as defined in 6 NYCRR Part 375- 1.8(g)(2)(i) and/or "Restricted-Residential Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(ii)

3.3 Engineering Controls

3.3.1 Cover

Exposure to remaining contamination at the Site is prevented by a cover system. This cover system is comprised of a minimum of 12 inches of soil, asphalt pavement and building slabs. A Site cover, may consist either of structures such as buildings, pavement, sidewalks comprising the Site development or a soil cover in areas where the upper one foot of exposed surface soil exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Figure 11 presents the site wide cover system.

The Excavation Work Plan (EWP) provided in Appendix H outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP.

The EWP is also relevant and appropriate for application to any excavation that will disturb the saturated subsurface soils on the Unither property south of the Area 2 ditch. The incremental cost and expense of any subsurface work on the Affected Area of the Unither property south of the Area 2 ditch in accordance with the EWP and as required by the Department, including but not limited to sampling, off-site soil/fill disposal, groundwater containerization and disposal, etc., shall be at the cost and expense of the Site's Owner and/or Remedial Party, as those terms are defined in Appendix N, entitled "RESPONSIBILITIES of OWNER and REMEDIAL PARTY (collectively, the "Site Owner").

Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendices I and M.

3.3.2 SSDS Installation

Although the RI program did not indicate a significant potential for vapor intrusion to exist at the Site, the potential for soil vapor intrusion was considered for any building to be constructed on the Site or on the Affected Area of the Unither property to the south of the Area 2 ditch in the area impacted by the plume of contaminants of concern. A soil vapor mitigation system (i.e. sub-slab depressurization system ("SSDS") was installed as a preventative measure as part of the retail store building construction. The SSDS underlying the retail store building consists of the following materials and components:

- 8-inches of aggregate layer beneath the concrete slab;
- 4-inch perforated PVC vapor collection piping manifold and associated fittings;
- 20-Mil membrane layer over the perforated piping;
- Vertical vent riser piping to the roof;
- Electrical service to three (3) roof mounted vacuum blowers and control system;
- Installation of a blower control system to test for operation effectiveness;
- Installation of a blower control panel with magnehelic gauges and visual and audible alarm system and test operation.

A NYSDEC-approved SSDS Design Work Plan with as-built design drawings prepared by Terracon Consultants is provided in Appendix E.

In May 2020, Terracon provided periodic observations of the SSDS installation to verify conformance with their design drawings and details. On September 21, 2020 Terracon performed the initial inspection and monitoring service of the SSDS and collected pressure readings at the three (3) monitoring ports. A second periodic inspection and monitoring event was conducted by Terracon on March 17, 2021.

SSD systems are normally designed to achieve a pressure differential of at least 0.02 inches of water to provide an adequate safety factor. The results of the Hobby Lobby store monitoring appeared to have achieved this goal with readings ranging from 0.19 to 0.43 inches of water at startup and 0.02 to 0.32 inches of water during the March 2021 monitoring event. The SSDS is designed to operate continuously and is currently operating as designed. Terracon summarized the initial September 21, 2020 and March 17, 2021 start-up and performance monitoring events in an "Annual Summary of Operations and Maintenance Report". A copy of the report is provided in Appendix F.

Terracon prepared an Operation, Monitoring, and Maintenance (OM&M) plan (Appendix G), which includes a Health and Safety Plan (HASP) for the Hobby Lobby building pad. The Plan includes the following:

- SSD system installation details (PE certified as-builts);
- an organization chart for the OM&M of the SSD system;
- an overview of the SSD system with drawings and manufacturer specifications;
- inspection procedures and schedule;
- monitoring / sampling procedures and schedule, if required; and
- data collection documentation and reporting requirements.

With respect to any building to be constructed on the Affected Area of the Unither property south of the Area 2 ditch, a SSDS will be installed in such building(s), and an appropriate SVI evaluation will be completed to confirm the system is operating effectively, in accordance with NYSDOH guidance. The incremental cost and expense of installing, testing, monitoring, operating and maintaining a SSDS in such new building shall be at the cost and expense of Site Owner. Any SSDS installed would become an Engineering Control subject to development of an NYSDEC-approved operation and maintenance plan for incorporation into this Site Management Plan, assessment for conformance to the operation and maintenance plan and certification included in the Periodic Review Report for the Site. The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH project managers. If monitoring data indicates that the SSD system may no longer be required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH project managers.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of Site management for the Site are included in the Quality Assurance Project Plan provided in Appendix J.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, soil vapor, indoor air, outdoor ambient air, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil and the Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006, as amended by the Soil Vapor/Indoor Air Matrices A, B and C dated May 2017, (collectively, the "SVI Guidance") of the New York State Department of Health (NYSDOH); and
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site–wide Inspection

Site-wide inspections will be performed annually or at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix K – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and

- Confirm that Site records are up to date.

Inspections of all remedial components installed at the Site will be conducted. A comprehensive Site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed (i.e. SSD and cover system);
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria.

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the Site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Post-Remediation Media Performance Monitoring and Sampling

Groundwater quality monitoring will be performed semi-annually to assess the performance of the ISCR/Excavation remedy on the Site and the Affected Area. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells were installed to monitor upgradient and downgradient groundwater conditions at the Site. The network of on-site and off-site wells has been designed based on the following criteria: pre-remedial extent of contaminants of concern; location of injection points and amendments injected; limits of remedial excavation; and cleanup goals. The well locations currently in use following Site construction are shown on Figure 6.

Groundwater monitoring will include DNAPL monitoring to the extent feasible of MW-5DR, MW-38, MW-54, MW-62, MW-63, and MW-77. Groundwater monitoring will continue on the Affected Area of the Unither property to the south of the Area 2 ditch and around MW-3 and MW-76 at the frequency and sampling requirements approved by the NYSDEC. The monitoring will continue until long-term trends indicate asymptotic level(s) at low concentrations satisfactory to NYSDEC.

Sampling locations, required analytical parameters and schedule are provided in Table II Post – ISCR/Excavation Remedy Performance Sampling Requirements and Schedule below. Groundwater elevations will be recorded during each groundwater sampling event. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The purpose of the post remediation groundwater monitoring is to assess the performance and effectiveness of the remedy. The performance and effectiveness of the remedy shall be evaluated at three years after implementation of the injection (the estimated longevity of the ISCR remedial amendments injected is three years) and annually thereafter. A minimum of three years of prior groundwater monitoring data will be used to evaluate trends in the remaining COC concentrations. No further remedial action onthe Site would be warranted if the long-term trend of the remaining COC concentrations is stable at a level acceptable to the NYSDEC, decreasing, or indicative of accelerated contaminant reduction and COC migration offsite is not increasing to the satisfaction of the NYSDEC. If the long-term trend of the remaining COC concentrations on-site is not stable, decreasing, or indicative of accelerated contaminant reduction, and COC migration off-site is increasing, additional remedial measures including, but not necessarily limited to, additional injection(s) of remedial amendments in a specific area(s) will be evaluated.

Off-site in the Affected Area of the Unither property to the south of the Area 2 ditch, no further remedial action would be warranted if the long-term trend of the remaining COC concentrations is decreasing to the satisfaction of NYSDEC. If the long-term trend of the remaining COC concentrations in the Affected Area of the Unither property to the south of the Area 2 ditch is not decreasing, additional injection(s) of remedial amendments in a specific area(s) will be evaluated and (provided further reduction of contaminant concentrations is feasible) would be implemented. If asymptotic contaminant reduction trends are realized at a concentration level(s) satisfactory to NYSDEC, no further injection will be implemented.

Table II – Long-Term Monitoring and Sampling Requirements and Schedule

	Wells Required to Assess Performance of ISCR and Excavation Remedy	Additional Wells Required per Unither Access Agreement	
Monitoring Wells Included	• MW-1IRR • MW-33R • MW-38 • MW-62 • MW-63 • MW-69R • MW-70R	• MW-5DR • MW-54 • MW-55 • MW-58 • MW-76 • MW-77 • UCB-MW-3	
Field Parameters	• ORP • DO • pH • Temperature • Specific Conductivity • DNAPL • Water Levels	• ORP • DO • pH • Temperature • Specific Conductivity • DNAPL • Water Levels	**Semi-Annually**
Laboratory Analysis	• VOCs (8260B, full target compound list) • Total and dissolved iron (6010) • Sulfate (SM 4500 CL-E) • TOC (SM5310C) • Ethene • Chloride	VOCs (8260B, full target compound list)	

Detailed sample collection and analytical procedures and protocols are provided in Appendix L – Field Sampling Plan and Appendix J – Quality Assurance Project Plan. Figure 6 shows the location of the post construction monitoring well network.

Table III summarizes the wells identification number, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, eight (8) on-site wells, and six (6) off-site/perimeter wells will be sampled to evaluate the effectiveness of the remedial injection. *Note, Wells in "Bold" font have been decommissioned.

The following wells were presumably destroyed during construction activity: MW-1DR, MW-22, MW-25, MW-27R, MW-35 and MW-68. The decommissioned wells and wells destroyed during construction are shown in Figure 7.

Table III – Monitoring Well Construction Details

Monitoring Well ID	Well Location/ Purpose	Coordinates (longitude/latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-1IRR (Replaced **MW-1IR**)	On-site/Former Source Area	1125702.412 N 1405701.112 E	2	554.10	555.28	492.10	472.10
MW-2R	On-site/Former Source Area	1125659.487 N 1405730.267	2	544.60	554.85	547.10	537.10
MW-3I	On-site/Down Gradient	1125576.213 N 1405741.363 E	2	553.65	554.174	529.65	519.65
MW-4I	On-site/Down Gradient	1125679.344 N 1405632.498 E	2	553.26	553.79	529.26	519.26
MW-5DR	On-site/ Perimeter	1125432.6 N 1405790.7 E	2	553.8	553.4	490.3	480.3
MW-61	On-site/Up Gradient	1125770.08 N 1405763.03 E	2	554.79	555.34	530.59	520.50
MW-8R	On-site/Up Gradient	1125683.4 N 1405799.7 E	2	555.28	555.34	554.28	538.28
MW-28	On-site/Down Gradient	1125593.249 N 1405738.296 E	2	554.02	554.12	548.02	543.02
MW-33R (Replaced **MW-33**)	On-Site/ Down Gradient	1125696.443 N 1405614.459 E	2	554.10	553.36	519.10	484.10
MW-38	On-site/ Perimeter	1125432.848 N 1405812.808 E	2	553.51	553.98	541.51	531.51
MW-54	Off-site/ Down Gradient	1125375.703 N 1405734.423 E	2	545.02	545.46	543.02	533.02
MW-55	Off-site/ Down Gradient	1125378.421 N 1405622.897 E	2	543.74	544.24	541.74	531.74
MW-62	On-site/ Perimeter	1125433.4 N 1405852.8 E	2	553.89	554.52	545.89	539.82
MW-63	On-site/ Perimeter	1125430.37 N 1405732.48 E	2	552.91	553.33	539.91	529.91
MW-69R (Replaced **MW-69**)	On-site	1125465.57 N 1405607.79 E	2	551.66	552.05	548.66	538.66
MW-70R (Replaced **MW-70**)	On-site	1125465.5 N 1405441.27 E	2	548.99	549.26	545.79	535.79
MW-74	On-site	1125617.936 N 1405495.739 E	2	550.55	551.11	547.55	537.55

Monitoring Well ID	Well Location/ Purpose	Coordinates (longitude/latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-76	Off-site	1125636.16 N 1405370.78 E	2	548.73	549.20	530.23	520.23
MW-77	Off-site	1125330.75 N 1405645.34 E	2	543.87	544.10	532.87	522.87
MW-78	Off-site	1125325.44 N 1405647.80 E	2	543.86	544.10	520.86	510.86
UCB-MW-3	Off-site	1125687.419 N 1405749.152 E	1	554.60	554.84	549.60	539.60

Monitoring well construction logs are included in Appendix C of this document.

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced if an event renders the wells unusable.

Monitoring wells will be inspected on an annual basis. Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC. Deliverables for the groundwater monitoring program are specified in Section 7.0 Reporting Requirements.

4.4 Soil Vapor Intrusion Sampling

In recognition that residual levels of COCs may be present in Area 1 and Area 2 and off-site saturated soils on the Affected Area of the Unither property to the south of the Area 2 ditch at concentrations which exceed the applicable SCOs, prior to the construction of new structures located on-site, consideration of potential soil vapor intrusion (SVI) impact will be conducted to entail either: a) performance of a pre-construction SVI evaluation within the proposed building area to determine the potential for SVI concern to exist that may require mitigation measures to eliminate potential exposures to vapors in the proposed structure, or b) that SVI mitigation is installed as an element of the building foundation without first conducting an investigation.

If changes observed in the long-term groundwater monitoring results warrant collection of additional environmental data, either of the following will be implemented on the Affected Area of the Unither property: a) sub-slab and indoor/outdoor monitoring and sampling of Unither Building 3, or b) installation of SVI mitigation in Unither Building 3 without first conducting sub-slab and indoor/outdoor monitoring and sampling. The incremental cost and expense of sub-slab and indoor/outdoor monitoring and sampling of Unither Building 3, or installing, testing, monitoring, operating and maintaining a SSDS in Unither Building 3 shall be at the cost and expense of Site Owner.

Prior to the construction of new structures located off-site on the Affected Area of the Unither property to the south of the Area 2 ditch, SVI mitigation will be installed as an element of the building foundation without first conducting an investigation, and an appropriate SVI evaluation will be completed to confirm the system is operating effectively, in accordance with NYSDOH guidance. The incremental cost and expense of installing, testing, monitoring, operating and maintaining a SSDS in such new building shall be at the cost and expense of Site Owner.

4.5 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix K - Site Inspection Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the Site-specific Field Sampling Plan provided as Appendix L of this document.

5.0 OPERATIONS AND MAINTENANCE PLAN

5.1 General

As referenced in Section 3.3.2, Terracon Consultants prepared an Operation, Monitoring, and Maintenance (OM&M) plan for the SDS system underlying for the Hobby Lobby store, which includes the following:

- SSD system installation details (PE certified as-builts);
- an organization chart for the OM&M of the SSD system;
- an overview of the SSD system with drawings and manufacturer specifications;
- inspection procedures and schedule;
- monitoring / sampling procedures and schedule, if required; and
- data collection documentation and reporting requirements.

The OM&M plan is provided in Appendix G.

Section 4.1 of Terracon's OM&M Plan refers to this SMP text for indoor air sampling requirements. Indoor air sampling should be completed on an annual basis during the heating season. The sampling will be done to evaluate the potential exposures to users of the Hobby Lobby building during SSDS operation and to confirm the effectiveness of the SSDS mitigation system. The proposed number of indoor air samples and their locations will be provided to the NYSDEC and NYSDOH for review prior to colection. Outdoor air samples should be collected simultaneously with indoor air samples to evaluate the potential influence, if any, of outdoor air on the indoor air sampled. The samples will be analyzed for VOCs following USEPA Method TO-15 and will be collected over an 8-hour period. The laboratory analysis will be conducted, and a data package (Category B type data deliverable) will be prepared. Once the Category B data deliverable is received, a data usability summary report ("DUSR") will be prepared and submitted with a project completion report.

Prior to the sampling event(s), an indoor air quality questionnaire and building inventory will be completed. While conducting the building inventory, the building will be inspected for exposure pathways, sampling locations, and possible interferences with the sampling (e.g., locations, air flow patterns, chemical interferences).

Sampling and reporting requirements are to be conducted in general accordance with the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

The Site remedy beyond that of the SSDS underlying the Hobby Lobby store does not currently rely on any mechanical systems, such as groundwater treatment systems, or air sparge/soil vapor extraction systems to protect public health and the environment. If future site development or future development on the Affected Area of the Unither property results in the installation of a mechanical system such as a vapor intrusion mitigation system, or a vapor intrusion mitigation system is installed in Unither because of changes observed in the long-term groundwater monitoring, the SMP would be amended to include operation and maintenance procedures for any such system.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given Site and associated remedial systems. Vulnerability assessments provide information so that the Site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for the Site during periodic assessments, and briefly summarizes the vulnerability of the Site and/or engineering controls to severe storms/weather events and associated flooding.

- Flood Plain: according to the United States Federal Emergency Management Agency National Flood Hazard Map of the property, the Site is not located in a floodplain.
- Site Drainage and Storm Water Management: Stormwater at the Site is controlled by a Storm Tech® subsurface stormwater management system comprised of five (5) 48-inch diameter by 200-linear feet corrugated HDPE pipes within a stormwater collection/detention chamber. A series of pre-cast stormwater manholes in the Site's parking lot diverts the stormwater to the chamber. The chamber is equipped with a six-foot diameter overflow manhole manifolded to a precast stormwater diversion structure to carry any possible overflow to the municipal storm sewer along Clay Road. A series of trench drains on the south side of the Hobby Lobby building diverts stormwater to an outlet structure at the southwest corner of a drainage ditch along the southern edge of the Site. The water is subsequently detained in the receiving ditch. The potential for flooding at the Site from stormwater events is unlikely.
- Erosion: The potential for erosion is minimal as the Site is on flat topography and is occupied by the Hobby Lobby building, paved parking surfaces and compacted gravel development pads.
- High Winds; The Site is currently developed by a 55,000 square foot single story Hobby Lobby store, paved parking surfaces, and future gravel development pads. These improvements would not be structurally affected by high winds.
- Electricity: Electricity servicing the Site is under ground.
- Spill/Contaminant Release: No operations exist on-Site that would potentially contribute to a spill/contaminant release.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including Site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. Green remediation evaluations will not be completed for the Site during Site management because no technology was implemented as part of the remedy nor will be implemented as part of Site management.

6.3 Remedial System Optimization

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the Remedial Party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

7.0 REPORTING REQUIRMENTS

7.1 Site Management Report

All Site management inspection, maintenance and monitoring events will be recorded on the appropriate Site management forms provided in Appendix K. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the] and summarized in the Periodic Review Report.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. Although the Site is subdivided into two separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix A -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site.
- Results of the required annual Site inspections and severe condition inspections, if applicable.
- All applicable Site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, and possibly soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html. The EQuIS™ data deliverable will be submitted to the NYSDEC within 90 days of receiving the data from the laboratory.
- A Site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the Site-specific RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - A groundwater elevation contour map created for each groundwater sampling event, including on-site and off-Site wells that are part of the Long-Term Groundwater Monitoring network detailed in Table VI.
    - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
    - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.
    - The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

- The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;

- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any Site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the Site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Site remedial program and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I,_____, of _____, am certifying as Owner's/Remedial Party's Designated Site Representative. I have been authorized and designated by all Site owners/remedial parties to sign this certification for the Site.

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Region 8 Office and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3), upon completion of an RSO, an RSO report must be submitted to the NYSDEC for approval. A general outline for the RSO report is provided in Appendix O. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineeringreport and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Region 8 Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

REFERENCES

6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation". NYSDEC, 1998.

Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

Remedial Investigation Work Plan (and Community Participation Plan) - Brownfield Cleanup Program, Site# C828148, Former AB Dick Facility, 811 Jefferson Road, Town of Henrietta, Monroe County, New York, Stantec Consulting Services, Inc., March 2008.

Revised Remedial Investigation Report - Former AB Dick Facility, 811 Jefferson Road, Town of Henrietta, Monroe County, New York, Stantec Consulting Services, Inc., October 2010.

Supplemental Investigation Report - Former AB Dick Facility, 811 Jefferson Road, Town of Henrietta, Monroe County, New York, Stantec Consulting Services, Inc., October 2010.

Pre-Design Assessment Report - Former AB Dick Facility, 811 Jefferson Road, Town of Henrietta, Monroe County, New York, Haley & Aldrich of New York. October 2011.

Revised Alternatives Analysis Report – Former AB Dick Facility, 811 Jefferson Road, Town of Henrietta, Monroe County, New York, Haley & Aldrich of New York, 30 August 2013.

Interim Remedial Measure Completion Report, Haley & Aldrich of New York, 30 August 2013.

Decision Document – Former A B Dick Facility Brownfield Cleanup Program, Rochester, Monroe County, Site no. C828148, NYSDEC, October 2016.

Remedial Action Work Plan - Former AB Dick Facility, 811 Jefferson Road, Town of Henrietta, Monroe County, New York, Haley & Aldrich of New York. January 2017.

Tables

Table IV
Groundwater Elevation Data
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

Well ID	Surveyed Inner Well Casing	27-Sep-17		16-Aug-17		5-Jul-17		14-Jun-17		17-Mar-17		20-Oct-16	
		Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
MW-1I-R*	555.28	1.56	553.72	2.87	552.41	2.51	552.77	2.26	553.02	1.21	-	-	-
MW-1D-R*	554.86	-	-	-	-	-	-	34.08	520.78	-	-	-	-
MW-2	554.60	-	-	-	-	-	-	-	-	2.11	552.49	-	-
MW-2R*	554.80	2.83	551.97	1.75	553.05	0.88	553.92	1.68	553.12	-	-	-	-
MW-3I	553.65	-	-	-	-	-	-	1.80	551.85	-	-	-	-
MW-4I	553.26	-	-	-	-	-	-	2.95	550.31	-	-	-	-
MW-5D-R*	553.60	33.46	520.14	32.55	521.05	31.93	521.67	32.45	521.15	32.51	521.09	-	-
MW-6I	554.79	-	-	-	-	-	-	2.88	551.91	-	-	-	-
MW-8	555.12	-	-	-	-	-	-	-	-	3.17	551.95	-	-
MW-8R*	555.28	2.41	552.87	1.29	553.99	0.42	554.86	1.33	553.95	-	-		
MW-22	555.12	-	-	-	-	-	-	-	-	1.75	553.37	3.09	552.03
MW-22R*	554.82	2.81	552.01	2.81	552.01	1.46	553.36	2.80	552.02	-	-	-	-
MW-25	553.76	-	-	-	-	-	-	2.15	551.61	-	-	-	-
MW-27	554.75	-	-	-	-	-	-	-	-	0.80	553.95	1.70	553.05
MW-27R*	554.82	3.03	551.79	1.88	552.94	1.71	553.11	1.88	552.94	-	-		
MW-28	554.02	-	-	-	-	-	-	1.95	552.07	-	-	-	-
MW-33	552.82	-	-	-	-	-	-	1.72	551.10	-	-	-	-
MW-35	554.74	-	-	-	-	-	-	1.62	553.12	-	-	-	-
MW-38	553.51	-	-	-	-	-	-	NA	-	3.98	549.53	4.80	548.71
MW-54	545.02	0.55	544.47	0.10	544.92	0.30	544.72	0.19	544.83	0.00	545.02	1.13	543.89
MW-55	544.03	2.31	541.72	1.00	543.03	0.63	543.4	1.95	542.08	0.60	543.43	-	-
MW-57	552.53	-	-	-	-	-	-	4.95	547.58	-	-	-	-
MW-58	543.74	-	-	0.60	543.14	0.10	543.64	0.77	542.97	1.44	542.3	-	-
MW-62	553.89	-	-	-	-	-	-	5.80	548.09	4.10	549.79	4.82	549.07
MW-63	552.91	5.93	546.98	-	-	-	-	4.45	548.46	4.10	548.81	5.06	547.85
MW-64	554.84	-	-	-	-	-	-	5.69	549.15	-	-	-	-
MW-68	552.43	-	-	-	-	-	-	2.32	550.11	-	-	-	-
MW-69	551.66	4.07	547.59	3.10	548.56	2.14	549.52	2.19	549.47	0.85	550.81	-	-
MW-70	548.99	4.00	544.99	3.10	545.89	2.92	546.07	3.11	545.88	2.08	546.91	-	-
MW-74	550.55	2.55	548	1.86	548.69	0.99	549.56	4.45	546.1	0.85	549.7	-	-
MW-76*	548.73	10.96	537.77	8.09	540.64	7.75	540.98	5.61	543.12	5.13	543.6	-	-
MW-77*	543.87	2.02	541.85	2.03	541.84	1.24	542.63	1.03	542.84	2.19	541.68	-	-
MW-78*	543.86	1.18	542.68	0.48	543.38	0.55	543.31	0.60	543.26	4.11	539.75	-	-
UCB-MW-03	548.83	3.28	545.55	2.92	545.91	2.92	545.91	3.30	545.53	2.26	546.57	-	-

Notes and Abbreviations:

- Elevation readings collected from top of inner casing
- * Monitoring wells surveyed by Hoffman Land Surveying & Geomatics of Ontario, NY

- December 2005 to May 2010 readings collected by Stantec Consulting, Inc.

- October 2016 to March 2017 readings collected by Haley & Aldrich of New York

- All groundwater elevation readings in feet above mean sea level
- All Depth to Water readings in feet below ground surface
- "-" reading not collected

Table IV
Groundwater Elevation Data
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

Well ID	Surveyed Inner Well Casing	10-May-10		4-May-09		20-Apr-09		25-Mar-09		24-Feb-09		14-Nov-08	
		Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
MW-1I-R*	555.28	-	-	-	-	-	-	-	-	-	-	-	-
MW-1D-R*	554.86	-		-	-	-	-	-	-	-	-	-	-
MW-2	554.60	1.43	553.17	2.11	552.49	-	-	-	-	-	-	2.94	551.66
MW-2R*	554.80	-	-	-	-	-	-	-	-	-	-	-	-
MW-3I	553.65	-	-	3.11	550.54	-	-	-	-	-	-	3.42	550.23
MW-4I	553.26	-	-	3.39	549.87	-	-	-	-	-	-	3.58	549.68
MW-5D-R*	553.60	-	-	-	-	-	-	-	-	-	-	-	-
MW-6I	554.79	-	-	4.34	550.45	-	-	-	-	-	-	5.76	549.03
MW-8	555.12	3.16	551.96	3.31	551.81	-	-	-	-	-	-	3.28	551.84
MW-8R*	555.28	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	555.12	2.06	553.06	2.96	552.16	-	-	-	-	-	-	3.81	551.31
MW-22R*	554.82	-	-	-	-	-	-	-	-	-	-	-	-
MW-25	553.76	2.60	551.16	2.43	551.33	-	-	-	-	-	-	2.94	550.82
MW-27	554.75	1.89	552.86	2.60	552.15	-	-	-	-	-	-	3.29	551.46
MW-27R*	554.82	-	-	-	-	-	-	-	-	-	-	-	-
MW-28	554.02	2.76	551.26	2.64	551.38					-	-	3.12	550.90
MW-33	552.82	2.45	550.37	2.19	550.63	-	-	-	-	-	-	2.77	550.05
MW-35	554.74	2.04	552.70	2.39	552.35	-	-	-	-	-	-	2.75	551.99
MW-38	553.51	4.36	549.15	4.46	549.05	4.46	549.05	4.45	549.06	-	-	4.82	548.69
MW-54	545.02	0.44	544.58	0.46	544.56	-	-	0.28	544.74	-	-	0.54	544.48
MW-55	544.03	1.53	542.50	1.51	542.52	-	-	1.17	542.86	-	-	1.72	542.31
MW-57	552.53	4.90	547.63	4.75	547.78	4.34	548.19	3.54	548.99	-	-	5.6	546.93
MW-58	543.74	0.66	543.08	0.8	543.11	-	-	-	-	-	-	0.57	543.17
MW-62	553.89	4.45	549.44	4.58	549.31	4.53	549.36	4.52	549.36	-	-	4.87	549.02
MW-63	552.91	5.06	547.85	5.11	547.8	-	-	4.89	548.02	-	-	5.38	547.53
MW-64	554.84	6.31	548.53	6.46	548.38	6.44	548.40	6.50	548.34	8.37	546.47	-	-
MW-68	552.43	2.81	549.62	2.40	550.03	-	-	-	-	3.59	548.84	-	-
MW-69	551.66	2.30	549.36	2.26	549.4	2.61	549.05	-	-	-	-	-	-
MW-70	548.99	1.41	547.58	1.88	547.11	3.33	545.66	-	-	-	-	-	-
MW-74	550.55	2.13	548.42	-	-	-	-	-	-	-	-	-	-
MW-76*	548.73	-	-	-	-	-	-	-	-	-	-	-	-
MW-77*	543.87	-	-	-	-	-	-	-	-	-	-	-	-
MW-78*	543.86	-	-	-	-	-	-	-	-	-	-	-	-
UCB-MW-03	548.83			3.31	545.52	-	-	-	-	-	-	-	-

Notes and Abbreviations:

- Elevation readings collected from top of inner casing
- * Monitoring wells surveyed by Hoffman Land Surveying & Geomatics of Ontario, NY

- December 2005 to May 2010 readings collected by Stantec Consulting, Inc.

- October 2016 to March 2017 readings collected by Haley & Aldrich of New York

- All groundwater elevation readings in feet above mean sea level
- All Depth to Water readings in feet below ground surface
- "-" reading not collected

Table IV
Groundwater Elevation Data
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

Well ID	Surveyed Inner Well Casing	18-Aug-08		30-Jun-08		7-Dec-05	
		Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
MW-1I-R*	555.28	-	-	-	-	-	-
MW-1D-R*	554.86	-	-	-	-	-	-
MW-2	554.60	2.29	552.31	2.18	552.42	3.50	551.10
MW-2R*	554.80	-	-	-	-	-	-
MW-3I	553.65	3.09	547.45	3.12	550.53	-	-
MW-4I	553.26	3.67	549.59	3.67	549.59	-	-
MW-5D-R*	553.60	-	-	-	-	-	-
MW-6I	554.79	-	-	-	-	-	-
MW-8	555.12	3.04	552.08	2.8	552.32	4.68	550.44
MW-8R*	555.28	-	-	-	-	-	-
MW-22	555.12	3.33	551.79	3.02	552.1	4.38	550.74
MW-22R*	554.82	-	-	-	-	-	-
MW-25	553.76	2.63	551.13	2.51	551.25	2.84	550.92
MW-27	554.75	2.71	552.04	2.46	552.29	3.96	550.79
MW-27R*	554.82	-	-	-	-	-	-
MW-28	554.02	2.79	551.23	2.63	551.39	3.1	550.92
MW-33	552.82	2.3	550.52	2.47	550.35	-	-
MW-35	554.74	2.41	552.33	2.03	552.71	-	-
MW-38	553.51	5.26	548.25	-	-	-	-
MW-54	545.02	0.76	544.26	-	-	-	-
MW-55	544.03	1.73	542.3	-	-	-	-
MW-57	552.53	5.57	546.96	-	-	-	-
MW-58	543.74	0.7	543.04	-	-	-	-
MW-62	553.89	-	-	-	-	-	-
MW-63	552.91	-	-	-	-	-	-
MW-64	554.84	-	-	-	-	-	-
MW-68	552.43	-	-	-	-	-	-
MW-69	551.66	-	-	-	-	-	-
MW-70	548.99	-	-	-	-	-	-
MW-74	550.55	-	-	-	-	-	-
MW-76*	548.73	-	-	-	-	-	-
MW-77*	543.87	-	-	-	-	-	-
MW-78*	543.86	-	-	-	-	-	-
UCB-MW-03	548.83	-	-	-	-	-	-

Notes and Abbreviations:

- Elevation readings collected from top of inner casing
- * Monitoring wells surveyed by Hoffman Land Surveying & Geomatics of Ontario, NY

- December 2005 to May 2010 readings collected by Stantec Consulting, Inc.

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- All groundwater elevation readings in feet above mean sea level
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- "-" reading not collected

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712616-01	L1712616-07	L1712616-02	L1712616-03	L1712616-04	L1712616-05	L1712616-06	L1712801-01
		Sample ID	4125-042017-0900	4125-042017-1250	4125-042017-0915	4125-042017-1000	4125-042017-1025	4125-042017-1055	4125-042017-1220	4347-042117-0845
		Location	Area 1A Sidewall - South East	Area 1A Sidewall - South East	Area 1A Bottom - South	Area 1A Sidewall - North	Area 1A Bottom - North	Area 1A Sidewall - South	Area 1A Sidewall - West	Stormwater Pipe Removal - Sidewall East
		Sample Depth (ft.)	5.0-6.0	5.0-6.0	9.0-10.0	5.0-6.0	7.0-8.0	7.0-8.0	7.0-8.0	1.0-1.5
		Sample Date	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	4/21/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
Inorganic Compounds (mg/kg)										
Aluminum			-	-	-	-	-	-	-	**5,800 J-**
Antimony			-	-	-	-	-	-	-	ND (0.34)
Arsenic	16		-	-	-	-	-	-	-	**3.2**
Barium	400		-	-	-	-	-	-	-	**42**
Beryllium	590		-	-	-	-	-	-	-	ND (0.03)
Cadmium	9.3		-	-	-	-	-	-	-	**0.17 J**
Calcium			-	-	-	-	-	-	-	**36,000**
Chromium			-	-	-	-	-	-	-	**8**
Cobalt			-	-	-	-	-	-	-	**3.4**
Copper	270		-	-	-	-	-	-	-	**10**
Iron			-	-	-	-	-	-	-	**10,000**
Lead	1000		-	-	-	-	-	-	-	**8.2**
Magnesium			-	-	-	-	-	-	-	**12,000**
Manganese	10000		-	-	-	-	-	-	-	**220**
Mercury	2.8		-	-	-	-	-	-	-	ND (0.02)
Nickel	310		-	-	**-**	-	-	-	-	**8.0**
Potassium			-	-	**-**	-	-	-	-	**530**
Selenium	1500		-	-	-	-	-	-	-	ND (0.23)
Silver	1500		-	-	-	-	-	-	-	ND (0.25)
Sodium			-	-	-	-	-	-	-	**85 J**
Thallium			-	-	-	-	-	-	-	ND (0.28)
Vanadium			-	-	-	-	-	-	-	**12**
Zinc	10000		-	-	-	-	-	-	-	**43**
PCBs (ug/kg)										
Aroclor-1016 (PCB-1016)			-	-	-	-	-	-	-	ND (2.92)
Aroclor-1221 (PCB-1221)			-	-	-	-	-	-	-	ND (3.41)
Aroclor-1232 (PCB-1232)			-	-	-	-	-	-	-	ND (4.33)
Aroclor-1242 (PCB-1242)			-	-	-	-	-	-	-	ND (4.52)
Aroclor-1248 (PCB-1248)			-	-	-	-	-	-	-	ND (3.12)
Aroclor-1254 (PCB-1254)			-	-	-	-	-	-	-	ND (3.04)
Aroclor-1260 (PCB-1260)			-	-	-	-	-	-	-	ND (2.82)
Aroclor-1262 (PCB-1262)			-	-	-	-	-	-	-	ND (1.83)
Aroclor-1268 (PCB-1268)			-	-	-	-	-	-	-	ND (5.36)
Polychlorinated biphenyls (PCBs)	1000		-	-	-	-	-	-	-	ND (1.83)
Semi-Volatile Organic Compounds (ug/kg)										
1,2,4,5-Tetrachlorobenzene			-	-	-	-	-	-	-	ND (20)
2,2'-oxybis(1-Chloropropane)			-	-	-	-	-	-	-	ND (32)
2,3,4,6-Tetrachlorophenol			-	-	-	-	-	-	-	ND (38)
2,4,5-Trichlorophenol			-	-	-	-	-	-	-	ND (36)
2,4,6-Trichlorophenol			-	-	-	-	-	-	-	ND (35)
2,4-Dichlorophenol			-	-	-	-	-	-	-	ND (30)
2,4-Dimethylphenol			-	-	-	-	-	-	-	ND (62)
2,4-Dinitrophenol			-	-	-	-	-	-	-	ND (87)
2,4-Dinitrotoluene			-	-	-	-	-	-	-	ND (37)
2,6-Dinitrotoluene			-	-	-	-	-	-	-	ND (32)
2-Chloronaphthalene			-	-	-	-	-	-	-	ND (18)
2-Chlorophenol			-	-	-	-	-	-	-	ND (22)
2-Methylnaphthalene			-	-	-	-	-	-	-	ND (22)
2-Methylphenol (o-Cresol)	500000		-	-	-	-	-	-	-	ND (29)
2-Nitroaniline			-	-	-	-	-	-	-	ND (36)
2-Nitrophenol			-	-	-	-	-	-	-	ND (70)
3,3'-Dichlorobenzidine			-	-	-	-	-	-	-	ND (50) J

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712616-01	L1712616-07	L1712616-02	L1712616-03	L1712616-04	L1712616-05	L1712616-06	L1712801-01
		Sample ID	4125-042017-0900	4125-042017-1250	4125-042017-0915	4125-042017-1000	4125-042017-1025	4125-042017-1055	4125-042017-1220	4347-042117-0845
		Location	Area 1A Sidewall - South East	Area 1A Sidewall - South East	Area 1A Bottom - South	Area 1A Sidewall - North	Area 1A Bottom - North	Area 1A Sidewall - South	Area 1A Sidewall - West	Stormwater Pipe Removal - Sidewall East
		Sample Depth (ft.)	5.0-6.0	5.0-6.0	9.0-10.0	5.0-6.0	7.0-8.0	7.0-8.0	7.0-8.0	1.0-1.5
		Sample Date	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	4/21/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
3-Methylphenol	500000		-	-	-	-	-	-	-	ND (29)
3-Nitroaniline			-	-	-	-	-	-	-	ND (35)
4,6-Dinitro-2-methylphenol			-	-	-	-	-	-	-	ND (90)
4-Bromophenyl phenyl ether			-	-	-	-	-	-	-	ND (28)
4-Chloro-3-methylphenol			-	-	-	-	-	-	-	ND (28)
4-Chloroaniline			-	-	-	-	-	-	-	ND (34)
4-Chlorophenyl phenyl ether			-	-	-	-	-	-	-	ND (20)
4-Nitroaniline			-	-	-	-	-	-	-	ND (77)
4-Nitrophenol			-	-	-	-	-	-	-	ND (76)
Acenaphthene	500000		-	-	-	-	-	-	-	ND (19)
Acenaphthylene	500000		-	-	-	-	-	-	-	ND (29)
Acetophenone			-	-	-	-	-	-	-	ND (23) J
Anthracene	500000		-	-	-	-	-	-	-	ND (36)
Atrazine			-	-	-	-	-	-	-	ND (65)
Benzaldehyde			-	-	-	-	-	-	-	ND (50)
Benzo(a)anthracene	5600		-	-	-	-	-	-	-	ND (21)
Benzo(a)pyrene	1000		-	-	-	-	-	-	-	ND (46)
Benzo(b)fluoranthene	5600		-	-	-	-	-	-	-	ND (31)
Benzo(g,h,i)perylene	500000		-	-	-	-	-	-	-	ND (22)
Benzo(k)fluoranthene	56000		-	-	-	-	-	-	-	ND (30)
Biphenyl			-	-	-	-	-	-	-	ND (43) J
bis(2-Chloroethoxy)methane			-	-	-	-	-	-	-	ND (19)
bis(2-Chloroethyl)ether			-	-	-	-	-	-	-	ND (25)
bis(2-Ethylhexyl)phthalate			-	-	-	-	-	-	-	ND (65)
Butyl benzylphthalate			-	-	-	-	-	-	-	ND (47)
Caprolactam			-	-	-	-	-	-	-	ND (57)
Carbazole			-	-	-	-	-	-	-	ND (18) J
Chrysene	56000		-	-	-	-	-	-	-	ND (19)
Dibenz(a,h)anthracene	560		-	-	-	-	-	-	-	ND (22)
Dibenzofuran	350000		-	-	-	-	-	-	-	ND (18)
Diethyl phthalate			-	-	-	-	-	-	-	ND (17)
Dimethyl phthalate			-	-	-	-	-	-	-	ND (39)
Di-n-butylphthalate			-	-	-	-	-	-	-	ND (35)
Di-n-octyl phthalate			-	-	-	-	-	-	-	ND (64)
Fluoranthene	500000		-	-	-	-	-	-	-	ND (21)
Fluorene	500000		-	-	-	-	-	-	-	ND (18)
Hexachlorobenzene	6000		-	-	-	-	-	-	-	ND (21)
Hexachlorobutadiene			-	-	-	-	-	-	-	ND (27)
Hexachlorocyclopentadiene			-	-	-	-	-	-	-	ND (170)
Hexachloroethane			-	-	-	-	-	-	-	ND (30)
Indeno(1,2,3-cd)pyrene	5600		-	-	-	-	-	-	-	ND (26)
Isophorone			-	-	-	-	-	-	-	ND (24)
Naphthalene	500000		-	-	-	-	-	-	-	ND (23)
Nitrobenzene	69000		-	-	-	-	-	-	-	ND (28)
N-Nitrosodi-n-propylamine			-	-	-	-	-	-	-	ND (29)
N-Nitrosodiphenylamine			-	-	-	-	-	-	-	ND (21)
Pentachlorophenol	6700		-	-	-	-	-	-	-	ND (41)
Phenanthrene	500000		-	-	-	-	-	-	-	ND (23)
Phenol	500000		-	-	-	-	-	-	-	ND (28)
Pyrene	500000		-	-	-	-	-	-	-	ND (18)
Volatile Organic Compounds (ug/kg)										
1,1,1-Trichloroethane	500000		-	-	-	-	-	-	-	ND (0.22)
1,1,2,2-Tetrachloroethane			-	-	-	-	-	-	-	ND (0.19)
1,1,2-Trichloroethane			-	-	-	-	-	-	-	ND (0.20)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712616-01	L1712616-07	L1712616-02	L1712616-03	L1712616-04	L1712616-05	L1712616-06	L1712801-01
		Sample ID	4125-042017-0900	4125-042017-1250	4125-042017-0915	4125-042017-1000	4125-042017-1025	4125-042017-1055	4125-042017-1220	4347-042117-0845
		Location	Area 1A Sidewall - South East	Area 1A Sidewall - South East	Area 1A Bottom - South	Area 1A Sidewall - North	Area 1A Bottom - North	Area 1A Sidewall - South	Area 1A Sidewall - West	Stormwater Pipe Removal - Sidewall East
		Sample Depth (ft.)	5.0-6.0	5.0-6.0	9.0-10.0	5.0-6.0	7.0-8.0	7.0-8.0	7.0-8.0	1.0-1.5
		Sample Date	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	4/21/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
1,1-Dichloroethane	240000		-	-	-	-	-	-	-	ND (0.17)
1,1-Dichloroethene	500000		ND (18)	ND (0.16) J	ND (11)	ND (0.28) J	ND (12)	ND (14)	ND (13)	ND (0.24)
1,2,3-Trichlorobenzene			-	-	-	-	-	-	-	ND (0.16)
1,2,4-Trichlorobenzene			-	-	-	-	-	-	-	ND (0.14)
1,2,4-Trimethylbenzene	190000		-	-	-	-	-	-	-	ND (0.12)
1,2-Dibromo-3-chloropropane (DBCP)			-	-	-	-	-	-	-	ND (0.25)
1,2-Dibromoethane (Ethylene Dibromide)			-	-	-	-	-	-	-	ND (0.13)
1,2-Dichlorobenzene	500000		-	-	-	-	-	-	-	ND (0.12)
1,2-Dichloroethane	30000		-	-	-	-	-	-	-	ND (0.16)
1,2-Dichloroethene (total)			-	-	-	-	-	-	-	-
1,2-Dichloropropane			-	-	-	-	-	-	-	ND (0.15)
1,3,5-Trimethylbenzene	190000		-	-	-	-	-	-	-	ND (0.10)
1,3-Dichlorobenzene	280000		-	-	-	-	-	-	-	ND (0.14)
1,4-Dichlorobenzene	130000		-	-	-	-	-	-	-	ND (0.12)
1,4-Dioxane	130000		-	-	-	-	-	-	-	ND (9.2)
2-Butanone (Methyl Ethyl Ketone)	500000		-	-	-	-	-	-	-	ND (0.44)
2-Hexanone			-	-	-	-	-	-	-	ND (0.43)
2-Phenylbutane (sec-Butylbenzene)	500000		-	-	-	-	-	-	-	ND (0.14)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)			-	-	-	-	-	-	-	ND (0.16)
Acetone	500000		-	-	-	-	-	-	-	**1.5 J**
Benzene	44000		-	-	-	-	-	-	-	ND (0.12)
Bromodichloromethane			-	-	-	-	-	-	-	ND (0.20)
Bromoform			-	-	-	-	-	-	-	ND (0.15)
Bromomethane (Methyl Bromide)			-	-	-	-	-	-	-	ND (0.22)
Carbon disulfide			-	-	-	-	-	-	-	ND (0.70) J
Carbon tetrachloride	22000		-	-	-	-	-	-	-	ND (0.22)
Chlorobenzene	500000		-	-	-	-	-	-	-	ND (0.22)
Chlorobromomethane			-	-	-	-	-	-	-	ND (0.23)
Chloroethane			-	-	-	-	-	-	-	ND (0.20)
Chloroform (Trichloromethane)	350000		-	-	-	-	-	-	-	ND (0.24)
Chloromethane (Methyl Chloride)			-	-	-	-	-	-	-	ND (0.28)
cis-1,2-Dichloroethene	500000		ND (16)	ND (0.15) R	**29**	**0.43 J+**	ND (11)	ND (13)	**22 J**	ND (0.22)
cis-1,3-Dichloropropene			-	-	-	-	-	-	-	ND (0.15)
Cyclohexane			-	-	-	-	-	-	-	ND (0.28)
Cymene (p-Isopropyltoluene)			-	-	-	-	-	-	-	ND (0.13)
Dibromochloromethane			-	-	-	-	-	-	-	ND (0.11)
Dichlorodifluoromethane (CFC-12)			-	-	-	-	-	-	-	ND (0.32)
Ethylbenzene	390000		-	-	-	-	-	-	-	ND (0.11)
Isopropylbenzene (Cumene)			-	-	-	-	-	-	-	ND (0.12)
m,p-Xylenes			-	-	-	-	-	-	-	ND (0.22)
Methyl acetate			-	-	-	-	-	-	-	ND (0.30)
Methyl cyclohexane			-	-	-	-	-	-	-	ND (0.15)
Methyl Tert Butyl Ether	500000		-	-	-	-	-	-	-	ND (0.10)
Methylene chloride	500000		-	-	-	-	-	-	-	ND (1.0)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712616-01	L1712616-07	L1712616-02	L1712616-03	L1712616-04	L1712616-05	L1712616-06	L1712801-01
		Sample ID	4125-042017-0900	4125-042017-1250	4125-042017-0915	4125-042017-1000	4125-042017-1025	4125-042017-1055	4125-042017-1220	4347-042117-0845
		Location	Area 1A Sidewall - South East	Area 1A Sidewall - South East	Area 1A Bottom - South	Area 1A Sidewall - North	Area 1A Bottom - North	Area 1A Sidewall - South	Area 1A Sidewall - West	Stormwater Pipe Removal - Sidewall East
		Sample Depth (ft.)	5.0-6.0	5.0-6.0	9.0-10.0	5.0-6.0	7.0-8.0	7.0-8.0	7.0-8.0	1.0-1.5
		Sample Date	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	04/20/2017	4/21/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
Naphthalene	500000		-	-	-	-	-	-	-	ND (0.09)
n-Butylbenzene	500000		-	-	-	-	-	-	-	ND (0.15)
n-Propylbenzene	500000		-	-	-	-	-	-	-	ND (0.14)
o-Xylene			-	-	-	-	-	-	-	ND (0.22)
Styrene			-	-	-	-	-	-	-	ND (0.26)
Tetrachloroethene	150000		ND (14)	ND (0.13)	ND (8.7)	ND (0.22)	**21 J**	ND (11)	ND (10)	ND (0.19)
Toluene	500000		-	-	-	-	-	-	-	ND (0.12)
trans-1,2-Dichloroethene	500000		-	-	-	-	-	-	-	ND (0.15)
trans-1,3-Dichloropropene			-	-	-	-	-	-	-	ND (0.13)
Trichloroethene	200000		ND (14)	ND (0.13) R	ND (8.7)	ND (0.22) R	**3000**	ND (11)	ND (10)	ND (0.19)
Trichlorofluoromethane (CFC-11)			-	-	-	-	-	-	-	ND (0.27)
Trifluorotrichloroethane (Freon 113)			-	-	-	-	-	-	-	ND (0.33)
Vinyl chloride	13000		ND (15)	ND (0.14)	ND (9.1)	**3.7**	ND (10) J	ND (12)	ND (11)	ND (0.20)
Xylene (total)	500000		-	-	-	-	-	-	-	ND (0.22)

Notes and Abbreviations:

1. Results were compared to the Restricted Use Soil Cleanup Objective (SCO) for Commercial (NYSDEC, Table 375-6.8(b), December 2006).
2. Results in dark gray shading exceed applicable criteria.
3. ND (#): Result is not detected above the indicated reporting limit.
   J: Estimated result
   J+: Estimated result, biased high
   R: Rejected
4. Results in **bold** are detected.

* - Bottom confirmation samples were collected before excavation activities using a geoprobe.

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712801-02	L1712801-03	L1717921-11	L1717921-14	L1718140-06	L1718729-01	L1717921-10	L1717921-12
		Sample ID	4347-042117-0850	4347-042117-0903	4542-170531-1515	4542-170531-1550	4542-170601-1245	4542-170606-0930	4542-170531-1450	4542-170531-1525
		Location	Stormwater Pipe Removal - Sidewall West	Stormwater Pipe Removal - Bottom	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A South Sidewall	Area 2A South Sidewall
		Sample Depth (ft.)	1.0-1.5	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5
		Sample Date	4/21/2017	4/21/2017	05/31/2017	05/31/2017	06/01/2017	06/06/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Inorganic Compounds (mg/kg)										
Aluminum			**4,500 J-**	**3,500 J-**	**3,720 J**	**4,050 J**	**5,080**	**3,400**	**6,000 J**	**4,470 J**
Antimony			ND (0.34)	ND (0.34)	ND (0.340)	ND (0.337)	ND (0.337)	ND (0.324)	ND (0.367)	ND (0.324)
Arsenic	16		**3.0**	**2.6**	**2.31**	**3.03**	**3.6**	**2.31**	**3.65**	**2.48**
Barium	400		**35**	**26**	**32.8**	**33.4**	**41.5**	**27.7**	**55.6**	**38.7**
Beryllium	590		ND (0.03)	ND (0.03)	**0.063 J**	ND (0.029)	**0.222 J**	**0.077**	**0.145 J**	**0.094 J**
Cadmium	9.3		**0.22 J**	**0.19 J**	ND (0.088)	**0.239 J**	**0.284 J**	**0.128**	ND (0.095)	ND (0.084)
Calcium			**45,000**	**37,000**	**48,100 J**	**40,200 J**	**54,500**	**37,500**	**55,300 J**	**48,600 J**
Chromium			**6.4**	**17**	**7.2**	**7.27**	**7.6**	**5.41**	**9.64**	**7.6**
Cobalt			**3.7**	**3.1**	**2.97**	**3.28**	**5.07**	**2.86**	**4.27**	**3.42**
Copper	270		**10**	**8.6**	**10.6**	**9.8**	**11.8**	**8.85**	**12.3**	**11.6**
Iron			**9,600**	**8,200**	**9,070 J**	**9,740 J**	**11,300**	**8,100**	**12,800 J**	**10,300 J**
Lead	1000		**6.7**	**6.3**	**5.7**	**5.72**	**6.3**	**4.9**	**28.7**	**6.39**
Magnesium			**12,000**	**12,000**	**14,400 J**	**11,000 J**	**14,600**	**12,900**	**14,800 J**	**16,600 J**
Manganese	10000		**250**	**220**	**243 J**	**319 J**	**376**	**247**	**298 J**	**266 J**
Mercury	2.8		ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Nickel	310		**7.5**	**6.2**	**6.49**	**7.32**	**9.94**	**6.28**	**9.87**	**7.84**
Potassium			**460**	**480**	**456**	**468**	**519**	**488**	**728**	**532**
Selenium	1500		ND (0.23)	ND (0.23)	ND (0.231)	ND (0.229)	**0.683 J**	**0.272**	ND (0.249)	ND (0.220)
Silver	1500		ND (0.26)	ND (0.25)	ND (0.253)	ND (0.251)	ND (0.251)	ND (0.241)	ND (0.273)	ND (0.241)
Sodium			**87 J**	**120 J**	ND (2.82)	ND (2.79)	**107 J**	**96.4**	**294**	ND (2.68)
Thallium			ND (0.28)	ND (0.28)	ND (0.282) J	ND (0.279) J	ND (0.280)	ND (0.268)	ND (0.304) J	ND (0.268) J
Vanadium			**12**	**10**	**10.5**	**11.2**	**12.9**	**9.18**	**15.2**	**11.7**
Zinc	10000		**45**	**34**	**37.5**	**33.8**	**45.1**	**93.4**	**41**	**46.8**
PCBs (ug/kg)										
Aroclor-1016 (PCB-1016)			ND (2.99)	ND (2.96)	ND (2.90) J	ND (2.85)	ND (2.90)	ND (2.90)	ND (3.11) J	ND (2.91) J
Aroclor-1221 (PCB-1221)			ND (3.49)	ND (3.46)	ND (3.39)	ND (3.32)	ND (3.38)	ND (3.39)	ND (3.63)	ND (3.40)
Aroclor-1232 (PCB-1232)			ND (4.44)	ND (4.39)	ND (4.31)	ND (4.22)	ND (4.30)	ND (4.30)	ND (4.61)	ND (4.32)
Aroclor-1242 (PCB-1242)			ND (4.64)	ND (4.59)	ND (4.50)	ND (4.41)	ND (4.49)	ND (4.50)	ND (4.82)	ND (4.51)
Aroclor-1248 (PCB-1248)			ND (3.20)	ND (3.16)	ND (3.10)	ND (3.04)	ND (3.09)	ND (3.10)	ND (3.32)	ND (3.11)
Aroclor-1254 (PCB-1254)			ND (3.12)	**40.5**	ND (3.02)	**4.88 J**	**4.21 J**	**120 J**	**4.84 J**	**3.69 J**
Aroclor-1260 (PCB-1260)			ND (2.89)	**15.5 J**	ND (2.80)	ND (2.75)	ND (2.79)	**25.2**	ND (3.00)	ND (2.81)
Aroclor-1262 (PCB-1262)			ND (1.88)	ND (1.86)	ND (1.82)	ND (1.79)	ND (1.82)	ND (1.82)	ND (1.95)	ND (1.83)
Aroclor-1268 (PCB-1268)			ND (5.50)	ND (5.43)	ND (5.33)	ND (5.22)	ND (5.32)	ND (5.32)	ND (5.71)	ND (5.34)
Polychlorinated biphenyls (PCBs)	1000		ND (1.88)	**56.0 J**	ND (1.82)	**4.88 J**	**4.21 J**	**145**	**4.84 J**	**3.69 J**
Semi-Volatile Organic Compounds (ug/kg)										
1,2,4,5-Tetrachlorobenzene			ND (20)	ND (20)	ND (20)	ND (19)	ND (20)	ND (19)	ND (21)	ND (19)
2,2'-oxybis(1-Chloropropane)			ND (32)	ND (32)	ND (33)	ND (31)	ND (32)	ND (32)	ND (34)	ND (32)
2,3,4,6-Tetrachlorophenol			ND (38)	ND (38)	ND (39)	ND (37)	ND (38)	ND (38)	ND (40)	ND (37)
2,4,5-Trichlorophenol			ND (36)	ND (36)	ND (37)	ND (35)	ND (36)	ND (36)	ND (38)	ND (35)
2,4,6-Trichlorophenol			ND (36)	ND (36)	ND (36)	ND (34)	ND (36)	ND (35)	ND (38)	ND (35)
2,4-Dichlorophenol			ND (30)	ND (30)	ND (31)	ND (29)	ND (30)	ND (30)	ND (32)	ND (30)
2,4-Dimethylphenol			ND (62)	ND (62)	ND (63)	ND (60)	ND (62)	ND (62)	ND (66)	ND (61)
2,4-Dinitrophenol			ND (88)	ND (88)	ND (89)	ND (85)	ND (88)	ND (87)	ND (93)	ND (86)
2,4-Dinitrotoluene			ND (38)	ND (38)	ND (38)	ND (36)	ND (38)	ND (37)	ND (40)	ND (37)
2,6-Dinitrotoluene			ND (32)	ND (32)	ND (33)	ND (31)	ND (32)	ND (32)	ND (34)	ND (32)
2-Chloronaphthalene			ND (19)	ND (19)	ND (19)	ND (18)	ND (19)	ND (18)	ND (20)	ND (18)
2-Chlorophenol			ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (24)	ND (22)
2-Methylnaphthalene			ND (23)	ND (23)	ND (23)	ND (22)	ND (23)	ND (22)	ND (24)	ND (22)
2-Methylphenol (o-Cresol)	500000		ND (29)	ND (29)	ND (30)	ND (28)	ND (29)	ND (29)	ND (31)	ND (29)
2-Nitroaniline			ND (36)	ND (36)	ND (37)	ND (35) J	ND (36)	ND (36)	ND (38)	ND (36)
2-Nitrophenol			ND (71)	ND (71)	ND (72)	ND (68) J	ND (71)	ND (70)	ND (75)	ND (69)
3,3'-Dichlorobenzidine			ND (50) J	ND (50) J	ND (51)	ND (48)	ND (50)	ND (50)	ND (53)	ND (49)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712801-02	L1712801-03	L1717921-11	L1717921-14	L1718140-06	L1718729-01	L1717921-10	L1717921-12
		Sample ID	4347-042117-0850	4347-042117-0903	4542-170531-1515	4542-170531-1550	4542-170601-1245	4542-170606-0930	4542-170531-1450	4542-170531-1525
		Location	Stormwater Pipe Removal - Sidewall West	Stormwater Pipe Removal - Bottom	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A South Sidewall	Area 2A South Sidewall
		Sample Depth (ft.)	1.0-1.5	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5
		Sample Date	4/21/2017	4/21/2017	05/31/2017	05/31/2017	06/01/2017	06/06/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
3-Methylphenol	500000		ND (30)	ND (30)	ND (30)	ND (28)	ND (29)	ND (29)	ND (31)	ND (29)
3-Nitroaniline			ND (36)	ND (36)	ND (36)	ND (34)	ND (35)	ND (35)	ND (38)	ND (35)
4,6-Dinitro-2-methylphenol			ND (90)	ND (91)	ND (92)	ND (88)	ND (90)	ND (90)	ND (96)	ND (89)
4-Bromophenyl phenyl ether			ND (29)	ND (29)	ND (29)	ND (28)	ND (29)	ND (28)	ND (30)	ND (28)
4-Chloro-3-methylphenol			ND (28)	ND (28)	ND (28)	ND (27)	ND (28)	ND (28)	ND (30)	ND (28)
4-Chloroaniline			ND (34)	ND (34)	ND (35)	ND (33)	ND (34)	ND (34)	ND (36)	ND (34)
4-Chlorophenyl phenyl ether			ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (21)	ND (20)
4-Nitroaniline			ND (78)	ND (78)	ND (79)	ND (76)	ND (78)	ND (77)	ND (82)	ND (76)
4-Nitrophenol			ND (77)	ND (77)	ND (78)	ND (74)	ND (77)	ND (76)	ND (81)	ND (75)
Acenaphthene	500000		ND (20)	ND (20)	ND (20)	ND (19)	ND (19)	ND (19)	ND (21)	ND (19)
Acenaphthylene	500000		ND (29)	ND (29)	ND (30)	ND (28)	ND (29)	ND (29)	ND (31)	ND (28)
Acetophenone			ND (23) J	ND (23) J	ND (24)	ND (22)	ND (23)	ND (23)	ND (25)	ND (23)
Anthracene	500000		ND (37)	ND (37)	ND (37)	ND (36)	ND (37)	ND (36)	ND (39)	ND (36)
Atrazine			ND (66)	ND (66)	ND (67)	ND (64)	ND (66)	ND (65)	ND (70)	ND (65)
Benzaldehyde			ND (51)	ND (51)	ND (52)	ND (49)	ND (51)	ND (50)	ND (54)	ND (50)
Benzo(a)anthracene	5600		ND (21)	ND (21)	ND (22)	**45 J**	**79 J**	ND (21)	ND (22)	ND (21)
Benzo(a)pyrene	1000		ND (46)	ND (46)	ND (47)	**45 J**	**68 J**	ND (46)	ND (49)	ND (45)
Benzo(b)fluoranthene	5600		ND (32)	ND (32)	ND (32)	**56 J**	**110**	ND (31)	ND (34)	ND (31)
Benzo(g,h,i)perylene	500000		ND (22)	ND (22)	ND (22)	ND (21)	**49 J**	ND (22)	ND (23)	ND (22)
Benzo(k)fluoranthene	56000		ND (30)	ND (30)	ND (30)	ND (29)	**40 J**	ND (30)	ND (32)	ND (30)
Biphenyl			ND (44) J	ND (44) J	ND (44)	ND (42)	ND (44)	ND (43)	ND (46)	ND (43)
bis(2-Chloroethoxy)methane			ND (19)	ND (19)	ND (19)	ND (18)	ND (19)	ND (19)	ND (20)	ND (18)
bis(2-Chloroethyl)ether			ND (26)	ND (26)	ND (26)	ND (25)	ND (25)	ND (25)	ND (27)	ND (25)
bis(2-Ethylhexyl)phthalate			ND (65)	ND (65)	ND (66)	ND (63)	**67 J**	ND (64)	ND (69)	ND (64)
Butyl benzylphthalate			ND (47)	ND (48)	ND (48)	ND (46)	ND (47)	ND (47)	ND (50)	ND (46)
Caprolactam			ND (57)	ND (58)	ND (58)	ND (55)	ND (57)	ND (57)	ND (60)	ND (56)
Carbazole			ND (18) J	ND (18) J	ND (18) J	ND (18)	ND (18)	ND (18)	ND (19) J	ND (18) J
Chrysene	56000		ND (20)	ND (20)	ND (20)	**46 J**	**95 J**	ND (19)	ND (21)	ND (19)
Dibenz(a,h)anthracene	560		ND (22)	ND (22)	ND (22)	ND (21)	ND (22)	ND (22)	ND (23)	ND (21)
Dibenzofuran	350000		ND (18)	ND (18)	ND (18)	ND (17)	ND (18)	ND (18)	ND (19)	ND (17)
Diethyl phthalate			ND (17)	ND (18)	ND (18)	ND (17)	ND (17)	ND (17)	ND (18)	ND (17)
Dimethyl phthalate			ND (40)	ND (40)	ND (40)	ND (38)	ND (39)	ND (39)	ND (42)	ND (39)
Di-n-butylphthalate			ND (36)	ND (36)	ND (36)	ND (34)	ND (36)	ND (35)	ND (38)	ND (35)
Di-n-octyl phthalate			ND (64)	ND (64)	ND (65)	ND (62)	ND (64)	ND (63)	ND (68)	ND (63)
Fluoranthene	500000		ND (22)	ND (22)	ND (22)	**110**	**210**	**24**	ND (23)	ND (21)
Fluorene	500000		ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (19)	ND (18)
Hexachlorobenzene	6000		ND (21)	ND (21)	ND (21) J	ND (20)	ND (21)	ND (21)	ND (22) J	ND (21) J
Hexachlorobutadiene			ND (28)	ND (28)	ND (28)	ND (27)	ND (27)	ND (27)	ND (29)	ND (27)
Hexachlorocyclopentadiene			ND (170)	ND (170)	ND (170)	ND (160)	ND (170) R	ND (170)	ND (180)	ND (170)
Hexachloroethane			ND (30)	ND (31)	ND (31)	ND (30)	ND (30)	ND (30)	ND (32)	ND (30)
Indeno(1,2,3-cd)pyrene	5600		ND (26)	ND (26)	ND (27)	ND (25)	**54 J**	ND (26)	ND (28)	ND (26)
Isophorone			ND (24)	ND (24)	ND (25)	ND (24)	ND (24)	ND (24)	ND (26)	ND (24)
Naphthalene	500000		ND (23)	ND (23)	ND (23)	ND (22)	ND (23)	ND (23)	ND (24)	ND (22)
Nitrobenzene	69000		ND (28)	ND (28)	ND (28)	ND (27)	ND (28)	ND (28)	ND (29)	ND (27)
N-Nitrosodi-n-propylamine			ND (29)	ND (29)	ND (30)	ND (28)	ND (29)	ND (29)	ND (31)	ND (28)
N-Nitrosodiphenylamine			ND (21)	ND (22)	ND (22)	ND (21)	ND (21)	ND (21)	ND (23)	ND (21)
Pentachlorophenol	6700		ND (41)	ND (42)	ND (42)	ND (40)	ND (41)	ND (41)	ND (44)	ND (41)
Phenanthrene	500000		ND (23)	ND (23)	ND (23)	**66 J**	**110**	ND (23)	ND (24)	ND (22)
Phenol	500000		ND (28)	ND (28)	ND (29)	ND (28)	ND (28)	ND (28)	ND (30)	ND (28)
Pyrene	500000		ND (19)	ND (19)	ND (19)	**89 J**	**170**	**46**	ND (20)	ND (18)
Volatile Organic Compounds (ug/kg)										
1,1,1-Trichloroethane	500000		ND (0.17)	ND (0.16)	ND (0.27)	ND (0.27)	ND (0.29)	ND (0.25)	ND (0.22)	ND (0.26)
1,1,2,2-Tetrachloroethane			ND (0.14)	ND (0.14)	ND (0.23)	ND (0.23)	ND (0.25)	ND (0.22)	ND (0.19)	ND (0.22)
1,1,2-Trichloroethane			ND (0.15)	ND (0.14)	ND (0.24)	ND (0.24)	ND (0.26)	ND (0.23)	ND (0.20)	ND (0.24)

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Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712801-02	L1712801-03	L1717921-11	L1717921-14	L1718140-06	L1718729-01	L1717921-10	L1717921-12
		Sample ID	4347-042117-0850	4347-042117-0903	4542-170531-1515	4542-170531-1550	4542-170601-1245	4542-170606-0930	4542-170531-1450	4542-170531-1525
		Location	Stormwater Pipe Removal - Sidewall West	Stormwater Pipe Removal - Bottom	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A South Sidewall	Area 2A South Sidewall
		Sample Depth (ft.)	1.0-1.5	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5
		Sample Date	4/21/2017	4/21/2017	05/31/2017	05/31/2017	06/01/2017	06/06/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
1,1-Dichloroethane	240000		ND (0.13)	ND (0.12)	ND (0.21)	ND (0.20)	ND (0.22)	ND (0.20)	ND (0.17)	ND (0.20)
1,1-Dichloroethene	500000		ND (0.18)	ND (0.17)	ND (0.29)	ND (0.28)	ND (0.31)	ND (0.27)	ND (0.24)	ND (0.28)
1,2,3-Trichlorobenzene			ND (0.12)	ND (0.12)	ND (0.20)	ND (0.19)	ND (0.21)	ND (0.18)	ND (0.16)	ND (0.19)
1,2,4-Trichlorobenzene			ND (0.10)	ND (0.10)	ND (0.17)	ND (0.16)	ND (0.18)	ND (0.16)	ND (0.14)	ND (0.16)
1,2,4-Trimethylbenzene	190000		ND (0.09)	ND (0.09)	ND (0.14)	ND (0.14)	ND (0.16)	**0.64**	ND (0.12)	ND (0.14)
1,2-Dibromo-3-chloropropane (DBCP)			ND (0.19)	ND (0.18)	ND (0.31)	ND (0.30)	ND (0.33)	ND (0.29)	ND (0.25)	ND (0.30)
1,2-Dibromoethane (Ethylene Dibromide)			ND (0.10)	ND (0.09)	ND (0.15)	ND (0.15)	ND (0.17)	ND (0.14)	ND (0.13)	ND (0.15)
1,2-Dichlorobenzene	500000		ND (0.09)	ND (0.08)	ND (0.14)	ND (0.14)	ND (0.15)	ND (0.13)	ND (0.12)	ND (0.14)
1,2-Dichloroethane	30000		ND (0.12)	ND (0.11)	ND (0.19)	ND (0.19)	ND (0.20)	ND (0.18)	ND (0.16)	ND (0.18)
1,2-Dichloroethene (total)			-	-	-	-	-	-	-	-
1,2-Dichloropropane			ND (0.11)	ND (0.10)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.15)	ND (0.17)
1,3,5-Trimethylbenzene	190000		ND (0.08)	ND (0.07)	ND (0.12)	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.10)	ND (0.12)
1,3-Dichlorobenzene	280000		ND (0.10)	ND (0.10)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.16)	ND (0.14)	ND (0.16)
1,4-Dichlorobenzene	130000		ND (0.09)	ND (0.08)	ND (0.14)	ND (0.14)	ND (0.15)	ND (0.13)	ND (0.12)	ND (0.14)
1,4-Dioxane	130000		ND (6.9)	ND (6.6)	ND (11)	ND (11) J	ND (12)	ND (10)	ND (9.2)	ND (11)
2-Butanone (Methyl Ethyl Ketone)	500000		ND (0.33)	ND (0.32)	ND (0.54)	ND (0.53)	ND (0.58)	ND (0.50)	ND (0.44)	ND (0.52)
2-Hexanone			ND (0.32)	ND (0.30)	ND (0.52)	ND (0.51)	ND (0.56)	ND (0.48)	ND (0.43)	ND (0.50)
2-Phenylbutane (sec-Butylbenzene)	500000		ND (0.10)	ND (0.10)	ND (0.17)	ND (0.16)	ND (0.18)	**14 J**	ND (0.14)	ND (0.16)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)			ND (0.12)	ND (0.11)	ND (0.19)	ND (0.19)	ND (0.20)	ND (0.18)	ND (0.16)	ND (0.18)
Acetone	500000		ND (1.1)	**4.3 J**	**2.3 J**	ND (1.7)	**1.9 J**	**5.6**	ND (1.5)	ND (1.7)
Benzene	44000		ND (0.09)	ND (0.09)	ND (0.15)	ND (0.15)	ND (0.16)	ND (0.14)	ND (0.12)	ND (0.14)
Bromodichloromethane			ND (0.15)	ND (0.14)	ND (0.24)	ND (0.23)	ND (0.26)	ND (0.22)	ND (0.20)	ND (0.23)
Bromoform			ND (0.11)	ND (0.11)	ND (0.18)	ND (0.18)	ND (0.20)	ND (0.17)	ND (0.15)	ND (0.18)
Bromomethane (Methyl Bromide)			ND (0.16)	ND (0.16)	ND (0.26)	ND (0.26)	ND (0.28)	ND (0.24)	ND (0.22)	ND (0.25)
Carbon disulfide			ND (0.53) J	ND (0.50) J	ND (0.86) J	ND (0.84)	ND (0.92)	ND (0.80)	ND (0.71) J	ND (0.83) J
Carbon tetrachloride	22000		ND (0.16)	ND (0.16)	ND (0.27)	ND (0.26)	ND (0.29)	ND (0.25)	ND (0.22)	ND (0.26)
Chlorobenzene	500000		ND (0.17)	ND (0.16)	ND (0.27)	ND (0.26)	ND (0.29)	ND (0.25)	ND (0.22)	ND (0.26)
Chlorobromomethane			ND (0.17)	ND (0.16)	ND (0.28)	ND (0.27)	ND (0.30)	ND (0.26)	ND (0.23)	ND (0.27)
Chloroethane			ND (0.15)	ND (0.14)	ND (0.24) J	ND (0.24)	ND (0.26)	ND (0.23)	ND (0.20) J	ND (0.24) J
Chloroform (Trichloromethane)	350000		ND (0.18)	ND (0.17)	ND (0.29)	ND (0.28)	ND (0.31)	ND (0.27)	ND (0.24)	ND (0.28)
Chloromethane (Methyl Chloride)			ND (0.21)	ND (0.20)	ND (0.34) J	ND (0.33)	ND (0.36)	ND (0.32)	ND (0.28) J	ND (0.33) J
cis-1,2-Dichloroethene	500000		ND (0.16)	**0.20 J**	**0.35 J**	ND (0.26)	ND (0.28)	ND (0.25)	**1.2**	ND (0.26)
cis-1,3-Dichloropropene			ND (0.11)	ND (0.10)	ND (0.18)	ND (0.18)	ND (0.19)	ND (0.17)	ND (0.15)	ND (0.17)
Cyclohexane			ND (0.21)	ND (0.20)	ND (0.34)	ND (0.33)	ND (0.36)	ND (0.31)	ND (0.28)	ND (0.33)
Cymene (p-Isopropyltoluene)			ND (0.10)	ND (0.09)	ND (0.16)	ND (0.15)	ND (0.17)	**2.1 J**	ND (0.13)	ND (0.15)
Dibromochloromethane			ND (0.08)	ND (0.08)	ND (0.14)	ND (0.13)	ND (0.15)	ND (0.13)	ND (0.11)	ND (0.13)
Dichlorodifluoromethane (CFC-12)			ND (0.24)	ND (0.23)	ND (0.39) J	ND (0.38) J	ND (0.42)	ND (0.36)	ND (0.32) J	ND (0.38) J
Ethylbenzene	390000		ND (0.08)	ND (0.08)	ND (0.13)	ND (0.13)	ND (0.14)	**0.44**	ND (0.11)	ND (0.13)
Isopropylbenzene (Cumene)			ND (0.09)	ND (0.09)	ND (0.15)	ND (0.15)	ND (0.16)	**5.1 J**	ND (0.12)	ND (0.15)
m,p-Xylenes			ND (0.17)	ND (0.16)	ND (0.27)	ND (0.27)	ND (0.29)	**4.3 J**	ND (0.22)	ND (0.26)
Methyl acetate			ND (0.22)	ND (0.21)	ND (0.36)	ND (0.35)	ND (0.39)	ND (0.34)	ND (0.30)	ND (0.35)
Methyl cyclohexane			ND (0.12)	ND (0.11)	ND (0.19)	ND (0.18)	ND (0.20)	**7.3 J**	ND (0.15)	ND (0.18)
Methyl Tert Butyl Ether	500000		ND (0.07)	ND (0.07)	ND (0.12)	ND (0.12)	ND (0.13)	ND (0.11)	ND (0.10)	ND (0.12)
Methylene chloride	500000		ND (0.79)	ND (0.76)	ND (1.3)	ND (1.2)	ND (1.4)	ND (1.2)	ND (1.0)	ND (1.2)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1712801-02	L1712801-03	L1717921-11	L1717921-14	L1718140-06	L1718729-01	L1717921-10	L1717921-12
		Sample ID	4347-042117-0850	4347-042117-0903	4542-170531-1515	4542-170531-1550	4542-170601-1245	4542-170606-0930	4542-170531-1450	4542-170531-1525
		Location	Stormwater Pipe Removal - Sidewall West	Stormwater Pipe Removal - Bottom	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A North Sidewall	Area 2A South Sidewall	Area 2A South Sidewall
		Sample Depth (ft.)	1.0-1.5	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5
		Sample Date	4/21/2017	4/21/2017	05/31/2017	05/31/2017	06/01/2017	06/06/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Naphthalene	500000		ND (0.07)	ND (0.06)	ND (0.11)	ND (0.10)	ND (0.12)	ND (0.10)	ND (0.09)	ND (0.10)
n-Butylbenzene	500000		ND (0.11)	ND (0.10)	ND (0.18)	ND (0.17)	ND (0.19)	**22 J**	ND (0.15)	ND (0.17)
n-Propylbenzene	500000		ND (0.10)	ND (0.10)	ND (0.17)	ND (0.16)	ND (0.18)	**9.0 J**	ND (0.14)	ND (0.16)
o-Xylene			ND (0.16)	ND (0.16)	ND (0.26)	ND (0.26)	ND (0.28)	ND (0.24)	ND (0.22)	ND (0.25)
Styrene			ND (0.19)	ND (0.18)	ND (0.31)	ND (0.30)	ND (0.33)	ND (0.29)	ND (0.26)	ND (0.30)
Tetrachloroethene	150000		ND (0.14)	ND (0.14)	ND (0.23)	ND (0.23)	ND (0.25)	ND (0.22)	ND (0.19)	ND (0.23)
Toluene	500000		ND (0.09)	ND (0.09)	ND (0.15)	ND (0.15)	ND (0.16)	ND (0.14)	ND (0.12)	ND (0.15)
trans-1,2-Dichloroethene	500000		ND (0.12)	ND (0.11)	ND (0.19)	ND (0.18)	ND (0.20)	ND (0.17)	ND (0.15)	ND (0.18)
trans-1,3-Dichloropropene			ND (0.10)	ND (0.10)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.15)	ND (0.13)	ND (0.16)
Trichloroethene	200000		ND (0.14)	**0.76**	ND (0.23)	ND (0.23)	ND (0.25)	ND (0.22)	**0.44 J**	ND (0.23)
Trichlorofluoromethane (CFC-11)			ND (0.20)	ND (0.19)	ND (0.32)	ND (0.32)	ND (0.35)	ND (0.30)	ND (0.27)	ND (0.31)
Trifluorotrichloroethane (Freon 113)			ND (0.25)	ND (0.24)	ND (0.40)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.33)	ND (0.39)
Vinyl chloride	13000		ND (0.15)	ND (0.14)	ND (0.24) J	ND (0.24)	ND (0.26)	ND (0.23)	ND (0.20) J	ND (0.24) J
Xylene (total)	500000		ND (0.16)	ND (0.16)	ND (0.26)	ND (0.26)	ND (0.28)	**4.3 J**	ND (0.22)	ND (0.25)

Notes and Abbreviations:

1. Results were compared to the Restricted Use Soil Cleanup Objective (SCO) for Commercial (NYSDEC, Table 375-6.8(b), December 2006).
2. Results in dark gray shading exceed applicable criteria.
3. ND (#): Result is not detected above the indicated reporting limit.
   J: Estimated result
   J+: Estimated result, biased high
   R: Rejected
4. Results in **bold** are detected.

* - Bottom confirmation samples were collected before excavation activities using a geoprobe.

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-15	L1718140-08	L1718140-07	L1718140-02	L1718140-05	L1718140-09	L1718140-01	L1718140-04
		Sample ID	4542-170531-1600	4542-170601-1315	4542-170601-1300	4542-170601-1000	4542-170601-1115	1234-170601-0001	4542-170601-0945	4542-170601-1100
		Location	Area 2A South Sidewall	Area 2A South Sidewall	Area 2A West End Sidewall	Area 2B Bottom	Area 2B NE Sidewall	Area 2B NE Sidewall	Area 2B NW Sidewall	Area 2B SE Sidewall
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	5.0-5.5	4.5-5.0	4.5-5.0	4.5-5.0	4.5-5.0
		Sample Date	05/31/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal
Inorganic Compounds (mg/kg)										
Aluminum			**3,770 J**	**3,800**	**5,810**	**3,690**	**4,040**	**5,640**	**3,790**	**4,140**
Antimony			ND (0.320)	ND (0.333)	ND (0.331)	ND (0.330)	ND (0.335)	ND (0.322)	ND (0.344)	ND (0.334)
Arsenic	16		**3.73**	**2.79**	**3.56**	**3.08**	**3.33**	**3.96**	**3.49**	**3.24**
Barium	400		**37.3**	**32.2**	**41.2**	**29.3**	**34.8**	**42.2**	**32.5**	**32.6**
Beryllium	590		ND (0.028)	**0.149 J**	**0.279 J**	**0.139 J**	**0.176 J**	**0.288 J**	**0.172 J**	**0.211 J**
Cadmium	9.3		**0.261 J**	**0.289 J**	**0.366 J**	**0.260 J**	**0.255 J**	**0.288 J**	**0.244 J**	**0.290 J**
Calcium			**50,300 J**	**41,900**	**48,400**	**44,200**	**46,700**	**33,800**	**49,300**	**56,400**
Chromium			**6.84**	**6.84**	**8.97**	**6.29**	**6.91**	**8.43**	**6.65**	**7.47**
Cobalt			**3.86**	**3.49**	**4.1**	**2.46**	**3.81**	**4.23**	**4**	**3.97**
Copper	270		**10.4**	**12.2**	**10.4**	**8.41**	**9.04**	**10.3**	**10.7**	**9.66**
Iron			**10,300 J**	**9,490**	**12,000**	**9,260**	**10,200**	**11,400**	**10,200**	**10,300**
Lead	1000		**5.76**	**5.01**	**7.48**	**5.99**	**5.63**	**6.19**	**6.43**	**5.76**
Magnesium			**13,800 J**	**13,400**	**14,100**	**14,600**	**14,800**	**11,300**	**18,100**	**19,200**
Manganese	10000		**274 J**	**273**	**295**	**268**	**320**	**272**	**342**	**308**
Mercury	2.8		ND (0.02)	ND (0.02)	**0.02 J**	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Nickel	310		**8.15**	**7.6**	**9.13**	**6.39**	**8.63**	**10.2**	**8.21**	**8.34**
Potassium			**478**	**578**	**533**	**600**	**587**	**600**	**566**	**704**
Selenium	1500		ND (0.217)	**0.324 J**	**0.802 J**	**0.477 J**	**0.696 J**	**0.764 J**	**0.823 J**	**0.308 J**
Silver	1500		ND (0.238)	ND (0.248)	ND (0.247)	ND (0.246)	ND (0.249)	ND (0.240)	ND (0.256)	ND (0.249)
Sodium			ND (2.65)	**114 J**	**238**	**164 J**	**129 J**	**297**	**143 J**	**422**
Thallium			ND (0.265) J	ND (0.276)	ND (0.274)	ND (0.273)	ND (0.277)	ND (0.267)	ND (0.285)	ND (0.277)
Vanadium			**11.5**	**11**	**14**	**10.7**	**11.5**	**12.9**	**11.7**	**12.2**
Zinc	10000		**43.2**	**43.6**	**49.7**	**33.4**	**41.9**	**45.4**	**37.4**	**47.2**
PCBs (ug/kg)										
Aroclor-1016 (PCB-1016)			ND (2.78)	ND (2.84)	ND (2.90)	ND (2.90)	ND (2.96)	ND (2.91)	ND (2.88)	ND (2.94)
Aroclor-1221 (PCB-1221)			ND (3.24)	ND (3.32)	ND (3.38)	ND (3.38)	ND (3.45)	ND (3.39)	ND (3.36)	ND (3.43)
Aroclor-1232 (PCB-1232)			ND (4.12)	ND (4.22)	ND (4.30)	ND (4.30)	ND (4.39)	ND (4.31)	ND (4.28)	ND (4.36)
Aroclor-1242 (PCB-1242)			ND (4.30)	ND (4.40)	ND (4.49)	ND (4.49)	ND (4.58)	ND (4.50)	ND (4.46)	ND (4.55)
Aroclor-1248 (PCB-1248)			ND (2.97)	ND (3.04)	ND (3.09)	ND (3.10)	ND (3.16)	ND (3.10)	ND (3.08)	ND (3.14)
Aroclor-1254 (PCB-1254)			**9.11 J**	ND (2.96)	**26.7 J**	ND (3.02)	ND (3.08)	ND (3.02)	ND (3.00)	**23.2 J**
Aroclor-1260 (PCB-1260)			ND (2.68)	ND (2.74)	ND (2.79)	ND (2.80)	ND (2.85)	ND (2.80)	ND (2.78)	ND (2.84)
Aroclor-1262 (PCB-1262)			ND (1.74)	ND (1.78)	ND (1.82)	ND (1.82)	ND (1.86)	ND (1.82)	ND (1.81)	ND (1.84)
Aroclor-1268 (PCB-1268)			ND (5.10)	ND (5.22)	ND (5.32)	ND (5.32)	ND (5.43)	ND (5.33)	ND (5.29)	ND (5.40)
Polychlorinated biphenyls (PCBs)	1000		**9.11 J**	ND (1.78)	**26.7 J**	ND (1.82)	ND (1.86)	ND (1.82)	ND (1.81)	**23.2 J**
Semi-Volatile Organic Compounds (ug/kg)										
1,2,4,5-Tetrachlorobenzene			ND (19)	ND (20)	ND (20)	ND (19)	ND (19)	ND (19)	ND (20)	ND (20)
2,2'-oxybis(1-Chloropropane)			ND (32)	ND (32)	ND (32)	ND (31)	ND (31)	ND (31)	ND (32)	ND (32)
2,3,4,6-Tetrachlorophenol			ND (37)	ND (38)	ND (38)	ND (37)	ND (37)	ND (37)	ND (38)	ND (38)
2,4,5-Trichlorophenol			ND (35)	ND (36)	ND (36)	ND (35)	ND (35)	ND (35)	ND (36)	ND (36)
2,4,6-Trichlorophenol			ND (35)	ND (36)	ND (36)	ND (35)	ND (35)	ND (35)	ND (35)	ND (36)
2,4-Dichlorophenol			ND (30)	ND (30)	ND (30)	ND (30)	ND (29)	ND (29)	ND (30)	ND (30)
2,4-Dimethylphenol			ND (61)	ND (62)	ND (62)	ND (61)	ND (60)	ND (60)	ND (62)	ND (62)
2,4-Dinitrophenol			ND (86)	ND (87)	ND (88)	ND (86)	ND (85)	ND (85)	ND (87)	ND (87)
2,4-Dinitrotoluene			ND (37)	ND (37)	ND (38)	ND (37)	ND (37)	ND (36)	ND (37)	ND (37)
2,6-Dinitrotoluene			ND (32)	ND (32)	ND (32)	ND (32)	ND (31)	ND (31)	ND (32)	ND (32)
2-Chloronaphthalene			ND (18)	ND (18)	ND (19)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)
2-Chlorophenol			ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)
2-Methylnaphthalene			ND (22)	ND (23)	ND (23)	ND (22)	ND (22)	ND (22)	ND (22)	ND (23)
2-Methylphenol (o-Cresol)	500000		ND (29)	ND (29)	ND (29)	ND (28)	ND (28)	ND (28)	ND (29)	ND (29)
2-Nitroaniline			ND (36) J	ND (36)	ND (36)	ND (36)	ND (35)	ND (35)	ND (36)	ND (36)
2-Nitrophenol			ND (70) J	ND (70)	ND (71)	ND (69)	ND (69)	ND (69)	ND (70)	ND (70)
3,3'-Dichlorobenzidine			ND (49)	ND (50)	ND (50)	ND (49)	ND (49)	ND (49)	ND (50)	ND (50)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-15	L1718140-08	L1718140-07	L1718140-02	L1718140-05	L1718140-09	L1718140-01	L1718140-04
		Sample ID	4542-170531-1600	4542-170601-1315	4542-170601-1300	4542-170601-1000	4542-170601-1115	1234-170601-0001	4542-170601-0945	4542-170601-1100
		Location	Area 2A South Sidewall	Area 2A South Sidewall	Area 2A West End Sidewall	Area 2B Bottom	Area 2B NE Sidewall	Area 2B NE Sidewall	Area 2B NW Sidewall	Area 2B SE Sidewall
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	5.0-5.5	4.5-5.0	4.5-5.0	4.5-5.0	4.5-5.0
		Sample Date	05/31/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal
3-Methylphenol	500000		ND (29)	ND (29)	ND (29)	ND (29)	ND (29)	ND (29)	ND (29)	ND (29)
3-Nitroaniline			ND (35)	ND (35)	ND (36)	ND (35)	ND (34)	ND (34)	ND (35)	ND (35)
4,6-Dinitro-2-methylphenol			ND (89)	ND (90)	ND (90)	ND (88)	ND (88)	ND (88)	ND (90)	ND (90)
4-Bromophenyl phenyl ether			ND (28)	ND (28)	ND (29)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)
4-Chloro-3-methylphenol			ND (28)	ND (28)	ND (28)	ND (27)	ND (27)	ND (27)	ND (28)	ND (28)
4-Chloroaniline			ND (34)	ND (34)	ND (34)	ND (34)	ND (33)	ND (33)	ND (34)	ND (34)
4-Chlorophenyl phenyl ether			ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
4-Nitroaniline			ND (77)	ND (78)	ND (78)	ND (76)	ND (76)	ND (76)	ND (77)	ND (78)
4-Nitrophenol			ND (76)	ND (76)	ND (77)	ND (75)	ND (75)	ND (74)	ND (76)	ND (76)
Acenaphthene	500000		ND (19)	ND (19)	ND (20)	ND (19)	ND (19)	ND (19)	ND (19)	ND (19)
Acenaphthylene	500000		ND (28)	ND (29)	ND (29)	ND (28)	ND (28)	ND (28)	ND (29)	ND (29)
Acetophenone			ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)
Anthracene	500000		ND (36)	ND (36)	ND (37)	ND (36)	ND (36)	ND (36)	ND (36)	ND (36)
Atrazine			ND (65)	ND (66)	ND (66)	ND (64)	ND (64)	ND (64)	ND (65)	ND (66)
Benzaldehyde			ND (50)	ND (50)	ND (51)	ND (50)	ND (49)	ND (49)	ND (50)	ND (51)
Benzo(a)anthracene	5600		ND (21)	ND (21)	ND (21)	ND (21)	ND (21)	ND (20)	ND (21)	ND (21)
Benzo(a)pyrene	1000		ND (45)	ND (46)	ND (46)	ND (45)	ND (45)	ND (44)	ND (46)	ND (46)
Benzo(b)fluoranthene	5600		ND (31)	ND (32)	ND (32)	ND (31)	ND (31)	ND (31)	ND (31)	ND (32)
Benzo(g,h,i)perylene	500000		ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (21)	ND (22)	ND (22)
Benzo(k)fluoranthene	56000		ND (30)	ND (30)	ND (30)	ND (30)	ND (29)	ND (29)	ND (30)	ND (30)
Biphenyl			ND (43)	ND (43)	ND (44)	ND (43)	ND (42)	ND (42)	ND (43)	ND (43)
bis(2-Chloroethoxy)methane			ND (18)	ND (19)	ND (19)	ND (18)	ND (18)	ND (18)	ND (19)	ND (19)
bis(2-Chloroethyl)ether			ND (25)	ND (25)	ND (26)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
bis(2-Ethylhexyl)phthalate			ND (64)	**79 J**	**87 J**	**93 J**	**72 J**	ND (63)	ND (65)	ND (65)
Butyl benzylphthalate			ND (47)	ND (47)	ND (47)	ND (46)	ND (46)	ND (46)	ND (47)	ND (47)
Caprolactam			ND (56)	ND (57)	ND (57)	ND (56)	ND (56)	ND (56)	ND (57)	ND (57)
Carbazole			ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)
Chrysene	56000		ND (19)	ND (19)	ND (20)	ND (19)	ND (19)	ND (19)	ND (19)	ND (19)
Dibenz(a,h)anthracene	560		ND (21)	ND (22)	ND (22)	ND (21)	ND (21)	ND (21)	ND (22)	ND (22)
Dibenzofuran	350000		ND (18)	ND (18)	ND (18)	ND (17)	ND (17)	ND (17)	ND (18)	ND (18)
Diethyl phthalate			ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)	ND (17)
Dimethyl phthalate			ND (39)	ND (39)	ND (40)	ND (39)	ND (38)	ND (38)	ND (39)	ND (39)
Di-n-butylphthalate			ND (35)	ND (36)	ND (36)	ND (35)	ND (35)	ND (35)	ND (35)	ND (36)
Di-n-octyl phthalate			ND (63)	ND (64)	ND (64)	ND (63)	ND (62)	ND (62)	ND (64)	ND (64)
Fluoranthene	500000		ND (21)	ND (21)	ND (22)	ND (21)	ND (21)	ND (21)	ND (21)	**22 J**
Fluorene	500000		ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)
Hexachlorobenzene	6000		ND (21)	ND (21)	ND (21)	ND (21)	ND (20)	ND (20)	ND (21)	ND (21)
Hexachlorobutadiene			ND (27)	ND (27)	ND (28)	ND (27)	ND (27)	ND (27)	ND (27)	ND (27)
Hexachlorocyclopentadiene			ND (170)	ND (170) R	ND (170) R	ND (170) R	ND (160) R	ND (160) R	ND (170) R	ND (170) R
Hexachloroethane			ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Indeno(1,2,3-cd)pyrene	5600		ND (26)	ND (26)	ND (26)	ND (26)	ND (26)	ND (25)	ND (26)	ND (26)
Isophorone			ND (24)	ND (24)	ND (24)	ND (24)	ND (24)	ND (24)	ND (24)	ND (24)
Naphthalene	500000		ND (22)	ND (23)	ND (23)	ND (22)	ND (22)	ND (22)	ND (23)	ND (23)
Nitrobenzene	69000		ND (27)	ND (28)	ND (28)	ND (27)	ND (27)	ND (27)	ND (28)	ND (28)
N-Nitrosodi-n-propylamine			ND (28)	ND (29)	ND (29)	ND (28)	ND (28)	ND (28)	ND (29)	ND (29)
N-Nitrosodiphenylamine			ND (21)	ND (21)	ND (21)	ND (21)	ND (21)	ND (21)	ND (21)	ND (21)
Pentachlorophenol	6700		ND (41)	ND (41)	ND (41)	ND (40)	ND (40)	ND (40)	ND (41)	ND (41)
Phenanthrene	500000		ND (22)	ND (23)	ND (23)	ND (22)	ND (22)	ND (22)	ND (23)	ND (23)
Phenol	500000		ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)
Pyrene	500000		ND (18)	ND (19)	ND (19)	ND (18)	ND (18)	ND (18)	ND (18)	ND (19)
Volatile Organic Compounds (ug/kg)										
1,1,1-Trichloroethane	500000		ND (0.28)	ND (0.26)	ND (0.28)	ND (15)	ND (0.27)	ND (0.28)	ND (0.27)	ND (0.29)
1,1,2,2-Tetrachloroethane			ND (0.24)	ND (0.22)	ND (0.24)	ND (13)	ND (0.23)	ND (0.24)	ND (0.23)	ND (0.24)
1,1,2-Trichloroethane			ND (0.25)	ND (0.23)	ND (0.25)	ND (14)	ND (0.24)	ND (0.25)	ND (0.24)	ND (0.26)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-15	L1718140-08	L1718140-07	L1718140-02	L1718140-05	L1718140-09	L1718140-01	L1718140-04
		Sample ID	4542-170531-1600	4542-170601-1315	4542-170601-1300	4542-170601-1000	4542-170601-1115	1234-170601-0001	4542-170601-0945	4542-170601-1100
		Location	Area 2A South Sidewall	Area 2A South Sidewall	Area 2A West End Sidewall	Area 2B Bottom	Area 2B NE Sidewall	Area 2B NE Sidewall	Area 2B NW Sidewall	Area 2B SE Sidewall
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	5.0-5.5	4.5-5.0	4.5-5.0	4.5-5.0	4.5-5.0
		Sample Date	05/31/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal
1,1-Dichloroethane	240000		ND (0.22)	ND (0.20)	ND (0.21)	ND (12)	ND (0.21)	ND (0.22)	ND (0.21)	ND (0.22)
1,1-Dichloroethene	500000		ND (0.30)	ND (0.28)	ND (0.29)	ND (16)	ND (0.29)	ND (0.30)	ND (0.28)	ND (0.30)
1,2,3-Trichlorobenzene			ND (0.20)	ND (0.19)	ND (0.20)	ND (11)	ND (0.20)	ND (0.20)	ND (0.19)	ND (0.20)
1,2,4-Trichlorobenzene			ND (0.17)	ND (0.16)	ND (0.17)	ND (9.5)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.18)
1,2,4-Trimethylbenzene	190000		ND (0.15)	ND (0.14)	ND (0.15)	ND (8.2)	ND (0.14)	ND (0.15)	ND (0.14)	ND (0.15)
1,2-Dibromo-3-chloropropane (DBCP)			ND (0.32)	ND (0.30)	ND (0.31)	ND (18)	ND (0.31)	ND (0.32)	ND (0.30)	ND (0.32)
1,2-Dibromoethane (Ethylene Dibromide)			ND (0.16)	ND (0.15)	ND (0.16)	ND (8.8)	ND (0.16)	ND (0.16)	ND (0.15)	ND (0.16)
1,2-Dichlorobenzene	500000		ND (0.14)	ND (0.14)	ND (0.14)	ND (8.0)	ND (0.14)	**1.2 J**	ND (0.14)	ND (0.15)
1,2-Dichloroethane	30000		ND (0.20)	ND (0.18)	ND (0.19)	ND (11)	ND (0.19)	ND (0.20)	ND (0.19)	ND (0.20)
1,2-Dichloroethene (total)			-	-	-	-	-	-	-	-
1,2-Dichloropropane			ND (0.18)	ND (0.17)	ND (0.18)	ND (10)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.19)
1,3,5-Trimethylbenzene	190000		ND (0.13)	ND (0.12)	ND (0.13)	ND (7.1)	ND (0.13)	ND (0.13)	ND (0.12)	ND (0.13)
1,3-Dichlorobenzene	280000		ND (0.17)	ND (0.16)	ND (0.17)	ND (9.6)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.18)
1,4-Dichlorobenzene	130000		ND (0.14)	ND (0.14)	ND (0.14)	ND (8.0)	ND (0.14)	**0.17 J**	ND (0.14)	ND (0.15)
1,4-Dioxane	130000		ND (11) J	ND (11)	ND (11)	ND (640)	ND (11)	ND (12)	ND (11)	ND (12)
2-Butanone (Methyl Ethyl Ketone)	500000		ND (0.55)	ND (0.52)	ND (0.54)	ND (30)	ND (0.54)	ND (0.56)	ND (0.53)	ND (0.56)
2-Hexanone			ND (0.53)	ND (0.50)	ND (0.52)	ND (29)	ND (0.52)	ND (0.54)	ND (0.51)	ND (0.54)
2-Phenylbutane (sec-Butylbenzene)	500000		ND (0.17)	ND (0.16)	ND (0.17)	ND (9.6)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.18)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)			ND (0.19)	ND (0.18)	ND (0.19)	ND (11)	ND (0.19)	ND (0.20)	ND (0.19)	ND (0.20)
Acetone	500000		ND (1.8)	ND (1.7)	ND (1.8)	ND (100)	**2.5 J**	ND (1.8)	ND (1.8)	ND (1.9)
Benzene	44000		ND (0.15)	ND (0.14)	ND (0.15)	ND (8.5)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)
Bromodichloromethane			ND (0.24)	ND (0.23)	ND (0.24)	ND (14)	ND (0.24)	ND (0.25)	ND (0.24)	ND (0.25)
Bromoform			ND (0.19)	ND (0.18)	ND (0.19)	ND (10)	ND (0.18)	ND (0.19)	ND (0.18)	ND (0.19)
Bromomethane (Methyl Bromide)			ND (0.27)	ND (0.25)	ND (0.27)	**37 J**	ND (0.26)	ND (0.27)	ND (0.26)	ND (0.28)
Carbon disulfide			ND (0.88)	ND (0.82)	ND (0.87)	ND (49)	ND (0.86)	ND (0.89)	ND (0.84)	ND (0.90)
Carbon tetrachloride	22000		ND (0.27)	ND (0.26)	ND (0.27)	ND (15)	ND (0.27)	ND (0.28)	ND (0.26)	ND (0.28)
Chlorobenzene	500000		ND (0.28)	ND (0.26)	ND (0.27)	ND (15)	ND (0.27)	ND (0.28)	ND (0.27)	ND (0.28)
Chlorobromomethane			ND (0.28)	ND (0.27)	ND (0.28)	ND (16)	ND (0.28)	ND (0.29)	ND (0.27)	ND (0.29)
Chloroethane			ND (0.25)	ND (0.24)	ND (0.25)	ND (14)	ND (0.25)	ND (0.25)	ND (0.24)	ND (0.26)
Chloroform (Trichloromethane)	350000		ND (0.29)	ND (0.28)	ND (0.29)	ND (16)	ND (0.29)	ND (0.30)	ND (0.28)	ND (0.30)
Chloromethane (Methyl Chloride)			ND (0.35)	ND (0.33)	ND (0.34)	ND (19)	ND (0.34)	ND (0.35)	ND (0.33)	ND (0.36)
cis-1,2-Dichloroethene	500000		**0.39 J**	ND (0.26)	ND (0.27)	ND (15)	ND (0.27)	**0.73 J**	**1**	**8.5**
cis-1,3-Dichloropropene			ND (0.18)	ND (0.17)	ND (0.18)	ND (10)	ND (0.18)	ND (0.19)	ND (0.18)	ND (0.19)
Cyclohexane			ND (0.34)	ND (0.32)	ND (0.34)	ND (19)	ND (0.34)	ND (0.35)	ND (0.33)	ND (0.35)
Cymene (p-Isopropyltoluene)			ND (0.16)	ND (0.15)	ND (0.16)	ND (8.9)	ND (0.16)	ND (0.16)	ND (0.15)	ND (0.16)
Dibromochloromethane			ND (0.14)	ND (0.13)	ND (0.14)	ND (7.8)	ND (0.14)	ND (0.14)	ND (0.14)	ND (0.14)
Dichlorodifluoromethane (CFC-12)			ND (0.40) J	ND (0.37)	ND (0.39)	ND (22)	ND (0.39)	ND (0.40)	ND (0.38)	ND (0.41)
Ethylbenzene	390000		ND (0.14)	ND (0.13)	ND (0.13)	ND (7.5)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.14)
Isopropylbenzene (Cumene)			ND (0.15)	ND (0.14)	ND (0.15)	ND (8.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)
m,p-Xylenes			ND (0.28)	ND (0.26)	ND (0.28)	ND (16)	ND (0.27)	ND (0.28)	ND (0.27)	ND (0.29)
Methyl acetate			ND (0.37)	ND (0.35)	ND (0.36)	ND (20)	ND (0.36)	ND (0.37)	ND (0.36)	ND (0.38)
Methyl cyclohexane			ND (0.19)	ND (0.18)	ND (0.19)	ND (11)	ND (0.19)	ND (0.19)	ND (0.18)	ND (0.20)
Methyl Tert Butyl Ether	500000		ND (0.12)	ND (0.11)	ND (0.12)	ND (6.8)	ND (0.12)	ND (0.12)	ND (0.12)	ND (0.12)
Methylene chloride	500000		ND (1.3)	ND (1.2)	ND (1.3)	ND (73)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.4)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-15	L1718140-08	L1718140-07	L1718140-02	L1718140-05	L1718140-09	L1718140-01	L1718140-04
		Sample ID	4542-170531-1600	4542-170601-1315	4542-170601-1300	4542-170601-1000	4542-170601-1115	1234-170601-0001	4542-170601-0945	4542-170601-1100
		Location	Area 2A South Sidewall	Area 2A South Sidewall	Area 2A West End Sidewall	Area 2B Bottom	Area 2B NE Sidewall	Area 2B NE Sidewall	Area 2B NW Sidewall	Area 2B SE Sidewall
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	5.0-5.5	4.5-5.0	4.5-5.0	4.5-5.0	4.5-5.0
		Sample Date	05/31/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal
Naphthalene	500000		ND (0.11)	ND (0.10)	ND (0.11)	ND (6.1)	ND (0.11)	ND (0.11)	ND (0.10)	ND (0.11)
n-Butylbenzene	500000		ND (0.18)	ND (0.17)	ND (0.18)	ND (10)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.19)
n-Propylbenzene	500000		ND (0.17)	ND (0.16)	ND (0.17)	ND (9.5)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.18)
o-Xylene			ND (0.27)	ND (0.25)	ND (0.27)	ND (15)	ND (0.26)	ND (0.27)	ND (0.26)	ND (0.28)
Styrene			ND (0.32)	ND (0.30)	ND (0.32)	ND (18)	ND (0.31)	ND (0.32)	ND (0.31)	ND (0.33)
Tetrachloroethene	150000		ND (0.24)	ND (0.23)	ND (0.24)	ND (13)	ND (0.24)	**0.63 J**	ND (0.23)	**1.4**
Toluene	500000		ND (0.16)	ND (0.14)	ND (0.15)	ND (8.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)
trans-1,2-Dichloroethene	500000		ND (0.19)	ND (0.18)	ND (0.19)	ND (11)	ND (0.19)	ND (0.19)	ND (0.18)	ND (0.20)
trans-1,3-Dichloropropene			ND (0.16)	ND (0.16)	ND (0.16)	ND (9.2)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.17)
Trichloroethene	200000		**0.34 J**	ND (0.23)	ND (0.24)	**3,700 J+**	**7.7 J+**	**140 J+**	**170 J+**	**120 J+**
Trichlorofluoromethane (CFC-11)			ND (0.33)	ND (0.31)	ND (0.33)	ND (18)	ND (0.33)	ND (0.34)	ND (0.32)	ND (0.34)
Trifluorotrichloroethane (Freon 113)			ND (0.41)	ND (0.38)	ND (0.40)	ND (23)	ND (0.40)	ND (0.41)	ND (0.39)	ND (0.42)
Vinyl chloride	13000		ND (0.25)	ND (0.24)	ND (0.25)	ND (14)	ND (0.25)	ND (0.25)	**0.44 J**	ND (0.26)
Xylene (total)	500000		ND (0.27)	ND (0.25)	ND (0.27)	ND (15)	ND (0.26)	ND (0.27)	ND (0.26)	ND (0.28)

Notes and Abbreviations:

1. Results were compared to the Restricted Use Soil Cleanup Objective (SCO) for Commercial (NYSDEC, Table 375-6.8(b), December 2006).
2. Results in dark gray shading exceed applicable criteria.
3. ND (#): Result is not detected above the indicated reporting limit.
   J: Estimated result
   J+: Estimated result, biased high
   R: Rejected
4. Results in **bold** are detected.

* - Bottom confirmation samples were collected before excavation activities using a geoprobe.

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1718140-03	L1717921-01	L1717921-02	L1717921-04	L1717921-06	L1717921-03	L1717921-05	L1717921-07
		Sample ID	4542-170601-1015	4542-170531-0840	4542-170531-0850	4542-170531-1010	4542-170531-1305	4542-170531-1000	4542-170531-1115	4542-170531-1320
		Location	Area 2B Sidewall	Area 2C East End Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C South Sidewall	Area 2C South Sidewall	Area 2C South Sidewall
		Sample Depth (ft.)	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5
		Sample Date	06/01/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Inorganic Compounds (mg/kg)										
Aluminum			**4,010**	**5,160 J**	**4,390 J**	**4,770 J**	**4,470 J**	**5,600 J**	**2,990 J**	**4,290 J**
Antimony			ND (0.330)	ND (0.376)	ND (0.336)	ND (0.341)	ND (0.325)	ND (0.382)	ND (0.349)	ND (0.342)
Arsenic	16		**3.2**	**4.19**	**2.46**	**2.67**	**2.7**	**3.53**	**2.15**	**4.25**
Barium	400		**34.1**	**36.4**	**44.5**	**41.2**	**41.9**	**37.9**	**27.1**	**34.6**
Beryllium	590		**0.200 J**	**0.129 J**	**0.088 J**	**0.099 J**	**0.094 J**	**0.131 J**	**0.037 J**	**0.090 J**
Cadmium	9.3		**0.278 J**	ND (0.097)	ND (0.087)	ND (0.088)	ND (0.084)	ND (0.099)	ND (0.090)	ND (0.088)
Calcium			**41,900**	**39,500 J**	**43,900 J**	**49,800 J**	**48,000 J**	**43,900 J**	**35,800 J**	**46,500 J**
Chromium			**7.72**	**8.71**	**8.88**	**7.79**	**8.53**	**8.64**	**5.25**	**7.05**
Cobalt			**4.2**	**3.86**	**3.34**	**3.97**	**3.84**	**4.64**	**2.35**	**4.06**
Copper	270		**9.2**	**15.4**	**13.4**	**11.7**	**11.3**	**13.9**	**8.4**	**13.3**
Iron			**10,400**	**11,500 J**	**9,770 J**	**11,000 J**	**10,600 J**	**11,100 J**	**8,720 J**	**11,800 J**
Lead	1000		**5.81**	**14.6**	**6.52**	**8.06**	**6.3**	**10.4**	**4.34 J**	**6.86**
Magnesium			**13,700**	**14,200 J**	**14,200 J**	**16,000 J**	**15,600 J**	**15,600 J**	**12,500 J**	**13,400 J**
Manganese	10000		**304**	**261 J**	**232 J**	**328 J**	**308 J**	**362 J**	**203 J**	**271 J**
Mercury	2.8		ND (0.02)	**0.03 J**	ND (0.02)	ND (0.02)	ND (0.02)	**0.02 J**	ND (0.02)	ND (0.02)
Nickel	310		**9.68**	**8.42**	**7.91**	**8.37**	**8.79**	**9.99**	**5.27**	**8.02**
Potassium			**556**	**546**	**627**	**694**	**629**	**693**	**437**	**561**
Selenium	1500		**0.660 J**	ND (0.256)	ND (0.228)	ND (0.232)	ND (0.220)	ND (0.259)	**0.377 J**	ND (0.232)
Silver	1500		ND (0.246)	**0.297 J**	ND (0.250)	ND (0.254)	ND (0.242)	ND (0.284)	ND (0.260)	ND (0.255)
Sodium			**157 J**	**211**	ND (2.78)	ND (2.83)	ND (2.69)	**381**	**468**	**430**
Thallium			ND (0.274)	ND (0.312) J	ND (0.278) J	ND (0.283) J	ND (0.269) J	ND (0.317) J	ND (0.289) J	ND (0.284) J
Vanadium			**11.5**	**13.5**	**11.9**	**12.5**	**12**	**13.2**	**10.1**	**13.4**
Zinc	10000		**47.6**	**65.4**	**49.4**	**87.2**	**42**	**43.6**	**25.1**	**54.4**
PCBs (ug/kg)										
Aroclor-1016 (PCB-1016)			ND (2.80)	ND (3.30) J	ND (2.87) J	ND (2.98) J	ND (2.86) J	ND (3.37) J	ND (3.00) J	ND (2.87) J
Aroclor-1221 (PCB-1221)			ND (3.26)	ND (3.86)	ND (3.35)	ND (3.48)	ND (3.33)	ND (3.94)	ND (3.50)	ND (3.35)
Aroclor-1232 (PCB-1232)			ND (4.15)	ND (4.90)	ND (4.26)	ND (4.42)	ND (4.24)	ND (5.00)	ND (4.45)	ND (4.26)
Aroclor-1242 (PCB-1242)			ND (4.33)	ND (5.12)	ND (4.45)	ND (4.62)	ND (4.42)	ND (5.22)	ND (4.65)	ND (4.45)
Aroclor-1248 (PCB-1248)			ND (2.99)	ND (3.53)	ND (3.07)	ND (3.18)	ND (3.05)	ND (3.60)	ND (3.20)	ND (3.07)
Aroclor-1254 (PCB-1254)			ND (2.91)	**10.6 J**	**6.62 J**	**5.64 J**	ND (2.97)	**233**	ND (3.12)	**7.21 J**
Aroclor-1260 (PCB-1260)			ND (2.70)	**5.56 J**	**3.36 J**	**4.91 J**	ND (2.75)	ND (3.25)	**4.67 J**	ND (2.77)
Aroclor-1262 (PCB-1262)			ND (1.76)	ND (2.08)	ND (1.80)	ND (1.87)	ND (1.79)	ND (2.12)	ND (1.88)	ND (1.80)
Aroclor-1268 (PCB-1268)			ND (5.13)	ND (6.07)	ND (5.27)	ND (5.47)	ND (5.24)	ND (6.19)	ND (5.50)	ND (5.27)
Polychlorinated biphenyls (PCBs)	1000		ND (1.76)	**16.2 J**	**9.98 J**	**10.6 J**	ND (1.79)	**233**	**4.67 J**	**7.21 J**
Semi-Volatile Organic Compounds (ug/kg)										
1,2,4,5-Tetrachlorobenzene			ND (19)	ND (22)	ND (19)	ND (19)	ND (19)	ND (22)	ND (20)	ND (19)
2,2'-oxybis(1-Chloropropane)			ND (31)	ND (37)	ND (31)	ND (32)	ND (32)	ND (36)	ND (33)	ND (32)
2,3,4,6-Tetrachlorophenol			ND (37)	ND (43)	ND (37)	ND (37)	ND (38)	ND (43)	ND (39)	ND (38)
2,4,5-Trichlorophenol			ND (35)	ND (41)	ND (35)	ND (36)	ND (36)	ND (40)	ND (37)	ND (36)
2,4,6-Trichlorophenol			ND (34)	ND (41)	ND (35)	ND (35)	ND (35)	ND (40)	ND (37)	ND (35)
2,4-Dichlorophenol			ND (29)	ND (34)	ND (29)	ND (30)	ND (30)	ND (34)	ND (31)	ND (30)
2,4-Dimethylphenol			ND (60)	ND (71)	ND (60)	ND (61)	ND (62)	ND (70)	ND (64)	ND (61)
2,4-Dinitrophenol			ND (84)	ND (100)	ND (85)	ND (86)	ND (87)	ND (98)	ND (90)	ND (87)
2,4-Dinitrotoluene			ND (36)	ND (43)	ND (37)	ND (37)	ND (37)	ND (42)	ND (39)	ND (37)
2,6-Dinitrotoluene			ND (31)	ND (37)	ND (31)	ND (32)	ND (32)	ND (36)	ND (33)	ND (32)
2-Chloronaphthalene			ND (18)	ND (21)	ND (18)	ND (18)	ND (18)	ND (21)	ND (19)	ND (18)
2-Chlorophenol			ND (21)	ND (25)	ND (22)	ND (22)	ND (22)	ND (25)	ND (23)	ND (22)
2-Methylnaphthalene			ND (22)	ND (26)	ND (22)	ND (22)	ND (22)	ND (26)	ND (23)	ND (22)
2-Methylphenol (o-Cresol)	500000		ND (28)	ND (33)	ND (28)	ND (29)	ND (29)	ND (33)	ND (30)	ND (29)
2-Nitroaniline			ND (35)	ND (41)	ND (35)	ND (36)	ND (36)	ND (41)	ND (37)	ND (36)
2-Nitrophenol			ND (68)	ND (81)	ND (69)	ND (70)	ND (70)	ND (79)	ND (73)	ND (70)
3,3'-Dichlorobenzidine			ND (48)	ND (57)	ND (49)	ND (49)	ND (50)	ND (56)	ND (51)	ND (49)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1718140-03	L1717921-01	L1717921-02	L1717921-04	L1717921-06	L1717921-03	L1717921-05	L1717921-07
		Sample ID	4542-170601-1015	4542-170531-0840	4542-170531-0850	4542-170531-1010	4542-170531-1305	4542-170531-1000	4542-170531-1115	4542-170531-1320
		Location	Area 2B Sidewall	Area 2C East End Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C South Sidewall	Area 2C South Sidewall	Area 2C South Sidewall
		Sample Depth (ft.)	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5
		Sample Date	06/01/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
3-Methylphenol	500000		ND (28)	ND (34)	ND (29)	ND (29)	ND (29)	ND (33)	ND (30)	ND (29)
3-Nitroaniline			ND (34)	ND (40)	ND (34)	ND (35)	ND (35)	ND (40)	ND (36)	ND (35)
4,6-Dinitro-2-methylphenol			ND (87)	ND (100)	ND (88)	ND (89)	ND (90)	ND (100)	ND (93)	ND (89)
4-Bromophenyl phenyl ether			ND (28)	ND (33)	ND (28)	ND (28)	ND (28)	ND (32)	ND (30)	ND (28)
4-Chloro-3-methylphenol			ND (27)	ND (32)	ND (27)	ND (28)	ND (28)	ND (31)	ND (29)	ND (28)
4-Chloroaniline			ND (33)	ND (39)	ND (33)	ND (34)	ND (34)	ND (38)	ND (35)	ND (34)
4-Chlorophenyl phenyl ether			ND (19)	ND (23)	ND (20)	ND (20)	ND (20)	ND (22)	ND (21)	ND (20)
4-Nitroaniline			ND (75)	ND (89)	ND (76)	ND (77)	ND (77)	ND (87)	ND (80)	ND (77)
4-Nitrophenol			ND (74)	ND (88)	ND (75)	ND (76)	ND (76)	ND (86)	ND (79)	ND (76)
Acenaphthene	500000		ND (19)	ND (22)	ND (19)	ND (19)	ND (19)	ND (22)	ND (20)	ND (19)
Acenaphthylene	500000		ND (28)	ND (33)	ND (28)	ND (29)	ND (29)	ND (33)	ND (30)	ND (29)
Acetophenone			ND (22)	ND (26)	ND (23)	ND (23)	ND (23)	ND (26)	ND (24)	ND (23)
Anthracene	500000		ND (35)	ND (42)	ND (36)	ND (36)	ND (36)	ND (41)	ND (38)	ND (36)
Atrazine			ND (64)	ND (75)	ND (64)	ND (65)	ND (65)	ND (74)	ND (68)	ND (65)
Benzaldehyde			ND (49)	ND (58)	ND (49)	ND (50)	ND (50)	ND (57)	ND (52)	ND (50)
Benzo(a)anthracene	5600		ND (20)	ND (24)	**58 J**	ND (21)	ND (21)	ND (24)	ND (22)	ND (21)
Benzo(a)pyrene	1000		ND (44)	ND (52)	**54 J**	ND (45)	ND (46)	ND (52)	ND (47)	ND (45)
Benzo(b)fluoranthene	5600		ND (30)	ND (36)	**73 J**	ND (31)	ND (31)	ND (36)	ND (32)	ND (31)
Benzo(g,h,i)perylene	500000		ND (21)	ND (25)	**37 J**	ND (22)	ND (22)	ND (25)	ND (23)	ND (22)
Benzo(k)fluoranthene	56000		ND (29)	ND (34)	ND (29)	ND (30)	ND (30)	ND (34)	ND (31)	ND (30)
Biphenyl			ND (42)	ND (50)	ND (42)	ND (43)	ND (43)	ND (49)	ND (45)	ND (43)
bis(2-Chloroethoxy)methane			ND (18)	ND (21)	ND (18)	ND (18)	ND (19)	ND (21)	ND (19)	ND (19)
bis(2-Chloroethyl)ether			ND (25)	ND (29)	ND (25)	ND (25)	ND (25)	ND (29)	ND (26)	ND (25)
bis(2-Ethylhexyl)phthalate			**79 J**	ND (74)	ND (63)	ND (64)	ND (64)	ND (73)	ND (67)	ND (64)
Butyl benzylphthalate			ND (46)	ND (54)	ND (46)	ND (47)	ND (47)	ND (53)	ND (49)	ND (47)
Caprolactam			ND (55)	ND (65)	ND (56)	ND (56)	ND (57)	ND (64)	ND (59)	ND (56)
Carbazole			ND (18)	ND (21) J	ND (18) J	ND (18) J	ND (18) J	ND (20) J	ND (19) J	ND (18) J
Chrysene	56000		ND (19)	ND (22)	**57 J**	ND (19)	ND (19)	ND (22)	ND (20)	ND (19)
Dibenz(a,h)anthracene	560		ND (21)	ND (25)	ND (21)	ND (21)	ND (22)	ND (24)	ND (22)	ND (21)
Dibenzofuran	350000		ND (17)	ND (20)	ND (17)	ND (18)	ND (18)	ND (20)	ND (18)	ND (18)
Diethyl phthalate			ND (17)	ND (20)	ND (17)	ND (17)	ND (17)	ND (20)	ND (18)	ND (17)
Dimethyl phthalate			ND (38)	ND (45)	ND (38)	ND (39)	ND (39)	ND (44)	ND (40)	ND (39)
Di-n-butylphthalate			ND (34)	ND (41)	ND (35)	ND (35)	ND (35)	ND (40)	ND (37)	ND (35)
Di-n-octyl phthalate			ND (62)	ND (73)	ND (62)	ND (63)	ND (63)	ND (72)	ND (66)	ND (63)
Fluoranthene	500000		ND (21)	ND (25)	**160**	**33 J**	ND (21)	**35 J**	ND (22)	ND (21)
Fluorene	500000		ND (18)	ND (21)	ND (18)	ND (18)	ND (18)	ND (20)	ND (19)	ND (18)
Hexachlorobenzene	6000		ND (20)	ND (24) J	ND (20) J	ND (21) J	ND (21) J	ND (24) J	ND (22) J	ND (21) J
Hexachlorobutadiene			ND (26)	ND (31)	ND (27)	ND (27)	ND (27)	ND (31)	ND (28)	ND (27)
Hexachlorocyclopentadiene			160 R	ND (190)	ND (160)	ND (170)	ND (170)	ND (190)	ND (180)	ND (170)
Hexachloroethane			ND (29)	ND (35)	ND (30)	ND (30)	ND (30)	ND (34)	ND (31)	ND (30)
Indeno(1,2,3-cd)pyrene	5600		ND (25)	ND (30)	**41 J**	ND (26)	ND (26)	ND (29)	ND (27)	ND (26)
Isophorone			ND (24)	ND (28)	ND (24)	ND (24)	ND (24)	ND (27)	ND (25)	ND (24)
Naphthalene	500000		ND (22)	ND (26)	ND (22)	ND (22)	ND (23)	ND (26)	ND (24)	ND (23)
Nitrobenzene	69000		ND (27)	ND (32)	ND (27)	ND (27)	ND (28)	ND (31)	ND (29)	ND (28)
N-Nitrosodi-n-propylamine			ND (28)	ND (33)	ND (28)	ND (29)	ND (29)	ND (33)	ND (30)	ND (29)
N-Nitrosodiphenylamine			ND (21)	ND (24)	ND (21)	ND (21)	ND (21)	ND (24)	ND (22)	ND (21)
Pentachlorophenol	6700		ND (40)	ND (47)	ND (40)	ND (41)	ND (41)	ND (46)	ND (42)	ND (41)
Phenanthrene	500000		ND (22)	ND (26)	**98 J**	ND (22)	ND (23)	ND (26)	ND (24)	ND (23)
Phenol	500000		ND (27)	ND (32)	ND (28)	ND (28)	ND (28)	ND (32)	ND (29)	ND (28)
Pyrene	500000		ND (18)	ND (21)	**120**	**27 J**	ND (18)	**30 J**	ND (19)	ND (18)
Volatile Organic Compounds (ug/kg)										
1,1,1-Trichloroethane	500000		ND (0.25)	ND (0.33)	ND (0.31)	ND (0.25)	ND (0.28)	ND (0.30)	ND (0.40) J	ND (0.30)
1,1,2,2-Tetrachloroethane			ND (0.22)	ND (0.28)	ND (0.26)	ND (0.22)	ND (0.24)	ND (0.26)	ND (0.34)	ND (0.25)
1,1,2-Trichloroethane			ND (0.23)	ND (0.30)	ND (0.28)	ND (0.23)	ND (0.25)	ND (0.27)	ND (0.36)	ND (0.26)

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811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1718140-03	L1717921-01	L1717921-02	L1717921-04	L1717921-06	L1717921-03	L1717921-05	L1717921-07
		Sample ID	4542-170601-1015	4542-170531-0840	4542-170531-0850	4542-170531-1010	4542-170531-1305	4542-170531-1000	4542-170531-1115	4542-170531-1320
		Location	Area 2B Sidewall	Area 2C East End Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C South Sidewall	Area 2C South Sidewall	Area 2C South Sidewall
		Sample Depth (ft.)	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5
		Sample Date	06/01/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
1,1-Dichloroethane	240000		ND (0.20)	ND (0.26)	ND (0.24)	ND (0.20)	ND (0.22)	ND (0.23)	ND (0.31) J	ND (0.23)
1,1-Dichloroethene	500000		ND (0.27)	ND (0.35)	ND (0.33)	ND (0.27)	ND (0.30)	ND (0.32)	ND (0.43) J	ND (0.31)
1,2,3-Trichlorobenzene			ND (0.18)	ND (0.24)	ND (0.22)	ND (0.18)	ND (0.20)	ND (0.22)	ND (0.29) J	ND (0.21)
1,2,4-Trichlorobenzene			ND (0.16)	ND (0.20)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.19)	ND (0.25) J	ND (0.18)
1,2,4-Trimethylbenzene	190000		ND (0.13)	ND (0.18)	ND (0.16)	ND (0.14)	ND (0.15)	ND (0.16)	ND (0.21) J	ND (0.16)
1,2-Dibromo-3-chloropropane (DBCP)			ND (0.29)	ND (0.38)	ND (0.35)	ND (0.29)	ND (0.32)	ND (0.34)	ND (0.46)	ND (0.33)
1,2-Dibromoethane (Ethylene Dibromide)			ND (0.14)	ND (0.19)	ND (0.18)	ND (0.14)	ND (0.16)	ND (0.17)	ND (0.23)	ND (0.17)
1,2-Dichlorobenzene	500000		**0.37 J**	ND (0.17)	ND (0.16)	ND (0.13)	ND (0.15)	ND (0.16)	ND (0.21) J	ND (0.15)
1,2-Dichloroethane	30000		ND (0.18)	ND (0.23)	ND (0.22)	ND (0.18)	ND (0.20)	ND (0.21)	ND (0.28) J	ND (0.21)
1,2-Dichloroethene (total)			-	-	-	-	-	-	-	-
1,2-Dichloropropane			ND (0.16)	ND (0.22)	ND (0.20)	ND (0.16)	ND (0.18)	ND (0.20)	ND (0.26) J	ND (0.19)
1,3,5-Trimethylbenzene	190000		ND (0.12)	ND (0.15)	ND (0.14)	ND (0.12)	ND (0.13)	ND (0.14)	ND (0.18) J	ND (0.14)
1,3-Dichlorobenzene	280000		ND (0.16)	ND (0.21)	ND (0.19)	ND (0.16)	ND (0.18)	ND (0.19)	ND (0.25) J	ND (0.18)
1,4-Dichlorobenzene	130000		ND (0.13)	ND (0.17)	ND (0.16)	ND (0.13)	ND (0.15)	ND (0.16)	ND (0.21) J	ND (0.15)
1,4-Dioxane	130000		ND (10)	ND (14)	ND (13)	ND (10)	ND (12)	ND (12)	ND (16)	ND (12)
2-Butanone (Methyl Ethyl Ketone)	500000		ND (0.50)	ND (0.65)	ND (0.61)	ND (0.50)	ND (0.56)	ND (0.60)	ND (0.79)	ND (0.58)
2-Hexanone			ND (0.48)	ND (0.63)	ND (0.58)	ND (0.48)	ND (0.54)	ND (0.58)	ND (0.76) J	ND (0.56)
2-Phenylbutane (sec-Butylbenzene)	500000		ND (0.16)	ND (0.20)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.19)	ND (0.25) J	ND (0.18)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)			ND (0.18)	ND (0.23)	ND (0.21)	ND (0.18)	ND (0.20)	ND (0.21)	ND (0.28)	ND (0.21)
Acetone	500000		ND (1.6)	ND (2.2)	ND (2.0)	ND (1.7)	ND (1.8)	**4.1 J**	ND (2.6)	ND (1.9)
Benzene	44000		ND (0.14)	ND (0.18)	ND (0.17)	ND (0.14)	ND (0.16)	ND (0.17)	ND (0.22) J	ND (0.16)
Bromodichloromethane			ND (0.22)	ND (0.29)	ND (0.27)	ND (0.22)	ND (0.25)	ND (0.27)	ND (0.35) J	ND (0.26)
Bromoform			ND (0.17)	ND (0.22)	ND (0.21)	ND (0.17)	ND (0.19)	ND (0.20)	ND (0.27)	ND (0.20)
Bromomethane (Methyl Bromide)			ND (0.24)	ND (0.32)	ND (0.30)	ND (0.24)	ND (0.27)	ND (0.29)	ND (0.39) J	ND (0.28)
Carbon disulfide			ND (0.80)	ND (1.0) J	ND (0.97) J	ND (0.80) J	ND (0.89) J	ND (0.95) J	ND (1.3) J	ND (0.93) J
Carbon tetrachloride	22000		ND (0.25)	ND (0.33)	ND (0.30)	ND (0.25)	ND (0.28)	ND (0.30)	ND (0.40) J	ND (0.29)
Chlorobenzene	500000		ND (0.25)	ND (0.33)	ND (0.31)	ND (0.25)	ND (0.28)	ND (0.30)	ND (0.40) J	ND (0.29)
Chlorobromomethane			ND (0.26)	ND (0.34)	ND (0.31)	ND (0.26)	ND (0.29)	ND (0.31)	ND (0.41) J	ND (0.30)
Chloroethane			ND (0.23)	ND (0.30) J	ND (0.28) J	ND (0.23) J	ND (0.25) J	ND (0.27)	ND (0.36) J	ND (0.27) J
Chloroform (Trichloromethane)	350000		ND (0.27)	ND (0.35)	ND (0.32)	ND (0.27)	ND (0.30)	ND (0.32)	ND (0.42) J	ND (0.31)
Chloromethane (Methyl Chloride)			ND (0.32)	ND (0.41) J	ND (0.38) J	ND (0.32) J	ND (0.35) J	ND (0.38)	ND (0.50) J	ND (0.37) J
cis-1,2-Dichloroethene	500000		**11**	ND (0.32)	ND (0.30)	ND (0.25)	ND (0.28)	**0.72 J**	ND (0.39) J	ND (0.29)
cis-1,3-Dichloropropene			ND (0.17)	ND (0.22)	ND (0.20)	ND (0.17)	ND (0.19)	ND (0.20)	ND (0.26) J	ND (0.20)
Cyclohexane			ND (0.31)	ND (0.41)	ND (0.38)	ND (0.31)	ND (0.35)	ND (0.37)	ND (0.50) J	ND (0.36)
Cymene (p-Isopropyltoluene)			ND (0.15)	ND (0.19)	ND (0.18)	ND (0.15)	ND (0.16)	ND (0.17)	ND (0.23) J	ND (0.17)
Dibromochloromethane			ND (0.13)	ND (0.17)	ND (0.15)	ND (0.13)	ND (0.14)	ND (0.15)	ND (0.20) J	ND (0.15)
Dichlorodifluoromethane (CFC-12)			ND (0.36)	ND (0.47) J	ND (0.44) J	ND (0.36) J	ND (0.40) J	ND (0.43) J	ND (0.57) J	ND (0.42) J
Ethylbenzene	390000		ND (0.12)	ND (0.16)	ND (0.15)	ND (0.12)	ND (0.14)	ND (0.15)	ND (0.20) J	ND (0.14)
Isopropylbenzene (Cumene)			ND (0.14)	ND (0.18)	ND (0.17)	ND (0.14)	ND (0.16)	ND (0.17)	ND (0.22) J	ND (0.16)
m,p-Xylenes			ND (0.25)	ND (0.33)	ND (0.31)	ND (0.25)	ND (0.28)	ND (0.30)	ND (0.40) J	ND (0.30)
Methyl acetate			ND (0.34)	ND (0.44)	ND (0.41)	ND (0.34)	ND (0.37)	ND (0.40)	ND (0.53)	ND (0.39)
Methyl cyclohexane			ND (0.17)	ND (0.23)	ND (0.21)	ND (0.17)	ND (0.19)	ND (0.21)	ND (0.28) J	ND (0.20)
Methyl Tert Butyl Ether	500000		ND (0.11)	ND (0.14)	ND (0.13)	ND (0.11)	ND (0.12)	ND (0.13)	ND (0.18) J	ND (0.13)
Methylene chloride	500000		ND (1.2)	ND (1.6)	ND (1.4)	ND (1.2)	ND (1.3)	ND (1.4)	ND (1.9) J	ND (1.4)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1718140-03	L1717921-01	L1717921-02	L1717921-04	L1717921-06	L1717921-03	L1717921-05	L1717921-07
		Sample ID	4542-170601-1015	4542-170531-0840	4542-170531-0850	4542-170531-1010	4542-170531-1305	4542-170531-1000	4542-170531-1115	4542-170531-1320
		Location	Area 2B Sidewall	Area 2C East End Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C North Sidewall	Area 2C South Sidewall	Area 2C South Sidewall	Area 2C South Sidewall
		Sample Depth (ft.)	4.5-5.0	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5
		Sample Date	06/01/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Naphthalene	500000		ND (0.10)	ND (0.13)	ND (0.12)	ND (0.10)	**0.16 J**	ND (0.12)	ND (0.16) J	ND (0.12)
n-Butylbenzene	500000		ND (0.16)	ND (0.22)	ND (0.20)	ND (0.16)	ND (0.18)	ND (0.20)	ND (0.26) J	ND (0.19)
n-Propylbenzene	500000		ND (0.16)	ND (0.20)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.19)	ND (0.25) J	ND (0.18)
o-Xylene			ND (0.24)	ND (0.32)	ND (0.30)	ND (0.24)	ND (0.27)	ND (0.29)	ND (0.39) J	ND (0.28)
Styrene			ND (0.29)	ND (0.38)	ND (0.35)	ND (0.29)	ND (0.32)	ND (0.35)	ND (0.46) J	ND (0.34)
Tetrachloroethene	150000		**0.41 J**	ND (0.29)	ND (0.26)	ND (0.22)	ND (0.24)	ND (0.26)	ND (0.35) J	ND (0.26)
Toluene	500000		ND (0.14)	ND (0.18)	ND (0.17)	ND (0.14)	ND (0.16)	ND (0.17)	ND (0.22) J	ND (0.16)
trans-1,2-Dichloroethene	500000		ND (0.17)	ND (0.23)	ND (0.21)	ND (0.17)	ND (0.19)	ND (0.21)	ND (0.28) J	ND (0.20)
trans-1,3-Dichloropropene			ND (0.15)	ND (0.20)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.18)	ND (0.24) J	ND (0.18)
Trichloroethene	200000		**25 J+**	**0.39 J**	**1.6**	ND (0.22)	ND (0.24)	ND (0.26)	ND (0.35) J	ND (0.26)
Trichlorofluoromethane (CFC-11)			ND (0.30)	ND (0.40)	ND (0.37)	ND (0.30)	ND (0.34)	ND (0.36)	ND (0.48) J	ND (0.35)
Trifluorotrichloroethane (Freon 113)			ND (0.37)	ND (0.49)	ND (0.45)	ND (0.37)	ND (0.41)	ND (0.44)	ND (0.59) J	ND (0.43)
Vinyl chloride	13000		**0.91 J**	ND (0.30) J	ND (0.28) J	ND (0.23) J	ND (0.25) J	**0.92 J**	ND (0.36) J	ND (0.27) J
Xylene (total)	500000		ND (0.24)	ND (0.32)	ND (0.30)	ND (0.24)	ND (0.27)	ND (0.29)	ND (0.39) J	ND (0.28)

Notes and Abbreviations:

1. Results were compared to the Restricted Use Soil Cleanup Objective (SCO) for Commercial (NYSDEC, Table 375-6.8(b), December 2006).
2. Results in dark gray shading exceed applicable criteria.
3. ND (#): Result is not detected above the indicated reporting limit.
   J: Estimated result
   J+: Estimated result, biased high
   R: Rejected
4. Results in **bold** are detected.

* - Bottom confirmation samples were collected before excavation activities using a geoprobe.

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-08	L1717921-13	L1707923-07	L1707923-08	L1707923-04	L1707923-05	L1707923-01	L1707923-02
		Sample ID	4542-170531-1335	1234-170531-0001	4542-170314-1255	4542-170314-1305	4542-170314-1005	4542-170314-1015	4542-170314-0850	4542-170314-0900
		Location	Area 2C South Sidewall	Area 2C South Sidewall	A2D-01 - Area 2A Bottom	A2D-01 - Area 2A Sidewall	A2D-02 - Area 2A Bottom	A2D-02 - Area 2A Bottom	A2D-03 - Area 2A - Bottom	A2D-03 - Area 2A - Bottom
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	05/31/2017	05/31/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
Inorganic Compounds (mg/kg)										
Aluminum			**4,250 J**	**3,640 J**	**4,300**	**4,400**	**4,000**	**3,200**	**4,000**	**3,900**
Antimony			ND (0.349)	ND (0.346)	ND (0.35)	ND (0.33)	ND (0.34)	ND (0.34)	ND (0.35)	ND (0.34)
Arsenic	16		**3.18 J**	**4.17 J**	**4.1**	**1.4**	**2.4**	**1.4**	**2.9**	**2**
Barium	400		**35.1**	**27.8**	**32**	**32**	**36**	**29**	**38**	**34**
Beryllium	590		**0.092 J**	**0.064 J**	**0.09 J**	**0.04 J**	**0.08 J**	**0.05 J**	**0.07 J**	**0.06 J**
Cadmium	9.3		ND (0.090)	ND (0.089)	**0.19 J**	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)
Calcium			**43,600 J**	**42,600 J**	**38,000**	**36,000**	**46,000**	**47,000**	**47,000**	**43,000**
Chromium			**6.91**	**6.33**	**30**	**8.1**	**6.9**	**5.7**	**9.5**	**7.6**
Cobalt			**3.4**	**3.18**	**4**	**4.5**	**3.5**	**3.2**	**3.8**	**4**
Copper	270		**11.5**	**10.6**	**15**	**11**	**13**	**8.5**	**10**	**10**
Iron			**10,400 J**	**10,200 J**	**9,800**	**9,800**	**10,000**	**8,200**	**9,800**	**9,600**
Lead	1000		**7.17**	**6.25**	**11**	**5**	**6.8**	**4.5**	**7.2**	**6.9**
Magnesium			**15,100 J**	**15,100 J**	**14,000**	**13,000**	**14,000**	**18,000**	**16,000**	**15,000**
Manganese	10000		**261 J**	**227 J**	**230**	**270**	**260**	**250**	**260**	**300**
Mercury	2.8		ND (0.02)	ND (0.02)	**0.03 J**	**0.02 J**	**0.02 J**	**0.02 J**	**0.02 J**	**0.02 J**
Nickel	310		**7.78**	**7.28**	**8.6**	**9.7**	**7.7**	**6.8**	**7.9**	**8.2**
Potassium			**664**	**570**	**420**	**470**	**480**	**530**	**510**	**560**
Selenium	1500		**0.441 J**	ND (0.235)	ND (0.24)	ND (0.23)	ND (0.23)	**0.31 J**	ND (0.24)	ND (0.23)
Silver	1500		ND (0.260)	ND (0.258)	ND (0.26)	ND (0.25)	ND (0.26)	ND (0.25)	ND (0.26)	ND (0.25)
Sodium			**480**	**391**	**120 J**	**160 J**	**120 J**	**100 J**	**130 J**	**120 J**
Thallium			ND (0.289) J	ND (0.287) J	ND (0.29)	ND (0.28)	ND (0.28)	**0.36 J**	ND (0.29)	ND (0.28)
Vanadium			**11.7**	**10.8**	**14**	**11**	**12**	**9.1**	**11**	**11**
Zinc	10000		**51**	**57**	**46**	**42**	**42**	**31**	**43**	**45**
PCBs (ug/kg)										
Aroclor-1016 (PCB-1016)			ND (2.96) J	ND (2.99) J	ND (3.06)	ND (2.88)	ND (2.90)	ND (2.86)	ND (3.01)	ND (2.91)
Aroclor-1221 (PCB-1221)			ND (3.46)	ND (3.49)	ND (3.58)	ND (3.37)	ND (3.39)	ND (3.34)	ND (3.51)	ND (3.40)
Aroclor-1232 (PCB-1232)			ND (4.40)	ND (4.44)	ND (4.54)	ND (4.28)	ND (4.30)	ND (4.24)	ND (4.46)	ND (4.32)
Aroclor-1242 (PCB-1242)			ND (4.59)	ND (4.63)	ND (4.75)	ND (4.47)	ND (4.50)	ND (4.43)	ND (4.66)	ND (4.51)
Aroclor-1248 (PCB-1248)			ND (3.16)	ND (3.20)	ND (3.27)	ND (3.08)	ND (3.10)	ND (3.05)	ND (3.21)	ND (3.11)
Aroclor-1254 (PCB-1254)			ND (3.08)	ND (3.11)	**17.2 J**	ND (3.00)	ND (3.02)	ND (2.97)	**9.97 J**	ND (3.03)
Aroclor-1260 (PCB-1260)			ND (2.86)	ND (2.88)	**7.79 J**	ND (2.78)	ND (2.80)	ND (2.76)	ND (2.90)	ND (2.81)
Aroclor-1262 (PCB-1262)			ND (1.86)	ND (1.88)	ND (1.92)	ND (1.81)	ND (1.82)	ND (1.79)	ND (1.89)	ND (1.83)
Aroclor-1268 (PCB-1268)			ND (5.44)	ND (5.49)	ND (5.62)	ND (5.30)	ND (5.33)	ND (5.25)	ND (5.52)	ND (5.34)
Polychlorinated biphenyls (PCBs)	1000		ND (1.86)	ND (1.88)	**25.0 J**	ND (1.81)	ND (1.82)	ND (1.79)	**9.97 J**	ND (1.83)
Semi-Volatile Organic Compounds (ug/kg)										
1,2,4,5-Tetrachlorobenzene			ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (19)
2,2'-oxybis(1-Chloropropane)			ND (33)	ND (32)	ND (33)	ND (32)	ND (33)	ND (32)	ND (32)	ND (32)
2,3,4,6-Tetrachlorophenol			ND (39)	ND (38)	ND (39)	ND (38)	ND (39)	ND (38)	ND (38)	ND (37)
2,4,5-Trichlorophenol			ND (37)	ND (36)	ND (37)	ND (36)	ND (37)	ND (36)	ND (36)	ND (36)
2,4,6-Trichlorophenol			ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (35)
2,4-Dichlorophenol			ND (31)	ND (30)	ND (31)	ND (30)	ND (31)	ND (30)	ND (30)	ND (30)
2,4-Dimethylphenol			ND (63)	ND (62)	ND (64)	ND (62)	ND (63)	ND (62)	ND (62)	ND (61)
2,4-Dinitrophenol			ND (89)	ND (88)	ND (90)	ND (88)	ND (89)	ND (87)	ND (88)	ND (86)
2,4-Dinitrotoluene			ND (38)	ND (38)	ND (38)	ND (38)	ND (38)	ND (37)	ND (38)	ND (37)
2,6-Dinitrotoluene			ND (33)	ND (32)	ND (33)	ND (32)	ND (33)	ND (32)	ND (32)	ND (32)
2-Chloronaphthalene			ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (18)	ND (19)	ND (18)
2-Chlorophenol			ND (23)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)	ND (22)	ND (22)
2-Methylnaphthalene			ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (22)
2-Methylphenol (o-Cresol)	500000		ND (30)	ND (29)	ND (30)	ND (29)	ND (30)	ND (29)	ND (29)	ND (29)
2-Nitroaniline			ND (37)	ND (36)	ND (37)	ND (36)	ND (37)	ND (36)	ND (36)	ND (36)
2-Nitrophenol			ND (72)	ND (71)	ND (72)	ND (71)	ND (72)	ND (70)	ND (71)	ND (70)
3,3'-Dichlorobenzidine			ND (51)	ND (50)	ND (51)	ND (50)	ND (51)	ND (50)	ND (50)	ND (49)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-08	L1717921-13	L1707923-07	L1707923-08	L1707923-04	L1707923-05	L1707923-01	L1707923-02
		Sample ID	4542-170531-1335	1234-170531-0001	4542-170314-1255	4542-170314-1305	4542-170314-1005	4542-170314-1015	4542-170314-0850	4542-170314-0900
		Location	Area 2C South Sidewall	Area 2C South Sidewall	A2D-01 - Area 2A Bottom	A2D-01 - Area 2A Sidewall	A2D-02 - Area 2A Bottom	A2D-02 - Area 2A Bottom	A2D-03 - Area 2A - Bottom	A2D-03 - Area 2A - Bottom
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	05/31/2017	05/31/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
3-Methylphenol	500000		ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (29)	ND (30)	ND (29)
3-Nitroaniline			ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (35)	ND (36)	ND (35)
4,6-Dinitro-2-methylphenol			ND (92)	ND (91)	ND (92)	ND (91)	ND (92)	ND (90)	ND (91)	ND (89)
4-Bromophenyl phenyl ether			ND (29)	ND (29)	ND (29)	ND (29)	ND (29)	ND (28)	ND (29)	ND (28)
4-Chloro-3-methylphenol			ND (28)	ND (28)	ND (29)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)
4-Chloroaniline			ND (35)	ND (34)	ND (35)	ND (34)	ND (35)	ND (34)	ND (34)	ND (34)
4-Chlorophenyl phenyl ether			ND (20)	ND (20)	ND (21)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
4-Nitroaniline			ND (79)	ND (78)	ND (80)	ND (78)	ND (79)	ND (78)	ND (78)	ND (77)
4-Nitrophenol			ND (78)	ND (77)	ND (79)	ND (77)	ND (78)	ND (76)	ND (77)	ND (76)
Acenaphthene	500000		ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (19)	ND (20)	ND (19)
Acenaphthylene	500000		ND (30)	ND (29)	ND (30)	ND (29)	ND (30)	ND (29)	ND (29)	ND (29)
Acetophenone			ND (24)	ND (23)	ND (24)	ND (23)	ND (24)	ND (23)	ND (23)	ND (23)
Anthracene	500000		ND (37)	ND (37)	ND (38)	ND (37)	ND (37)	ND (36)	ND (37)	ND (36)
Atrazine			ND (67)	ND (66)	ND (68)	ND (66)	ND (67)	ND (66)	ND (66)	ND (65)
Benzaldehyde			ND (52)	ND (51)	ND (52)	ND (51)	ND (52)	ND (50)	ND (51)	ND (50)
Benzo(a)anthracene	5600		ND (22)	ND (21)	ND (22)	ND (21)	ND (22)	ND (21)	ND (21)	ND (21)
Benzo(a)pyrene	1000		ND (47)	ND (46)	ND (47)	ND (46)	ND (47)	ND (46)	ND (46)	ND (45)
Benzo(b)fluoranthene	5600		ND (32)	ND (32)	ND (32)	ND (32)	ND (32)	ND (32)	ND (32)	ND (31)
Benzo(g,h,i)perylene	500000		ND (22)	ND (22)	ND (23)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)
Benzo(k)fluoranthene	56000		ND (31)	ND (30)	ND (31)	ND (30)	ND (31)	ND (30)	ND (30)	ND (30)
Biphenyl			ND (44)	ND (44)	ND (45)	ND (44)	ND (44)	ND (43)	ND (44)	ND (43)
bis(2-Chloroethoxy)methane			ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (18)
bis(2-Chloroethyl)ether			ND (26)	ND (26)	ND (26)	ND (26)	ND (26)	ND (25)	ND (26)	ND (25)
bis(2-Ethylhexyl)phthalate			ND (66)	ND (65)	ND (67)	ND (65)	ND (66)	ND (65)	**75 J**	ND (64)
Butyl benzylphthalate			ND (48)	ND (48)	ND (49)	ND (48)	ND (48)	ND (47)	ND (48)	ND (47)
Caprolactam			ND (58)	ND (57)	ND (59)	ND (57)	ND (58)	ND (57)	ND (58)	ND (56)
Carbazole			ND (19) J	ND (18) J	ND (19)	ND (18)	ND (19)	ND (18)	ND (18)	ND (18)
Chrysene	56000		ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (19)	ND (20)	ND (19)
Dibenz(a,h)anthracene	560		ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (21)
Dibenzofuran	350000		ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)	ND (18)
Diethyl phthalate			ND (18)	ND (17)	ND (18)	ND (18)	ND (18)	ND (17)	ND (18)	ND (17)
Dimethyl phthalate			ND (40)	ND (40)	ND (40)	ND (40)	ND (40)	ND (39)	ND (40)	ND (39)
Di-n-butylphthalate			ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (36)	ND (35)
Di-n-octyl phthalate			ND (65)	ND (64)	ND (66)	ND (64)	ND (65)	ND (64)	ND (64)	ND (63)
Fluoranthene	500000		ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (22)	ND (21)
Fluorene	500000		ND (19)	ND (18)	ND (19)	ND (18)	ND (19)	ND (18)	ND (18)	ND (18)
Hexachlorobenzene	6000		ND (21) J	ND (21) J	ND (22)	ND (21)	ND (21)	ND (21)	ND (21)	ND (21)
Hexachlorobutadiene			ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (27)	ND (28)	ND (27)
Hexachlorocyclopentadiene			ND (170)	ND (170)	ND (170)	ND (170)	ND (170)	ND (170)	ND (170)	ND (170)
Hexachloroethane			ND (31)	ND (30)	ND (31)	ND (30)	ND (31)	ND (30)	ND (31)	ND (30)
Indeno(1,2,3-cd)pyrene	5600		ND (27)	ND (26)	ND (27)	ND (26)	ND (27)	ND (26)	ND (26)	ND (26)
Isophorone			ND (25)	ND (24)	ND (25)	ND (24)	ND (25)	ND (24)	ND (24)	ND (24)
Naphthalene	500000		ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)
Nitrobenzene	69000		ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (28)	ND (27)
N-Nitrosodi-n-propylamine			ND (30)	ND (29)	ND (30)	ND (29)	ND (30)	ND (29)	ND (29)	ND (29)
N-Nitrosodiphenylamine			ND (22)	ND (21)	ND (22)	ND (22)	ND (22)	ND (21)	ND (22)	ND (21)
Pentachlorophenol	6700		ND (42)	ND (42)	ND (42)	ND (42)	ND (42)	ND (41)	ND (42)	ND (41)
Phenanthrene	500000		ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (23)	ND (22)
Phenol	500000		ND (29)	ND (28)	ND (29)	ND (28)	ND (29)	ND (28)	ND (28)	ND (28)
Pyrene	500000		ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (19)	ND (18)
Volatile Organic Compounds (ug/kg)										
1,1,1-Trichloroethane	500000		ND (0.32)	ND (0.34)	ND (0.09)	ND (0.08)	ND (0.09)	ND (0.08)	ND (0.09)	ND (0.08)
1,1,2,2-Tetrachloroethane			ND (0.28)	ND (0.29)	ND (0.08)	ND (0.08)	ND (0.08)	ND (0.08)	ND (0.08)	ND (0.07)
1,1,2-Trichloroethane			ND (0.29)	ND (0.30)	ND (0.23)	ND (0.23)	ND (0.24)	ND (0.22)	ND (0.25)	ND (0.22)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-08	L1717921-13	L1707923-07	L1707923-08	L1707923-04	L1707923-05	L1707923-01	L1707923-02
		Sample ID	4542-170531-1335	1234-170531-0001	4542-170314-1255	4542-170314-1305	4542-170314-1005	4542-170314-1015	4542-170314-0850	4542-170314-0900
		Location	Area 2C South Sidewall	Area 2C South Sidewall	A2D-01 - Area 2A Bottom	A2D-01 - Area 2A Sidewall	A2D-02 - Area 2A Bottom	A2D-02 - Area 2A Bottom	A2D-03 - Area 2A - Bottom	A2D-03 - Area 2A - Bottom
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	05/31/2017	05/31/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
1,1-Dichloroethane	240000		ND (0.25)	ND (0.26)	ND (0.07)	ND (0.07)	ND (0.07)	ND (0.06)	ND (0.07)	ND (0.06)
1,1-Dichloroethene	500000		ND (0.34)	ND (0.36)	ND (0.20)	ND (0.20)	ND (0.21)	ND (0.19)	ND (0.21)	ND (0.19)
1,2,3-Trichlorobenzene			ND (0.23)	ND (0.24)	ND (0.11)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.11)
1,2,4-Trichlorobenzene			ND (0.20)	ND (0.21)	ND (0.14)	ND (0.14)	ND (0.14)	ND (0.13)	ND (0.15)	ND (0.13)
1,2,4-Trimethylbenzene	190000		ND (0.17)	ND (0.18)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.10)
1,2-Dibromo-3-chloropropane (DBCP)			ND (0.36)	ND (0.38)	ND (0.30)	ND (0.30)	ND (0.32)	ND (0.29)	ND (0.32)	ND (0.29)
1,2-Dibromoethane (Ethylene Dibromide)			ND (0.18)	ND (0.19)	ND (0.13)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.14)	ND (0.13)
1,2-Dichlorobenzene	500000		ND (0.17)	ND (0.17)	ND (0.12)	ND (0.12)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.11)
1,2-Dichloroethane	30000		ND (0.23)	ND (0.24)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.08)	ND (0.09)	ND (0.08)
1,2-Dichloroethene (total)			-	-	ND (0.11)	ND (0.11)	**0.28 J**	ND (0.10)	**6**	**0.14 J**
1,2-Dichloropropane			ND (0.21)	ND (0.22)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.18)	ND (0.17)
1,3,5-Trimethylbenzene	190000		ND (0.15)	ND (0.15)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.12)	ND (0.10)
1,3-Dichlorobenzene	280000		ND (0.20)	ND (0.21)	ND (0.10)	ND (0.10)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.10)
1,4-Dichlorobenzene	130000		ND (0.17)	ND (0.17)	ND (0.10)	ND (0.10)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.10)
1,4-Dioxane	130000		ND (13)	ND (14)	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
2-Butanone (Methyl Ethyl Ketone)	500000		ND (0.64)	ND (0.66)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.20)	ND (0.22)	ND (0.20)
2-Hexanone			ND (0.61)	ND (0.64)	ND (0.51)	ND (0.51)	ND (0.53)	ND (0.49)	ND (0.54)	ND (0.49)
2-Phenylbutane (sec-Butylbenzene)	500000		ND (0.20)	ND (0.21)	ND (0.09)	ND (0.09)	ND (0.10)	ND (0.09)	ND (0.10)	ND (0.09)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)			ND (0.22)	ND (0.23)	ND (0.19)	ND (0.18)	ND (0.20)	ND (0.18)	ND (0.20)	ND (0.18)
Acetone	500000		ND (2.1)	ND (2.2)	ND (0.79)	**5.8 J**	**1.7 J**	**1.0 J**	**3.5 J**	ND (0.76)
Benzene	44000		ND (0.18)	ND (0.18)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.10)	ND (0.09)
Bromodichloromethane			ND (0.28)	ND (0.30)	ND (0.13)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.14)	ND (0.13)
Bromoform			ND (0.22)	ND (0.23)	ND (0.18)	ND (0.18)	ND (0.19)	ND (0.17)	ND (0.19)	ND (0.17)
Bromomethane (Methyl Bromide)			ND (0.31)	ND (0.32)	ND (0.26)	ND (0.26)	ND (0.27)	ND (0.25)	ND (0.27)	ND (0.25)
Carbon disulfide			ND (1.0) J	ND (1.0) J	ND (0.84)	ND (0.84)	ND (0.88)	ND (0.82)	ND (0.89)	ND (0.81)
Carbon tetrachloride	22000		ND (0.32)	ND (0.33)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.17)	ND (0.15)
Chlorobenzene	500000		ND (0.32)	ND (0.33)	ND (0.26)	ND (0.26)	ND (0.28)	ND (0.26)	ND (0.28)	ND (0.26)
Chlorobromomethane			ND (0.33)	ND (0.34)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.20)	ND (0.22)	ND (0.20)
Chloroethane			ND (0.29) J	ND (0.30)	ND (0.24)	ND (0.24)	ND (0.25)	ND (0.23)	ND (0.26)	ND (0.23)
Chloroform (Trichloromethane)	350000		ND (0.34)	ND (0.36)	ND (0.28)	ND (0.28)	ND (0.30)	ND (0.27)	ND (0.30)	ND (0.27)
Chloromethane (Methyl Chloride)			ND (0.40) J	ND (0.42)	ND (0.22)	ND (0.22)	ND (0.24)	ND (0.22)	ND (0.24)	ND (0.22)
cis-1,2-Dichloroethene	500000		**100 J**	**56 J**	ND (0.11)	ND (0.11)	**0.28 J**	ND (0.10)	**6**	**0.14 J**
cis-1,3-Dichloropropene			ND (0.21)	ND (0.22)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.10)	ND (0.09)
Cyclohexane			ND (0.40)	ND (0.42)	ND (0.11)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.11)
Cymene (p-Isopropyltoluene)			ND (0.19)	ND (0.19)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.09)	ND (0.10)	ND (0.09)
Dibromochloromethane			ND (0.16)	ND (0.17)	ND (0.12)	ND (0.12)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.11)
Dichlorodifluoromethane (CFC-12)			ND (0.46) J	ND (0.48) J	ND (0.14)	ND (0.14)	ND (0.15)	ND (0.14)	ND (0.15)	ND (0.14)
Ethylbenzene	390000		ND (0.16)	ND (0.16)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.09)	ND (0.10)	ND (0.09)
Isopropylbenzene (Cumene)			ND (0.18)	ND (0.19)	ND (0.08)	ND (0.08)	ND (0.08)	ND (0.08)	ND (0.08)	ND (0.08)
m,p-Xylenes			ND (0.32)	ND (0.34)	ND (0.27)	ND (0.27)	ND (0.28)	ND (0.26)	ND (0.28)	ND (0.26)
Methyl acetate			ND (0.43)	ND (0.44)	ND (0.21)	ND (0.20)	ND (0.22)	ND (0.20)	ND (0.22)	ND (0.20)
Methyl cyclohexane			**0.75 J**	**0.29 J**	ND (0.12)	ND (0.12)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.11)
Methyl Tert Butyl Ether	500000		ND (0.14)	ND (0.15)	ND (0.06)	ND (0.06)	ND (0.07)	ND (0.06)	ND (0.07)	ND (0.06)
Methylene chloride	500000		ND (1.5)	ND (1.6)	ND (0.84)	ND (0.84)	ND (0.88)	ND (0.82)	ND (0.90)	ND (0.81)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1717921-08	L1717921-13	L1707923-07	L1707923-08	L1707923-04	L1707923-05	L1707923-01	L1707923-02
		Sample ID	4542-170531-1335	1234-170531-0001	4542-170314-1255	4542-170314-1305	4542-170314-1005	4542-170314-1015	4542-170314-0850	4542-170314-0900
		Location	Area 2C South Sidewall	Area 2C South Sidewall	A2D-01 - Area 2A Bottom	A2D-01 - Area 2A Sidewall	A2D-02 - Area 2A Bottom	A2D-02 - Area 2A Bottom	A2D-03 - Area 2A - Bottom	A2D-03 - Area 2A - Bottom
		Sample Depth (ft.)	1.0-1.5	1.0-1.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	05/31/2017	05/31/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017	03/14/2017
		Sample Type	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
Naphthalene	500000		ND (0.13)	ND (0.13)	ND (0.10)	ND (0.10)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.10)
n-Butylbenzene	500000		ND (0.21)	ND (0.22)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)
n-Propylbenzene	500000		ND (0.20)	ND (0.21)	ND (0.08)	ND (0.08)	ND (0.09)	ND (0.08)	ND (0.09)	ND (0.08)
o-Xylene			ND (0.31)	ND (0.32)	ND (0.26)	ND (0.26)	ND (0.27)	ND (0.25)	ND (0.27)	ND (0.25)
Styrene			ND (0.37)	ND (0.38)	ND (0.31)	ND (0.30)	ND (0.32)	ND (0.30)	ND (0.33)	ND (0.30)
Tetrachloroethene	150000		**0.86 J**	ND (0.29)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.10)
Toluene	500000		ND (0.18)	ND (0.19)	ND (0.15)	ND (0.15)	ND (0.16)	ND (0.14)	ND (0.16)	ND (0.14)
trans-1,2-Dichloroethene	500000		**1.3 J**	**0.62 J**	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.17)	ND (0.16)
trans-1,3-Dichloropropene			ND (0.19)	ND (0.20)	ND (0.09)	ND (0.09)	ND (0.10)	ND (0.09)	ND (0.10)	ND (0.09)
Trichloroethene	200000		**92 J**	**46 J**	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.09)	**1.1**	**3.1**
Trichlorofluoromethane (CFC-11)			ND (0.38)	ND (0.40)	ND (0.30)	ND (0.29)	ND (0.31)	ND (0.29)	ND (0.31)	ND (0.28)
Trifluorotrichloroethane (Freon 113)			ND (0.47)	ND (0.49)	ND (0.21)	ND (0.21)	ND (0.22)	ND (0.20)	ND (0.22)	ND (0.20)
Vinyl chloride	13000		ND (0.29) J	ND (0.30) J	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	**0.39 J**	ND (0.09)
Xylene (total)	500000		ND (0.31)	ND (0.32)	ND (0.26)	ND (0.26)	ND (0.27)	ND (0.25)	ND (0.27)	ND (0.25)

Notes and Abbreviations:

1. Results were compared to the Restricted Use Soil Cleanup Objective (SCO) for Commercial (NYSDEC, Table 375-6.8(b), December 2006).
2. Results in dark gray shading exceed applicable criteria.
3. ND (#): Result is not detected above the indicated reporting limit.
   J: Estimated result
   J+: Estimated result, biased high
   R: Rejected
4. Results in **bold** are detected.

* - Bottom confirmation samples were collected before excavation activities using a geoprobe.

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1707803-07	L1707803-08	L1707803-05	L1707803-01	L1707803-02
		Sample ID	4542-170313-1430	4542-170313-1440	4542-170313-1300	4542-170313-1045	4542-170313-1105
		Location	A2D-04 - Area 2C - Bottom	A2D-04 - Area 2C - Bottom	A2D-05 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom
		Sample Depth (ft.)	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	03/13/2017	03/13/2017	03/13/2017	03/13/2017	03/13/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal
Inorganic Compounds (mg/kg)							
Aluminum			**3,300**	**3,100**	**3,200**	**3,500**	**3,500**
Antimony			ND (0.33)	ND (0.32)	ND (0.33)	ND (0.34)	ND (0.32)
Arsenic	16		**2.5**	**1.9**	**1.7**	**2.5**	**2.3**
Barium	400		**27**	**33**	**24**	**36**	**32**
Beryllium	590		**0.10 J**	**0.03 J**	**0.06 J**	**0.10 J**	**0.10 J**
Cadmium	9.3		ND (0.08)	ND (0.08)	ND (0.09)	ND (0.09)	ND (0.08)
Calcium			**41,000**	**82,000**	**37,000**	**38,000**	**41,000**
Chromium			**6.9**	**6**	**6.4**	**7**	**6.9**
Cobalt			**3.2**	**3.9**	**2.5**	**4.2**	**4.1**
Copper	270		**9.9**	**7.9**	**9.7**	**12**	**11**
Iron			**9,100**	**8,300**	**8,500**	**9,400**	**9,400**
Lead	1000		**7.4**	**6.1**	**4.3 J**	**7**	**6.4**
Magnesium			**16,000**	**12,000**	**14,000**	**14,000**	**16,000**
Manganese	10000		**210**	**300**	**210**	**250**	**260**
Mercury	2.8		ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Nickel	310		**6.9**	**7.8**	**5.7**	**8.5**	**8.4**
Potassium			**490**	**510**	**510**	**530**	**530**
Selenium	1500		ND (0.22)	ND (0.22)	ND (0.23)	ND (0.23)	ND (0.22)
Silver	1500		ND (0.24)	ND (0.24)	ND (0.25)	ND (0.25)	ND (0.24)
Sodium			**140 J**	**120 J**	**150 J**	**150 J**	**150 J**
Thallium			ND (0.27)	ND (0.27)	**0.40 J**	ND (0.28)	ND (0.27)
Vanadium			**11**	**8.9**	**11**	**11**	**11**
Zinc	10000		**41**	**62**	**34**	**43**	**37**
PCBs (ug/kg)							
Aroclor-1016 (PCB-1016)			ND (2.96)	ND (2.89)	ND (2.88)	ND (2.98)	ND (2.82)
Aroclor-1221 (PCB-1221)			ND (3.45)	ND (3.37)	ND (3.36)	ND (3.48)	ND (3.30)
Aroclor-1232 (PCB-1232)			ND (4.39)	ND (4.29)	ND (4.28)	ND (4.42)	ND (4.19)
Aroclor-1242 (PCB-1242)			ND (4.58)	ND (4.48)	ND (4.47)	ND (4.62)	ND (4.38)
Aroclor-1248 (PCB-1248)			ND (3.16)	ND (3.09)	ND (3.08)	ND (3.18)	ND (3.02)
Aroclor-1254 (PCB-1254)			**7.22 J**	ND (3.01)	ND (3.00)	ND (3.10)	ND (2.94)
Aroclor-1260 (PCB-1260)			ND (2.85)	ND (2.79)	ND (2.78)	ND (2.87)	ND (2.72)
Aroclor-1262 (PCB-1262)			ND (1.86)	ND (1.82)	ND (1.81)	ND (1.87)	ND (1.77)
Aroclor-1268 (PCB-1268)			ND (5.43)	ND (5.31)	ND (5.29)	ND (5.47)	ND (5.18)
Polychlorinated biphenyls (PCBs)	1000		**7.22 J**	ND (1.82)	ND (1.81)	ND (1.87)	ND (1.77)
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4,5-Tetrachlorobenzene			ND (20)	ND (19)	ND (19)	ND (20)	ND (19)
2,2'-oxybis(1-Chloropropane)			ND (32)	ND (31)	ND (32)	ND (32)	ND (31)
2,3,4,6-Tetrachlorophenol			ND (38)	ND (37)	ND (37)	ND (38)	ND (37)
2,4,5-Trichlorophenol			ND (36)	ND (35)	ND (35)	ND (36)	ND (35)
2,4,6-Trichlorophenol			ND (36)	ND (35)	ND (35)	ND (36)	ND (35)
2,4-Dichlorophenol			ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
2,4-Dimethylphenol			ND (62)	ND (61)	ND (61)	ND (62)	ND (61)
2,4-Dinitrophenol			ND (88)	ND (86)	ND (86)	ND (87)	ND (86)
2,4-Dinitrotoluene			ND (38)	ND (37)	ND (37)	ND (38)	ND (37)
2,6-Dinitrotoluene			ND (32)	ND (32)	ND (32)	ND (32)	ND (32)
2-Chloronaphthalene			ND (19)	ND (18)	ND (18)	ND (19)	ND (18)
2-Chlorophenol			ND (22)	ND (22)	ND (22)	ND (22)	ND (22)
2-Methylnaphthalene			ND (23)	ND (22)	ND (22)	ND (23)	ND (22)
2-Methylphenol (o-Cresol)	500000		ND (29)	ND (28)	ND (29)	ND (29)	ND (28)
2-Nitroaniline			ND (36)	ND (35)	ND (36)	ND (36)	ND (36)
2-Nitrophenol			ND (71)	ND (69)	ND (70)	ND (70)	ND (69)
3,3'-Dichlorobenzidine			ND (50)	ND (49)	ND (49)	ND (50)	ND (49)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1707803-07	L1707803-08	L1707803-05	L1707803-01	L1707803-02
		Sample ID	4542-170313-1430	4542-170313-1440	4542-170313-1300	4542-170313-1045	4542-170313-1105
		Location	A2D-04 - Area 2C - Bottom	A2D-04 - Area 2C - Bottom	A2D-05 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom
		Sample Depth (ft.)	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	03/13/2017	03/13/2017	03/13/2017	03/13/2017	03/13/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal
3-Methylphenol	500000		ND (30)	ND (29)	ND (29)	ND (29)	ND (29)
3-Nitroaniline			ND (36)	ND (35)	ND (35)	ND (35)	ND (35)
4,6-Dinitro-2-methylphenol			ND (91)	ND (88)	ND (89)	ND (90)	ND (88)
4-Bromophenyl phenyl ether			ND (29)	ND (28)	ND (28)	ND (29)	ND (28)
4-Chloro-3-methylphenol			ND (28)	ND (27)	ND (28)	ND (28)	ND (27)
4-Chloroaniline			ND (34)	ND (33)	ND (34)	ND (34)	ND (34)
4-Chlorophenyl phenyl ether			ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
4-Nitroaniline			ND (78)	ND (76)	ND (76)	ND (78)	ND (76)
4-Nitrophenol			ND (77)	ND (75)	ND (75)	ND (76)	ND (75)
Acenaphthene	500000		ND (20)	ND (19)	ND (19)	ND (19)	ND (19)
Acenaphthylene	500000		ND (29)	ND (28)	ND (28)	ND (29)	ND (28)
Acetophenone			ND (23)	ND (23)	ND (23)	ND (23)	ND (23)
Anthracene	500000		ND (37)	ND (36)	ND (36)	ND (36)	ND (36)
Atrazine			ND (66)	ND (64)	ND (65)	ND (66)	ND (64)
Benzaldehyde			ND (51)	ND (50)	ND (50)	ND (51)	ND (50)
Benzo(a)anthracene	5600		ND (21)	ND (21)	ND (21)	ND (21)	ND (21)
Benzo(a)pyrene	1000		ND (46)	ND (45)	ND (45)	ND (46)	ND (45)
Benzo(b)fluoranthene	5600		ND (32)	ND (31)	ND (31)	ND (32)	ND (31)
Benzo(g,h,i)perylene	500000		ND (22)	ND (22)	ND (22)	ND (22)	ND (22)
Benzo(k)fluoranthene	56000		ND (30)	ND (29)	ND (30)	ND (30)	ND (29)
Biphenyl			ND (44)	ND (43)	ND (43)	ND (44)	ND (43)
bis(2-Chloroethoxy)methane			ND (19)	ND (18)	ND (18)	ND (19)	ND (18)
bis(2-Chloroethyl)ether			ND (26)	ND (25)	ND (25)	ND (25)	ND (25)
bis(2-Ethylhexyl)phthalate			ND (65)	ND (64)	ND (64)	ND (65)	ND (64)
Butyl benzylphthalate			ND (48)	ND (46)	ND (47)	ND (47)	ND (46)
Caprolactam			ND (57)	ND (56)	ND (56)	ND (57)	ND (56)
Carbazole			ND (18)	ND (18)	ND (18)	ND (18)	ND (18)
Chrysene	56000		ND (20)	ND (19)	ND (19)	ND (20)	ND (19)
Dibenz(a,h)anthracene	560		ND (22)	ND (21)	ND (21)	ND (22)	ND (21)
Dibenzofuran	350000		ND (18)	ND (17)	ND (17)	ND (18)	ND (17)
Diethyl phthalate			ND (17)	ND (17)	ND (17)	ND (17)	ND (17)
Dimethyl phthalate			ND (40)	ND (39)	ND (39)	ND (39)	ND (39)
Di-n-butylphthalate			ND (36)	ND (35)	ND (35)	ND (36)	ND (35)
Di-n-octyl phthalate			ND (64)	ND (62)	ND (63)	ND (64)	ND (63)
Fluoranthene	500000		ND (22)	ND (21)	ND (21)	ND (22)	ND (21)
Fluorene	500000		ND (18)	ND (18)	ND (18)	ND (18)	ND (18)
Hexachlorobenzene	6000		ND (21)	ND (21)	ND (21)	ND (21)	ND (21)
Hexachlorobutadiene			ND (28)	ND (27)	ND (27)	ND (27)	ND (27)
Hexachlorocyclopentadiene			ND (170)	ND (170)	ND (170)	ND (170)	ND (170)
Hexachloroethane			ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Indeno(1,2,3-cd)pyrene	5600		ND (26)	ND (26)	ND (26)	ND (26)	ND (26)
Isophorone			ND (24)	ND (24)	ND (24)	ND (24)	ND (24)
Naphthalene	500000		ND (23)	ND (22)	ND (22)	ND (23)	ND (22)
Nitrobenzene	69000		ND (28)	ND (27)	ND (27)	ND (28)	ND (27)
N-Nitrosodi-n-propylamine			ND (29)	ND (28)	ND (28)	ND (29)	ND (28)
N-Nitrosodiphenylamine			ND (22)	ND (21)	ND (21)	ND (21)	ND (21)
Pentachlorophenol	6700		ND (42)	ND (40)	ND (41)	ND (41)	ND (40)
Phenanthrene	500000		ND (23)	ND (22)	ND (22)	ND (23)	ND (22)
Phenol	500000		ND (28)	ND (28)	ND (28)	ND (28)	ND (28)
Pyrene	500000		ND (19)	ND (18)	ND (18)	ND (19)	ND (18)
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane	500000		ND (0.09)	ND (0.08)	ND (0.09)	ND (0.09)	ND (0.08)
1,1,2,2-Tetrachloroethane			ND (0.08)	ND (0.07)	ND (0.08)	ND (0.08)	ND (0.07)
1,1,2-Trichloroethane			ND (0.23)	ND (0.22)	ND (0.24)	ND (0.24)	ND (0.22)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1707803-07	L1707803-08	L1707803-05	L1707803-01	L1707803-02
		Sample ID	4542-170313-1430	4542-170313-1440	4542-170313-1300	4542-170313-1045	4542-170313-1105
		Location	A2D-04 - Area 2C - Bottom	A2D-04 - Area 2C - Bottom	A2D-05 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom
		Sample Depth (ft.)	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	03/13/2017	03/13/2017	03/13/2017	03/13/2017	03/13/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal
1,1-Dichloroethane	240000		ND (0.07)	ND (0.06)	ND (0.07)	ND (0.07)	ND (0.06)
1,1-Dichloroethene	500000		ND (0.20)	ND (0.19)	ND (0.20)	ND (0.21)	ND (0.19)
1,2,3-Trichlorobenzene			ND (0.11)	ND (0.10)	ND (0.11)	ND (0.12)	ND (0.10)
1,2,4-Trichlorobenzene			ND (0.14)	ND (0.13)	ND (0.14)	ND (0.15)	ND (0.13)
1,2,4-Trimethylbenzene	190000		ND (0.11)	ND (0.10)	ND (0.11)	ND (0.11)	ND (0.10)
1,2-Dibromo-3-chloropropane (DBCP)			ND (0.30)	ND (0.28)	ND (0.31)	ND (0.32)	ND (0.28)
1,2-Dibromoethane (Ethylene Dibromide)			ND (0.13)	ND (0.12)	ND (0.13)	ND (0.14)	ND (0.12)
1,2-Dichlorobenzene	500000		ND (0.12)	ND (0.11)	ND (0.12)	ND (0.12)	ND (0.11)
1,2-Dichloroethane	30000		ND (0.09)	ND (0.08)	ND (0.09)	ND (0.09)	ND (0.08)
1,2-Dichloroethene (total)			ND (0.11)	ND (0.10)	ND (0.11)	ND (0.11)	ND (0.10)
1,2-Dichloropropane			ND (0.18)	ND (0.16)	ND (0.18)	ND (0.18)	ND (0.16)
1,3,5-Trimethylbenzene	190000		ND (0.11)	ND (0.10)	ND (0.11)	ND (0.12)	ND (0.10)
1,3-Dichlorobenzene	280000		ND (0.10)	ND (0.10)	ND (0.10)	ND (0.11)	ND (0.10)
1,4-Dichlorobenzene	130000		ND (0.11)	ND (0.10)	ND (0.11)	ND (0.11)	ND (0.10)
1,4-Dioxane	130000		ND (11)	ND (10)	ND (11)	ND (12)	ND (10)
2-Butanone (Methyl Ethyl Ketone)	500000		ND (0.21)	ND (0.20)	ND (0.21)	ND (0.22)	ND (0.19)
2-Hexanone			ND (0.51)	ND (0.48)	ND (0.52)	ND (0.54)	ND (0.48)
2-Phenylbutane (sec-Butylbenzene)	500000		ND (0.09)	ND (0.09)	ND (0.09)	ND (0.10)	ND (0.09)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)			ND (0.19)	ND (0.18)	ND (0.19)	ND (0.20)	ND (0.17)
Acetone	500000		ND (0.80)	ND (0.74)	ND (0.80)	ND (0.83)	ND (0.74)
Benzene	44000		ND (0.09)	**0.12 J**	ND (0.09)	ND (0.10)	ND (0.08)
Bromodichloromethane			ND (0.13)	ND (0.12)	ND (0.13)	ND (0.14)	ND (0.12)
Bromoform			ND (0.18)	ND (0.17)	ND (0.18)	ND (0.19)	ND (0.17)
Bromomethane (Methyl Bromide)			ND (0.26)	ND (0.24)	ND (0.26)	ND (0.27)	ND (0.24)
Carbon disulfide			ND (0.85)	ND (0.79)	ND (0.85)	ND (0.88)	ND (0.79)
Carbon tetrachloride	22000		ND (0.16)	ND (0.15)	ND (0.16)	ND (0.17)	ND (0.15)
Chlorobenzene	500000		ND (0.27)	ND (0.25)	ND (0.27)	ND (0.28)	ND (0.25)
Chlorobromomethane			ND (0.21)	ND (0.20)	ND (0.21)	ND (0.22)	ND (0.20)
Chloroethane			ND (0.24)	ND (0.23)	ND (0.24)	ND (0.25)	ND (0.22)
Chloroform (Trichloromethane)	350000		ND (0.28)	ND (0.26)	ND (0.29)	ND (0.30)	ND (0.26)
Chloromethane (Methyl Chloride)			ND (0.22)	ND (0.21)	ND (0.23)	ND (0.24)	ND (0.21)
cis-1,2-Dichloroethene	500000		ND (0.11)	ND (0.10)	ND (0.11)	ND (0.11)	ND (0.10)
cis-1,3-Dichloropropene			ND (0.09)	ND (0.08)	ND (0.09)	ND (0.09)	ND (0.08)
Cyclohexane			ND (0.11)	**0.13 J**	ND (0.11)	ND (0.12)	ND (0.10)
Cymene (p-Isopropyltoluene)			ND (0.10)	ND (0.09)	ND (0.10)	ND (0.10)	ND (0.09)
Dibromochloromethane			ND (0.12)	ND (0.11)	ND (0.12)	ND (0.12)	ND (0.11)
Dichlorodifluoromethane (CFC-12)			ND (0.15)	ND (0.14)	ND (0.15)	ND (0.15)	ND (0.14)
Ethylbenzene	390000		ND (0.10)	ND (0.09)	ND (0.10)	ND (0.10)	ND (0.09)
Isopropylbenzene (Cumene)			ND (0.08)	ND (0.07)	ND (0.08)	ND (0.08)	ND (0.07)
m,p-Xylenes			ND (0.27)	ND (0.25)	ND (0.27)	ND (0.28)	ND (0.25)
Methyl acetate			ND (0.21)	ND (0.19)	ND (0.21)	ND (0.22)	ND (0.19)
Methyl cyclohexane			ND (0.12)	ND (0.11)	ND (0.12)	ND (0.12)	ND (0.11)
Methyl Tert Butyl Ether	500000		ND (0.07)	ND (0.06)	ND (0.07)	ND (0.07)	ND (0.06)
Methylene chloride	500000		ND (0.85)	ND (0.79)	ND (0.85)	ND (0.89)	ND (0.79)

Table V
Soil Confirmation Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC Part 375 SCO (Commercial)	Laboratory ID	L1707803-07	L1707803-08	L1707803-05	L1707803-01	L1707803-02
		Sample ID	4542-170313-1430	4542-170313-1440	4542-170313-1300	4542-170313-1045	4542-170313-1105
		Location	A2D-04 - Area 2C - Bottom	A2D-04 - Area 2C - Bottom	A2D-05 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom	A2D-06 - Area 2C - Bottom
		Sample Depth (ft.)	1.0-1.5	3.0-3.5	3.0-3.5	1.0-1.5	3.0-3.5
		Sample Date	03/13/2017	03/13/2017	03/13/2017	03/13/2017	03/13/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal
Naphthalene	500000		ND (0.11)	ND (0.10)	ND (0.11)	ND (0.11)	ND (0.10)
n-Butylbenzene	500000		ND (0.09)	ND (0.08)	ND (0.09)	ND (0.09)	ND (0.08)
n-Propylbenzene	500000		ND (0.08)	ND (0.08)	ND (0.08)	ND (0.09)	ND (0.08)
o-Xylene			ND (0.26)	ND (0.24)	ND (0.26)	ND (0.27)	ND (0.24)
Styrene			ND (0.31)	ND (0.29)	ND (0.31)	ND (0.32)	ND (0.29)
Tetrachloroethene	150000		ND (0.11)	ND (0.10)	ND (0.11)	**1.5**	**2**
Toluene	500000		ND (0.15)	**0.22 J**	ND (0.15)	ND (0.16)	ND (0.14)
trans-1,2-Dichloroethene	500000		ND (0.16)	ND (0.15)	ND (0.16)	ND (0.17)	ND (0.15)
trans-1,3-Dichloropropene			ND (0.09)	ND (0.09)	ND (0.09)	ND (0.10)	ND (0.09)
Trichloroethene	200000		**0.11 J**	**0.44 J**	ND (0.10)	**6.3**	**13**
Trichlorofluoromethane (CFC-11)			ND (0.30)	ND (0.28)	ND (0.30)	ND (0.31)	ND (0.28)
Trifluorotrichloroethane (Freon 113)			ND (0.21)	ND (0.20)	ND (0.21)	ND (0.22)	ND (0.20)
Vinyl chloride	13000		ND (0.09)	ND (0.08)	ND (0.09)	ND (0.09)	ND (0.08)
Xylene (total)	500000		ND (0.26)	ND (0.24)	ND (0.26)	ND (0.27)	ND (0.24)

Notes and Abbreviations:

1. Results were compared to the Restricted Use Soil Cleanup Objective (SCO) for Commercial (NYSDEC, Table 375-6.8(b), December 2006).
2. Results in dark gray shading exceed applicable criteria.
3. ND (#): Result is not detected above the indicated reporting limit.
   J: Estimated result
   J+: Estimated result, biased high
   R: Rejected
4. Results in **bold** are detected.

* - Bottom confirmation samples were collected before excavation activities using a geoprobe.

Table VI
Summary of Groundwater Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC TOGS Table I Class GA	Well ID	MW-1I	MW-1IR (offset 10-15 feet northwest MW-1I)			MW-2	MW-2R (reinstalled in place of MW-2)			
		Ground Elevation (ft. AMSL)	554.88	554.82			554.85	554.8			
		Screen Interval (ft. AMSL)	530.88-520.88	530.82-520.82			547.35-537.35	547.3-537.3			
		Screen Interval (ft. bgs)	24.0-34.0	24.0-34.0			7.5-17.5	7.5-17.5			
		Laboratory ID	L1708209-01	L1723031-05	L1728747-02	L1734681-03	L1708209-04	L1722787-01	L1728963-06	L1734925-11	L1734925-10
		Sample ID	4542-170316-1540	7006-170706-1300	7006-170816-1500	4125-092717-1410	4542-170317-1400	7006-170705-1100	4542-170817-1010	4125-092817-1010	4125-092817-0001
		Sample Date	03/16/2017	07/06/2017	08/16/2017	09/27/2017	03/17/2017	07/05/2017	08/17/2017	09/28/2017	09/28/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Field Duplicate
Volatile Organic Compounds (VOCs) (ug/L)											
cis-1,2-Dichloroethene	5		ND (1400)	**5500 J**	**5500 J**	**5500 J**	**13**	**200**	**140**	**100**	**90**
1,1-Dichloroethene	5		--	ND (840)	ND (840)	ND (420)	--	**1.9**	**0.75**	**0.29 J**	**0.27 J**
Tetrachloroethene	5		ND (360)	ND (900)	ND (900)	ND (450)	**0.23 J**	**1.2**	**1.0**	ND (0.18)	ND (0.18)
Trichloroethene	5		**140000**	**550000**	**500000**	**580000**	**5.9**	**150**	**34 J+**	**2.3 J**	**3.2 J**
Vinyl chloride	2		ND (140)	**940 J**	**680 J**	**860 J**	**2.4**	**4.6**	**27**	**130 J**	**85 J**
Other (mg/L)											
Total Organic Carbon	--		**2.76**	**8.51**	**12.1**	**162**	**7.12**	**26.2**	**16.8**	**13**	**12.8**
Sulfate	250		**9.4 J+**	**150**	**170**	**200**	**10 J+**	ND (1.4)	ND (1.4)	**1.7 J**	ND (1.4)
Iron, Dissolved	0.3		ND (0.0191)	**0.0351 J**	ND (0.0191)	ND (0.0191)	**0.248**	**2.52**	**2.61**	**2.34**	**2.26**
Iron, Total	0.3		**0.531**	**1.56**	**0.852**	**0.895**	**7.79**	**2.44**	**2.68**	**2.28**	**2.40 J**
Ethene	--		--	--	**122**	**115**	--	--	**27.4**	**83.6**	**50.0 J**
Chloride	250		--	--	**220**	**260**	--	--	**20**	**28**	**19 J**
Field Parameters											
Temperature (°C)	--		10.1	15.3	16.3	26.2	10.5	16.5	18.2	18.3	
pH	--		7.72	7.54	7.71	7.67	7.51	7.02	7.2	7.22	
Conductivity (ms/cm)	--		0.287	1.44	1.4	1.42	0.513	0.02	0.941	1.03	
Dissolved Oxygen (mg/L)	--		4.06	0.35	0.28	0.32	3.64	3.05	0.14	0.22	
Turbidity (NTU)	--		14	44.4	45	44.2	2122	8.6	2.08	7.94	
ORP/eH (mv)	--		-27.1	45.5	48.5	-52.5	-108.1	-67.5	-159.2	-159.2	

Notes and Abbreviations:

1. -- = Not applicable/not analyzed
2. ND = Not detected above the laboratory detection limits. Laboratory method detection limit (MDL) shown in parentheses.
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Table VI
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Former AB Dick Facility
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	NYSDEC TOGS Table I Class GA	Well ID	MW-5DR				MW-8	MW-8R (reinstalled in place of MW-8)				
		Ground Elevation (ft. AMSL)	553.4				555.34	555.28				
		Screen Interval (ft. AMSL)	489.9-479.9				548.34-538.34	548.28-538.28				
		Screen Interval (ft. bgs)	63.5-73.5				7.0-17.0	7.0-17.0				
		Laboratory ID	L1708541-03	L1723238-04	L1729197-02	L1734925-09	L1709099-06	L1722787-03	L1722787-06	L1728747-01	L1728747-05	L1734681-02
		Sample ID	4542-170320-1630	7006-170707-1100	7006-170818-1105	4125-092817-1455	4542-170323-1000	7006-170705-1355	1234-170705-0002	7006-170816-1240	1234-170816-0002	4125-092717-1200
		Sample Date	03/20/2017	07/07/2017	08/18/2017	09/28/2017	03/22/2017	07/05/2017	07/05/2017	08/16/2017	08/16/2017	09/27/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Field Duplicate	Normal	Field Duplicate	Normal
Volatile Organic Compounds (VOCs) (ug/L)												
cis-1,2-Dichloroethene	5		ND (14)	ND (0.70)	ND (0.70)	ND (0.70)	**15 J**	**250**	**200**	**350**	**320**	**4.9**
1,1-Dichloroethene	5		--	ND (0.17)	ND (0.17)	ND (0.17)	--	**1.1**	**1.2**	**1.0 J**	**1.1**	**ND**
Tetrachloroethene	5		ND (3.6)	ND (0.18)	ND (0.18)	ND (0.18)	ND (1.8)	ND (0.36)	ND (0.18)	ND (0.72)	ND (0.36)	ND
Trichloroethene	5		**810 J-**	**1.5**	**3.2**	**3.9**	**710**	**41**	39	ND (0.70)	**1.2**	**0.18 J**
Vinyl chloride	2		ND (1.4)	ND (0.07)	ND (0.07)	ND (0.07)	ND (0.71)	**2.2**	**2.4**	**27**	**35**	**75**
Other (mg/L)												
Total Organic Carbon	--		**1.12**	**1.19**	**1.08**	**1.41**	**1.59 J+**	**116**	**105**	**142**	**132**	**12.2**
Sulfate	250		**17**	**15**	**16**	**18**	**24**	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	**1.6**
Iron, Dissolved	0.3		**0.0699**	**0.418**	**0.0976**	**0.104**	ND (0.0191)	**2.57**	**2.64**	**3.06**	**3.12**	**5**
Iron, Total	0.3		**0.624**	**5.98**	**0.396**	**0.72**	**13 J-**	**2.93**	**2.74**	**3.67**	**3.55**	**4.98**
Ethene	--		--	--	**0.593**	ND	--	--	**--**	**10.3**	**11.8**	**52.2**
Chloride	250		--	--	**1.2 R**	**1.7 J+**	--	--	**--**	**19**	**18**	**16**
Field Parameters												
Temperature (°C)	--		11.8	14.2	15.2	14.3	10.5	17		19.7		22
pH	--		8.14	8.02	7.94	7.87	7.52	6.83		6.96		6.85
Conductivity (ms/cm)	--		0.549	0.56	0.548	0.545	0.649	0.78		0.91		1.03
Dissolved Oxygen (mg/L)	--		0.49	0.99	0.14	0.19	4.13	0.13		0.27		0.15
Turbidity (NTU)	--		29	11	10.2	40.9	3061	9.9		12		11.7
ORP/eH (mv)	--		-91.7	-63.5	-80.4	-111.1	-70.7	-173.1		-58.5		-102.9

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	NYSDEC TOGS Table I Class GA	Well ID	MW-22	MW-22R (reinstalled in place of MW-22)			MW-27	MW-27R (reinstalled in place of MW-27)			MW-38			
		Ground Elevation (ft. AMSL)	555.36	555.22			554.87	554.82			553.98			
		Screen Interval (ft. AMSL)	550.36-540.36	550.22-540.22			548.87-543.87	548.82-543.82			541.98-531.98			
		Screen Interval (ft. bgs)	5.0-15.0	5.0-15.0			6.0-11.0	6.0-11.0			12.0-22.0			
		Laboratory ID	L1709099-01	L1722787-04	L1728963-08	L1735106-02	L1709099-02	L1722787-02	L1728747-03	L1734925-07	L170542-02			
		Sample ID	4542-170322-1040	4542-170705-1430	4542-170817-1250	7006-092917-1145	4542-170322-1335	4542-170705-1135	4542-170816-1440	1425-092817-1225	4542-170320-1325	Unable to collect a sample during the July, August, and September sampling events due to ISCR amendment present in the well.		
		Sample Date	03/22/2017	07/05/2017	08/17/2017	09/29/2017	03/22/2017	07/05/2017	08/16/2017	09/28/2017	03/20/2017			
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			
Volatile Organic Compounds (VOCs) (ug/L)														
cis-1,2-Dichloroethene	5		**18**	**2.3 J**	**4.9**	**12**	ND (0.70)	**2.4 J**	**9.4**	**7.5**	**9400 J**	--	--	--
1,1-Dichloroethene	5		--	ND (0.17)	ND (0.17)	ND	--	ND (0.17)	ND (0.17)	ND	--	--	--	--
Tetrachloroethene	5		**4.2**	**2**	**2.3**	**0.21 J**	ND (0.18)	**0.56**	ND (0.18)	**0.23**	ND (1800)	--	--	--
Trichloroethene	5		**6.6**	**4.1**	**3.4 J+**	**2.6**	**0.94**	**4**	**2.4**	**3.9**	**690000**	--	--	--
Vinyl chloride	2		**2.3**	**0.12 J**	**0.22 J**	**0.25**	ND (0.07)	ND (0.07)	**0.32 J**	**1.2**	ND (710)	--	--	--
Other (mg/L)														
Total Organic Carbon	--		**3.83**	**6.56**	**4.42**	**4.48**	**3.25**	**2.38**	**3.02**	**3.77**	**8.18**	--	--	--
Sulfate	250		**5.0 J+**	**42 J+**	**42**	**62**	**27**	ND (1.4)	**15 J+**	**76**	**59**	--	--	--
Iron, Dissolved	0.3		ND (0.0191)	**0.698**	**0.413**	**0.538**	**0.676**	**0.134**	**0.271**	**0.382**	**0.0212 J**	--	--	--
Iron, Total	0.3		**21.2 J-**	**1.22**	**0.567**	**0.811**	**1.69 J-**	**0.173**	**0.205**	**0.423**	**0.794**	--	--	--
Ethene	--		--	--	ND (0.500)	ND	--	--	ND (0.500)	ND	--	--	--	--
Chloride	250		--	--	**30**	**47**	--	--	**6.6**	**6.2**	--	--	--	--
Field Parameters														
Temperature (°C)	--		7.2	16.4	18.9	18.1	6.9	17.8	20.3	20.0	9.3	--	--	--
pH	--		7.55	7.75	7.33	7.22	7.23	7.62	7.5	7.35	7.33	--	--	--
Conductivity (ms/cm)	--		0.619	0.369	0.606	0.83	0.41	0.277	0.422	0.556	4.78	--	--	--
Dissolved Oxygen (mg/L)	--		13.05	0.13	0.38	0.5	0.25	0.24	0.14	0.11	3.41	--	--	--
Turbidity (NTU)	--		2443	32.5	12.7	19	31.6	2.57	1.31	7.12	19.7	--	--	--
ORP/eH (mv)	--		-18.2	-160.1	-125.1	-92.1	-174	-62.2	-99.6	-107.9	-45.7	--	--	--

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	NYSDEC TOGS Table I Class GA	Well ID	MW-54					MW-55				MW-58			
		Ground Elevation (ft. AMSL)	545.46					544.58				544.24			
		Screen Interval (ft. AMSL)	543.46-533.46					542.58-532.58				542.24-532.24			
		Screen Interval (ft. bgs)	2.0-12.0					2.0-12.0				2.0-12.0			
		Laboratory ID	L1709099-09	L1723238-03	L1724067-01	L1728963-05	L1734925-08	L1709099-10	L1723238-01	L1728963-01	L1734925-06	L1709099-05	L1723031-07	L1728963-03	L1735106-05
		Sample ID	4542-170323-1640	7006-170706-1905	4257-071317-1605	7006-170816-2115	4125-092717-1745	4542-170323-1825	7006-170706-1735	7006-170816-1840	7006-092717-1700	4527-170322-1900	7006-170706-1605	7006-170816-1950	4125-092817-1700
		Sample Date	03/23/2017	07/06/2017	07/13/2017	08/16/2017	09/27/2017	03/23/2017	07/06/2017	08/16/2017	09/27/2017	03/22/2017	07/06/2017	08/16/2017	09/28/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Volatile Organic Compounds (VOCs) (ug/L)															
cis-1,2-Dichloroethene	5		**400 J**	**420**	**200**	**200**	**200**	ND (0.70)	ND (0.70)	**4.8**	**ND**	ND (0.70)	ND (0.70)	ND (1.8)	ND
1,1-Dichloroethene	5		--	ND (17)	ND (25)	ND (8.4)	ND	--	ND (0.17)	**0.29 J**	ND	--	ND (0.17)	ND (1.2)	ND
Tetrachloroethene	5		ND (36)	ND (18)	ND (25)	ND (9.0)	ND	ND (0.18)	ND (0.18)	ND (0.18)	ND	ND (0.18)	ND (0.18)	ND (1.2)	ND
Trichloroethene	5		**13000**	**12000**	**8500**	**6800 J+**	**5600**	**15**	**61**	**740 J+**	**17**	**26**	**77**	**260 J+**	**4.2**
Vinyl chloride	2		**50 J**	**49 J**	ND (50)	**25 J**	**18**	ND (0.07)	ND (0.07)	**0.60 J**	ND	ND (0.07)	**0.08 J**	ND (2.5)	ND
Other (mg/L)															
Total Organic Carbon	--		**5.3**	--	**4.43**	**3.71**	**4.33**	**--**	--	--	--	**--**	--	--	--
Sulfate	250		**67**	--	**52**	**56**	**56**	**--**	--	--	--	**--**	--	--	--
Iron, Dissolved	0.3		ND (0.0191)	--	**0.0436 J**	ND (0.0191)	ND	--	--	--	--	**--**	--	--	--
Iron, Total	0.3		**0.54 J-**	--	**0.479**	**0.487**	**0.137**	**--**	--	--	--	**--**	--	--	--
Ethene	--		--	--	--	**7.26**	**5.97**	--	--	--	--	--	--	--	--
Chloride	250		--	--	--	**620**	**730**	--	--	**--**	**--**	--	--	**--**	**--**
Field Parameters															
Temperature (°C)	--		6.9	18.4	18.1	20.2	22.3	--	--	--	--	--	--	--	--
pH	--		7.12	6.93	6.85	7.13	7.07	--	--	--	--	--	--	--	--
Conductivity (ms/cm)	--		4.06	3.72	3.65	3.06	2.97	--	--	--	--	--	--	--	--
Dissolved Oxygen (mg/L)	--		0.39	0.4	0.5	0.45	0.32	--	--	--	--	--	--	--	--
Turbidity (NTU)	--		14.4	33.7	25.2	10.5	5.8	--	--	--	--	--	--	--	--
ORP/eH (mv)	--		-55.4	65.1	89.9	32.1	28.5	--	--	--	--	--	--	--	--

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	NYSDEC TOGS Table I Class GA	Well ID	MW-62				MW-63				MW-69			
		Ground Elevation (ft. AMSL)	554.52				553.33				552.05			
		Screen Interval (ft. AMSL)	546.52-536.52				540.33-530.33				549.05-539.05			
		Screen Interval (ft. bgs)	8.0-18.0				13.0-23.0				3.0-13.0			
		Laboratory ID	L1708541-01				L1708541-04	L1723238-05	L1729197-04	L1735106-06	L1708541-07	L1723031-01	L1728963-07	L1734681-04
		Sample ID	4542-170320-1055	Unable to collect a sample during the July, August, and September sampling events due to ISCR amendment present in the well.			4542-170320-1845	4542-170707-1400	7006-170818-1440	4125-092817-1830	4542-170321-1520	7006-170706-0945	7006-170817-1025	4125-092717-1230
		Sample Date	03/20/2017				03/20/2017	07/07/2017	08/18/2017	09/28/2017	03/21/2017	07/06/2017	08/17/2017	09/27/2017
		Sample Type	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Volatile Organic Compounds (VOCs) (ug/L)														
cis-1,2-Dichloroethene	5		**78**	--	--	--	**8.7 J**	**17**	**17**	**11**	**0.71 J**	ND (0.70)	**0.85 J**	ND
1,1-Dichloroethene	5		--	--	--	--	--	ND (0.17)	ND (0.17)	ND	--	ND (0.17)	ND (0.5)	ND
Tetrachloroethene	5		ND (1.8)	--	--	--	ND (0.90)	ND (0.18)	ND (0.18)	ND	ND (0.18)	ND (0.18)	ND (0.18)	ND
Trichloroethene	5		**860 J-**	--	--	--	**250 J-**	**0.37 J**	**2.8**	**2.7**	**45 J-**	ND (0.18)	**16 J+**	**2.2**
Vinyl chloride	2		ND (0.71)	--	--	--	ND (0.36)	**0.07 J**	ND (0.70)	4.2	**0.81 J**	**0.79 J**	**0.87 J**	**0.39**
Other (mg/L)														
Total Organic Carbon	--		--	--	--	--	**3.34**	**30.2**	**123**	**355**	--	--	--	--
Sulfate	250		--	--	--	--	**17**	ND (1.4)	ND (1.4)	**1.5**	--	--	--	--
Iron, Dissolved	0.3		--	--	--	--	**0.0697**	**3.48**	**8.79**	**45.9**	--	--	--	--
Iron, Total	0.3		--	--	--	--	**2.68**	**5.22**	**10**	**49.4**	--	--	--	--
Ethene	--		--	--	--	--	--	--	**0.602**	**1.48**	--	--	--	--
Chloride	250		--	--	--	--	--	--	**260**	**270**	--	--	--	--
Field Parameters														
Temperature (°C)	--		--	--	--	--	9.8	14.6	15.8	16.4	--	--	--	--
pH	--		--	--	--	--	7.46	7.73	7.07	6.62	--	--	--	--
Conductivity (ms/cm)	--		--	--	--	--	1.37	1.65	1.93	2.34	--	--	--	--
Dissolved Oxygen (mg/L)	--		--	--	--	--	0.18	0.06	0.03	0.06	--	--	--	--
Turbidity (NTU)	--		--	--	--	--	250	84.7	25.5	30.1	--	--	--	--
ORP/eH (mv)	--		--	--	--	--	-115.5	-173.4	-110.3	-77	--	--	--	--

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		Ground Elevation (ft. AMSL)	549.26				511.11					549.2			
		Screen Interval (ft. AMSL)	546.06-536.06				508.11-498.11					530.7-520.7			
		Screen Interval (ft. bgs)	3.2-13.2				3.0-13.0					18.5-28.5			
		Laboratory ID	L1708541-08	L1723031-03	L1728963-09	L1734681-05	L1709099-07	L1709099-12	L1723031-06	L1728963-10	L1734925-02	L1708541-05	L1723031-02	L1729197-01	L1734925-03
		Sample ID	4542-170323-1500	7006-170706-1057	7006-170817-1245	4125-092717-1400	4542-170323-1225	1234-170323-0002	4542-170706-1430	7006-170817-1430	7006-092817-1030	4542-170321-1025	4542-170706-1030	4542-170818-1020	7006-092817-1410
		Sample Date	03/23/2017	07/06/2017	08/17/2017	09/27/2017	03/23/2017	03/23/2017	07/06/2017	08/17/2017	09/28/2017	03/21/2017	07/06/2017	08/18/2017	09/28/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Field Duplicate	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Volatile Organic Compounds (VOCs) (ug/L)															
cis-1,2-Dichloroethene	5		ND (0.70)	ND (0.70)	ND (0.70)	ND	**930**	**950**	**840**	**920**	**690**	ND (2.8)	ND (0.70)	ND (0.70)	**0.82 J**
1,1-Dichloroethene	5		--	ND (0.17)	ND (0.18)	ND	--	--	**3.6 J**	**3.7 J**	**2.8**	--	ND (0.17)	ND (0.17)	ND
Tetrachloroethene	5		ND (0.18)	ND (0.18)	ND (0.18)	ND	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.8)	ND	ND (0.72)	ND (0.18)	ND (0.18)	ND
Trichloroethene	5		**10 J-**	ND (0.18)	**18 J+**	ND	**46**	**44**	**18**	**39 J+**	**16**	**180**	**3.6**	**1.8**	**1.3**
Vinyl chloride	2		ND (0.07)	ND (0.70)	ND (0.17)	ND	**320**	**320**	**350**	**420**	**300**	ND (0.28)	ND (0.70)	ND (0.07)	**0.25**
Other (mg/L)															
Total Organic Carbon	--		**--**	--	--	--	**7.47**	**7.67**	**7.77**	**7.6**	**7.6**	**--**	--	--	--
Sulfate	250		**--**	--	--	--	**47**	**31**	**33**	**36**	**34**	**--**	--	--	--
Iron, Dissolved	0.3		--	--	--	--	**1.7**	**1.60**	**1.54**	**1.16**	**1.2**	--	--	--	--
Iron, Total	0.3		**--**	--	--	--	**2.54 J-**	**2.44 J-**	**2.09**	**1.5**	**1.51**	**--**	--	--	--
Ethene	--		--	--	--	--	--	--	--	**6.83**	**6.13**	--	--	--	--
Chloride	250		--	--	**--**	**--**	--	--	--	**94**	**97**	--	--	--	**--**
Field Parameters															
Temperature (°C)	--		--	--	--	--	8.5	--	19.9	22.1	20.6	--	--	--	--
pH	--		--	--	--	--	7.05	--	7.14	6.95	6.98	--	--	--	--
Conductivity (ms/cm)	--		--	--	--	--	1.49	--	1.6	1.44	1.41	--	--	--	--
Dissolved Oxygen (mg/L)	--		--	--	--	--	0.22	--	0.16	0.2	0.28	--	--	--	--
Turbidity (NTU)	--		--	--	--	--	16	--	17.1	18.7	19.4	--	--	--	--
ORP/eH (mv)	--		--	--	--	--	-99.8	--	-62.5	-25	-16	--	--	--	--

Notes and Abbreviations:

1. -- = Not applicable/not analyzed
2. ND = Not detected above the laboratory detection limits. Laboratory method detection limit (MDL) shown in parentheses.
3. Bold = Analyte was detected above the laboratory's method detection limit.
4. NYSDEC = New York Department of Environmental Conservation
5. TOGS = Technical & Operational Guidance Series, Table 1, Class GA
6. mg/L = milligrams per liter
7. ug/L = micrograms per liter
8. Exceeds the NYSDEC TOGS Criteria

J = result is an estimated value
J- = results is an estimated value with a potential low bias
J+ = result is an estimated value, with a potential high bias
D = indicates reanalysis of sample with additional dilution to address exceedance
R = result is rejected as unusable
N = normal sample
FD = field duplicate
**: Exact installation date is unknown, but was prior to 10/14/96. Construction details are not known.

Table VI
Summary of Groundwater Analytical Results
Former AB Dick Facility
811 Jefferson Road
Henrietta, New York

	NYSDEC TOGS Table I Class GA	Well ID	MW-77				MW-78				UCB-MW-03			
		Ground Elevation (ft. AMSL)	544.1				544.1				548.53			
		Screen Interval (ft. AMSL)	533.1-522.1				521.1-511.1				See Notes**			
		Screen Interval (ft. bgs)	11.0-22.0				23.0-33.0				Measured Well Depth: 14.85'bgs			
		Laboratory ID	L1709099-04	L1723238-02	L1728963-02	L1735106-07	L1709099-03	L1723031-08	L1728963-04	L1734925-05	L1708541-06	L1723031-04	L1729197-03	L1734925-04
		Sample ID	4527-170322-1755	4542-170706-1850	4542-170816-1920	7006-092817-1840	4527-170322-1650	4542-170706-1620	4542-170816-2040	7006-092717-1820	4542-170321-1245	4542-170706-1240	4542-170818-1230	7006-092817-1600
		Sample Date	03/22/2017	07/06/2017	08/16/2017	09/28/2017	03/22/2017	07/06/2017	08/16/2017	09/27/2017	03/21/2017	07/06/2017	08/18/2017	09/28/2017
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Volatile Organic Compounds (VOCs) (ug/L)														
cis-1,2-Dichloroethene	5		**1.2 J**	**0.84 J**	**0.78 J**	**0.84 J**	**17**	**10**	ND (0.70)	**1.0**	ND (1.4)	ND (0.70)	ND (0.70)	ND
1,1-Dichloroethene	5		--	ND (0.17)	ND (0.50)	ND	--	ND (0.17)	ND (0.17)	ND	--	ND (0.17)	ND (0.17)	ND
Tetrachloroethene	5		ND (0.18)	ND (0.18)	ND (0.50)	ND	ND (0.36)	ND (0.18)	ND (0.18)	ND	ND (0.36)	ND (0.18)	ND (0.18)	ND
Trichloroethene	5		**58**	**2.5**	**1.5 J+**	**1.2**	**200**	**0.5**	**0.49 J+**	**0.59**	**86 J-**	**0.32 J**	**0.21 J**	**0.26**
Vinyl chloride	2		ND (0.07)	ND (0.07)	ND (1.0)	ND	ND (0.14)	**140**	**2.0**	**0.4**	ND (0.14)	ND (0.70)	ND (0.70)	ND
Other (mg/L)														
Total Organic Carbon	--		**--**	--	--	--	**--**	--	--	--	**--**	--	--	--
Sulfate	250		**--**	--	--	--	**--**	--	--	--	**--**	--	--	--
Iron, Dissolved	0.3		**--**	--	--	--	--	--	--	--	**--**	--	--	--
Iron, Total	0.3		**--**	--	--	--	**--**	--	--	--	**--**	--	--	--
Ethene	--		--	--	--	--	--	--	**--**	--	--	--	--	--
Chloride	250		--	--	**--**	**--**	--	--	**--**	**--**	--	--	**--**	**--**
Field Parameters														
Temperature (°C)	--		--	--	--	--	--	--	--	--	--	--	--	--
pH	--		--	--	--	--	--	--	--	--	--	--	--	--
Conductivity (ms/cm)	--		--	--	--	--	--	--	--	--	--	--	--	--
Dissolved Oxygen (mg/L)	--		--	--	--	--	--	--	--	--	--	--	--	--
Turbidity (NTU)	--		--	--	--	--	--	--	--	--	--	--	--	--
ORP/eH (mv)	--		--	--	--	--	--	--	--	--	--	--	--	--

Notes and Abbreviations:
1. -- = Not applicable/not analyzed
2. ND = Not detected above the laboratory detection limits. Laboratory method detection limit (MDL) shown in parentheses.
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8. Exceeds the NYSDEC TOGS Criteria

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J- = results is an estimated value with a potential low bias
J+ = result is an estimated value, with a potential high bias
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R = result is rejected as unusable
N = normal sample
FD = field duplicate
**: Exact installation date is unknown, but was prior to 10/14/96. Construction details are not known.

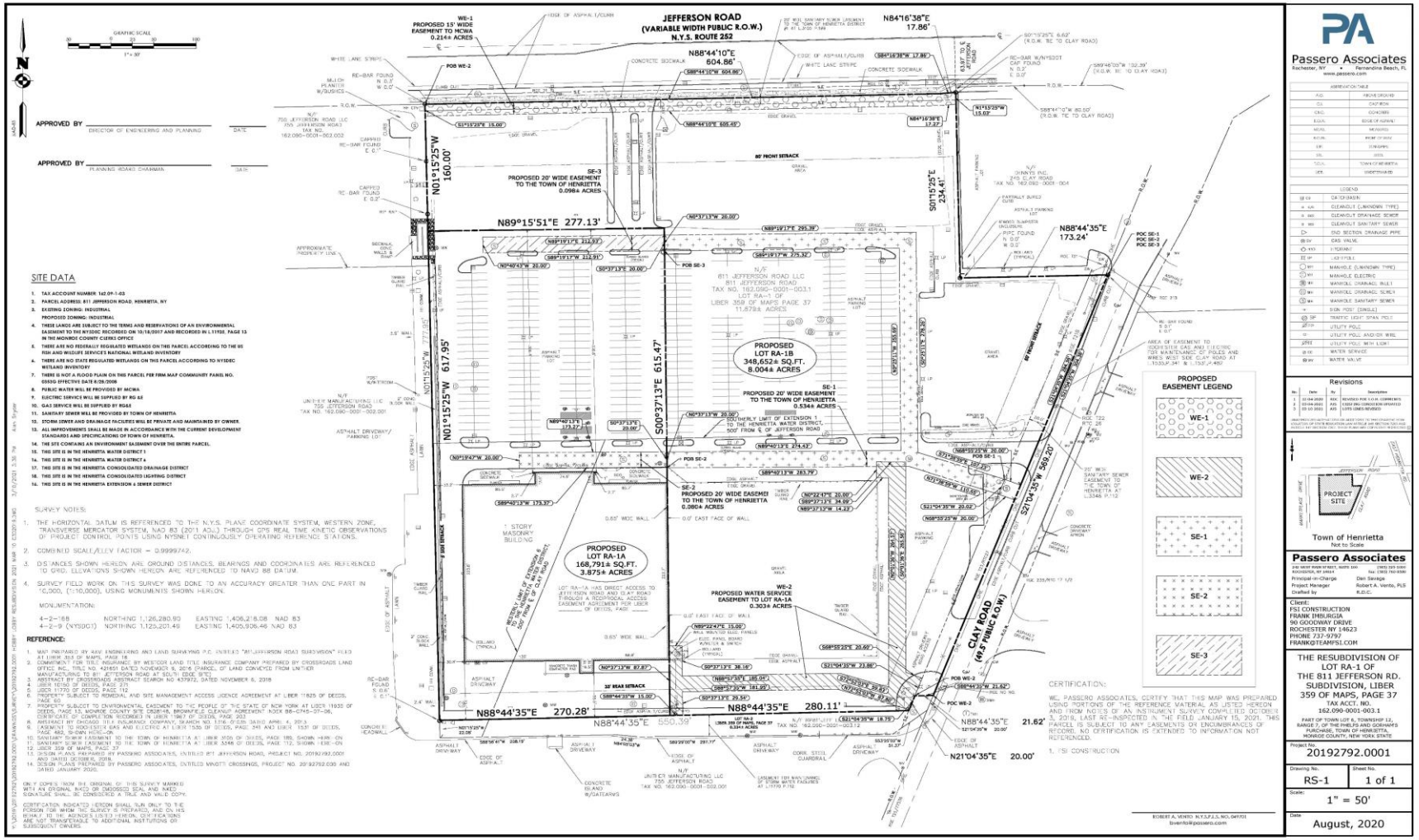
Figures

Site Location

NORTH



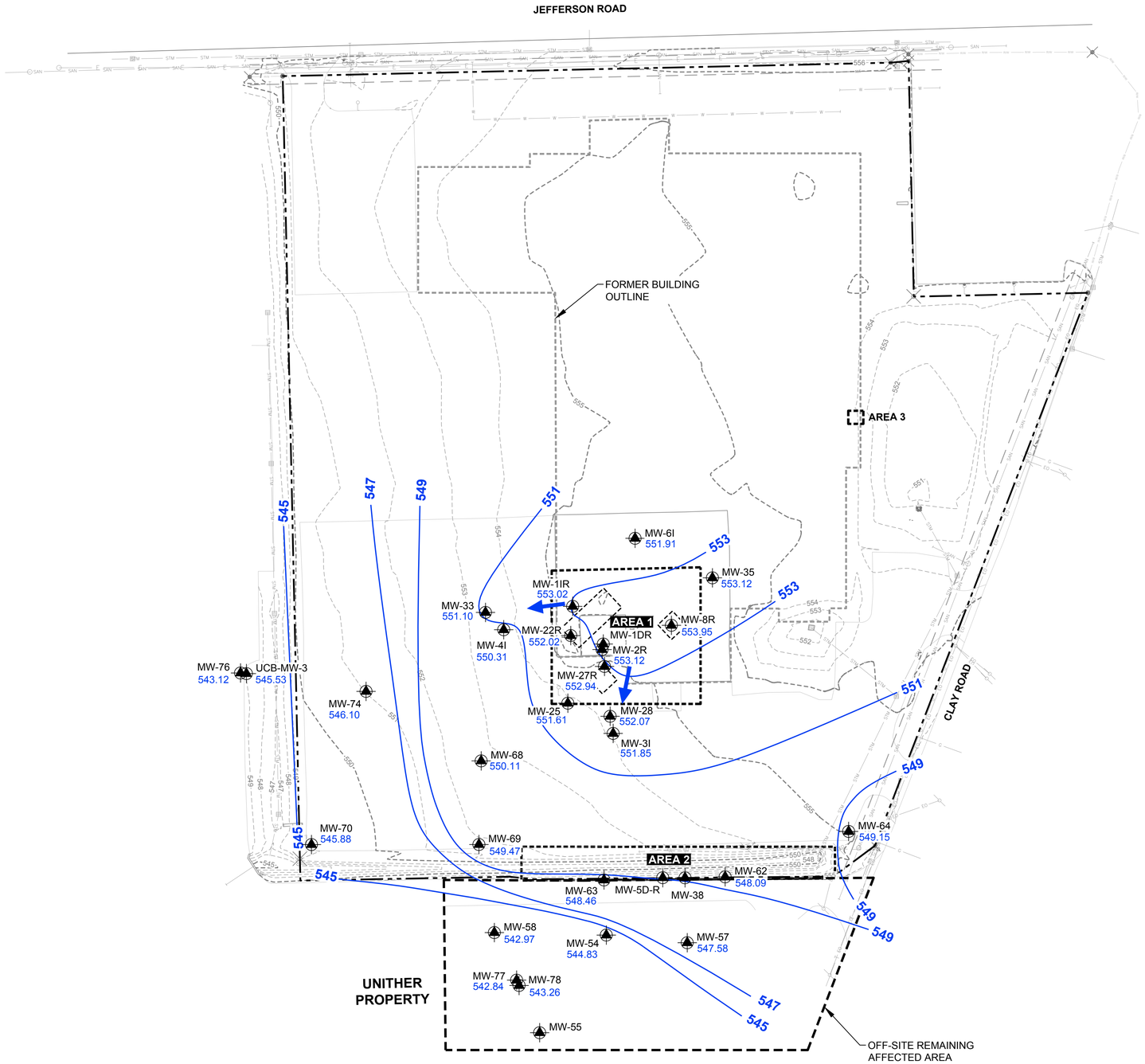
Title: Site Location 811 Jefferson Road Henrietta, New York	Leader Professional Services, Inc 271 Marsh Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 9/27/2020 Scale NTS	Drawn PVS Checked MPR File Name PRR	Figure 1
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				



Title	Site Plan August 2020
Prepared For	811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York

Leader Professional Services, Inc
271 Marsh Road-Suite 2
Pittsford, New York 14534
(585) 248-2413
FAX (585) 248-2834

Project	713.032A
Date	04/21/2021
Scale	As shown
Drawn	FRT
Checked	MPR
File Name	As-Built
Figure	2



LEGEND

- PROPERTY LINE / SITE BOUNDARY
- AREA OF CONCERN
- OFFSITE REMAINING AFFECTED AREA
- FORMER FACILITY BUILDING FOOTPRINT
- EXISTING IRON ROD
- EXISTING IRON PIPE
- UTILITY POLE
- DECIDUOUS TREE
- MANHOLE
- CATCH BASIN
- WATER OR GAS VALVE
- LIGHT POLE
- RIGHT-OF-WAY LINE
- WATER PIPELINE
- BURIED TELEPHONE CABLE
- UNDERGROUND ELECTRIC LINES
- OVERHEAD ELECTRIC LINES
- SANITARY SEWER
- STORM SEWER
- GAS LINE
- MW-40 — EXISTING MONITORING WELL LOCATION AND NUMBER
- 553.95 — GROUNDWATER ELEVATION IN FEET
- 553 — GROUNDWATER CONTOUR AND ELEVATION IN FEET
- GROUNDWATER FLOW DIRECTION

NOTES

1. BASE MAP PROVIDED BY HUNT ENGINEERS ARCHITECTS SURVEYORS, TAX PARCEL NO. 162.08-1-3, JOB NO. 5384-002, DRAWING NAME 5384-002.DWG, DATED AUGUST 23, 2012.
2. SOUTHERN PROPERTY BOUNDARY LINE PROVIDED BY McFARLAND JOHNSON, MARCH 2016.
3. GROUNDWATER LEVEL MEASUREMENTS COLLECTED ON JUNE 14, 2017.

0 60 120 180 240
SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK
FACILITY SITE
811 JEFFERSON ROAD

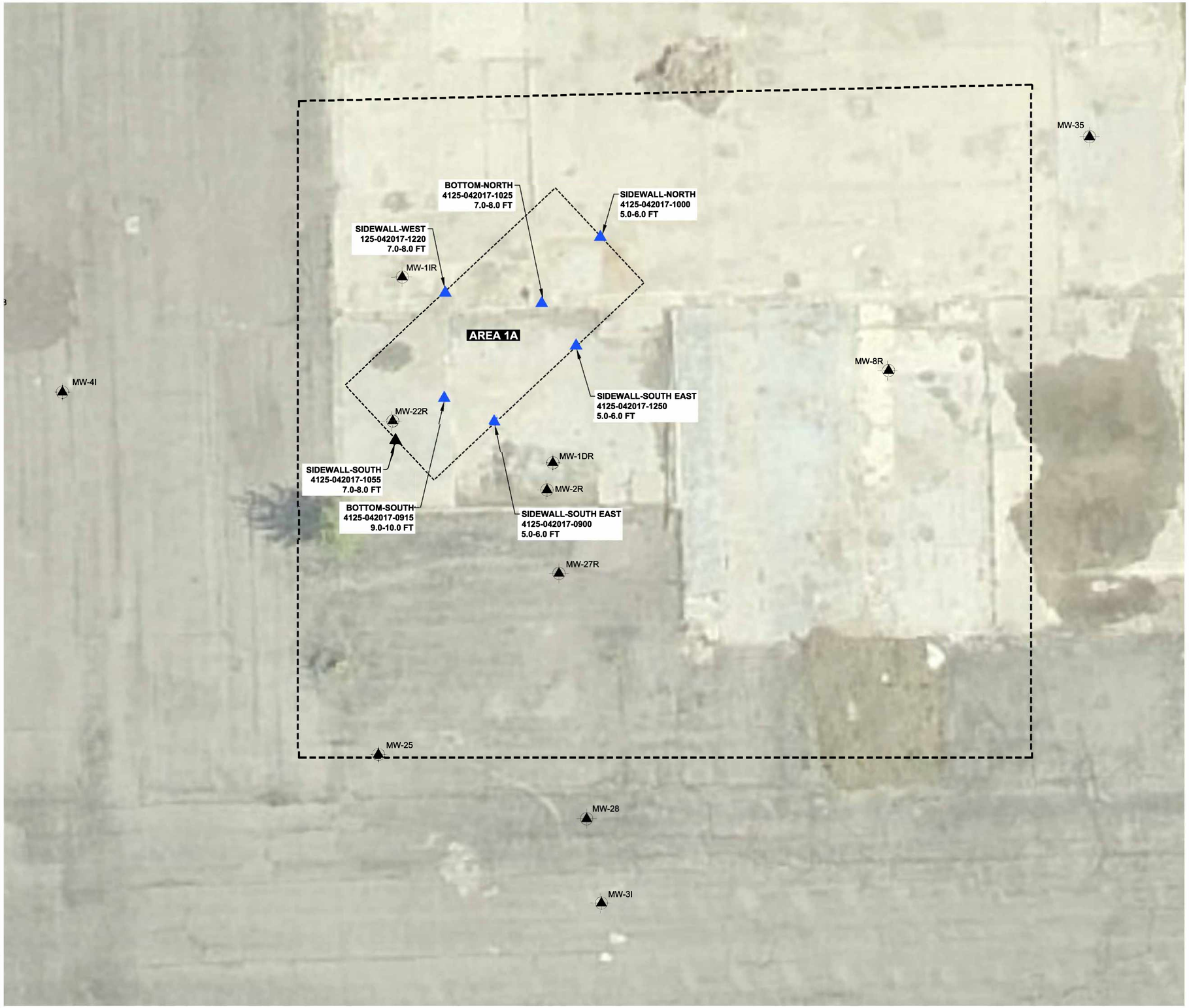
ROCHESTER, NEW YORK

GROUNDWATER CONTOUR MAP

FIGURE 3

Sheet: 03 of 10

LUCIDO, SAM Printed: 11/20/2017 6:07 PM Layout: FIGURE 3
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\128437_811 JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-3_GW CONT.DWG



LEGEND

- LIMITS OF EXCAVATION
- AREA OF CONCERN
- MONITORING WELL LOCATION AND NUMBER
- CONFIRMATION/DOCUMENTATION SOIL SAMPLE LOCATIONS (SEE NOTE 2)

NOTES

1. ALL CONFIRMATION SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONFIRMATION SAMPLE LOCATION RESULTS MET THE PART 375 RESTRICTED COMMERCIAL USE CRITERIA.
3. SAMPLE DEPTHS ARE MEASURED IN FEET BELOW GROUND SURFACE.

0 10 20 30 40
SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev	Description	By	Date

FORMER AB DICK
FACILITY SITE
811 JEFFERSON ROAD

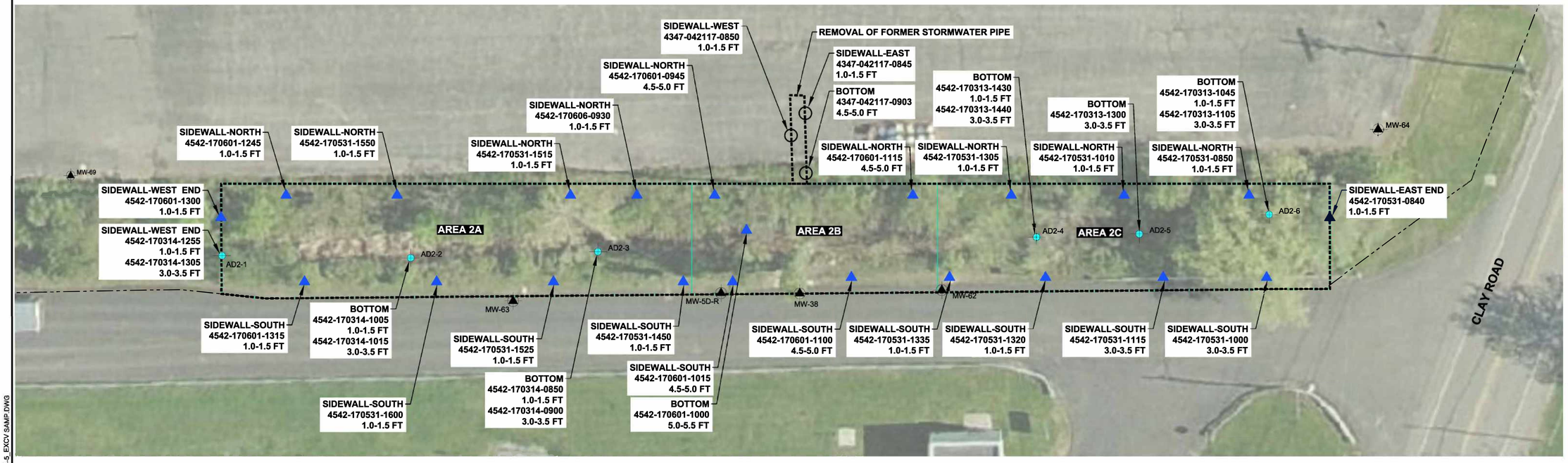
ROCHESTER, NEW YORK

AREA 1A EXCAVATION AND CONFIRMATION SAMPLE LOCATIONS

FIGURE 4

Sheet: 04 of 10

Printed: 11/20/2017 6:08 PM LUCIDO, SAM
Layout: FIGURE 4
W:\ALEVALDRICH.CO\MSHARE\ROC_COMMON\128437_811_JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-4-5_EXCV SAMP.DWG



LEGEND

- PROPERTY LINE / SITE BOUNDARY
- APPROXIMATE EXCAVATION LIMITS
- MONITORING WELL LOCATION
- CONFIRMATION/DOCUMENTATION SOIL SAMPLE LOCATIONS (SEE NOTE 2)
- PRE-EXCAVATION GEOPROBE LOCATIONS
- STORMWATER CONFIRMATION / DOCUMENTATION SOIL SAMPLE LOCATIONS

NOTES

1. ALL CONFIRMATION SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONFIRMATION SAMPLE LOCATION RESULTS MET THE PART 375 RESTRICTED COMMERCIAL USE CRITERIA.
3. SAMPLE DEPTHS ARE MEASURED IN FEET BELOW GROUND SURFACE.

N

0 15 30 45 60

SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK
FACILITY SITE
811 JEFFERSON ROAD

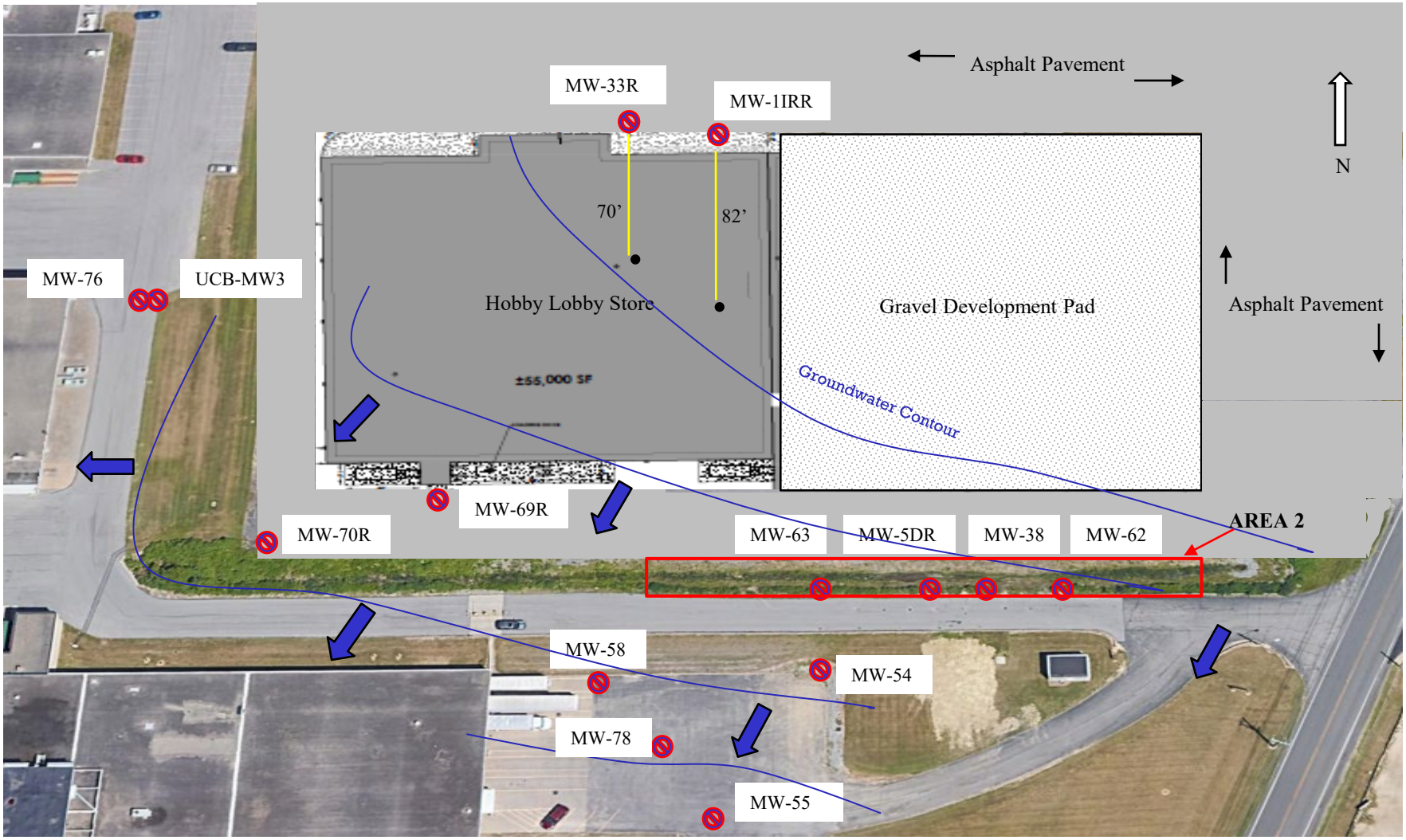
ROCHESTER, NEW YORK

AREA 2 EXCAVATION AND CONFIRMATION SAMPLE LOCATIONS

FIGURE 5

Sheet: 05 of 10

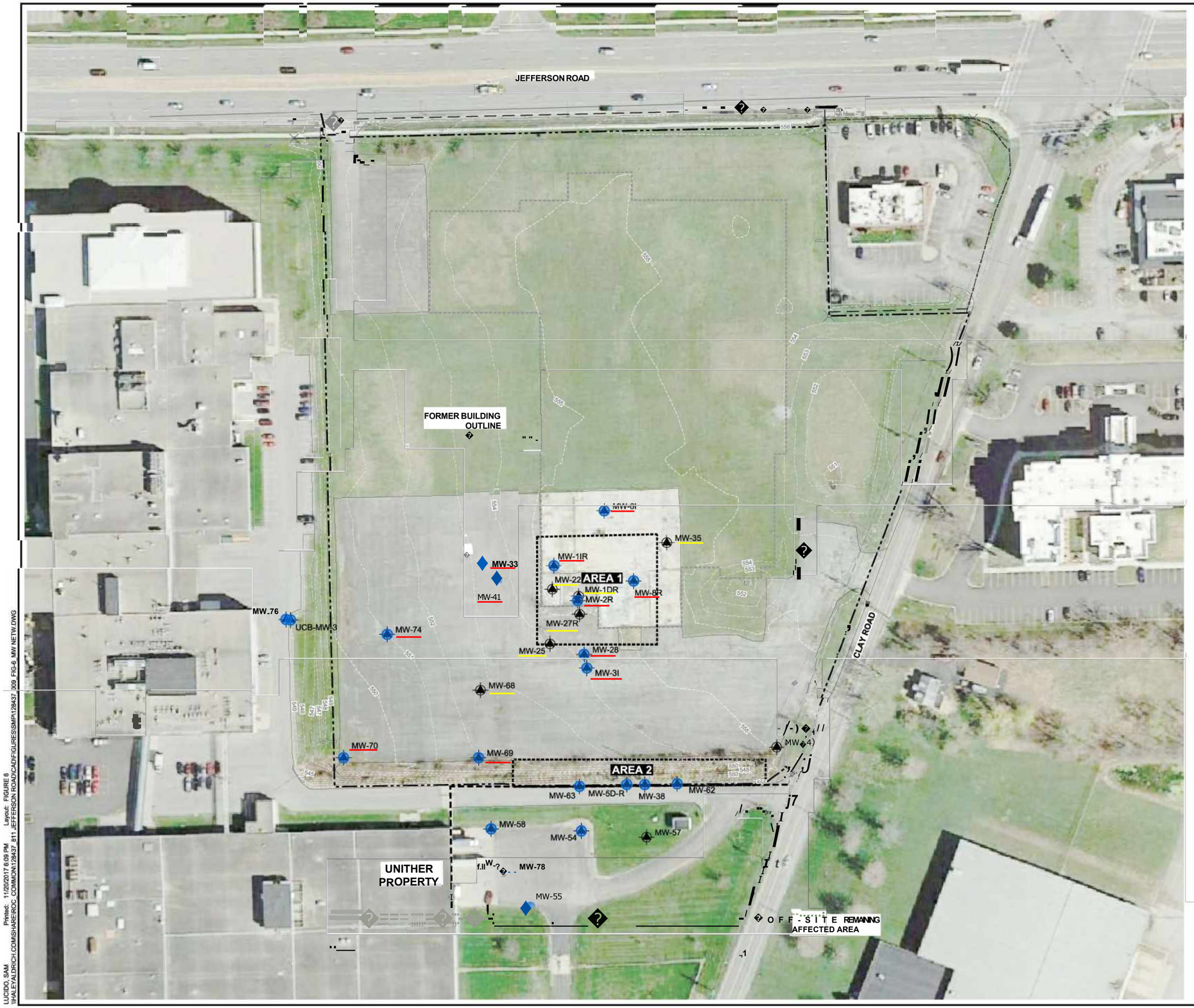
LUCIDO, SAM Printed: 11/20/2017 6:08 PM Layout: FIGURE 5
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\128437_811 JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-4-5_EXCV SAMP.DWG



Title	Post Construction Monitoring Well Location Map 811 Jefferson Road Tonawanda, New York
Prepared For	811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York 14623

Leader Professional Services, Inc
271 Marsh Road-Suite 2
Pittsford, New York 14534
(585) 248-2413
FAX (585) 248-2834

Project	713.032A
Date	4/7/2021
Scale	NTS
Drawn	FRT
Checked	MPR
File Name	Site drawing
Figure	6



LEGEND

- PROPERTY LINE / SITE BOUNDARY
- AREA OF CONCERN
- OFFSITE REMAINING AFFECTED AREA
- FORMER FACILITY BUILDING FOOTPRINT
- EDGE OF CONCRETE/PAVEMENT
- EXISTING IRON ROD
- EXISTING IRON PIPE
- UTILITY POLE
- DECIDUOUS TREE
- MANHOLE
- CATCH BASIN
- WATER OR GAS VALVE
- LIGHT POLE
- RIGHT-OF-WAY LINE
- WATER PIPELINE
- BURIED TELEPHONE CABLE
- UNDERGROUND ELECTRIC LINES
- OVERHEAD ELECTRIC LINES
- SANITARY SEWER
- STORM SEWER
- GAS LINE
- EXISTING MONITORING WELL LOCATION
- NETWORK MONITORING WELL LOCATION
- DECOMMISSIONED WELL
  *The table below conveys which wells were replaced
- PRESUMED DESTROYED DURING CONSTRUCTION

NOTES:

1. BASE MAP PROVIDED BY HUNT ENGINEERS ARCHITECTS SURVEYORS, TAX PARCEL NO. 162.08-1-3, JOB NO. 5384-002, DRAWING NAME 5384-002.DWG, DATED AUGUST 23, 2012.
2. SOUTHERN PROPERTY BOUNDARY LINE PROVIDED BY McFARLAND JOHNSON, MARCH 2016.

DecommissionedWells:

MW - 1IR (replaced angle well)
MW - 2R
MW - 8R
MW - 28
MW - 31
MW - 33 (replaced angle well)
MW - 41
MW - 61
MW - 69 (replaced in kind)
MW - 70 (replaced in kind)
MW - 74

Presumed Destroyed AfterConstruction:

MW - 1DR
MW - 22
MW - 25
MW - 27R
MW - 35
MW - 68

N

0 60 120 180 240
SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK FACILITY SITE
811 JEFFERSON ROAD

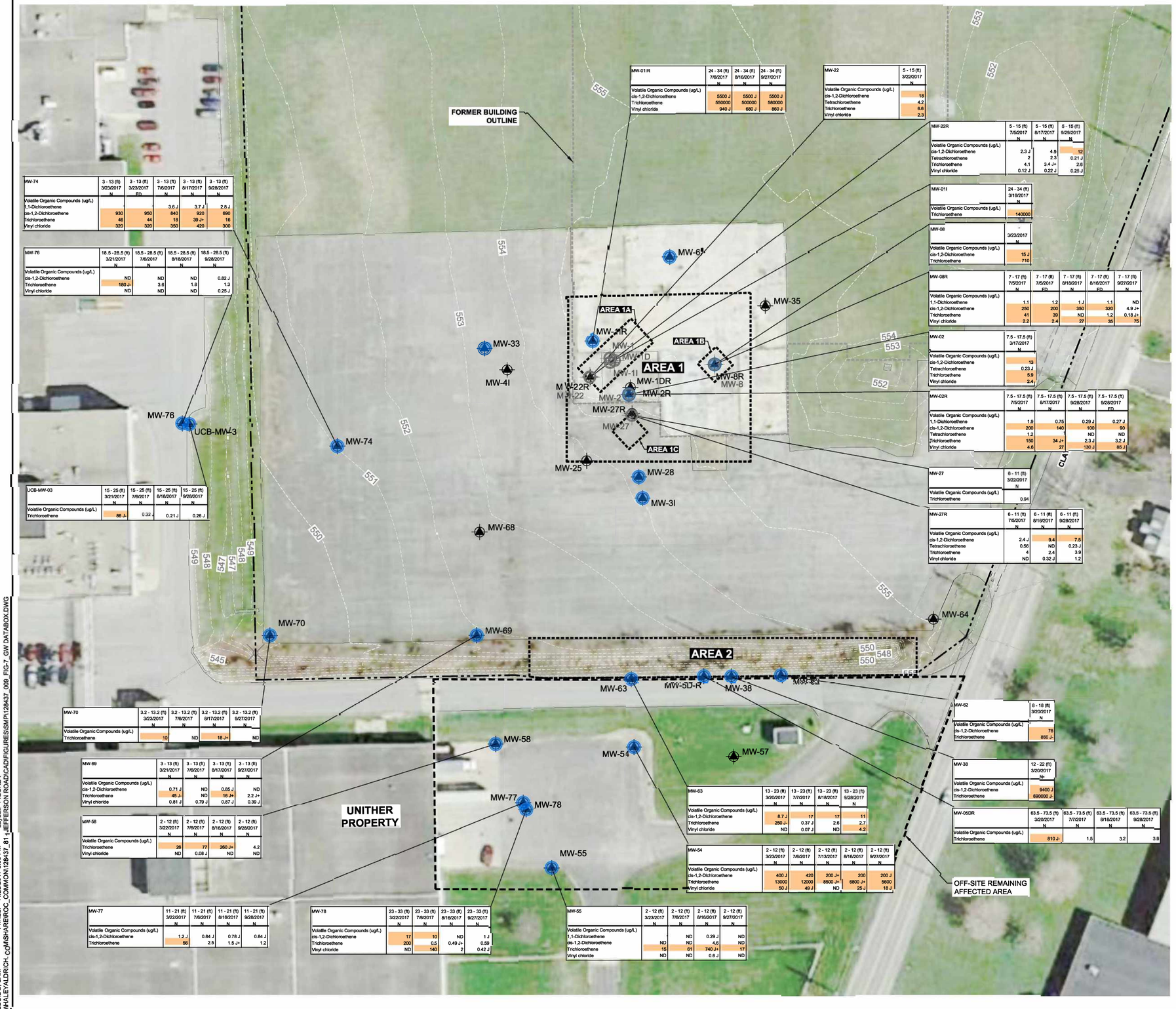
ROCHESTER, NEW YORK

PRECONSTRUCTION MONITORING WELL NETWORK

FIGURE 7

Sheet: 06 of 10

LUCIDO, SAM
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\128437_811 JEFFERSON ROAD\CADD\FIGURES\SMP\128437_009_FIG-6_MW NETW.DWG
Layout: FIGURE 6
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MW-01R	24 - 34 (ft) 7/6/2017 N	24 - 34 (ft) 8/16/2017 N	24 - 34 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)			
cis-1,2-Dichloroethene	5500 J	5500 J	5500 J
Trichloroethene	550000	500000	580000
Vinyl chloride	940 J	680 J	860 J

MW-22	5 - 15 (ft) 3/22/2017 N
Volatile Organic Compounds (ug/L)	
cis-1,2-Dichloroethene	18
Tetrachloroethene	4.2
Trichloroethene	6.8
Vinyl chloride	2.3

MW-22R	5 - 15 (ft) 7/5/2017 N	5 - 15 (ft) 8/17/2017 N	5 - 15 (ft) 9/29/2017 N
Volatile Organic Compounds (ug/L)			
cis-1,2-Dichloroethene	2.3 J	4.9	12
Tetrachloroethene	2	2.3	0.21 J
Trichloroethene	4.1	3.4 J+	2.6
Vinyl chloride	0.12 J	0.22 J	0.25 J

MW-01I	24 - 34 (ft) 3/16/2017 N
Volatile Organic Compounds (ug/L)	
Trichloroethene	140000

MW-08	- 3/23/2017 N
Volatile Organic Compounds (ug/L)	
cis-1,2-Dichloroethene	15 J
Trichloroethene	710

MW-08R	7 - 17 (ft) 7/5/2017 N	7 - 17 (ft) 7/5/2017 FD	7 - 17 (ft) 8/16/2017 N	7 - 17 (ft) 8/16/2017 FD	7 - 17 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethene	1.1	1.2	1.1	1.1	ND
cis-1,2-Dichloroethene	250	200	350	320	4.9 J+
Trichloroethene	41	39	ND	1.2	0.18 J+
Vinyl chloride	2.2	2.4	27	35	75

MW-02	7.5 - 17.5 (ft) 3/17/2017 N
Volatile Organic Compounds (ug/L)	
cis-1,2-Dichloroethene	13
Tetrachloroethene	0.23 J
Trichloroethene	5.9
Vinyl chloride	2.4

MW-02R	7.5 - 17.5 (ft) 7/5/2017 N	7.5 - 17.5 (ft) 8/17/2017 N	7.5 - 17.5 (ft) 9/28/2017 N	7.5 - 17.5 (ft) 9/29/2017 FD
Volatile Organic Compounds (ug/L)				
1,1-Dichloroethene	1.9	0.75	0.29 J	0.27 J
cis-1,2-Dichloroethene	200	140	100	99
Tetrachloroethene	1.2		ND	ND
Trichloroethene	150	34 J+	2.3 J	3.2 J
Vinyl chloride	4.6	27	130 J	85 J

MW-27	8 - 11 (ft) 3/22/2017 N
Volatile Organic Compounds (ug/L)	
Trichloroethene	0.94

MW-27R	8 - 11 (ft) 7/5/2017 N	8 - 11 (ft) 8/16/2017 N	8 - 11 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)			
cis-1,2-Dichloroethene	2.4 J	9.4	7.5
Tetrachloroethene	0.56	ND	0.23 J
Trichloroethene	4	2.4	3.9
Vinyl chloride	ND	0.32 J	1.2

MW-74	3 - 13 (ft) 3/23/2017 N	3 - 13 (ft) 3/23/2017 FD	3 - 13 (ft) 7/6/2017 N	3 - 13 (ft) 8/17/2017 N	3 - 13 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)					
1,1-Dichloroethene	-	-	3.6 J	3.7 J	2.8 J
cis-1,2-Dichloroethene	930	950	840	920	690
Trichloroethene	46	44	18	39 J+	16
Vinyl chloride	320	320	350	420	300

MW-76	18.5 - 28.5 (ft) 3/21/2017 N	18.5 - 28.5 (ft) 7/6/2017 N	18.5 - 28.5 (ft) 8/18/2017 N	18.5 - 28.5 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)				
cis-1,2-Dichloroethene	ND	ND	ND	0.82 J
Trichloroethene	180 J	3.6	1.8	1.3
Vinyl chloride	ND	ND	ND	0.25 J

UCB-MW-03	15 - 25 (ft) 3/21/2017 N	15 - 25 (ft) 7/6/2017 N	15 - 25 (ft) 8/18/2017 N	15 - 25 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)				
Trichloroethene	88 J-	0.32 J	0.21 J	0.26 J

MW-70	3.2 - 13.2 (ft) 3/23/2017 N	3.2 - 13.2 (ft) 7/6/2017 N	3.2 - 13.2 (ft) 8/17/2017 N	3.2 - 13.2 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)				
Trichloroethene	10	ND	18 J+	ND

MW-69	3 - 13 (ft) 3/21/2017 N	3 - 13 (ft) 7/6/2017 N	3 - 13 (ft) 8/17/2017 N	3 - 13 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)				
cis-1,2-Dichloroethene	0.71 J	ND	0.85 J	ND
Trichloroethene	45 J-	ND	16 J+	2.2 J+
Vinyl chloride	0.81 J	0.79 J	0.87 J	0.39 J

MW-58	2 - 12 (ft) 3/22/2017 N	2 - 12 (ft) 7/6/2017 N	2 - 12 (ft) 8/16/2017 N	2 - 12 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)				
Trichloroethene	26	77	260 J+	4.2
Vinyl chloride	ND	0.08 J	ND	ND

MW-77	11 - 21 (ft) 3/22/2017 N	11 - 21 (ft) 7/6/2017 N	11 - 21 (ft) 8/16/2017 N	11 - 21 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)				
cis-1,2-Dichloroethene	1.2 J	0.84 J	0.78 J	0.84 J
Trichloroethene	56	2.5	1.5 J+	1.2

MW-78	23 - 33 (ft) 3/22/2017 N	23 - 33 (ft) 7/6/2017 N	23 - 33 (ft) 8/16/2017 N	23 - 33 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)				
cis-1,2-Dichloroethene	17	10	ND	1 J
Trichloroethene	200	0.5	0.49 J+	0.59
Vinyl chloride	ND	140	2	0.42 J

MW-55	2 - 12 (ft) 3/23/2017 N	2 - 12 (ft) 7/6/2017 N	2 - 12 (ft) 8/16/2017 N	2 - 12 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)				
1,1-Dichloroethene	-	ND	0.29 J	ND
cis-1,2-Dichloroethene	ND	ND	4.6	ND
Trichloroethene	15	61	740 J+	17
Vinyl chloride	ND	ND	0.6 J	ND

MW-63	13 - 23 (ft) 3/20/2017 N	13 - 23 (ft) 7/7/2017 N	13 - 23 (ft) 8/18/2017 N	13 - 23 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)				
cis-1,2-Dichloroethene	8.7 J	17	17	11
Trichloroethene	250 J-	0.37 J	2.6	2.7
Vinyl chloride	ND	0.07 J	ND	4.2

MW-54	2 - 12 (ft) 3/23/2017 N	2 - 12 (ft) 7/6/2017 N	2 - 12 (ft) 7/13/2017 N	2 - 12 (ft) 8/16/2017 N	2 - 12 (ft) 9/27/2017 N
Volatile Organic Compounds (ug/L)					
cis-1,2-Dichloroethene	400 J	420	200 J+	200	200 J
Trichloroethene	13000	12000	8500 J+	6800 J+	5600
Vinyl chloride	50 J	49 J	ND	25 J	18 J

MW-62	8 - 18 (ft) 3/20/2017 N
Volatile Organic Compounds (ug/L)	
cis-1,2-Dichloroethene	78
Trichloroethene	880 J-

MW-38	12 - 22 (ft) 3/20/2017 N
Volatile Organic Compounds (ug/L)	
cis-1,2-Dichloroethene	9400 J
Trichloroethene	690000 J-

MW-05DR	63.5 - 73.5 (ft) 3/20/2017 N	63.5 - 73.5 (ft) 7/7/2017 N	63.5 - 73.5 (ft) 8/18/2017 N	63.5 - 73.5 (ft) 9/28/2017 N
Volatile Organic Compounds (ug/L)				
Trichloroethene	810 J-	1.5	3.2	3.6

LEGEND

- PROPERTY LINE / SITE BOUNDARY
- AREA OF CONCERN
- OFFSITE REMAINING AFFECTED AREA
- EXISTING MONITORING WELL LOCATION
- DECOMISSIONED MONITORING WELL LOCATION

NOTES

1. BASE MAP PROVIDED BY HUNT ENGINEERS ARCHITECTS SURVEYORS, TAX PARCEL NO. 162.08-1-3, JOB NO. 5384-002, DRAWING NAME 5384-002.DWG, DATED AUGUST 23, 2012.
2. SOUTHERN PROPERTY BOUNDARY LINE PROVIDED BY McFARLAND JOHNSON, MARCH 2016.
3. PARAMETERS SHOWN IN DATABOXES ARE THOSE THAT ARE DETECTED AT EACH SAMPLE LOCATION.
4. ND (#): NOT DETECTED ABOVE THE REPORTING LIMIT.
5. QUALIFIERS DEFINED AS FOLLOWS:
   J: ESTIMATED RESULT
   J+: ESTIMATED RESULT, BIASED HIGH
6. N: NORMAL; FD: FIELD DUPLICATE
7. UCB-MW-03 INSTALLED AS PART OF INVESTIGATIONS AT 755 JEFFERSON ROAD BY UCB OR ITS PREDECESSORS. CONSTRUCTION DETAILS ARE NOT KNOWN.

	NYSDEC TOGS Ambient Water Class GA (ug/L)
Volatile Organic Compounds	
1,1-Dichloroethene	5
cis-1,2-Dichloroethene	5
Tetrachloroethene	5
Trichloroethene	5
Vinyl chloride	2

MW-58	2 - 12 (ft) — SCREEN INTERVAL
	7/6/2017 — SAMPLE DATE
	N — SAMPLE TYPE
Volatile Organic Compounds (ug/L)	
Trichloroethene	77 **
Vinyl chloride	0.08 J

WELL ID

** DETECTED CONCENTRATIONS FROM GROUNDWATER SAMPLES WERE SCREENED AGAINST NYSDEC TOGS AMBIENT WATER CLASS GA. CONCENTRATIONS THAT EXCEED ARE HIGHLIGHTED ORANGE.

0 40 80 120 160
SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK FACILITY SITE
811 JEFFERSON ROAD

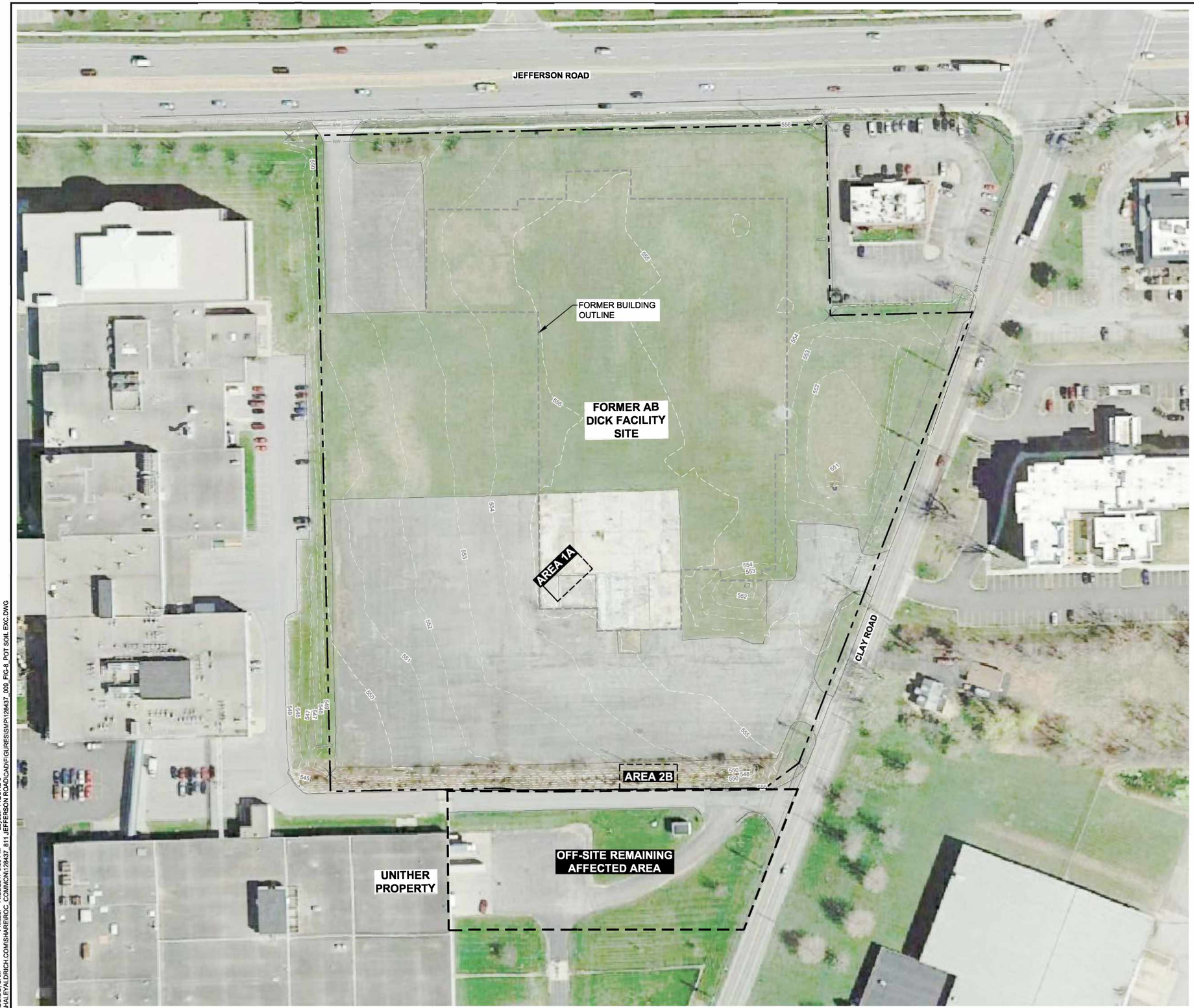
ROCHESTER, NEW YORK

ON-SITE AND OFF-SITE GROUNDWATER CONCENTRATIONS

FIGURE 8

Sheet: 07 of 10

Printed: 11/20/2017 6:09 PM Layout: FIGURE 7
LUCIDO, SAM \\HALEYALDRICH.COM\SHAREROC_COMMON\128437_811 JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-7_GW DATABOX.DWG



LEGEND

- PROPERTY LINE / SITE BOUNDARY
- POTENTIAL SOIL EXCEEDANCE AREA
- OFFSITE REMAINING AFFECTED AREA
- FORMER FACILITY BUILDING FOOTPRINT
- EDGE OF CONCRETE/PAVEMENT
- EXISTING IRON ROD
- EXISTING IRON PIPE
- UTILITY POLE
- DECIDUOUS TREE
- MANHOLE
- CATCH BASIN
- WATER OR GAS VALVE
- LIGHT POLE
- R/W — RIGHT-OF-WAY LINE
- W — WATER PIPELINE
- TU — BURIED TELEPHONE CABLE
- EU — UNDERGROUND ELECTRIC LINES
- EO — OVERHEAD ELECTRIC LINES
- SAN — SANITARY SEWER
- STM — STORM SEWER
- GAS LINE

NOTES

1. BASE MAP PROVIDED BY HUNT ENGINEERS ARCHITECTS SURVEYORS, TAX PARCEL NO. 162.08-1-3, JOB NO. 5384-002, DRAWING NAME 5384-002.DWG, DATED AUGUST 23, 2012.
2. SOUTHERN PROPERTY BOUNDARY LINE PROVIDED BY McFARLAND JOHNSON, MARCH 2016.

N

0 60 120 180 240

SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK FACILITY SITE
811 JEFFERSON ROAD

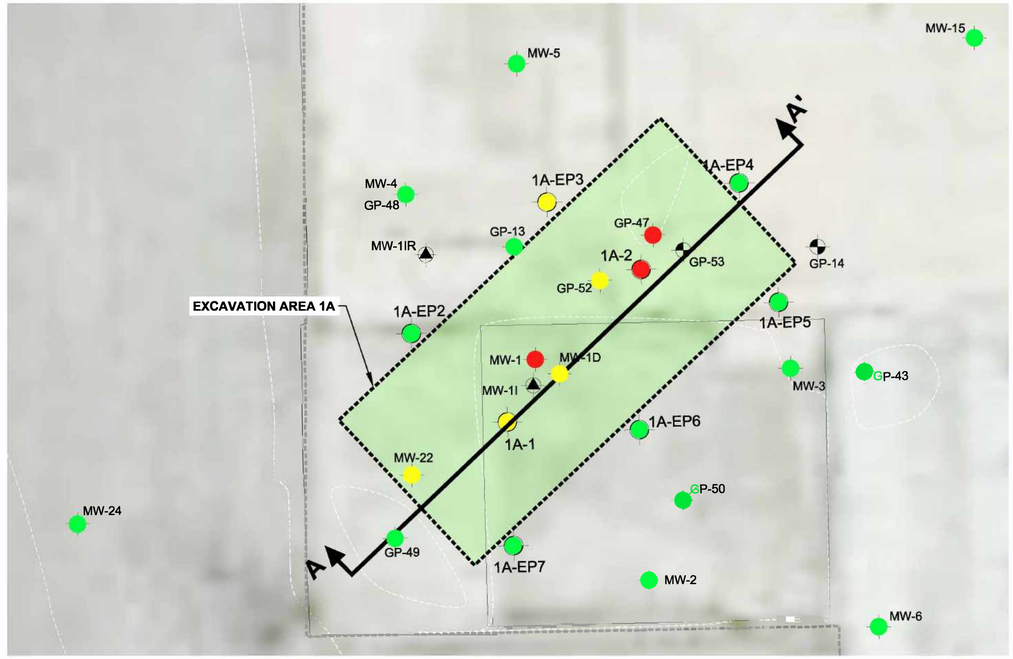
ROCHESTER, NEW YORK

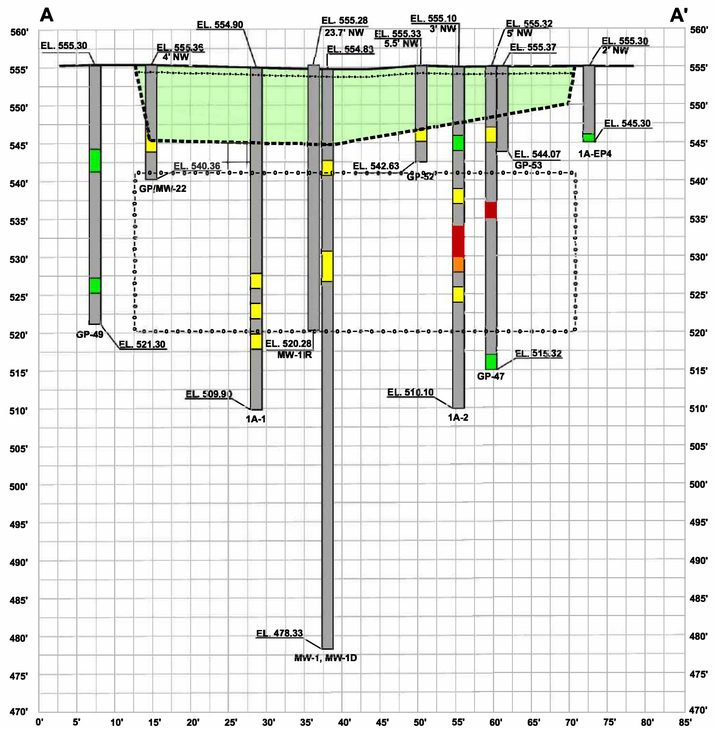
POTENTIAL SOIL EXCEEDANCE AREAS

FIGURE 9

Sheet: 08 of 10

Printed: 11/20/2017 6:09 PM Layout: FIGURE 8
LUCIDO, SAM
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\128437_811 JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-8_POT SOIL EXC.DWG





A **EXCAVATION CROSS SECTION A - A'**
NTS

LEGEND

- ESTIMATED LIMITS OF EXCAVATION
- DEMARCATION LAYER
- TARGETED ISCR INJECTION ZONE
- MW-28 MONITORING WELL LOCATION AND NUMBER
- GP-45 GEOPROBE BORING LOCATION AND NUMBER
- NO VOC CONCENTRATIONS > PART 375 PROTECTION OF GROUNDWATER CRITERIA
- MAXIMUM VOC CONCENTRATIONS BETWEEN PART 375 PROTECTION OF GROUNDWATER CRITERIA AND PART 375 RESTRICTED COMMERCIAL USE CRITERIA
- MAXIMUM VOC CONCENTRATIONS BETWEEN PART 375 RESTRICTED COMMERCIAL USE CRITERIA AND PART 375 RESTRICTED INDUSTRIAL USE CRITERIA
- MAXIMUM VOC CONCENTRATIONS GREATER THAN PART 375 RESTRICTED INDUSTRIAL USE CRITERIA

NOTES

1. SOIL SAMPLING LOCATIONS PROVIDED BY FINAL RI REPORT (STANTEC, 2009), REVISED SUPPLEMENTAL RI REPORT (STANTEC, 2010), AND PREDESIGN WORK (HALEY & ALDRICH, 2016).
2. ALL LOCATIONS ARE APPROXIMATE.
3. CONTAMINANT LEVELS PRESENTED BELOW THE EXCAVATION LIMITS WERE FROM THE REMEDIAL INVESTIGATION PRIOR TO REMEDIAL ACTION.
4. ISCR = IN-SITU CHEMICAL REDUCTION.
5. DEMARCATION LAYER CONSISTS OF ORANGE SAFETY BARRIER.

N

0 10 20 30 40
SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK FACILITY SITE
811 JEFFERSON ROAD

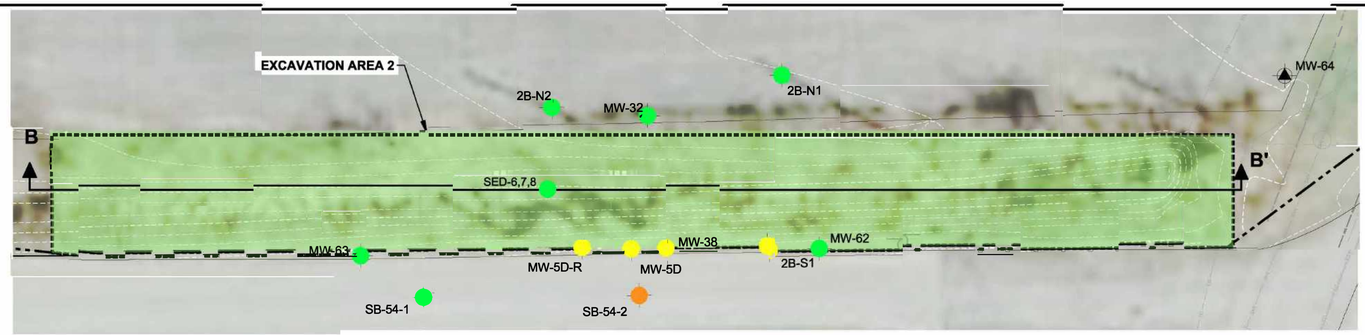
ROCHESTER, NEW YORK

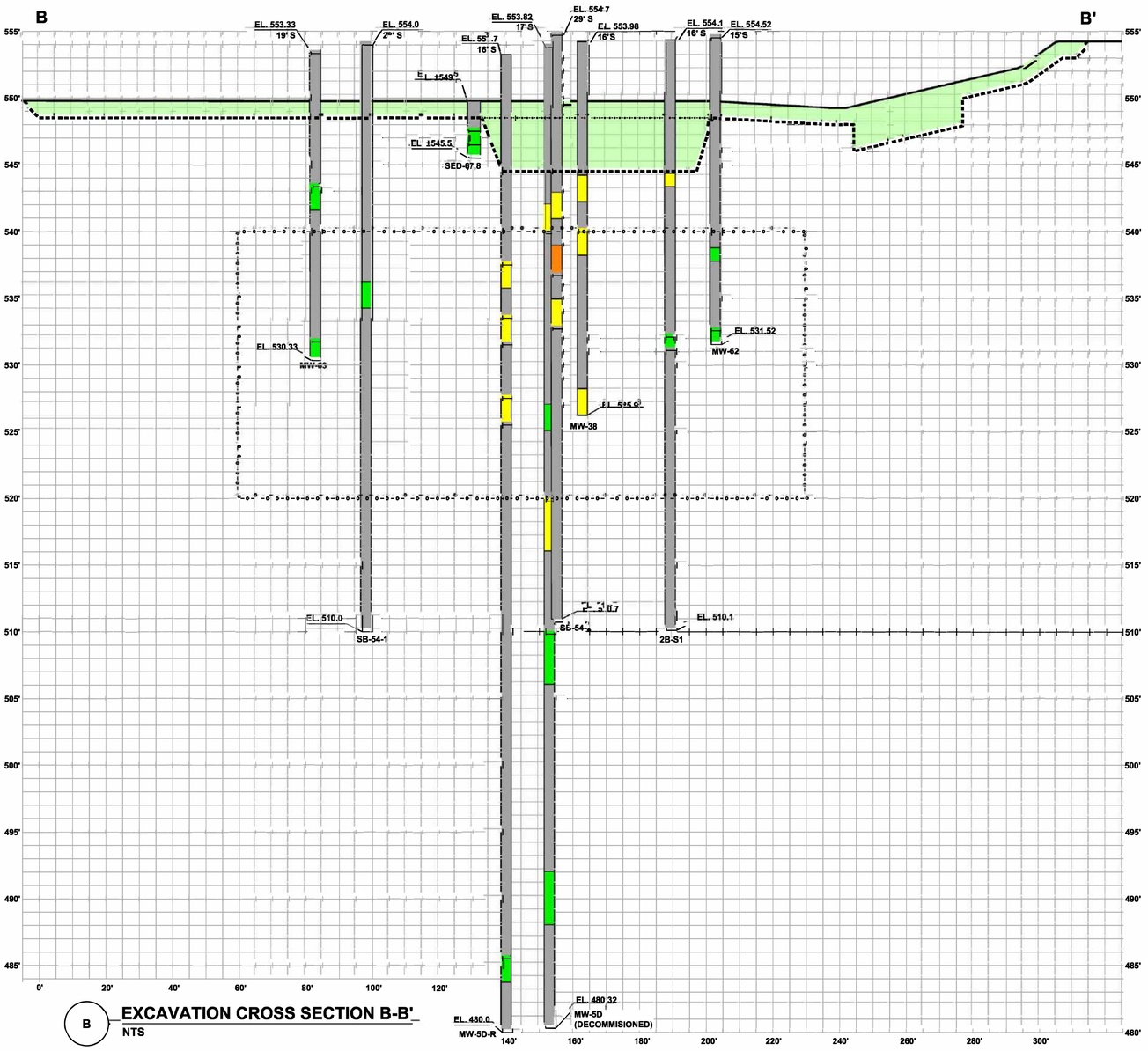
AREA 1A EXCAVATION CROSS-SECTION

FIGURE 10

Sheet: 09 of 10

LUCIDO, SAM
Printed: 11/20/2017 6:10 PM Layout: FIGURE 9
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\128437_811 JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-9-10_EXCAV XS.DWG





B **EXCAVATION CROSS SECTION B-B'**
NTS

LEGEND

- PROPERTY LINE (BROWNFIELD BOUNDARY)
- ESTIMATED LIMITS OF EXCAVATION
- DEMARCATION LAYER
- TARGETED ISCR INJECTION ZONE
- MW-28 — MONITORING WELL LOCATION AND NUMBER
- SED-6,7,8 — SEDIMENT AND DRAINAGE DITCH SOIL SAMPLING LOCATION AND NUMBER
- NO VOC CONCENTRATIONS > PART 375 PROTECTION OF GROUNDWATER CRITERIA
- MAXIMUM VOC CONCENTRATIONS BETWEEN PART 375 PROTECTION OF GROUNDWATER CRITERIA AND PART 375 RESTRICTED COMMERCIAL USE CRITERIA
- MAXIMUM VOC CONCENTRATIONS BETWEEN PART 375 RESTRICTED COMMERCIAL USE CRITERIA AND PART 375 RESTRICTED INDUSTRIAL USE CRITERIA
- MAXIMUM VOC CONCENTRATIONS GREATER THAN PART 375 RESTRICTED INDUSTRIAL USE CRITERIA

NOTES

1. SOIL SAMPLING LOCATIONS PROVIDED BY FINAL RI REPORT (STANTEC, 2009), REVISED SUPPLEMENTAL RI REPORT (STANTEC, 2010), AND PREDESIGN WORK (HALEY & ALDRICH, 2016).
2. ALL LOCATIONS ARE APPROXIMATE.
3. CONTAMINANT LEVELS PRESENTED BELOW EXCAVATION LIMITS WERE FROM THE REMEDIAL INVESTIGATION PRIOR TO REMEDIAL ACTION.
4. ISCR = IN-SITU CHEMICAL REDUCTION.
5. DEMARCATION LAYER CONSISTS OF ORANGE SAFETY BARRIER.

N

0 20 40 60 80
SCALE IN FEET

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM

Stamp:

Rev.	Description	By	Date

FORMER AB DICK
FACILITY SITE
811 JEFFERSON ROAD

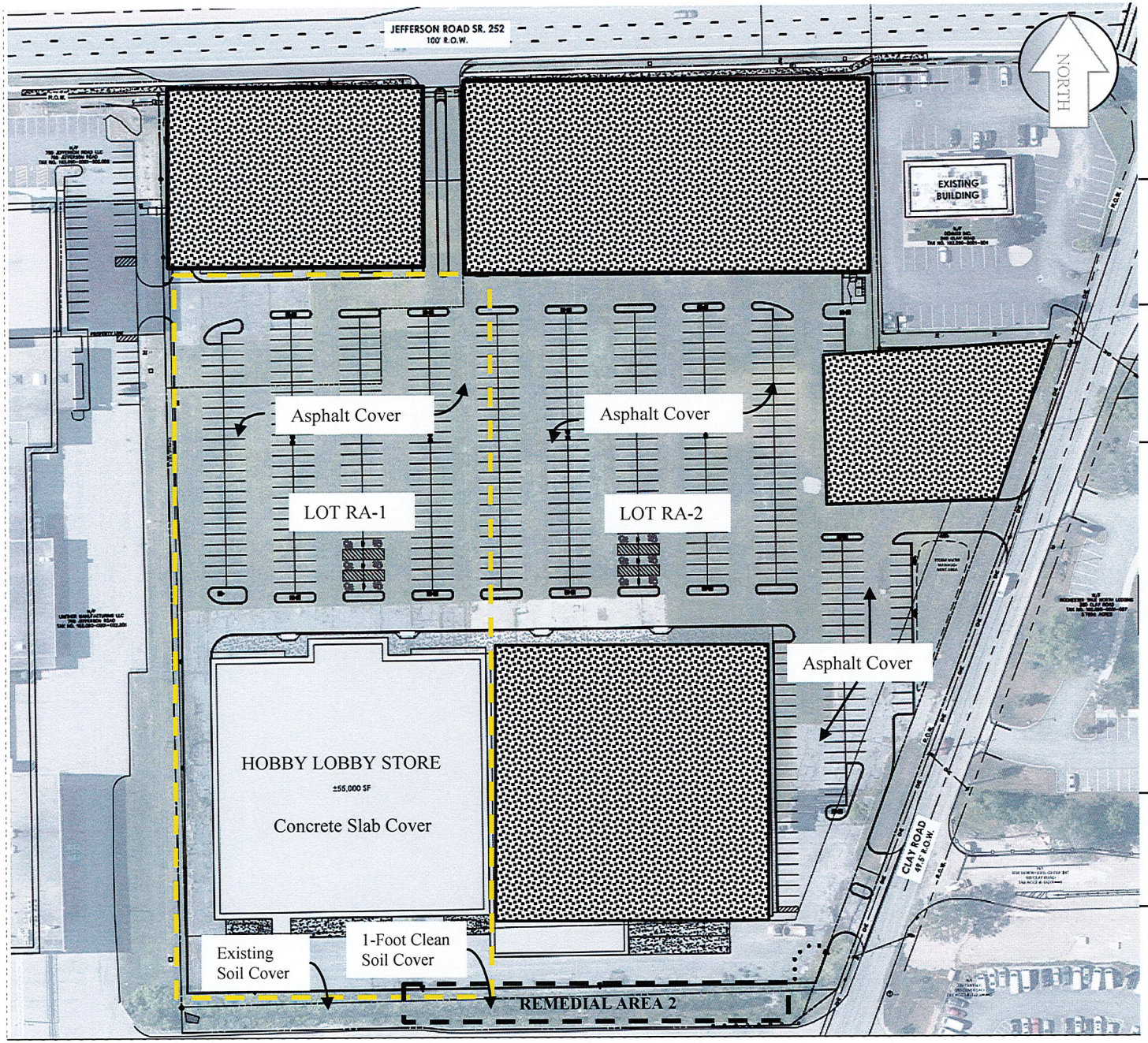
ROCHESTER, NEW YORK

AREA 2
EXCAVATION
CROSS-SECTION

FIGURE 11

Sheet: 10 of 10

LUCIDO, SAM
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\128437_81 JEFFERSON ROAD\CAD\FIGURES\SM\P\128437_009_FIG-9-10_EXCAV XS.DWG
Printed: 11/20/2017 6:10 PM
Layout: FIGURE 10



Leader Professional Services, Inc
271 Marsh Road-Suite 2
Pittsford, New York 14534
(585) 248-2413
FAX (585) 248-2834

FORMER AB DICK
FACILITY SITE
811 JEFFERSON ROAD
ROCHESTER, NEW YORK
BCP Site No: C828148

Project No: 713.032A
Scale: NTS
Date: July 2021
Drawn By: FRT
Checked By: MPR

LEGEND

RA-1 Property Limits

Gravel Development Pads, minimum 1-ft. gravel over demarcation layer.

SITE WIDE EXISTING COVER SYSTEM PLAN

FIGURE 12

Appendix A

Environmental Easement and the Remedial and Site Management Access License

MONROE COUNTY CLERK'S OFFICE

THIS IS NOT A BILL. THIS IS YOUR RECEIPT.

Receipt # 2275858

Book Page D 12273 0300

No. Pages: 7

Instrument: DEED OTHER

Control #: 201911211101

Ref #: TT0000008318

Date: 11/21/2019

Time: 4:14:51 PM

Return To:
811 JEFFERSON PARTNERS LLC
90 GOODWAY DRIVE
ROCHESTER, NY 14623

811 JEFFERSON ROAD LLC,

811 JEFFERSON PARTNERS LLC,

Recording Fee	$26.00
Pages Fee	$30.00
State Fee Cultural Education	$14.25
State Fee Records Management	$4.75
Transfer Tax	$14,300.00
TP-584 Form Fee	$5.00
RP-5217 County Fee	$9.00
RP5217 State Equal Addit Fee	$241.00
Total Fees Paid:	$14,630.00

Employee: DA

State of New York

MONROE COUNTY CLERK'S OFFICE
WARNING – THIS SHEET CONSTITUTES THE CLERKS ENDORSEMENT, REQUIRED BY SECTION 317-a(5) & SECTION 319 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK. DO NOT DETACH OR REMOVE.

Consideration: $3,575,000.00

ADAM J BELLO

MONROE COUNTY CLERK



9

RECORDED
Time: 4:14
NOV 21 2019
Monroe County Clerk's Office

BARGAIN AND SALE DEED

THIS INDENTURE is made this 20th day of November , 2019

BETWEEN 811 Jefferson Road, LLC, a New York limited liability company with an address of 1150 Pittsford Victor Road, Pittsford, NY 14534 14580

(hereinafter the "Grantor"), and

811 JEFFERSON PARTNERS LLC, a New York limited liability company having an address of 90 Goodway Drive, Rochester, NY 14623

(hereinafter the "Grantee").

WITNESSETH, that the Grantor, in consideration of ONE AND MORE ($1.00+) Dollars paid by the Grantee, hereby grants and releases unto the Grantee, and Grantee's heirs, successors and assigns forever,

All that tract or parcel of land situate in the Town of Henrietta, County of Monroe and State of New York, being part of Lot 6, Fourth Range, Township 12, Range 7, bounded and described as follows:

Being Lot RA-1 of the 811 Jefferson Road Subdivision filed at Liber 353 of Maps, page 16. Lot RA-1 is a Resubdivision of Lot A, as shown on a subdivision map made by Passero Associates dated October 3, 2019, Project No. 20192792.0001, and filed in the Monroe County Clerk's Office on October 29, 2019 in Liber 359 of Maps, page 37.

Said Lot RA-1 contains 11.879± acres and is of the dimensions as shown on said map (the "Property").

Being and hereby intending to convey a portion of the same premises by deed recorded in the Monroe County Clerk's Office on August 21, 2000 in Liber 9352 of Deeds, page 161 and Liber 9352 of Deeds, page 165 and by deeds recorded July 6, 2005 in Liber 10150 of Deeds, page 262 and Liber 10150 of Deeds, page 265 and Liber 10150 of Deeds, page 268, and Liber 10150 of Deeds, page 271 and by deed recorded October 19, 2016 in Liber 11770 of Deeds, page 112.

Tax Map No. Part of 162.09-1-3.1
12 - 12 Tax Mailing Address: 90 Goodway Drive, Rochester, NY 14623
Property Address: 811 Jefferson Road, Town of Henrietta, New York 14623

This conveyance is made and accepted subject to covenants, easements and restrictions of record affecting the Premises.

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

The Environmental Easement was granted to the People of the State of New York, Commissioner of the Department of Environmental Conservation ("Department") by Grantor on September 25, 2017 and was recorded in the Monroe County Clerk's Office on October 18, 2017 in Liber 11935 of Deeds, page 13. The Environmental Easement, among other things, limits the use of the Property to "Commercial Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(iii) and/or "Industrial Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(iv), prohibits the use of groundwater without necessary water quality treatment as determined by the New York State Department of Health or the Monroe County Department of Health, and binds Grantor and Grantor's successors and assigns, including Grantee, any lessees and any person using the Property, to abide by the institutional controls and inspect, monitor, operate and maintain the engineering controls listed in the Department-approved Site Management Plan, as amended ("SMP"), to collect and report to the Department the data and information pertinent to the management of the Property at the frequency and in a manner defined in the SMP, to periodically submit to the Department a written statement by an expert the Department finds acceptable certifying that, among other things, the institutional controls and/or engineering controls employed at the Property are in place and nothing has occurred that would impair the ability of such controls to protect the public health and environment, and to conduct all future activities on the Property that will disturb remaining contaminated material in accordance with the SMP ("Grantee's EE Tasks"). The Environmental Easement further binds Grantor and Grantor's successors and assigns, including Grantee, with the burden of obtaining an up-to-date version of the SMP from: Site Control Section, Division of Environmental Remediation, New York State Department of Environmental Conservation, 625 Broadway, Albany, New York 12233, and the obligation to incorporate the Environmental Easement in full or by reference in any leases, licenses, or other instruments granting a right to use the Property.

Grantee specifically hereby agrees to accept the conveyance of the Property subject to the terms and condition of the Environmental Easement and SMP, and by the execution of this deed, hereby assumes all obligations conditions of the Grantor and/or the current owner of the Property to be performed thereunder, including Grantee's EE Tasks. Grantee further acknowledges that the Property is the subject of a certain Brownfield Cleanup Agreement Index Number: B8-0745-07-06 for the Former A B Dick Facility Site, ID No. C828148 ("BCA"), and after having an opportunity to inspect the Property, perform any investigations and review Grantor's actions with respect to the remediation of the Property, Grantee affirmatively states that Grantee has waived any environmental inspection, has elected to proceed with the purchase of the Property. Accordingly, Grantee for itself and its successors and assigns unconditionally waives and agrees not to assert any claims against Grantor and/or

Grantor's members, its officers or theirs heirs or assigns for property damage, personal injury, medical monitoring, cleanup costs, investigation costs, demands, bills, reckonings or any other claims or damages no matter how denominated arising from or concerning the condition of the Property including any claims Grantee has or could have against Grantor under any law, statute or decision including, but not limited to "Hazardous Substances", as defined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), 42 U.S.C. 9601(14), pollutants or contaminants as defined in CERCLA, 42 U.S.C. 9601(33), or hazardous waste as defined by the Resource Conservation and Recovery Act, 42 U.S.C. 6903(5), or other similar applicable federal or state laws (collectively, "Environmental Laws"), including, but not limited to, asbestos, radon, oil or other petroleum products, PCBs and urea formaldehyde (collectively "Damages"). Grantee, its successors and assigns, shall forever release Grantor and shall protect, defend, indemnify and hold harmless Grantor its members and their officers, heirs, successors and assigns, and all family members of Raymond P. Hylan from any and all Damages or claims, actions, liability and expenses including attorney's fees, investigation costs, medical monitoring and cleanup costs found to be the result of (i) known or unknown environmental conditions on the Property including the presence of any known conditions which existed prior to the date hereof ("Pre-Closing Conditions"), (ii) the failure to undertake promptly and diligently pursue to completion all necessary, appropriate and legally authorized investigative containment, removal and clean up and other remedial actions with respect to a release or the threat of a release on, at, or from the Property arising from a Pre-Closing Condition, or (iii) a violation of any Environmental Law or the Environmental Easement with respect to the Property if such violation occurred or related to a condition in existence prior to the date hereof. This paragraph shall specifically survive closing and delivery of the Deed to Grantee.

TOGETHER with the appurtenances and all estate and rights of the Grantor in and to the Premises.

TO HAVE AND TO HOLD the Premises herein granted unto the Grantee, and Grantee's heirs, successors and assigns forever.

AND Grantor covenants that the Grantor has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

This Deed is subject to the trust provisions of Section 13 of the Lien Law.

The words "Grantor" and "Grantee" shall be construed to read in the plural whenever the sense of this deed so requires.

IN WITNESS WHEREOF, the Grantor has executed this Deed.

811 JEFFERSON ROAD, LLC

By its Member(s):

Sandra L. Rueckwald as Co-Trustee for the benefit of Eric Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

The Canandaigua National Bank and Trust Company, as Co-trustee for the benefit of Eric Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

By: _____
James F. Lieb, Sr., SVP

and

Sandra L. Rueckwald as Co-Trustee for the benefit of Mark Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

The Canandaigua National Bank and Trust Company, as Co-trustee for the benefit of Mark Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

By: _____
James F. Lieb, Sr., SVP

811 JEFFERSON PARTNERS LLC

By: Frank S. Imburgia, Jr.
its: Manager

STATE OF NEW YORK)
COUNTY OF MONORE) ss.:

On the 20th day of November in the year 2019, before me, the undersigned, personally appeared Frank S. Imburgia, Jr. personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Notary Public

ANTHONY MICHAEL CARELLO
NOTARY PUBLIC, State of New York
Qualified in Monroe County
Registration No. 02CA6278368
Commission Expires March 25, 2021

STATE OF NEW YORK)
COUNTY OF MONORE) ss.:

On the 20th day of November in the year 2019, before me, the undersigned, personally appeared James F. Lieb personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Eileen M. Treat
Notary Public

EILEEN M. TREAT
Notary Public, State of New York
Monroe County Reg. #01TR6225207
Commission Expires 07/19/2022

STATE OF NEW YORK)
COUNTY OF MONORE) ss.:

On the 20th day of November in the year 2019, before me, the undersigned, personally appeared Sandra L. Rueckwald personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Eileen M. Treat
Notary Public

EILEEN M. TREAT
Notary Public, State of New York
Monroe County Reg. #01TR6225207
Commission Expires 07/19/2022

MONROE COUNTY CLERK'S OFFICE

THIS IS NOT A BILL. THIS IS YOUR RECEIPT.

Receipt # 2275858

Book Page D 12273 0317

No. Pages. 6

Instrument: DEED OTHER

Control #: 201911211105
Ref #: TT0000008320

Date: 11/21/2019

Time: 4:14:55 PM

Return To:
RP811JEFF LLC
90 GOODWAY DRIVE
ROCHESTER, NY 14623

811 JEFFERSON ROAD LLC,

RP811JEFF LLC,

Recording Fee	$26.00
Pages Fee	$25.00
State Fee Cultural Education	$14.25
State Fee Records Management	$4.75
Transfer Tax	$100.00
TP-584 Form Fee	$5.00
RP-5217 County Fee	$9.00
RP5217 State Equal Addit Fee	$241.00
Total Fees Paid:	$425.00

Employee: DA

State of New York

MONROE COUNTY CLERK'S OFFICE
WARNING – THIS SHEET CONSTITUTES THE CLERKS ENDORSEMENT, REQUIRED BY SECTION 317-a(5) & SECTION 319 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK. DO NOT DETACH OR REMOVE.

Consideration: $25,000.00

ADAM J BELLO

MONROE COUNTY CLERK



5

RECORDED
Time: 4:14
NOV 21 2019

BARGAIN AND SALE DEED

Monroe County Clerk's Office

THIS INDENTURE is made this 20th day of November, 2019

BETWEEN 811 Jefferson Road, LLC, a New York limited liability company with an address of 1150 Pittsford Victor Road, Pittsford, NY 14534 14580

(hereinafter the "Grantor"), and

RP811JEFF LLC, a Delaware limited liability company having an address of 90 Goodway Drive, Rochester, NY 14623

(hereinafter the "Grantee").

WITNESSETH, that the Grantor, in consideration of ONE AND MORE ($1.00−) Dollars paid by the Grantee, hereby grants and releases unto the Grantee, and Grantee's heirs, successors and assigns forever,

All that tract or parcel of land situate in the Town of Henrietta, County of Monroe and State of New York, being part of Lot 6, Fourth Range, Township 12, Range 7, bounded and described as follows:

Being Lot RA-2 of the 811 Jefferson Road Subdivision filed at Liber 353 of Maps, page 16. Lot RA-2 is a Resubdivision of Lot A, as shown on a subdivision map made by Passero Associates dated October 3, 2019, Project No. 20192792.0001, and filed in the Monroe County Clerk's Office on October 29, 2019 in Liber 359 of Maps, page 37.

Said Lot RA-2 contains .334± acres and is of the dimensions as shown on said map (the "Property").

Being and hereby intending to convey a portion of the same premises by deed recorded in the Monroe County Clerk's Office on August 21, 2000 in Liber 9352 of Deeds, page 161 and Liber 9352 of Deeds, page 165 and by deeds recorded July 6, 2005 in Liber 10150 of Deeds, page 262 and Liber 10150 of Deeds, page 265 and Liber 10150 of Deeds, page 268, and Liber 10150 of Deeds, page 271 and by deed recorded October 19, 2016 in Liber 11770 of Deeds, page 112.

Tax Map No. Part of 162.09-1-3.1
12 - 12 Tax Mailing Address: 90 Goodway Drive, Rochester, NY 14623
Property Address: 811 Jefferson Road, Town of Henrietta, New York 14623

This conveyance is made and accepted subject to covenants, easements and restrictions of record affecting the Premises.

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law ("Environmental Easement").

The Environmental Easement was granted to the People of the State of New York, Commissioner of the Department of Environmental Conservation ("Department") by Grantor on September 25, 2017 and was recorded in the Monroe County Clerk's Office on October 18, 2017 in Liber 11935 of Deeds, page 13. The Environmental Easement, among other things, limits the use of the Property to "Commercial Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(iii) and/or "Industrial Use" as defined in 6 NYCRR Part 375-1.8(g)(2)(iv), prohibits the use of groundwater without necessary water quality treatment as determined by the New York State Department of Health or the Monroe County Department of Health, and binds Grantor and Grantor's successors and assigns, including Grantee, any lessees and any person using the Property, to abide by the institutional controls and inspect, monitor, operate and maintain the engineering controls listed in the Department-approved Site Management Plan, as amended ("SMP"), to collect and report to the Department the data and information pertinent to the management of the Property at the frequency and in a manner defined in the SMP, to periodically submit to the Department a written statement by an expert the Department finds acceptable certifying that, among other things, the institutional controls and/or engineering controls employed at the Property are in place and nothing has occurred that would impair the ability of such controls to protect the public health and environment, and to conduct all future activities on the Property that will disturb remaining contaminated material in accordance with the SMP ("Grantee's EE Tasks"). The Environmental Easement further binds Grantor and Grantor's successors and assigns, including Grantee, with the burden of obtaining an up-to-date version of the SMP from: Site Control Section, Division of Environmental Remediation, New York State Department of Environmental Conservation, 625 Broadway, Albany, New York 12233, and the obligation to incorporate the Environmental Easement in full or by reference in any leases, licenses, or other instruments granting a right to use the Property.

Grantee specifically hereby agrees to accept the conveyance of the Property subject to the terms and condition of the Environmental Easement and SMP, and by the execution of this deed, hereby assumes all obligations conditions of the Grantor and/or the current owner of the Property to be performed thereunder, including Grantee's EE Tasks. Grantee further acknowledges that the Property is the subject of a certain Brownfield Cleanup Agreement Index Number: B8-0745-07-06 for the Former A B Dick Facility Site, ID No. C828148 ("BCA"), and after having an opportunity to inspect the Property, perform any investigations and review Grantor's actions with respect to the remediation of the Property, Grantee affirmatively states that Grantee has waived any environmental inspection, has elected to proceed with the purchase of the Property. Accordingly, Grantee for itself and its successors and assigns unconditionally waives and agrees not to assert any claims against Grantor and/or Grantor's members, its officers or theirs heirs or assigns for property damage, personal injury, medical monitoring, cleanup costs, investigation costs, demands, bills, reckonings or any other claims or damages no matter how denominated arising from or concerning the condition of the Property including any claims Grantee has or could have against Grantor under any law, statute or decision including, but not limited to "Hazardous Substances", as defined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), 42 U.S.C. 9601(14), pollutants or contaminants as defined in CERCLA, 42 U.S.C. 9601(33), or hazardous waste as defined by the Resource Conservation and Recovery Act, 42 U.S.C. 6903(5), or other similar applicable federal or state laws (collectively, "Environmental Laws"), including, but not limited to, asbestos, radon, oil or other petroleum products, PCBs and

urea formaldehyde (collectively "Damages"). Grantee, its successors and assigns, shall forever release Grantor and shall protect, defend, indemnify and hold harmless Grantor its members and their officers, heirs, successors and assigns, and all family members of Raymond P. Hylan from any and all Damages or claims, actions, liability and expenses including attorney's fees, investigation costs, medical monitoring and cleanup costs found to be the result of (i) known or unknown environmental conditions on the Property including the presence of any known conditions which existed prior to the date hereof ("Pre-Closing Conditions"), (ii) the failure to undertake promptly and diligently pursue to completion all necessary, appropriate and legally authorized investigative containment, removal and clean up and other remedial actions with respect to a release or the threat of a release on, at, or from the Property arising from a Pre-Closing Condition, or (iii) a violation of any Environmental Law or the Environmental Easement with respect to the Property if such violation occurred or related to a condition in existence prior to the date hereof. This paragraph shall specifically survive closing and delivery of the Deed to Grantee.

This paragraph shall specifically survive closing and delivery of the deed to Grantee.

TOGETHER with the appurtenances and all estate and rights of the Grantor in and to the Premises.

TO HAVE AND TO HOLD the Premises herein granted unto the Grantee, and Grantee's heirs, successors and assigns forever.

AND Grantor covenants that the Grantor has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

This Deed is subject to the trust provisions of Section 13 of the Lien Law.

The words "Grantor" and "Grantee" shall be construed to read in the plural whenever the sense of this deed so requires.

IN WITNESS WHEREOF, the Grantor and Grantee have executed this Deed.

RP811JEFF LLC

By: Frank S. Imburgia, Jr.
its: Manager

STATE OF NEW YORK)
COUNTY OF MONROE) ss.:

On the 20th day of November in the year 2019, before me, the undersigned, personally appeared Frank S. Imburgia, Jr. personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Notary Public

ANTHONY MICHAEL CARELLO
NOTARY PUBLIC, State of New York
Qualified in Monroe County
Registration No. 02CA6278366
Commission Expires March 25, 2021

811 JEFFERSON ROAD, LLC

By its Member(s):

Sandra L. Rueckwald as Co-Trustee for the benefit of Eric Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

The Canandaigua National Bank and Trust Company, as Co-trustee for the benefit of Eric Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

By: _____
James F. Lieb, Sr., SVP

and

Sandra L. Rueckwald as Co-Trustee for the benefit of Mark Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

The Canandaigua National Bank and Trust Company, as Co-trustee for the benefit of Mark Rueckwald under Agreement dated December 23, 1976 with Raymond P. Hylan

By: _____
James F. Lieb, Sr., SVP

STATE OF NEW YORK)
COUNTY OF MONORE) ss.:

On the 20th day of November in the year 2019, before me, the undersigned, personally appeared James F. Lieb personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Eileen M. Treat
Notary Public

EILEEN M. TREAT
Notary Public, State of New York
Monroe County Reg. #01TR6225207
Commission Expires 07/19/2022

STATE OF NEW YORK)
COUNTY OF MONORE) ss.:

On the 20th day of November in the year 2019, before me, the undersigned, personally appeared Sandra L. Rueckwald personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Eileen M. Treat
Notary Public

EILEEN M. TREAT
Notary Public, State of New York
Monroe County Reg. #01TR6225207
Commission Expires 07/19/2022

Appendix B
List of Site Contacts

LIST OF SITE CONTACTS

Name	Phone/Email Address
Joseph Akel, Remedial Party Contact Site Owner Contact	(585) 537-5616 joe@teamfsi.com
Charles B. Guzzetta, Office Manager, Terracon	(585) 247-3471 chuck.guzzetta@terracon.com
Christian Hargis, Off-Site Access Contact Unither Manufacturing	(585) 274-5428 christian.hargis@unither-pharma.com
Danielle Miles, NYSDEC DER Project Manager	(585) 226-5349 danielle.miles@dec.ny.gov

Appendix C
Well Construction Logs

OBSERVATION WELL INSTALLATION REPORT

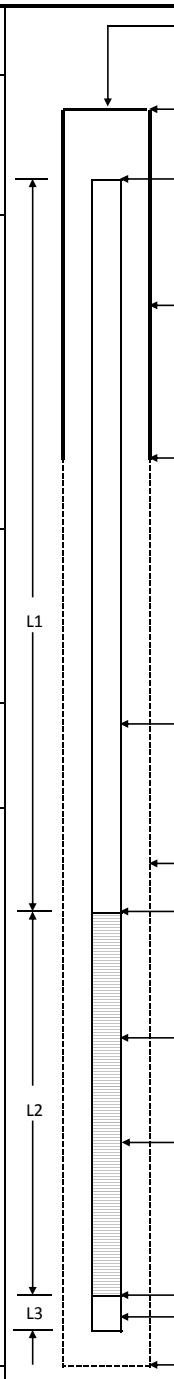
Well No. MW-1IR
Boring No. MW-1I

PROJECT	BROWNFIELD CLEANUP PROGRAM #C828148/FORMER AB DICK FACILITY	**H&A FILE NO.**	128035-008
LOCATION	811 JEFFERSON ROAD, ROCHESTER, NEW YORK	**PROJECT MGR.**	J. SZUCS
CLIENT	811 JEFFERSON ROAD, LLC	**FIELD REP.**	D. KELLER
CONTRACTOR	NYEG DRILLING, LLC.	**DATE INSTALLED**	05/12/17
DRILLER	B. GUYETTE	**WATER LEVEL**	1.4 ft below PVC riser

Ground El. 555.28 ft
El. Datum NAVD 88 (GEOID 12A)
Location N43°05'07.6754", W77°37'11.0701"
☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	Concrete
FILL	
	0.5
	Sand
	1.5
3	Bentonite Grout
	20
	Bentonite
	22.0
GLACIAL TILL (upper)	
	Filter Sand
35.0	35.0

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	7/16th inch hex bolt
Height of top of roadway box above ground surface	0.0 ft
Depth of top of riser pipe below ground surface	0.8 ft
Type of protective casing:	Road Box
Length	1.1 ft
Inside Diameter	8 in
Depth of bottom of guard pipe/roadway box	1.1 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.5
Bentonite	20.0	2.0

Type of riser pipe:	Schedule 40 PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	Bentonite Grout
Diameter of borehole	8 in
Depth to top of well screen	25.0 ft
Type of screen	Schedule 40 PVC
Screen gauge or size of openings	0.01 in
Diameter of screen	2.0 in
Type of backfill around screen	Filter Sand
Depth of bottom of well screen	35.0 ft
Bottom of silt trap	35.0 ft
Depth of bottom of borehole	35.0 ft

5.0	ft +	10.0	ft +	0.0	ft =	15.0	ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length	

COMMENTS: Existing soil conditions based on boring logs completed by Stantec.
Replaced MW-1I with a 2-in well approximately 25 ft north of the original location.

Monitoring Well: MW-3I

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jun-5-2008 / Jun-6-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	554.17 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.65 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405741
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125576

SUBSURFACE PROFILE				SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	N-Value	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface									
			ASPHALT black, gravel base	0.5								Flushmount protective casing
			SAND yellowish brown, fine to medium grained, with some fine to coarse gravel, dry	1.0 1.5 1.9	1	MA	n/a	34" 71%	VOCs	0.3		
1			CLAYEY SILT dark brown, some black staining, dry							0		
			SAND/SILT yellowish brown, sand is fine grained, few clay, dry to moist, few black and orange staining	4.0								
	5		SILT/SAND yellowish brown with orange staining, sand is fine grained, few fine to medium gravel, few clay, moist		2	MA	n/a	24" 50%		0		
2			SAND/SILT brown to reddish brown, sand is fine grained, little fine to medium gravel, trace clay, moist to wet									
										0.1		
3	10		SAND/SILT brown, sand is fine grained, some orange coloring, trace fine gravel, moist	9.9	3	MA	n/a	32" 67%		0		Grout
				12.0								
			SAND/SILT brown, sand is fine grained, little fine to coarse gravel, some orange and black staining	13.4						0		
4			SAND/SILT grayish brown, sand is fine grained, little clay, trace fine to coarse gravel, moist to wet		4	MA	n/a	34" 71%		0.1		
	15			16.0								
5			SAND/SILT grayish brown, sand is fine grained, little clay, little fine to coarse gravel, moist to wet		5	MA	n/a	43" 90%		0		
										0		Top of seal (19.2 ft BGS)
6	20		SAND/SILT grayish brown, sand is fine grained, few clay, little fine to coarse gravel, few medium sand, moist to wet	20.0								Bentonite Seal
					6	MA	n/a	28" 58%		0.3		Top of sand (22 ft BGS)
7										0.3		Top of screen (24 ft BGS)

Screen Interval: 24.00 - 34.00 ft BGS
Sand Pack Interval: 22.00 - 35.80 ft BGS
Well Seal Interval: 19.20 - 22.00 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing
SS - split-spoon sample

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-3I

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jun-5-2008 / Jun-6-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	554.17 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.65 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405741
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125576

SUBSURFACE PROFILE				SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	N-Value	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram / Description
8					7	MA	n/a	20" 42%		0.2	#00N Sand size
9	30				8	MA	n/a	35" 73%		0 0.2	No.10 Slot PVC screen 2 in. diameter
				32.0							
10			SAND/SILT grayish brown, sand is fine grained, little fine to coarse gravel, little medium sand, moist to wet		9	MA	n/a	34" 71%		0 0.3	Bottom of screen (34 ft BGS) Sand
11	35				10	MA	n/a	29" 60%		0	
12	40				11	MA	n/a	6" 13%		0	
				44.0							
13			SAND/SILT grayish brown, sand is fine grained, little medium sand, little fine to medium gravel, moist to wet								
14	45				12	MA	n/a	26" 54%		0	Bentonite Chips
15											

Screen Interval: 24.00 - 34.00 ft BGS
Sand Pack Interval: 22.00 - 35.80 ft BGS
Well Seal Interval: 19.20 - 22.00 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing
SS - split-spoon sample

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-3I

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jun-5-2008 / Jun-6-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	554.17 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.65 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405741
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125576

SUBSURFACE PROFILE				SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	N-Value	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
					13	MA	n/a	13" 27%		0		
16			trace clay at 52 to 58.2 ft BGS		14	MA	n/a	47" 98%		0.2		
	55									0.3		
17					15	MA	n/a	46" 96%		0.3		
				58.2								
			SILTY CLAY grayish brown, some medium to coarse gravel, wet to moist	58.7						0.5		
18			CLAY grayish brown, little silt, wet to moist									Bentonite Chips
	60				16	MA	n/a	48" 100%		0.5		
19										0.6		
				63.7								
			CLAY grayish brown, little silt, little fine to medium sand, wet to moist	64.0 64.4 64.6								
	65		SILT/SAND grayish brown, sand is fine grained, some fine to coarse gravel, wet		17	MA	n/a	22" 46%		0.5		
20			GRAVEL greenish grey, fine to coarse grained, wet							0.7		
			SILT/SAND grayish brown, sand is fine to medium grained, little fine to coarse gravel, tightly compacted, wet	68.7								
21				69.7								
	70		SAND/SILT brown, sand is fine grained, some fine to medium gravel, trace coarse gravel, saturated		18	MA	n/a	31" 65%		0.2		
				71.4								
			SAND/SILT brown, sand is fine grained, some fine to coarse angular gravel, saturated, gravel is green, grey, or black	72.0								
22					19	SS	16-46-81-105 (127)	18" 75%		0		
			Macrocore refusal at 71.4 ft BGS	73.8								
			SILT reddish brown, with weathered rock	74.0								

Screen Interval: 24.00 - 34.00 ft BGS
Sand Pack Interval: 22.00 - 35.80 ft BGS
Well Seal Interval: 19.20 - 22.00 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing
SS - split-spoon sample

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-3I

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jun-5-2008 / Jun-6-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	554.17 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.65 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405741
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125576

SUBSURFACE PROFILE			SAMPLE DETAILS							WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	N-Value	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
23			ROCK weathered, greenish grey End of Hole									
24	80											
25												
26	85											
27												
28	90											
29	95											
30												

Screen Interval: 24.00 - 34.00 ft BGS
Sand Pack Interval: 22.00 - 35.80 ft BGS
Well Seal Interval: 19.20 - 22.00 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing
SS - split-spoon sample

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-4I

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jun-10-2008 / Jun-11-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	553.79 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.26 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405632
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125679

SUBSURFACE PROFILE				SAMPLE DETAILS					WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram / Description
			Ground Surface							
			ASPHALT	0.5						Flushmount protective casing
			SAND AND GRAVEL brown, sand is coarse grained, gravel is fine to medium grained, dry	0.8					5.1	
			CLAYEY SILT dark brown to black, some orange, yellow and black staining; trace fine gravel; dry	1.9 2.4	1	MA	48" 100%	VOCs		
1			CLAYEY SILT brown, dry to moist	4.0					6.8	
	5		SAND/SILT brown, sand is fine grained, trace clay, trace orange and maroon staining, dry to moist	5.0					6.1	
			SAND/SILT brown, sand is fine grained, few clay, trace fine gravel, moist		2	MA	34" 71%			
2			SAND/SILT brown, with trace orange mottling, sand is fine grained, trace clay, trace fine to medium gravel, moist	8.0					9	
			SAND/SILT brown, sand is fine grained, trace medium sand, trace fine to coarse gravel, moist	8.7					10.8	
3	10		SAND/SILT brown, sand is fine grained, few clay, few fine to coarse gravel, moist		3	MA	25" 52%			Grout
									8.2	
4			some orange and black staining at 12.9 to 14 ft BGS		4	MA	22" 46%	VOCs	10.9	
	15			16.0						
5			SAND/SILT grayish brown, sand is fine grained, few fine to medium gravel, moist		5	MA	19" 40%		1.7	
6	20			20.0						Top of seal (19.7 ft BGS) Bentonite Seal
			No Recovery		6	MA	0" 0%			Top of sand (21.9 ft BGS)
7				24.0						Top of screen (24 ft BGS)
			SAND/SILT grayish brown, sand is fine grained,							

Screen Interval: 24.00 - 34.00 ft BGS
Sand Pack Interval: 21.90 - 34.00 ft BGS
Well Seal Interval: 19.70 - 21.90 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-4I

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jun-10-2008 / Jun-11-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	553.79 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.26 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405632
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125679

SUBSURFACE PROFILE				SAMPLE DETAILS					WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
8			little fine to coarse gravel, wet		7	MA	32" 67%		0.9		
									1.2		#00N Sand size
9	30		trace clay at 28 to 32 ft BGS		8	MA	34" 71%		2.3		No.10 Slot PVC screen 2 in. diameter
				32.0					2.3		
10			SAND/SILT grayish brown, sand is fine grained, little fine to coarse gravel, trace clay, few medium sand, wet		9	MA	26" 54%		1.4		Bottom of screen (34 ft BGS)
	35			36.0					1.2		
11			End of Hole								
12	40										
13											
	45										
14											
15											

Screen Interval: 24.00 - 34.00 ft BGS
Sand Pack Interval: 21.90 - 34.00 ft BGS
Well Seal Interval: 19.70 - 21.90 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

OBSERVATION WELL INSTALLATION REPORT

HALEY ALDRICH

Well No. MW-5D-R
Boring No.

PROJECT	Former AB Dick Facility, Rochester, New York	**H&A FILE NO.**	36277-020
LOCATION	811 Jefferson Road, Henrietta, NY	**PROJECT MGR.**	J. Szucs
CLIENT	811 Jefferson Road, LLC	**FIELD REP.**	D. Nostrant
CONTRACTOR	Nothnagle Drilling, Inc.	**DATE INSTALLED**	10/11/2016
DRILLER	Steve Loranty	**WATER LEVEL**	

Ground El. 553.5 ft
El. Datum NAVD83
Location

☐ **Guard Pipe**
☑ **Roadway Box**

SOIL/ROCK CONDITIONS

Please see MWE-5D-R Tes Boring Report

BOREHOLE BACKFILL

1.0 — Grout

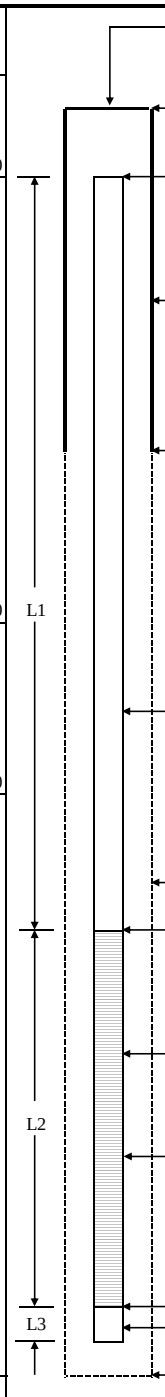
59.0 — Bentonite

61.0 — Sand

73.5 — 73.7

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: Flushmount

Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.3 ft

Height/Depth of top of riser pipe above/below ground surface: 0.0 ft

Type of protective casing: steel
Length: 1.5 ft
Inside Diameter: 1.2 ft

Depth of bottom of guard pipe/roadway box: 1.2 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.3 ags	1.3
Grout	1.0	58.0
Bentonite Seal	59.0	2.0
Sand	61.0	12.5

Type of riser pipe: Outside: Steel Casing, Inside: PVC
Outside/Inside legth of riser pipe: 48.0/63.5 ft
Outside/Inside diameter of riser pipe: 10.0/2.0 in
Type of backfill around inside riser: Sand, Bentonite, Grout

Diameter of borehole: 8.0 in

Depth to top of well screen: 63.5 ft

Type of screen: PVC 10 slot
Screen gauge or size of openings: 0.0 in
Diameter of screen: 2.0 in
Type of backfill around screen: Sand

Depth of bottom of well screen: 73.5 ft

Bottom of Silt trap: 73.7 ft

Depth of bottom of borehole: 73.7 ft

63.5 ft	+	10 ft	+	0.5 ft	=	73.7 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

Monitoring Well: MW-6I

Project:	AB Dick	**Drilling method:**	CME-75 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Oct-3-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	555.34 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	554.79 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405763
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125770

SUBSURFACE PROFILE				SAMPLE DETAILS					WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			CONCRETE	0.9							Flushmount protective casing
			SILT dark brown, trace medium to coarse gravel, moist	2.4	1	MA	37" 77%		0		
			SAND brown, fine grained, few fine to medium gravel, few clay, moist	3.1					0		
1			No Recovery	4.0							
	5		SILTY CLAY reddish brown, gray and pink mottling, dry to moist	5.7					0		
			SILT/SAND reddish brown, sand is fine grained, little clay, few fine to medium gravel, moist	6.5	2	MA	43" 90%		0		
2			SILTY CLAY reddish brown, few fine to medium gravel, dry to moist	8.8					0		
			SILT/SAND reddish brown, sand is fine grained, trace clay, trace fine to medium gravel, little coarse gravel, moist to wet		3	MA	35" 73%	VOCs	0.1		Grout
3	10		pocket of orange fine sand, dry to moist	13.5					0.1		
			CLAYEY SILT reddish brown, tight, few fine to medium gravel, few fine sand, moist	16.0	4	MA	48" 100%		0		
4	15								0		
			SILT/SAND reddish brown, sand is fine grained, few fine gravel, few clay, dry to moist	16.6					0		
5			SAND/SILT grayish brown, sand is fine grained, trace clay, few fine to medium gravel, trace coarse gravel, moist	18.5	5	MA	43" 90%	VOCs	0.1		Top of seal (19.7 ft BGS)
			SAND/SILT grayish brown, sand is fine grained, few clay, few fine to medium gravel, trace coarse gravel, moist								Bentonite Seal
6	20			21.7					0		Top of sand (21.9 ft BGS)
			SAND/SILT grayish brown, sand is fine grained, trace clay, few fine to medium gravel, trace coarse gravel, moist		6	MA	34" 71%		0.1		Top of screen (24.2 ft BGS)
7											

Screen Interval: 24.20 - 34.20 ft BGS
Sand Pack Interval: 21.90 - 34.20 ft BGS
Well Seal Interval: 19.70 - 21.90 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-6I

Project:	AB Dick	**Drilling method:**	CME-75 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Oct-3-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	555.34 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	554.79 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405763
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125770

SUBSURFACE PROFILE				SAMPLE DETAILS					WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
8			at 25.3 to 26.2 ft BGS, few medium sand		7	MA	38" 79%		0.1		
				28.0					0.1		#00N Sand size
9	30		SAND/SILT grayish brown, sand is fine grained, few medium sand, trace clay, few fine to medium gravel, trace coarse gravel, moist to wet		8	MA	13" 27%		0		No.10 Slot PVC screen 2 in. diameter
									0		
10					9	MA	24" 100%	VOCs	0		
				34.0							Bottom of screen (34.2 ft BGS)
			End of Hole								
	35										
11											
12											
	40										
13											
	45										
14											
15											

Screen Interval: 24.20 - 34.20 ft BGS
Sand Pack Interval: 21.90 - 34.20 ft BGS
Well Seal Interval: 19.70 - 21.90 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

OBSERVATION WELL INSTALLATION REPORT

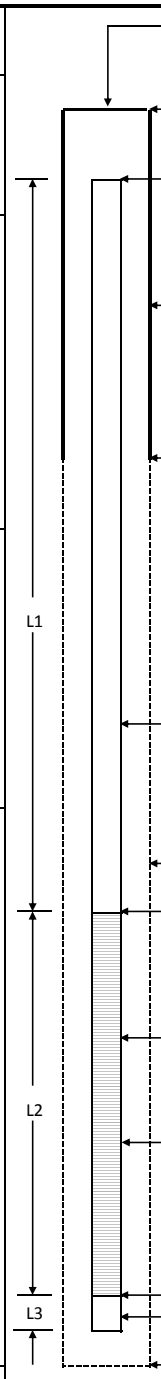
Well No. MW-08R
Boring No. MW-08

PROJECT	BROWNFIELD CLEANUP PROGRAM #C828148/FORMER AB DICK FACILITY	**H&A FILE NO.**	128035-008
LOCATION	811 JEFFERSON ROAD, ROCHESTER, NEW YORK	**PROJECT MGR.**	J. SZUCS
CLIENT	811 JEFFERSON ROAD, LLC	**FIELD REP.**	D. KELLER
CONTRACTOR	NYEG DRILLING, LLC.	**DATE INSTALLED**	05/10/17
DRILLER	B. GUYETTE	**WATER LEVEL**	0.8 (from PVC)

Ground El. 555.28 ft
El. Datum NAVD 88 (GEOID 12A)
Location N43°05'07.4762", W77°37'09.7450"
☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	Concrete
FILL	0.5
	Sand
	1.5
3	Bentonite
	5.0
GLACIAL TILL (upper)	
	Filter Sand
17.0	17.0

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: 7/16th inch hex bolt
Height of top of roadway box above ground surface: 0.0 ft
Depth of top of riser pipe below ground surface: 0.3 ft
Type of protective casing: Road Box
Length: 1.1 ft
Inside Diameter: 8 in
Depth of bottom of guard pipe/roadway box: 1.1 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.5
Bentonite	1.5	3.5

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Bentonite
Diameter of borehole: 8 in
Depth to top of well screen: 7.0 ft
Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.01 in
Diameter of screen: 2.0 in
Type of backfill around screen: Filter Sand
Depth of bottom of well screen: 17.0 ft
Bottom of silt trap: 17.0 ft
Depth of bottom of borehole: 17.0 ft

7.0 ft	+	10.0 ft	+	0.0 ft	=	17.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: Existing soil conditions based on boring logs completed by Stantec.
Removed existing 1-inch diameter well and replaced it with a 2-in well at the original location.

Stantec

2250 Brighton Henrietta Town Li
Rochester, NY 14623
(585) 475-1440

Test Boring No.: GP-28

Project:	811 Jefferson Road	Drill Contractor:	TREC	Start Date:	11/21/2005
Project #:	190500279	Driller:	S. Stockmaster	Completion Date:	11/21/2005
Client:		Elevation:		Drilling Method:	Direct Push
Location:	See Figure	Weather:		Supervisor:	D. Gnage

	SAMPLE				Soil Information
0	PID	Rec.	No.	Depth	Remarks
0-3.5	0.5/0.0	3.7	1	0-4	Asphalt and base 0.5
					Brown, Silty CLAY, little fine Sand, trace fine to coarse Gravel, dry 3.5
	0.3/0.0	2.7	2	4-8	Brown, SILT, some fine Sand, little Clay, trace fine Gravel, moist to wet
5					@ 7' increase in sand content 8.0
	0.3/0.0	2.1		8-11	Brown. SILT and fine Sand, trace Clay and fine Gravel, wet
10					11.0
					End of Boring
15					
20					

Notes:
1. PID Model Mini-Rae 2000 with 10.6eV lamp.

Stantec

2250 Brighton Henrietta Town Li
Rochester, NY 14623
(585) 475-1440

Test Boring No.: GP-33

Project:	811 Jefferson Road	Drill Contractor:	TREC	Start Date:	11/21/2005
Project #:	190500279	Driller:	S. Stockmaster	Completion Date:	11/21/2005
Client:		Elevation:		Drilling Method:	Direct Push
Location:	See Figure	Weather:		Supervisor:	D. Gnage

	SAMPLE				Soil Information
0	PID	Rec.	No.	Depth	Remarks
	0.7/0.0	3.8	1	0-4	Asphalt and base 0.6
					Brown/gray, Silty CLAY, little fine Sand, trace fine Gravel and Cinder, dry 2.3
					Same, Red brown/Brown, no Cinder
		2.6	2	4-8	
5					5.4
5.5-8	0.3/0.0				Brown, SILT, some fine Sand, little Clay, trace fine Gravel, moist (TILL)
	0.2/0.0	1.1	3	8-10.4	
10					10.4
					Refusal
15					
20					

Notes:
1. PID Model Mini-Rae 2000 with 10.6eV lamp

Monitoring Well: MW-38

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jul-11-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	553.98 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.51 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405813
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125432

SUBSURFACE PROFILE				SAMPLE DETAILS					WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram / Description
			Ground Surface							
			TOPSOIL brown, silty, roots, dry to moist	0.3					0.3	Flushmount protective casing Grout
			SILT/SAND brown, sand is fine grained, few clay, trace medium sand, moist, orange mottling black staining at 1.8 ft BGS	2.4	1	MA	48" 100%		0.3	
1			SILT/SAND pinkish brown with orange mottling, sand is fine grained, little medium sand, moist	3.7					0.3	
	5		SILT/SAND brown with orange mottling, sand is fine grained, little medium sand, few medium to coarse gravel, dry to moist	5.1					0.3	
2			SILT/SAND brown with orange mottling, sand is fine grained, few clay, few fine to coarse gravel, moist	8.0	2	MA	48" 100%		0.3	Top of seal (7.2 ft BGS) Bentonite Seal
3	10		SILT/SAND brown with orange mottling, sand is fine grained, little clay, few fine to medium gravel, moist	12.0	3	MA	30" 63%	VOCs	318.9 783.9	Top of sand (9.7 ft BGS)
4			SILT/SAND brown with orange mottling, sand is fine grained, trace clay, trace fine gravel, moist		4	MA	35" 73%	VOCs, SVOCs, Pesticides, PCBs, Metals	9999	Top of screen (12 ft BGS)
	15								9999	#00N Sand size
5				17.9	5	MA	32" 67%		9999	
			SILT/SAND grayish brown, sand is fine grained, few fine to medium gravel, trace clay, trace medium sand, moist, product on outside of sleeve at 20-24 ft BGS						9999	No.10 Slot PVC screen 2 in. diameter
6	20								9999	
					6	MA	35" 73%		1198.9	Bottom of screen (22 ft BGS) Sand
7				24.0						Bentonite Chips
			SILT/SAND grayish brown, sand is fine grained,							

Screen Interval: 12.00 - 22.00 ft BGS
Sand Pack Interval: 9.70 - 22.00 ft BGS
Well Seal Interval: 7.20 - 9.70 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

9999 - PID reading over the range (9999 ppm) of the instrument

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-38

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jul-11-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	553.98 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.51 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405813
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125432

SUBSURFACE PROFILE				SAMPLE DETAILS					WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
8			little fine to coarse gravel, few medium sand, moist		7	MA	37" 77%	VOCs	493.9		
									31.9		
				28.0							
			End of Hole								
9	30										
10											
	35										
11											
12											
	40										
13											
	45										
14											
15											

Screen Interval: 12.00 - 22.00 ft BGS
Sand Pack Interval: 9.70 - 22.00 ft BGS
Well Seal Interval: 7.20 - 9.70 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

9999 - PID reading over the range (9999 ppm) of the instrument

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-54

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jul-17-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	545.46 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	545.02 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405734
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125376

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			ASPHALT with gravel base, dry	0.6							Flushmount protective casing
			SAND/SILT brown, with trace orange mottling, sand is fine grained, few fine to medium gravel, trace coarse gravel, dry to moist orange and black mottling and increased clay between 2.6 and 4 ft BGS		1	MA	41" 85%		0.4 104		Grout Bentonite Seal Top of seal (1.0 ft BGS) Top of sand (1.5 ft BGS) Top of screen (2 ft BGS)
1				4.0							
	5		SAND/SILT brown, sand is fine grained, some fine to medium gravel, trace coarse gravel, moist	6.3	2	MA	44" 92%	VOCs	402		#00N Sand size
2			SAND brown, fine grained, wet	6.7					94		
			SAND/SILT brown, sand is fine grained, some fine to medium gravel, trace coarse gravel, moist	8.5							
			SAND/SILT grayish brown, sand is fine grained, some fine to medium gravel, trace coarse gravel, moist		3	MA	41" 85%	VOCs	57 4		No.10 Slot PVC screen 2 in. diameter
3	10										Bottom of screen (12 ft BGS)
					4	MA	8" 17%		2.2		
4	15										
			End of Hole	16.0							
5											
6	20										
7											

Screen Interval: 2.00 - 12.00 ft BGS
Sand Pack Interval: 1.50 - 12.00 ft BGS
Well Seal Interval: 1.00 - 1.50 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-55

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jul-17-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	544.58 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	544.03 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405668
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125279

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			TOPSOIL brown, silty, coarse gravel at 0.4 and 0.6 ft, moist	0.7							Flushmount protective casing Grout
			SAND/SILT brown, sand is fine grained, little coarse gravel, dry and becoming moist at 1.3 ft BGS	4.0	1	MA	18" 38%		0.2		Bentonite Seal Top of seal (1.0 ft BGS) Top of sand (1.5 ft BGS) Top of screen (2 ft BGS)
1			POOR RECOVERY consisting of a cobble with brown fine grained sand/silt, moist	8.0	2	MA	1" 2%		0.2		#00N Sand size
2	5		SAND/SILT brown, sand is fine grained, few medium sand, little fine to medium gravel, few coarse gravel, moist	9.7					0		No.10 Slot PVC screen 2 in. diameter
3	10		SAND/SILT brown, sand is fine grained, little fine to medium gravel, moist	10.3	3	MA	42" 88%	VOCs			
			SAND/SILT grayish brown, sand is fine grained, little fine to medium gravel, trace coarse gravel, moist	12.0					0		
4	15		SAND/SILT grayish brown, sand is fine grained, little fine to medium gravel, trace coarse gravel, few medium sand, moist	16.0	4	MA	36" 75%		0.1 0		Bottom of screen (12 ft BGS)
5			End of Hole								
6	20										
7											

Screen Interval: 2.00 - 12.00 ft BGS
Sand Pack Interval: 1.50 - 12.00 ft BGS
Well Seal Interval: 1.00 - 1.50 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-58

Project:	AB Dick	**Drilling method:**	BK-81- Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Jul-18-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	544.24 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	543.74 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405623
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125378

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			ASPHALT	0.5							Flushmount protective casing
			ASPHALT GRAVEL BASE mixed with soil	0.7							Grout
			SAND/SILT brown, sand is fine grained, few clay, some fine to coarse gravel, dry to moist		1	MA	38" 79%		0.1 0.3		Top of seal (1.0 ft BGS) Bentonite Seal Top of sand (1.5 ft BGS) Top of screen (2.0 ft BGS)
1				4.5							
	5		SAND/SILT brown with orange mottling, sand is fine grained, little grading to trace medium sand, little fine to medium gravel, trace coarse gravel, moist						0.1		#00N Sand size
2				6.9	2	MA	42" 88%	VOCs			
			SAND/SILT grayish brown, sand is fine grained, few medium sand, little fine to medium gravel, trace coarse gravel, moist	8.5					0.1		No.10 Slot PVC screen 2 in. diameter
3	10		SAND/SILT grayish brown, sand is fine grained, little medium sand, little fine to medium gravel, trace coarse gravel, moist		3	MA	28" 58%		0.1		
				12.5					0.1		Bottom of screen (12.0 ft BGS)
4			SAND/SILT grayish brown, sand is fine grained, little medium sand, some fine to medium gravel, trace coarse gravel, moist		4	MA	36" 75%		0.1		
	15										
5				16.5					0.1		
			End of Hole								
6	20										
7											

Screen Interval: 2.00 - 12.00 ft BGS
Sand Pack Interval: 1.50 - 12.00 ft BGS
Well Seal Interval: 1.00 - 1.50 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-62

Project:	AB Dick	**Drilling method:**	CME-75 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Oct-7-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	554.52 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	553.89 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405853
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125433

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			TOPSOIL silty, brown, roots, moist	0.5							Flushmount protective casing
			SAND/SILT brown with pink mottling, sand is fine grained, trace fine gravel, dry to moist	2.2	1	MA	41" 85%		0		Grout Top of seal (1.5 ft BGS)
1			SAND/SILT brown with black and orange mottling, sand is fine grained, with some clay, trace fine gravel, moist	4.0					0		Bentonite
	5		SILT/SAND brown with pink and orange mottling, sand is fine grained, few fine to medium gravel, trace coarse gravel, few clay, moist						0		
2			pocket of coarse white/black sand on side of core at 6.3 and 6.4 ft	8.0	2	MA	44" 92%		0.2		Top of sand (5.9 ft BGS)
			SAND/SILT brown, sand is fine grained, trace clay, little fine to medium gravel, trace orange mottling, few coarse gravel, moist to wet						13.4		Top of screen (8.0 ft BGS)
3	10			10.7	3	MA	47" 98%				#00N Sand size
			SAND/SILT brown, sand is fine grained, trace fine gravel, trace coarse gravel, little clay, moist	12.0					23.4		
			SAND/SILT brown, sand is fine grained, few fine to medium gravel, few coarse gravel, trace orange and black mottling, trace clay, few medium sand, moist to wet		4	MA	36" 75%		43.6		No.10 Slot PVC screen 2 in. diameter
4	15								32		
5					5	MA	30" 83%	VOCs	51.7		
				18.0							Bottom of screen (18.0 ft BGS)
			SAND/SILT brown, sand is fine grained, few fine to medium gravel, trace orange mottling, little clay, moist	19.0					3.1		
6	20		SAND/SILT grayish brown, sand is fine grained, few medium sand, few fine to medium gravel, few clay, moist to wet		6	MA	28" 58%	VOCs	0.3		Bentonite Chips
				23.0					0		
7			End of Hole								

Screen Interval: 8.00 - 18.00 ft BGS
Sand Pack Interval: 5.90 - 18.00 ft BGS
Well Seal Interval: 1.50 - 5.90 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-63

Project:	AB Dick	**Drilling method:**	CME-75 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Oct-7-2008
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	553.33 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	552.91 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405732
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125430

Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV)	Well Diagram	Description
			Ground Surface						5000 10000		
			TOPSOIL silty, brown, organic rich, trace medium gravel, moist	0.7							Flushmount protective casing
			SILT/SAND brown with orange mottling, sand is fine grained, trace fine gravel, few clay, moist		1	MA	44" 92%		0.1		Grout
									0.1		Top of seal (1.6 ft BGS)
1											
	5			5.3					0.2		Bentonite
2			SAND/SILT brown with pink and orange mottling, sand is fine grained, trace clay, trace fine and coarse gravel, moist		2	MA	44" 92%				
				7.0					0.2		
			SAND/SILT brown, sand is fine grained, trace fine and coarse gravel, few clay, moist	8.0							
			SAND/SILT brown, sand is fine grained, few fine to medium gravel, trace coarse gravel, trace medium sand, trace clay, moist to wet		3	MA	35" 73%	VOCs	0.2		
3	10								0.5		Top of sand (11.1 ft BGS)
					4	MA	10" 28%		0.1		Top of screen (13.0 ft BGS)
4			trace black fine sand at 13 and 13.2 ft BGS on outside of core	15.0							
	15		SAND/SILT grayish brown, sand is fine grained, few fine to medium gravel, trace clay, trace medium sand, trace coarse gravel, moist to wet		5	MA	44" 92%		0.1		#00N Sand size
5				19.0					0.2		
			SAND/SILT grayish brown, sand is fine grained, few fine to medium gravel, few coarse gravel, few medium sand, moist		6	MA	48" 100%	VOCs	0.1		No.10 Slot PVC screen 2 in. diameter
6	20			21.6							
			SAND grayish brown, fine to medium grained, saturated						0.1		
7				23.0							Bottom of screen (23.0 ft BGS)
			End of Hole								

SUBSURFACE PROFILE | SAMPLE DETAILS | WELL DETAILS

Screen Interval: 13.00 - 23.00 ft BGS
Sand Pack Interval: 11.10 - 23.00 ft BGS
Well Seal Interval: 1.60 - 11.10 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-69

Project:	AB Dick	**Drilling method:**	CME-75 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Mar-30-2009
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	552.05 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	551.66 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405608
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125466

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			Not sampled	1.00							Flushmount protective casing Top of seal (0.5 ft BGS)
			ASPHALT	1.20							
	2		SAND/SILT brown, some orange mottling, sand is fine grained, trace clay, few fine gravel, moist to wet from 0 to 1.8 ft, moist from 1.8 to 2.3 ft, gasoline odour at surface						1.7		Bentonite seal Top of sand (2.5 ft BGS)
1					1	MA	28" 58%	VOCs VOCs			Top of screen (3.0 ft BGS)
	4								0.7		
				5.00							
			POOR RECOVERY brown fine grained sand/silt, few clay, few coarse gravel, moist								
	6								0		#00N Sand size
2					2	MA	4" 8%				
	8										
				9.00							
			SAND/SILT brown, sand is fine grained, little fine gravel, trace coarse gravel, moist to wet								No.10 Slot PVC screen 2 in. diameter
3	10								0		
					3	MA	n/a				
	12								0		
				13.00							
4			End of Hole								Bottom of screen (13.0 ft BGS)
	14										

Screen Interval: 3.00 - 13.00 ft BGS
Sand Pack Interval: 2.50 - 13.00 ft BGS
Well Seal Interval: 0.50 - 2.50 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-70

Project:	AB Dick	**Drilling method:**	CME-75 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Mar-30-2009
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	549.26 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	548.99 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405441
Contractor:	Nothnagle Drilling Inc.	**Northing:**	1125466

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			Not sampled	1.00							Flushmount protective casing Grout
			SILT/SAND brown, sand is fine grained, few clay, trace black staining, moist	1.50							Top of seal (1 ft BGS)
	2		SAND/SILT brown with orange mottling, sand is fine grained, few fine to medium gravel, moist, trace pink and mint green mottling	2.60					0		Bentonite seal Top of sand (2.8 ft BGS)
1			No recovery		1	MA	19" 40%				Top of screen (3.2 ft BGS)
	4			5.00					0		#00N Sand size
	6		SAND/SILT brown, sand is fine grained, little fine to medium grained gravel, moist to wet						0		
2					2	MA	36" 75%	VOCs			
	8			9.00					0		
			SAND/SILT brown, sand is fine grained, little fine to medium grained gravel, trace clay, moist, trace red mottling, some orange mottling								No.10 Slot PVC screen 2 in. diameter
3	10								0		
					3	MA	30" 63%				
	12								0		
				13.00							
4			End of Hole								Bottom of screen (13.2 ft BGS)
	14										

Screen Interval: 3.20 - 13.20 ft BGS
Sand Pack Interval: 2.80 - 13.20 ft BGS
Well Seal Interval: 1.00 - 2.80 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOC - Volatile Organic Compounds
ppmV - parts per million by volume

Drawn By/Checked By: OR/RS

Stantec

Monitoring Well: MW-74

Project:	AB Dick	**Drilling method:**	CME-55 Hollow Stem Auger and Macrocore
Client:	811 Jefferson Rd. LLC	**Date started/completed:**	Apr-1-2010
Location:	811 Jefferson Rd., Henrietta, NY, USA	**Ground surface elevation:**	551.11 ft AMSL
Number:	190500279.206	**Top of casing elevation:**	550.55 ft AMSL
Field investigator:	S.Reynolds Smith	**Easting:**	1405496
Contractor:	Geologic	**Northing:**	1125618

SUBSURFACE PROFILE			SAMPLE DETAILS						WELL DETAILS	
Depth (m)	Depth (ft)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery	Lab Analyses	PID (ppmV) 5000 10000	Well Diagram	Description
			Ground Surface								
			ASPHALT	551.11							Flushmount protective casing
			ASPHALT GRAVEL BASE wet	0.00 ~~550.71~~							Cement
			SILTY CLAY brown, trace gravel, tight, dry, gray mottling	0.40 550.41					2.3		Top of seal (1.0 ft BGS)
	2		CLAYEY SILT brown with gray mottling, tight, dry	0.70 549.21	1	MA	25" 52%				Bentonite Top of sand (2.5 ft BGS)
1			No Recovery	1.90							Top of screen (3.0 ft BGS)
	4			548.61							
			SILT/FINE SAND brown, trace clay, few fine to coarse grained gravel, wet	2.50					2.2		
	6				2	MA	32" 67%	TCL VOCs			#0 Sand size
2	8			546.71							
			SILT/FINE SAND brown, few fine to coarse grained gravel, few clay, wet	4.40					0.6		
3	10				3	MA	40" 83%		1.4		No.10 Slot PVC screen 2 in. diameter
	12										
4					4	MA	24" 100%		0.1		Bottom of screen (13.0 ft BGS)
	14			542.71							
			End of Hole	8.40							

Screen Interval: 3.00 - 13.00 ft BGS
Sand Pack Interval: 2.50 - 13.00 ft BGS
Well Seal Interval: 1.00 - 2.50 ft BGS

Notes:
ft AMSL - feet above mean sea level
ft BGS - feet below ground surface
ft BTOC - feet below top of casing

n/a - not available/applicable

MA - Macrocore sample
VOCs - Volatile Organic Compounds
ppmV - parts per million by volume
TCL - Target compound list

Drawn By/Checked By: OR/RS

Stantec

OBSERVATION WELL INSTALLATION REPORT

Well No. MW-76

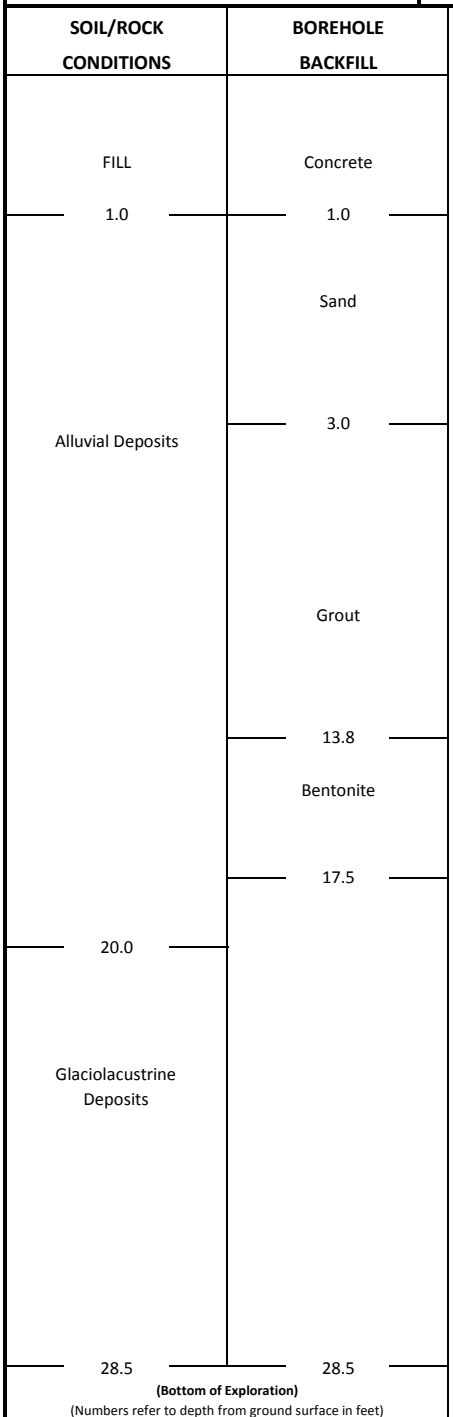
Boring No. MW-76

PROJECT	FORMER AB DICK FACILITY	**H&A FILE NO.**	128437-010
LOCATION	811 JEFFERSON ROAD, HENRIETTA, MONROE COUNTY, NEW YORK	**PROJECT MGR.**	J. SZUCS
CLIENT	NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	**FIELD REP.**	D. KELLER
CONTRACTOR	NOTHNAGLE DRILLING, INC.	**DATE INSTALLED**	09/11/14
DRILLER	T. MANGEFRIDA	**WATER LEVEL**	27.10

Ground El. 549.20 ft. **El. Datum** NAVD 83

Location 1125636.16 N, 1405370.78 E

☐ **Guard Pipe**
☑ **Roadway Box**



Type of protective cover/lock 9/16th inch hex bolt

Height of top of roadway box above ground surface 0.0 ft.

Depth of top of riser pipe below ground surface 0.5 ft.

Type of protective casing: Road Box

Length 1.1 ft.

Inside Diameter 8.0 in

Depth of bottom of guard pipe/roadway box 1.1 ft.

Type of Seals	Top of Seal (ft.)	Thickness (ft.)
Concrete	0.0	1.0
Grout	3.0	10.8
Bentonite	13.8	3.7

Type of riser pipe: Schedule 40 PVC

Inside diameter of riser pipe 2.0 in

Type of backfill around riser cuttings

Diameter of borehole 8.0 in

Depth to top of well screen 18.5 ft.

Type of screen Schedule 40 PVC

Screen gauge or size of openings 0.01 in

Diameter of screen 2.0 in

Type of backfill around screen Filter Sand

Depth of bottom of well screen 28.5 ft.

Bottom of silt trap 28.5 ft.

Depth of bottom of borehole 28.5 ft.

(Not to Scale)

18.5 ft.	+	10.0 ft.	+	0.0 ft.	=	28.5 ft.
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

OBSERVATION WELL INSTALLATION REPORT

Well No. MW-77

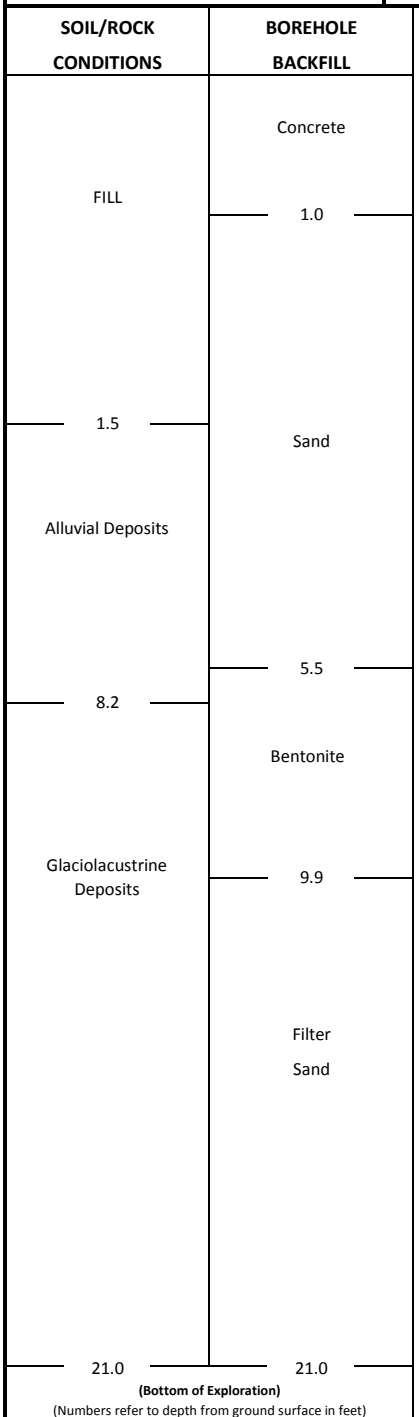
Boring No. MW-77

PROJECT	FORMER AB DICK FACILITY	**H&A FILE NO.**	128437-010
LOCATION	811 JEFFERSON ROAD, HENRIETTA, MONROE COUNTY, NEW YORK	**PROJECT MGR.**	J. SZUCS
CLIENT	NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	**FIELD REP.**	D. KELLER
CONTRACTOR	NOTHNAGLE DRILLING, INC.	**DATE INSTALLED**	09/12/14
DRILLER	T. MANGEFRIDA	**WATER LEVEL**	0.10

Ground El. 544.10 ft
El. Datum NAVD 83

Location 112533.075 N 1405645.34 E

☐ **Guard Pipe**
☑ **Roadway Box**



Type of protective cover/lock 9/16th inch hex bolt

Height of top of roadway box above ground surface 0.0 ft

Depth of top of riser pipe below ground surface 0.3 ft

Type of protective casing: Road Box

Length 1.1 ft

Inside Diameter 8.0 in

Depth of bottom of guard pipe/roadway box 1.1 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite	5.5	4.4

Type of riser pipe: Schedule 40 PVC

Inside diameter of riser pipe 2.0 in

Type of backfill around riser cuttings

Diameter of borehole 8.0 in

Depth to top of well screen 11.0 ft

Type of screen Schedule 40 PVC

Screen gauge or size of openings 0.01 in

Diameter of screen 2.0 in

Type of backfill around screen Filter Sand

Depth of bottom of well screen 21.0 ft

Bottom of silt trap 21.0 ft

Depth of bottom of borehole 21.0 ft

(Not to Scale)

11.0 ft	+	10.0 ft	+	0.0 ft	=	21.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

OBSERVATION WELL INSTALLATION REPORT

Well No. MW-78

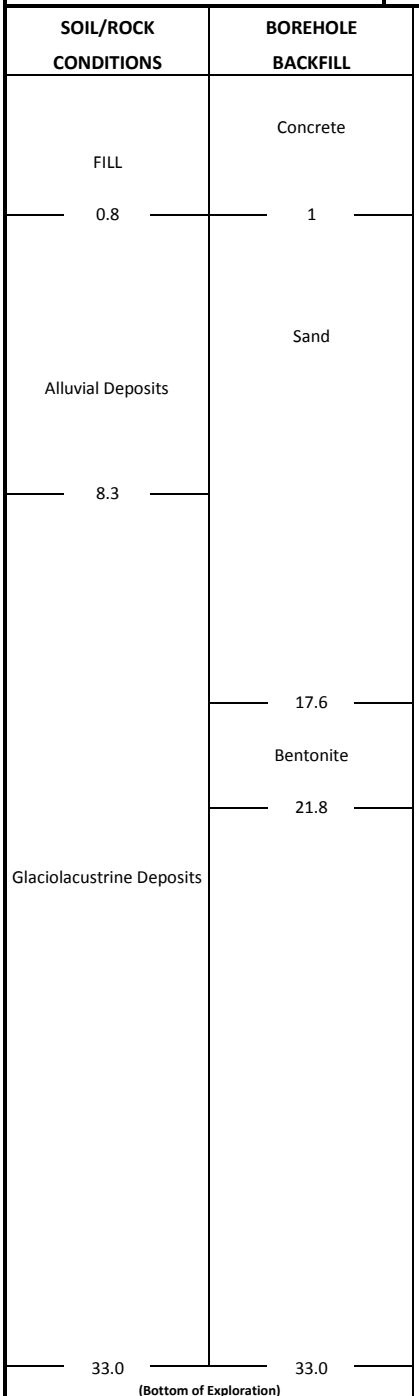
Boring No. MW-78

PROJECT	FORMER AB DICK FACILITY	**H&A FILE NO.**	128437-010
LOCATION	811 JEFFERSON ROAD, HENRIETTA, MONROE COUNTY, NEW YORK	**PROJECT MGR.**	J. SZUCS
CLIENT	NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	**FIELD REP.**	D. KELLER
CONTRACTOR	NOTHNAGLE DRILLING, INC.	**DATE INSTALLED**	09/11/14
DRILLER	T. MANGEFRIDA	**WATER LEVEL**	6.95 *

Ground El. 544.10 ft
El. Datum NAVD 83

Location 1125325.44 N 1405647.80 E

☐ **Guard Pipe**
☑ **Roadway Box**



Type of protective cover/lock 9/16th inch hex bolt

Height of top of roadway box above ground surface 0.0 ft

Depth of top of riser pipe below ground surface 0.3 ft

Type of protective casing: Road Box

Length 1.1 ft

Inside Diameter 8.0 in

Depth of bottom of guard pipe/roadway box 1.1 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.5
Bentonite	17.6	4.2

Type of riser pipe: Schedule 40 PVC

Inside diameter of riser pipe 2.0 in

Type of backfill around riser cuttings

Diameter of borehole 8.0 in

Depth to top of well screen 23.0 ft

Type of screen Schedule 40 PVC

Screen gauge or size of openings 0.01 in

Diameter of screen 2.0 in

Type of backfill around screen Filter Sand

Depth of bottom of well screen 33.0 ft

Bottom of silt trap 33.0 ft

Depth of bottom of borehole 33.0 ft

(Not to Scale)

10.0 ft	+	23.0 ft	+	0.0 ft	=	33.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

Appendix D
January 29, 2020 Monitoring Well Decommissioning Plan

MONITORING WELL DECOMMISSIONING AND REPLACEMENT PLAN

Former AB Dick Facility (C828148)
811 Jefferson Road
Henrietta, New York

Prepared for:
811 Jefferson Partners, LLC
90 Goodway Drive
Rochester, New York 14623

Prepared by:
Leader Professional Services, Inc.
271 Marsh Road, Suite 2
Pittsford, New York 14534

713.032A

January 2020

Leader

Table of Contents

1.0 INTRODUCTION 1
2.0 EXISTING MONITORING WELLS 1
3.0 MONITORING WELL DECOMMISSIONING 2
4.0 MONITORING WELL REPLACEMENT DESIGN 3
5.0 HEALTH AND SAFETY 4
6.0 SITE MANAGEMENT PLAN UPDATE 4

Figures

Figure 1 – Existing Monitoring Well Network
Figure 2 – Site Development with Monitoring Wells
Figure 3 – Pre-Packed Screen Schematic
Figure 4 – MW-1IR Replacement Schematic
Figure 5 – MW-33 Replacement Schematic
Figure 6 Site Plan with Replacement Wells
Figure 7 – MW-1IR Replacement Cross Section
Figure 8 – MW-33 Replacement Cross Section

1.0 INTRODUCTION

Leader Professional Services, Inc. ("Leader") prepared this Well Decommissioning Plan ("Plan") for the former AB Dick Facility (C828148) at 811 Jefferson Road in Henrietta, New York ("Site"). This Plan includes procedures for decommissioning 11 monitoring wells at the Site. All decommissioning work will be performed in accordance with applicable Federal, New York State and local laws and regulations. Specifically, the well decommissioning procedures follow New York State Department of Environmental Conservation ("NYSDEC") CP-43: Groundwater and Monitoring Well Decommissioning Policy and Procedures.

2.0 EXISTING MONITORING WELLS

According to the Site Management Plan ("SMP"), there are 22 existing monitoring wells ("MW") at the Site, including eight wells on the neighboring Unither property (see Figure 1). The Site Owner (811 Jefferson Road Partners, LLC) is planning to develop the Site which will include the construction of approximately 135,500 square feet of total retail space plus additional surface parking across the Site. Figure 2 shows the proposed development with the existing MWs located in or near the new building footprint. In order to proceed with the development, 11 of the 22 MWs at the Site will need to be decommissioned. In addition, while investigating the Site, Leader found one additional monitoring well that is not included in the SMP and is presumed to be from previous remediation activities at the Site that was not properly decommissioned. The well is located near the southwest corner of the Site between MW-69 and MW-70 (labeled MW-unknown on Figure 2). We propose to decommission that well in addition to the 11 MWs within or near the building footprint. The 12 total monitoring wells to be decommissioned are listed in Table 1.

Table 1. Monitoring Wells to be Removed

Name	SMP Location Description	Depth (feet)	Diameter (inches)	Latest Sampling Results*
MW-1IR	Former Source Area	35	2	3 of 5 VOC readings exceed TOGS Criteria
MW-2R	Former Source Area	18	2	0 of 5 VOC readings exceed TOGS Criteria
MW-3I	Downgradient	34	2	1 of 5 VOC readings exceed TOGS Criteria
MW-4I	Downgradient	34	2	0 of 5 VOC readings exceed TOGS Criteria
MW-6I	Upgradient	34	2	0 of 5 VOC readings exceed TOGS Criteria
MW-8R	Upgradient	17	2	0 of 5 VOC readings exceed TOGS Criteria
MW-28	Downgradient	11	2	0 of 5 VOC readings exceed TOGS Criteria

Name	SMP Location Description	Depth (feet)	Diameter (inches)	Latest Sampling Results*
MW-33	Downgradient	13	2	4 of 5 VOC readings exceed TOGS Criteria
MW-69	On-site	13	2	0 of 5 VOC readings exceed TOGS Criteria
MW-70	On-site	13	2	0 of 5 VOC readings exceed TOGS Criteria
MW-74	On-site	13	2	3 of 5 VOC readings exceed TOGS Criteria
MW-Unknown	Onsite	Unknown	Unknown	Unknown

*Latest monitoring well sampling was performed in October 2019. VOC samples included cis-1,2-Dichlorethene, 1,1-Dichloroethene, Tetrachloroethene, Trichloroethene and Vinyl Chloride. Samples were compared against NYSDEC Technical and Operational Guidance Series (TOGS) Table 1 Class GA.

3.0 MONITORING WELL DECOMMISSIONING

The decommissioning of the MWs will be completed by Trec Environmental Inc, ("Trec") a commercial well driller licensed in the State of New York. Trec will follow the applicable procedures outlined by the NYSDEC in CP-43. The decommissioning of each MW will be logged and recorded by Leader. The location of each MW will be identified and confirmed with a hand-held global position system device.

The wells will be grouted in-place and will involve the following procedure:

1. Mixing a standard grout mixture in the following ratios until all of the components have been combined:
    a. One 94-pound bag of Type I Portland Cement;
    b. 3.9 pounds of powdered Bentonite; and
    c. 7.8 gallons of potable water.
2. Insert a tremie pipe to the bottom of the well.
3. Pump the grout into the groundwater MW starting from the bottom of the well until the grout level is within a few feet of the ground surface.
4. Remove the MW riser and curb box, ensuring that the final grout level is approximately five feet below ground surface.
5. Cap the remaining hole with concrete unless the location is within a lawn area where the remaining hole will be filled with soil or a more appropriate material.
6. Complete a well log for the decommissioning.

Although not anticipated, if one-inch diameter MWs are found, a tremie pipe will not fit into the well bore. For these well(s), the grout mixture will need to be added to the well using one of the following methods:

- The contractor will fill the well bore with grout; or
- The contractor will pull the well from the ground and fill the void with a grout mixture filling the remaining void.

The grout level will be allowed to settle for four hours before continuing with the decommissioning process to ensure the grout has completely filled the MWs. The decommissioning process will continue as identified in steps 4 through 6 above.

3.1 Decommissioning Reporting

The decommissioning process will be monitored by Leader. Records will be maintained that monitor for organic vapors and dust emissions, and health and safety compliance. Logs of each MW decommissioning will be prepared. At a minimum, the contractor completing the work will be identified, date, depth and diameter of the well, depth to groundwater, estimated material volumes to be used and the actual amount used will be included in the report.

If liquid, water or soil is generated as a waste, samples will be collected and analyzed to determine if the waste is contaminated and requires offsite disposal. This testing will follow NYSDEC and Federal requirements and any requirements identified by disposal facilities.
At the completion of the project, a letter will be submitted to NYSDEC confirming the completion of the work.

4.0 MONITORING WELL REPLACEMENT DESIGN

Three of the monitoring wells to be decommissioned continue to indicate TCE concentrations above NYSDEC TOGS criteria: MW-11R, MW-33, MW-74. Leader is proposing to replace two of these monitoring wells that are within or immediately downgradient of the original source area (MW-11R and MW-33) using angled wells. The angled wells will ensure we continue to monitor the same areas as MW-11R and MW-33 upon building completion and allow for continued monitoring of groundwater at these locations outside of the completed building footprint.

Leader and the site Owner will contract with Nothnagle Drilling, Inc. to install replacement angled wells for MW-11R and MW-33. The new wells will be constructed similar to the existing wells, but at an angle beneath the building to allow access to the wells from outside the finished building. The wells will be constructed using a pre-packed screen (2.0 inch inside diameter and 3.4 inch outside diameter), manufactured by Geoprobe Systems. A 2-inch PVC riser will extend to the surface with a locking well cap and a 12-inch flush mount well cover. All water and soil generated during the construction of the wells will be containerized for offsite disposal in accordance with applicable requirements.

To ensure we will be able to adequately sample the wells on an ongoing basis, Leader plans to install a dedicated bladder pump with connected tubing in each well that will remain in the well in between sampling events. During sampling events, Leader will connect the ends of the tubing to an air compressor or cylinder, which connects to an electronic control unit to control the pumping and flow from the well. Leader anticipates using Solinst model 407 bladder pumps or equivalent in the angled wells that will replace MW-1IR and MW-33.

Prior to inserting the pumps into the angled wells, Leader will first insert an equivalent size pipe or cylinder connected to a rope to ensure that the pumps will be able to reach the bottom of the well. Once confirmed, we will insert the bladder pumps into the wells along with the connected tubing.

See the figures listed below for other specifications of the design of the angled wells.

Figure	Description
3	Well construction diagram from Geoprobe Systems Inc. showing pre-packed screen design and overall well construction
4	MW-1IR replacement well schematic
5	MW-33 replacement well schematic
6	Overall Site Plan showing location of existing and replacement wells
7	MW-1IR replacement cross-section
8	MW-33 replacement cross-section

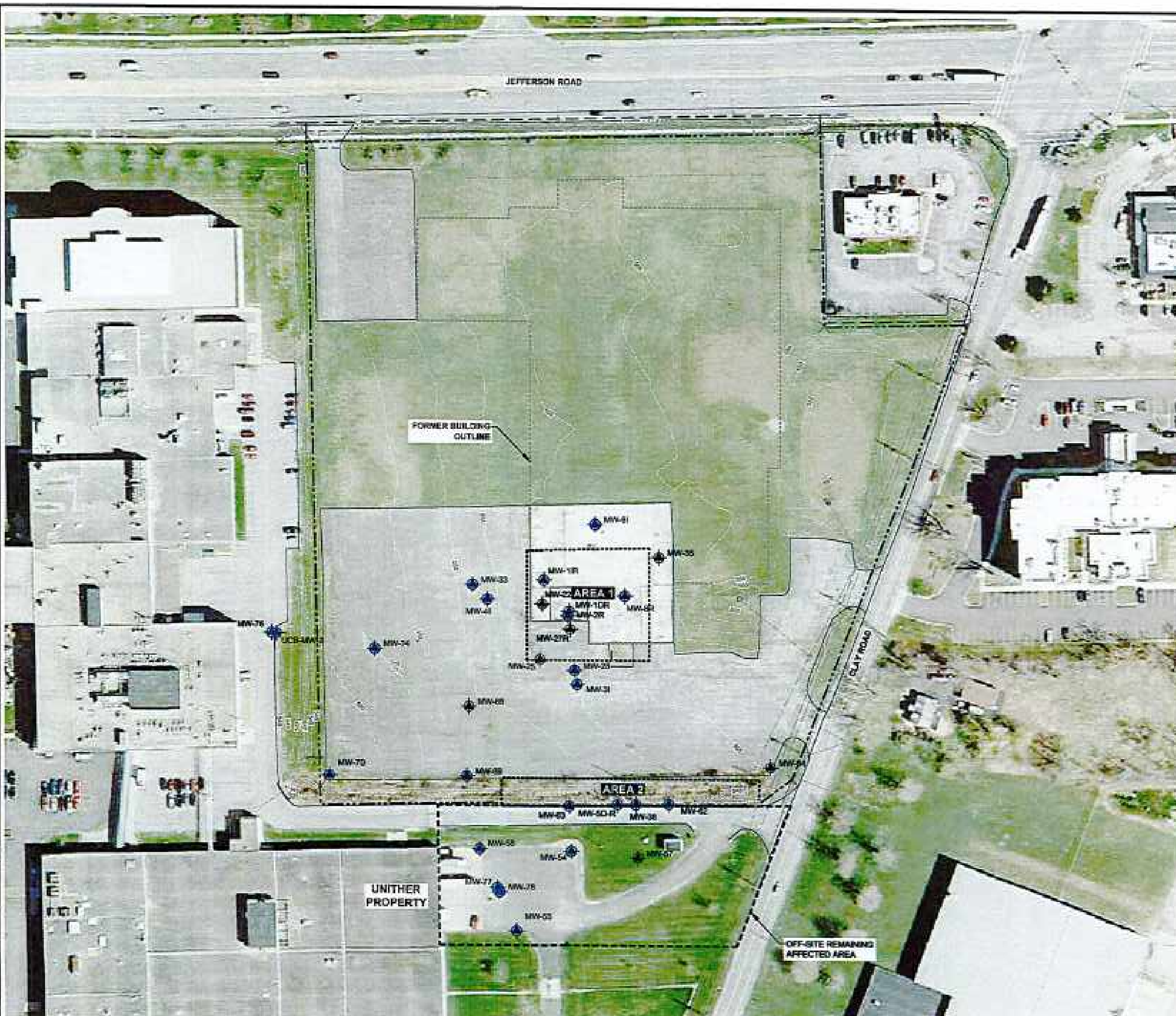
In addition to the angled wells, Leader will replace two vertical wells (MW-69 and MW-70) in as close to the same location as their original design. The replacement wells will be vertical wells of equivalent depth and diameter to the wells they replace.

5.0 HEALTH AND SAFETY

Each contractor will be responsible for the health and safety of their employees in a manner consistent with the updated January 2020 Health and Safety Plan developed for the Site by Leader, OSHA and the identified Site hazards.

6.0 SITE MANAGEMENT PLAN UPDATE

Following the decommissioning of the MWs, Leader will update the SMP to include the decommissioning logs for the decommissioned MWs.



0 60 120 180 240
SCALE IN FEET

LEGEND

- PROPERTY LINE / SITE BOUNDARY
- AREA OF CONCERN
- OFFSITE REMAINING AFFECTED AREA
- FORMER FACILITY BUILDING FOOTPRINT
- EDGE OF CONCRETE/PAVEMENT
- EXISTING IRON ROD
- EXISTING IRON PIPE
- UTILITY POLE
- DECIDUOUS TREE
- MANHOLE
- CATCH BASIN
- WATER OR GAS VALVE
- LIGHT POLE
- RIGHT-OF-WAY LINE
- WATER PIPELINE
- BURIED TELEPHONE CABLE
- UNDERGROUND ELECTRIC LINES
- OVERHEAD ELECTRIC LINES
- SANITARY SEWER
- STORM SEWER
- GAS LINE
- EXISTING MONITORING WELL LOCATION
- NETWORK MONITORING WELL LOCATION

NOTES:

1. BASE MAP PROVIDED BY HUNT ENGINEERS ARCHITECTS SURVEYORS, TAX PARCEL NO. 162.08-1-3, JOB NO. 5364-002, DRAWING NAME 5364-002.DWG, DATED AUGUST 23, 2012.
2. SOUTHERN PROPERTY BOUNDARY LINE PROVIDED BY McFARLAND JOHNSON, MARCH 2016.

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

Project No.:	
Scale:	
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	BM
Approved By:	BM
Stamp:	

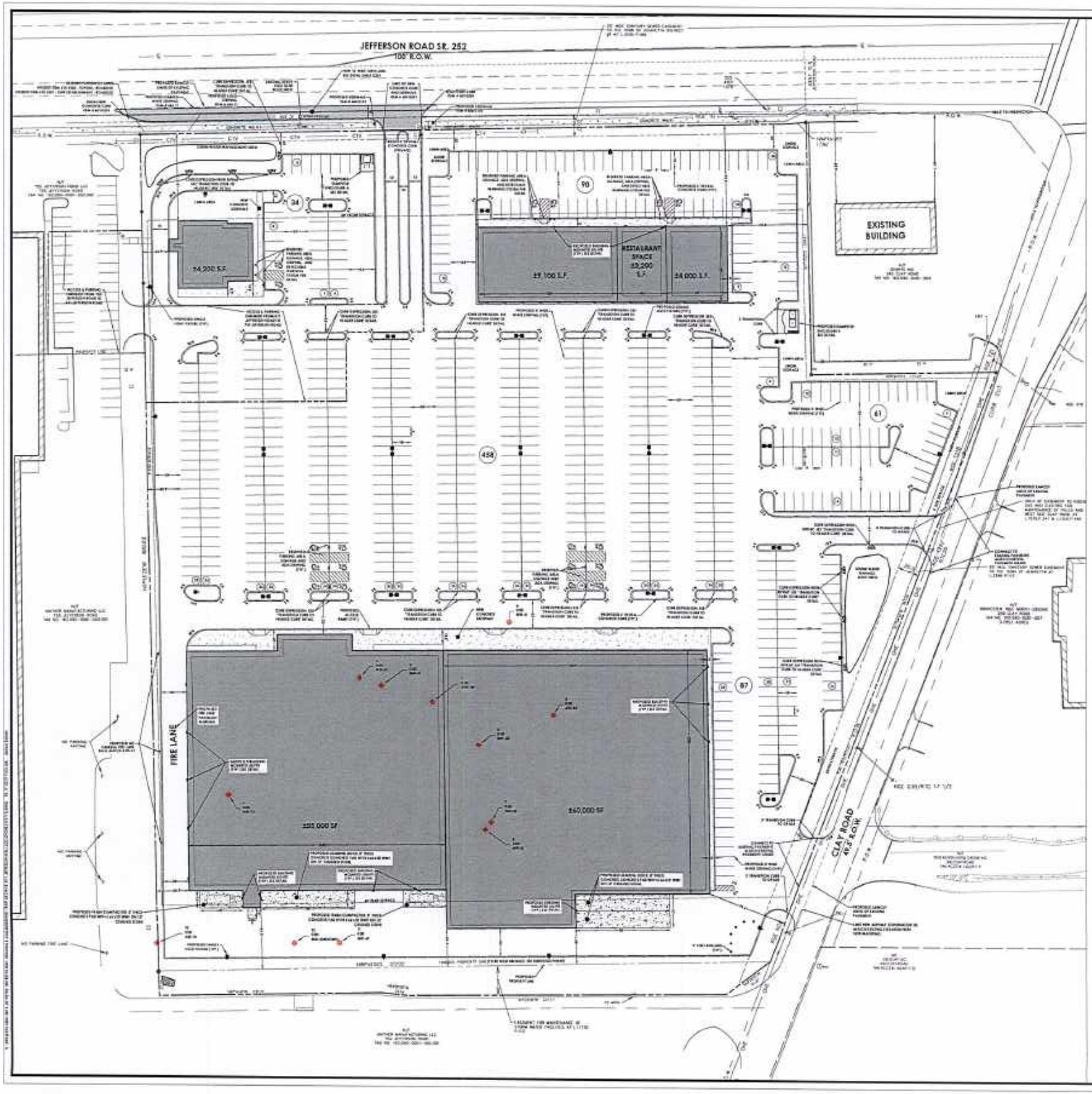
Rev	Description	By	Date

FORMER AB DICK FACILITY SITE
811 JEFFERSON ROAD
ROCHESTER, NEW YORK

MONITORING WELL NETWORK

FIGURE 1

Sheet 06 of 10



LEGEND

SITE DATA

ZONING ANALYSIS: INDUSTRIAL	REQUIRED	PROPOSED
	40	40
	4 FOR RESIDENCE, 1 FOR EACH 2 EMPLOYEES IN ANY OTHER USE	167
	40	40
	40	148
	7.5 X 17	9 X 18
	1/24	1/375

PARKING TABLE		
USE	REQUIRED	PROPOSED
	1 PER EMPLOYEE + 1 PER 4 EMPLOYEES = 40 SPACES	458 SPACES
	1 PER EMPLOYEE + 1 PER 4 EMPLOYEES = 40 SPACES	NO CHANGE TO EXISTING
	1 PER 200 S.F. & 1,000 S.F. = 20 SPACES	NO CHANGE TO EXISTING
	3 SPACES/1,000 S.F. = 1.98 SPACES	NO CHANGE TO EXISTING
	3 SPACES/1,000 S.F. = 2 SPACES	NO CHANGE TO EXISTING
	3 SPACES/1,000 S.F. = 42 SPACES	NO CHANGE TO EXISTING
	700 SPACES	458 SPACES
	70 SPACES	148 SPACES

SPECIAL USE PERMIT

AS-BUILT NOTE

UTILITY CONNECTION NOTE

ARCHITECTURAL NOTE

APPROVED BY: _____ DATE _____
PLANNING BOARD CHAIRMAN

APPROVED BY: _____ DATE _____
DIRECTOR OF ENGINEERING AND PLANNING

APPROVED BY: _____ DATE _____
FIRE MARSHAL

APPROVED BY: _____ DATE _____
DIRECTOR OF BUILDING AND FIRE PROTECTION

APPROVED BY: _____ DATE _____
COMMISSIONER OF PUBLIC WORKS

APPROVED BY: _____ DATE _____
WASTEWATER WATER AND CONNECTION DIVISION

PASSERO ASSOCIATES
engineering architecture

HOME DEPOT PLAZA
JEFFERSON ROAD SR 252
PROJECT LOCATION
HAMPTON INN & SUITES
Location Map

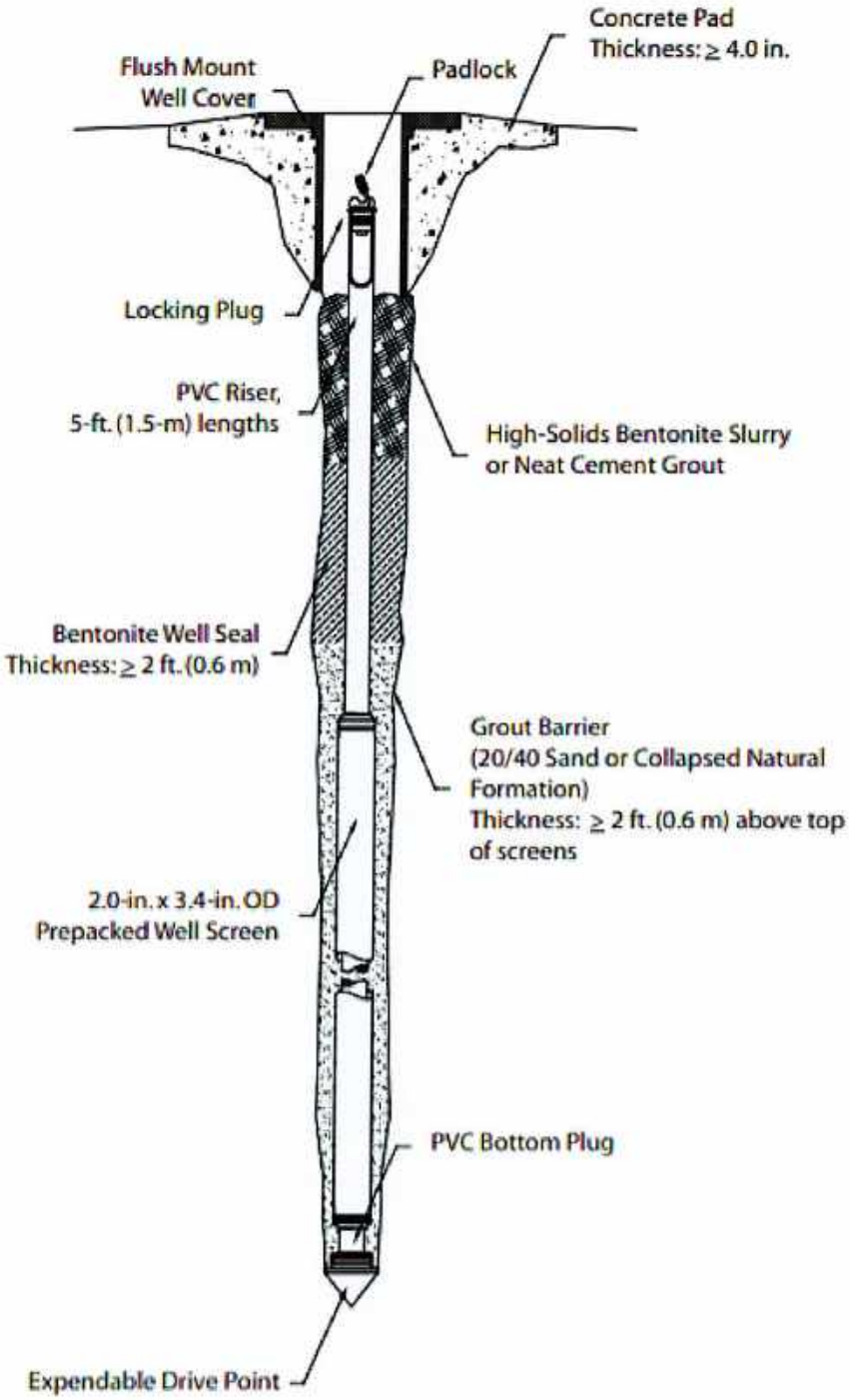
Client
FSI
90 GOODWAY DRIVE
ROCHESTER, NY 14623

PASSERO ASSOCIATES

Revisions

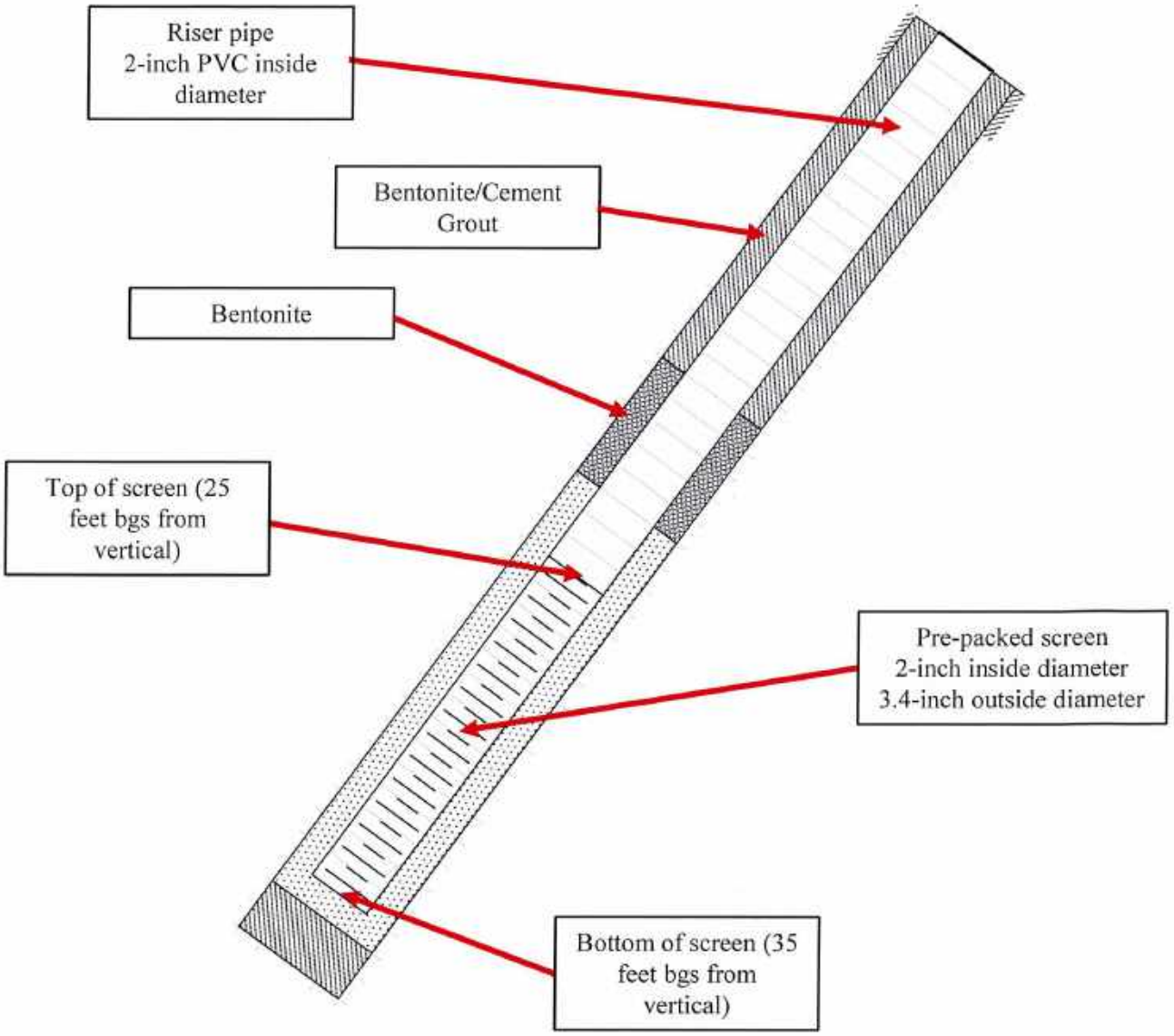
SITE PLAN
611 JEFFERSON ROAD

Project No. 20192792.0001
Drawing No. C 102
Sheet No. 2
Scale 1" = 30'
Date OCTOBER 2019



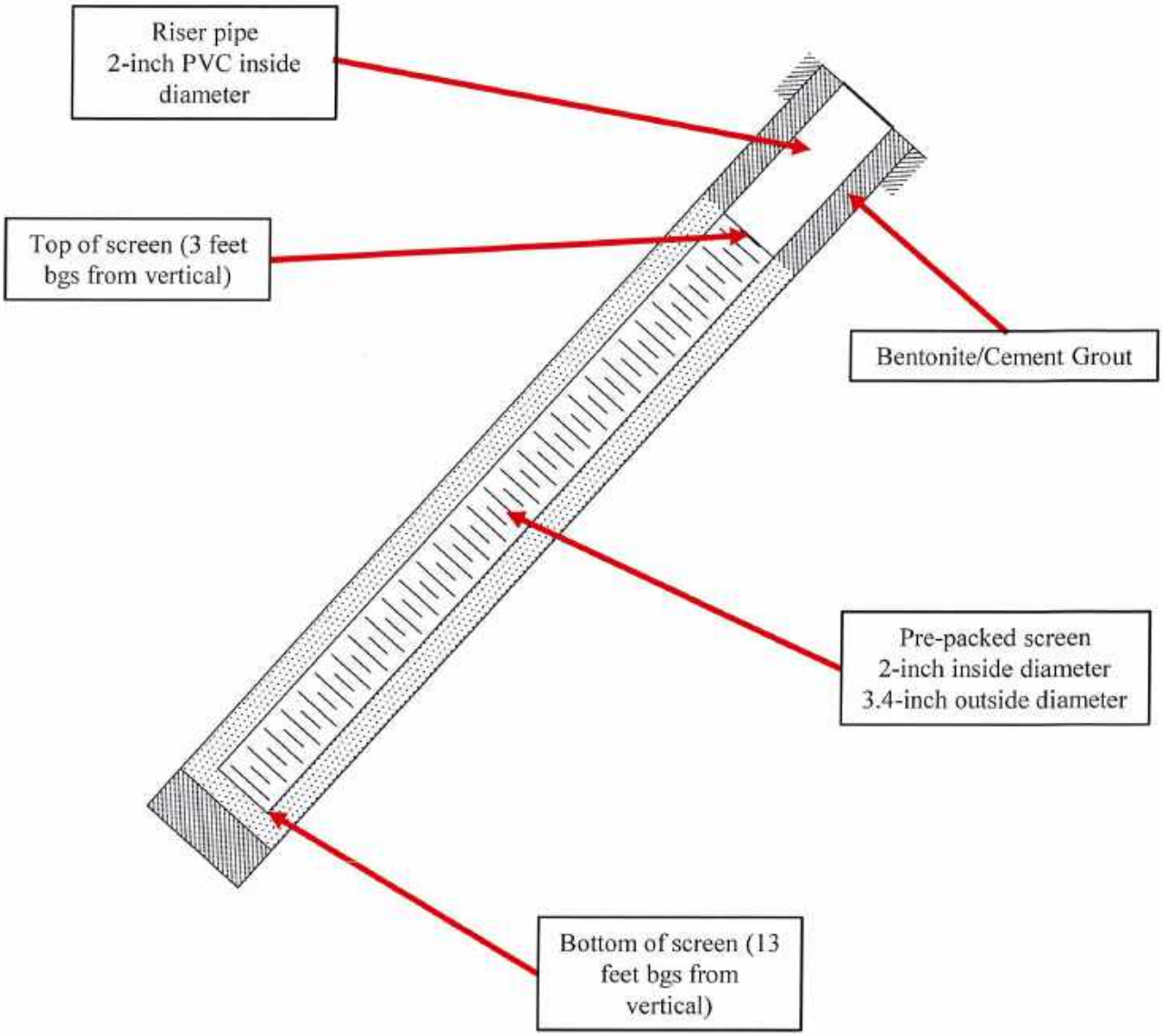
Title: Well Construction 811 Jefferson Road Henrietta, New York	Leader Professional Services, Inc 271 Marsh Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 1/24/2020 Scale NTS	Drawn MGD Checked MPR File Name Well Construction	Figure 3
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				

MW-1IR - Replacement

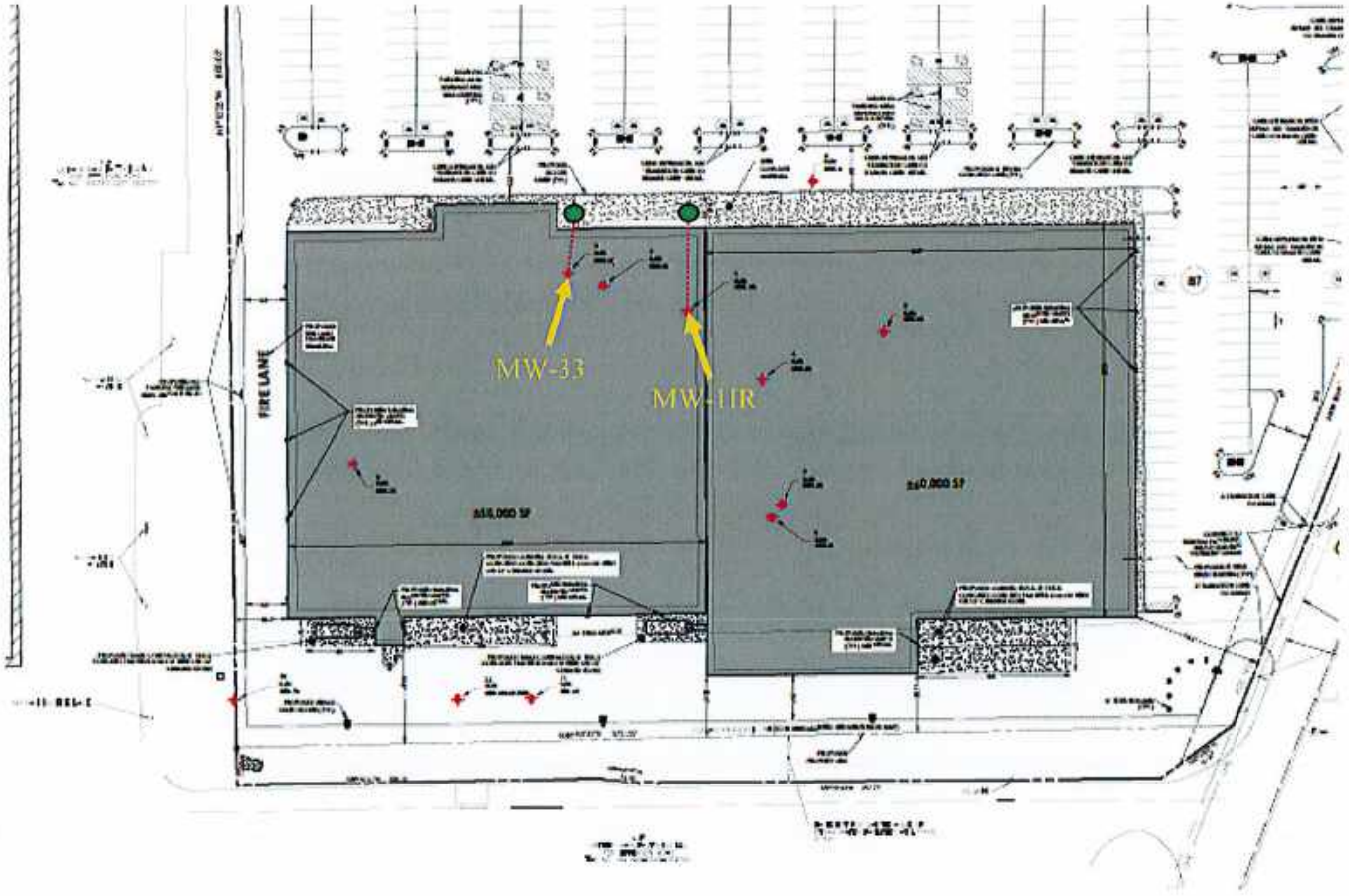


Title: Well Schematic – MW-1IR - Replacement 811 Jefferson Road Henrietta, New York	Leader Leader Professional Services, Inc 271 Marsh Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2004	Project 713.032A Date 1/24/2020 Scale NTS	Drawn MGD Checked MPR File Name Well Schematic	Figure 4
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				

MW-33 - Replacement



Title: Well Schematic – MW-33 - Replacement 811 Jefferson Road Henrietta, New York	Leader Leader Professional Services, Inc 271 Mark Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 1/24/2020 Scale NTS	Drawn MGD Checked MPR File Name Well Schematic	Figure 5
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				

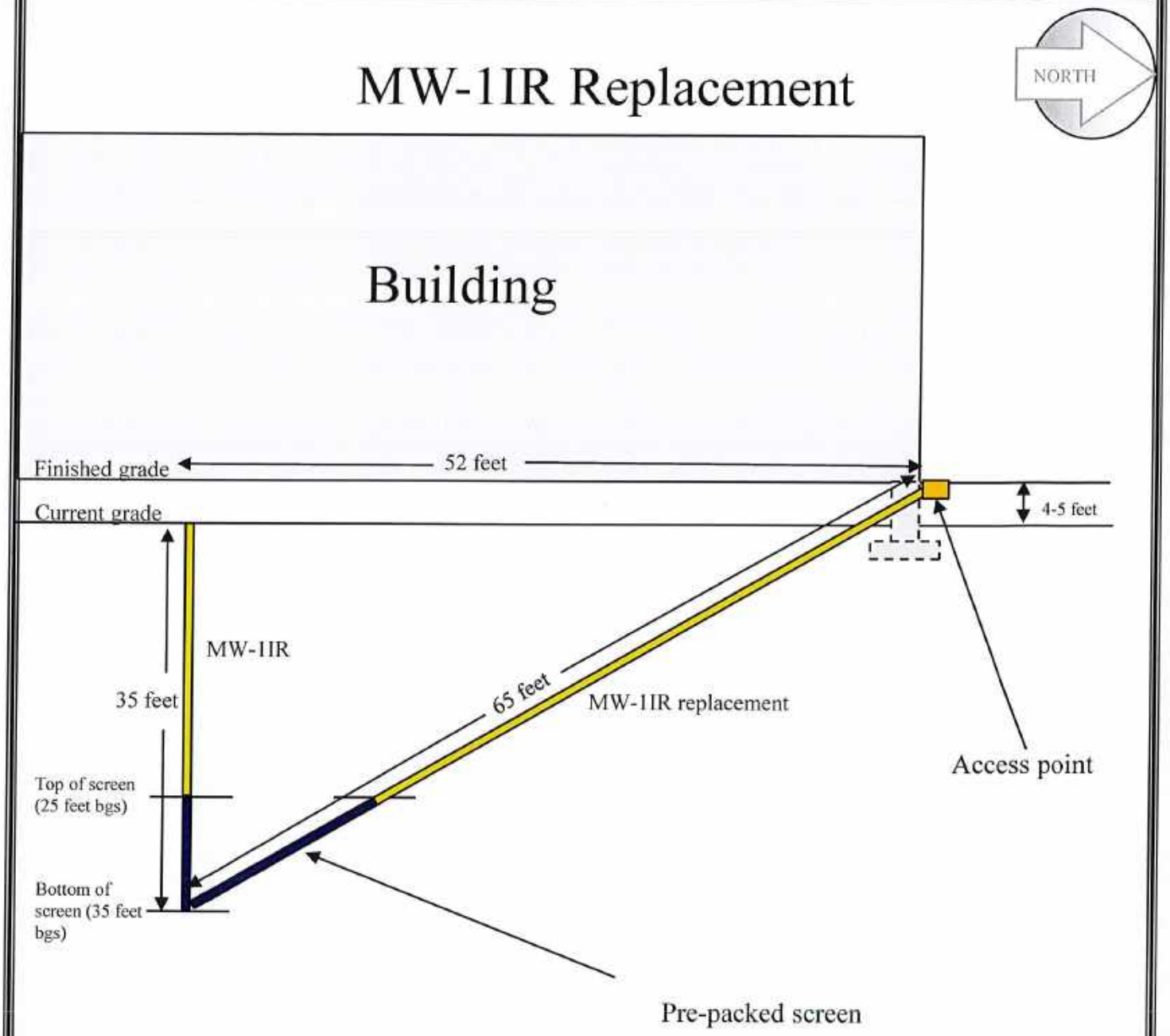


● Proposed angled well access point

···· Proposed angled well

Title: Monitoring Well Location Map 811 Jefferson Road Henrietta, New York	Leader Professional Services, Inc. 271 Marsh Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 1/24/2020 Scale NTS	Drawn MGD Checked MPR File Name Site Map	Figure 6
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				

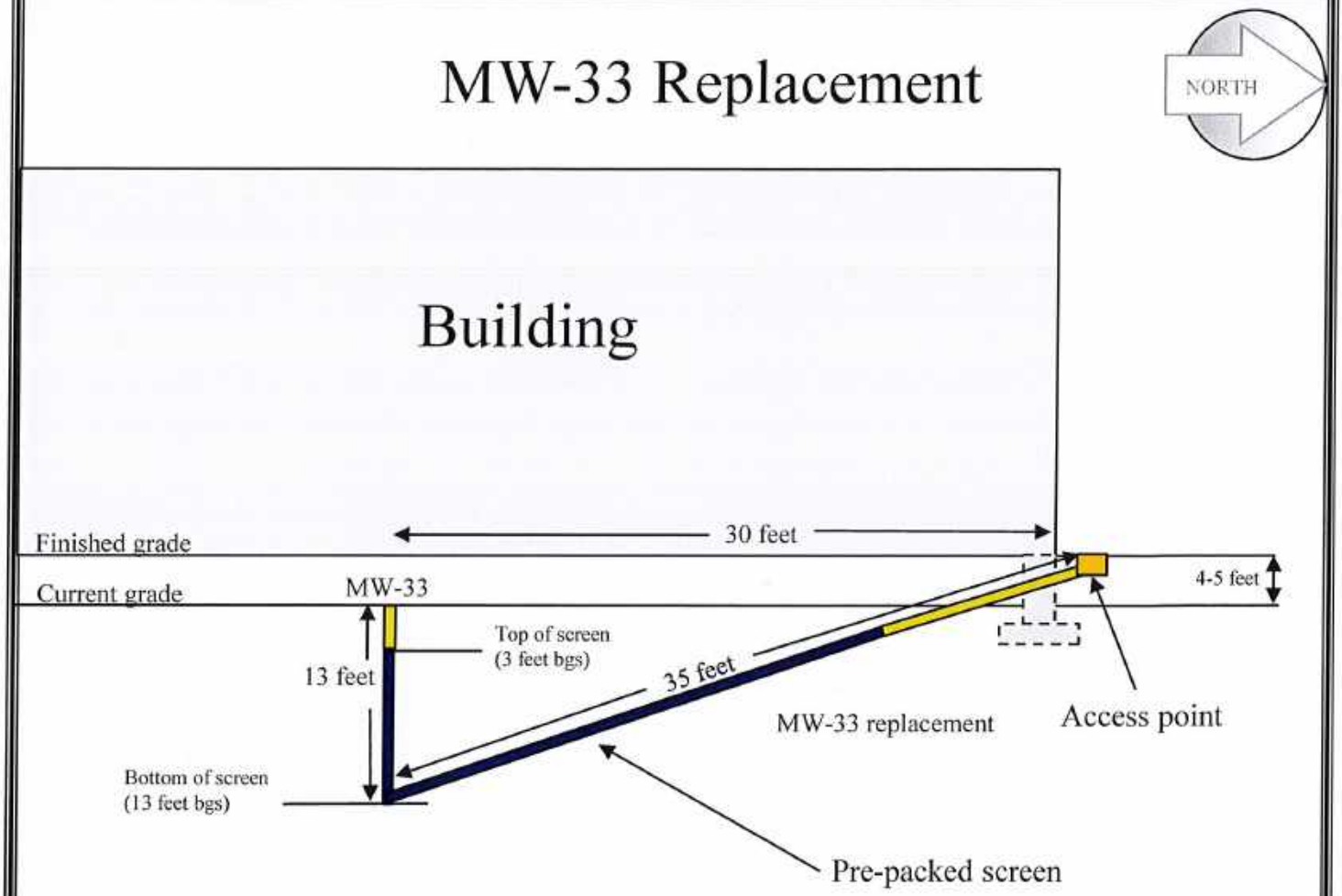
MW-1IR Replacement



*Note: distances and dimensions are approximate. Not to scale.

Title: Cross Section – MW-1IR Replacement 811 Jefferson Road Henrietta, New York	Leader Leader Professional Services, Inc 271 North Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 1/24/2020 Scale NTS	Drawn MGD Checked MPR File Name Cross Section	Figure 7
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				

MW-33 Replacement



*Note: distances and dimensions are approximate. Not to scale.

Title: Cross Section – MW-33 Replacement 811 Jefferson Road Henrietta, New York	Leader Professional Services, Inc. 271 Marsh Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 1/24/2020 Scale NTS	Drawn MGD Checked MPR File Name Cross Section	Figure 8
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				

Appendix E
SSDS Design Work Plan

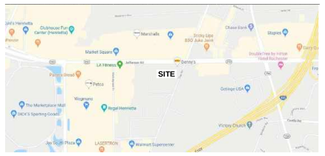
PLANS & SPECIFICATIONS FOR

VAPOR INTRUSION MITIGATION SYSTEM

HOBBY LOBBY

811 JERRERSON ROAD
ROCHESTER, NEW YORK

PROJECT SITE LOCATION



INDEX OF SHEETS

VIMS-1	**TITLE SHEET AND GENERAL NOTES**
VIMS-2	**GENERAL NOTES**
VIMS-3	**VIMS MEMBRANE AND VAPOR COLLECTION PIPING LAYOUT**
VIMS-4	**ROOF VENT LAYOUT**
VIMS-5	**VAPOR MITIGATION SYSTEM DETAILS - MEMBRANE**
VIMS-6	**VAPOR MITIGATION SYSTEM DETAILS - PIPING**

NOTICE FOR CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND ALL LOCAL AND STATE REGULATIONS.

THE OWNER AND THE VIMS DESIGNER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND ALL LOCAL AND STATE REGULATIONS.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE VIMS DESIGNER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE VIMS DESIGNER.

IN CASE OF CONFLICT BETWEEN THESE PLANS AND OTHER SITE DESIGN DOCUMENTS AND/OR MANUFACTURER SPECIFICATIONS / REQUIREMENTS THE APPROPRIATE PARTIES / COMPANIES WITH CONFLICTING DOCUMENTATION SHALL CONFER TO DETERMINE A MUTUALLY AGREED UPON SOLUTION.

NOTES

I. APPLICABILITY

A. GENERAL

1. THIS VAPOR INTRUSION MITIGATION SYSTEM (VIMS) PLAN PROVIDES DESIGN DRAWINGS, STANDARD DETAILS, AND ASSOCIATED SPECIFICATIONS FOR THE REFERENCED PROJECT. THE SYSTEM TO BE CONSTRUCTED IS AN ACTIVE SUB-SLAB DEPRESSURIZATION (SSD) SYSTEM COMBINED WITH A SEALED, SUB-SLAB MEMBRANE, DESIGNED TO RETARD INFILTRATION OF SOIL GAS VAPORS FROM BENEATH THE BUILDING SLAB TO INDOOR AIR. VENT RISERS INSTALLED IN INTERIOR WALLS ARE CONNECTED TO BLOWERS MOUNTED ON THE ROOF, AND THE SYSTEM ACHIEVES LOWER SUBSLAB AIR PRESSURE RELATIVE TO INDOOR AIR PRESSURE (OR NEGATIVE PRESSURE) BY DRAWING AIR FROM BENEATH THE UNDERSLAB MEMBRANE.

2. VIMS DETAILS PRESENTED IN THESE PLANS AND SPECIFICATIONS SHALL BE UTILIZED IN THE CONSTRUCTION OF THE BUILDING DESIGNATED ON SHEETS VIMS-1 THROUGH VIMS-6. THE BASIS OF DESIGN IS A SHEET MEMBRANE MANUFACTURED BY VAPORBLOCK® PLUS AND ANY ASSOCIATED MATERIALS AS DESCRIBED IN THESE PLANS. REFERENCE TO THESE PRODUCTS ARE PROVIDED TO DESCRIBE THE SYSTEM AND MATERIALS ONLY AND MAY BE SUBSTITUTED FOR EQUIVALENT PRODUCTS IF APPROVED BY THE VIMS DESIGNER.

3. THE VIMS MEMBRANE WILL ALSO SERVE AS A MOISTURE MEMBRANE AND WILL REPLACE ANY VAPOR OR MOISTURE BARRIER SPECIFIED IN THE STRUCTURAL DETAILS. INSTALLATION OF A MOISTURE OR VAPOR BARRIER BETWEEN THE VIMS MEMBRANE AND BUILDING FLOOR SLAB MAY VOID THE WARRANTY PROVIDED BY THE VIMS MEMBRANE MANUFACTURER.

B. SYSTEM COMPONENTS

1. THE VIMS CONSTRUCTION SHALL CONSIST OF, BUT NOT BE LIMITED TO, THE FOLLOWING:

   a. SUPPLY AND INSTALL 8-INCH AGGREGATE LAYER BENEATH CONCRETE SLAB
   b. SUPPLY AND INSTALL 4-INCH PVC PERFORATED VAPOR COLLECTION PIPING AND ASSOCIATED FITTINGS
   c. SUPPLY AND INSTALL PVC MANIFOLD PIPING
   d. SUPPLY AND INSTALL 20-MIL SHEET MEMBRANE LAYER
   e. SEAL 20 MIL MEMBRANE TO SEAMS, FOOTINGS, AND PENETRATIONS PER THE MANUFACTURER'S SPECIFICATIONS
   f. SUPPLY AND INSTALL VERTICAL VENT RISER PIPING, SAMPLE PORTS, AND GAS FITTINGS
   g. COMPLETE CONNECTION OF VERTICAL VENT RISER PIPING TO ROOF
   h. INSTALL ROOF-MOUNTED VACUUM BLOWER AND CONTROL SYSTEM
   i. PROVIDE ELECTRICAL SERVICE TO BLOWER AND CONTROL SYSTEM
   j. SUPPLY AND INSTALL BLOWER CONTROL SYSTEM AND TEST FOR OPERATION / EFFECTIVENESS
   k. SUPPLY AND INSTALL BLOWER CONTROL PANEL WITH MAGNEHELIC GAUGES AND VISUAL AND AUDIBLE ALARM SYSTEM AND TEST OPERATION.

2. ALL MATERIALS AND EQUIPMENT ARE TO BE DELIVERED TO THE PROJECT SITE IN THEIR ORIGINAL UNBROKEN PACKAGES BEARING THE MANUFACTURER'S LABEL SHOWING BRAND, WEIGHT, VOLUME, BATCH NUMBER AND DATE. MATERIALS ARE TO BE STORED AT THE PROJECT SITE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS

II. VAPOR INTRUSION MITIGATION SYSTEM

A. GAS VENT SYSTEM

A.1 AGGREGATE LAYER

1. A MINIMUM 8-INCH LAYER OF GRAVEL AGGREGATE SHALL BE PROVIDED BENEATH THE CONCRETE SLAB. THE AGGREGATE LAYER SHALL BE A FINE TO MEDIUM AGGREGATE AND CONTAIN NO MORE THAN 5% FINES (I.E. ≤5% PASSING #200 SIEVE). THE GRADATION OF THE AGGREGATE PLACED BELOW THE MEMBRANE SHALL MEET THE FOLLOWING SPECIFICATIONS OR AS SPECIFIED IN THE GEOTECHNICAL REPORT IF APPROVED BY THE VIMS DESIGNER:

GRAVEL AGGREGATE		
Sieve	Percent Passing	
	3/4"	3/8"
1-1/2"	100	-
1"	95-100	-
3/4"	90-100	100
3/8"	20-55	70-95
No. 4	0-10	0-25
No. 8	0-5	0-10
ASTM C 131 Test Grading	B	C

2. ARCHITECT AND CONTRACTOR TO ENSURE DRAINAGE FROM GRAVEL AGGREGATE LAYER TO PREVENT BUILD-UP OF WATER INSIDE THE AGGREGATE LAYER.

3. THE AGGREGATE WILL BE PLACED 2-INCH ABOVE AND 1.5-INCHES BELOW THE VAPOR COLLECTION PIPING AS SHOWN IN DETAIL 1, SHEET VIMS-5.

4. ANY AGGREGATE REMOVED DURING PLACEMENT OF UTILITIES MUST BE PLACED BACK TO LEVEL GRADE AND COMPACTED AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. UTILITIES PLACED IN THE AGGREGATE LAYER MAY NOT BE LARGER THAN 1-INCH IN DIAMETER. UTILITIES LARGER THAN 1-INCH IN DIAMETER MUST BE BURIED INTO THE SUBGRADE SUCH THAT NO MORE THAN 1 INCH OF THE AGGREGATE LAYER IS AFFECTED.

5. THE SUBGRADE UNDER THE AGGREGATE SHALL BE ROLLED SMOOTH AND MOISTURE CONDITIONED AS NECESSARY TO ACHIEVE THE COMPACTION SPECIFIED IN THE GEOTECHNICAL ENGINEER'S SPECIFICATION.

A.2 SUB-SLAB VAPOR VENT PIPING

1. SUB-SLAB VAPOR COLLECTION PIPING SHALL BE COMPRISED OF SCH. 40 4-INCH DIAMETER POLY VINYL CHLORIDE (PVC) PERFORATE PIPE. THE PERFORATIONS SHALL CONSIST OF FOUR 1/4-INCH DIA. HOLES DRILLED 90° APART FOR EVERY 2 FEET OF STRAIGHT PIPE BY CONTRACTOR OR EQUIVALENT AS APPROVED BY THE VIMS DESIGNER (SEE DETAIL 1, SHEET VIMS-6).

2. VAPOR COLLECTION PIPING SHALL BE INSTALLED AS SHOWN ON VIMS-3 AND PLACED WITHIN THE 8-INCH AGGREGATE LAYER. A MINIMUM OF 1.5-INCHES OF GRAVEL AGGREGATE SHALL BE PLACED BENEATH THE PIPING.

3. VAPOR COLLECTION PIPING SHALL BE CONNECTED TO 4-INCH SOLID SCHEDULE 40 PVC TRANSITION PIPING, CONNECTING TO 5-INCH I.D. COUPLINGS, ELBOWS, AND TEES BENEATH THE FLOOR SLAB THROUGH A PRE-CAST EXTERIOR WALL, AND TURNING UP VERTICALLY ADJACENT TO THE BUILDING EXTERIOR TO THE ROOF.

4. ALL TRANSITION PIPING SHALL BE IN PLACE PRIOR TO POURING THE FOUNDATION GRADE BEAMS OR FOOTINGS WHEN POURED SEPARATELY FROM THE FLOOR SLAB. THE PIPING TRANSITIONS SHALL BE ACCOMPLISHED IN COMPLIANCE WITH APPLICABLE BUILDING CODES AND WITH THE APPROVAL OF THE PROJECT STRUCTURAL ENGINEER AND/OR BUILDING OFFICIAL.

A.3 ABOVE SLAB GAS VENT RISER

1. VENT RISER TO THE ROOF SHALL BE COMPRISED OF 6-INCH DIAMETER SCH 40 PVC MOUNTED ON THE BUILDING EXTERIOR. THE CONTRACTOR SHALL INSTALL THE SCH 40 PVC RISER PIPING USING PIPE SUPPORTS, INSULATION, AND JACKETING RATED FOR OUTDOOR USE.

2. THE RISER PIPE TO THE ROOF SHALL BE FULLY SUPPORTED THROUGH THE ENTIRE HEIGHT OF THE BUILDING. VERTICAL PIPE SUPPORTS SHALL BE SPACED NO GREATER THAN 7 FEET, USING UNISTRUT® P2600 - UNICUSHION PIPE CLAMP SYSTEM, OR APPROVED EQUAL IN ACCORDANCE WITH APPLICABLE PLUMBING CODES.

3. PIPE INSULATION SHALL BE R2 OR GREATER, 1/2-INCH THICK, PIPE INSULATION. PVC JACKETING SHALL BE INSTALLED OVER ALL EXPOSED STRAIGHT PIPE AND FITTINGS, DESIGNED TO PROTECT THE INSULATION FROM LIGHT IMPACT AND MOISTURE, CONFORMING TO ASTM E84 25/50 FOR FLAME AND SMOKE. ALL SEAMS SHALL BE COVERED WITH A TAPING SYSTEM / SEALANT APPROVED BY THE PVC JACKETING MATERIAL MANUFACTURER.

4. A VENT RISER SAMPLE PORT SHALL BE INSTALLED ON THE PIPING EXTERIOR BETWEEN 3 AND 5 FEET ABOVE SURFACE GRADE. THE SAMPLE PORT SHALL CONSIST OF A 304 STAINLESS STEEL HEX REDUCING BUSHING (MNPT X FNPT, 1/2" X 1/4") SHALL BE THREADED INTO THE PIPING AND SEALED PERMANENTLY FOR GAS-TIGHT APPLICATIONS. A QUICK-CONNECT COUPLER SHALL BE INSTALLED IN THE BUSHING AND SEALED WITH GAS-RATED TEFLON TAPE TO ALLOW FOR REMOVAL DURING MONITORING (SEE DETAIL 4, SHEET VIMS-6).

A.4 SUB-SLAB VACUUM MONITORING PROBE

1. SUB-SLAB VACUUM MONITORING PROBES WILL BE USED TO MEASURE THE SUB-SLAB VACUUM CREATED BY THE VIMS SYSTEM ACROSS THE BUILDING FOOTPRINT. THESE PROBES CONSIST OF 3/8-INCH O.D. NYLAFOW TUBING CONNECTED TO A STAINLESS-STEEL SOIL GAS IMPLANT EQUIPPED WITH A BARRED FITTING AND WIRE MESH SCREEN, TERMINATING IN THE AGGREGATE LAYER.

2. THE PROBES WILL BE INSTALLED IN 1.5-INCH PVC PIPING, SEALED, AND SECURED TO BE ACCESSIBLE FROM THE BUILDING EXTERIOR ONE-FOOT ABOVE SURFACE GRADE. THE PROBE LOCATIONS ARE SHOWN ON SHEET VIMS-3, AND DETAILS OF THE PROBE IS SHOWN AS DETAIL 10, SHEET VIMS-6 OF THESE PLANS.

B. VIMS MEMBRANE

B.1 MATERIALS

1. THE VIMS MEMBRANE SHALL CONSIST OF A 20 MIL SHEET MEMBRANE MANUFACTURED AS VAPORBLOCK® PLUS BY RAVEN INDUSTRIES.

2. THE BASE LAYER AND PROTECTIVE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE VIMS DESIGNER.

B.2 PENETRATION SEALS

1. WHERE UTILITIES, VENT LINES, PIPING, ELECTRICAL CONDUITS, ETC. PENETRATE THE VIMS MEMBRANE, A RAVEN BUTYL SEAL TAPE AND VAPORBOND TAPE SHALL BE PROVIDED TO CREATE A GAS-TIGHT SEAL AROUND THE PENETRATION IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AS SHOWN ON DETAIL 5, SHEET VIMS-5.

2. WHERE PENETRATIONS SUCH AS ELECTRICAL UTILITY CONDUITS, PLUMBING PIPING, ETC. ARE CONCENTRATED, A CONCRETE PENETRATION BANK WILL BE CONSTRUCTED TO SECURE THE PENETRATIONS IN-PLACE (SEE DETAIL 4, SHEET VIMS-5). THE PENETRATION BANK SHALL BE CONSTRUCTED USING A MINIMUM THICKNESS OF 12 INCHES EXTENDING A MINIMUM OF 8 INCHES FROM ANY PENETRATION, ALLOWING FOR A MINIMUM 6-INCH ATTACHMENT OF THE VIMS MEMBRANE, SIMILAR TO AN ATTACHMENT TO AN INTERIOR FOOTING. THE TOP OF CONCRETE PENETRATION BANK SHALL BE BELOW THE BOTTOM OF THE SLAB. PENETRATIONS SHALL NOT BE IN CONTACT WITH ADJACENT PENETRATIONS OR OTHER OBJECTS TO ALLOW PROPER SEALING AROUND THE ENTIRE PENETRATION CIRCUMFERENCE.

C. QUALITY ASSURANCE

1. A PRE-INSTALLATION CONFERENCE SHALL BE HELD PRIOR TO THE APPLICATION OF THE VIMS MEMBRANE TO COORDINATE PROPER SUBSTRATE AND INSTALLATION CONDITIONS AND PROCEDURES. THE VIMS SUBCONTRACTOR, SITE SUPERINTENDENT, THE FOUNDATION SUBCONTRACTOR, SUBSLAB UTILITY CONTRACTORS, AND THE VIMS DESIGNER SHALL BE PRESENT AT THIS MEETING.

2. THE INSTALLATION OF THE VIMS MEMBRANE SHALL BE CLOSELY MONITORED BY THE VIMS DESIGNER OR HIS DESIGNATED REPRESENTATIVE. INSPECTIONS SHALL TYPICALLY BE PERFORMED PRIOR TO, DURING, AND SUBSEQUENT TO THE INSTALLATION OF THE VAPOR VENT PIPING AND APPLICATION OF THE VIMS MEMBRANE. IT IS THE RESPONSIBILITY OF THE VIMS SUBCONTRACTOR TO NOTIFY THE OWNER AND VIMS DESIGNER WITHIN A MINIMUM OF 72 HOURS OF PRIOR TO BEGINNING ANY PORTION OF THIS WORK.

3. ALL SURFACES TO RECEIVE THE VIMS MEMBRANE TERMINATES SHALL BE INSPECTED AND APPROVED BY THE VIMS SUBCONTRACTOR FOR THE PERFORMANCE OF THIS SCOPE OF WORK AND BY THE VIMS DESIGNER PRIOR TO COMMENCING WORK.

4. PRIOR TO PLACING THE FLOOR SLAB OVER THE MEMBRANE, THE VIMS DESIGNER SHALL INSPECT AND APPROVE THE MEMBRANE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. CONSTRUCTION OF THE FLOOR SLAB SHALL NOT PROCEED WITHOUT WRITTEN CERTIFICATION OF THE SUCCESSFUL INSTALLATION BY THE VIMS SUBCONTRACTOR.

D. SUBMITTALS

1. THE VIMS SUBCONTRACTOR SHALL SUBMIT ANY UPDATES OR REVISIONS TO THE MANUFACTURER'S MATERIAL DATA AND RECOMMENDED INSTALLATION PROCEDURES TO THE VIMS DESIGNER FOR REVIEW AND APPROVAL AT LEAST ONE WEEK PRIOR TO THE CONSTRUCTION OF THE VIMS MEMBRANE.

2. THE VIMS SUBCONTRACTOR SHALL SUBMIT REPRESENTATIVE SAMPLES OR MANUFACTURER'S PRODUCT SPECIFICATIONS OF THE FOLLOWING TO THE VIMS DESIGNER FOR APPROVAL:

   - BASE BOND AND UPPER PROTECTIVE MATERIALS
   - VIMS MEMBRANE MATERIAL
   - BASE GEOTEXTILES
   - AGGREGATE MATERIAL

3. AT THE COMPLETION OF INSTALLATION, THE VIMS SUBCONTRACTOR SHALL SUBMIT A LETTER TO THE VIMS DESIGNER AND TO THE OWNER CERTIFYING THAT VIMS INSTALLATION WAS COMPLETED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS AS WELL AS MANUFACTURER SPECIFICATIONS.

E. WARRANTY

1. TERRACON RECOMMENDS THE OWNER OBTAIN A WARRANTY FOR THE VIMS MEMBRANE. THE MANUFACTURER PROVIDES PRODUCT AND/OR SYSTEM WARRANTIES FOR THE VIMS MEMBRANE.

2. THE VIMS MANUFACTURER MAY REQUIRE SUBMITTAL OF DESIGN DOCUMENTS, ENVIRONMENTAL REPORTS, GEOTECHNICAL REPORTS, OR OTHER DOCUMENTATION FOR REVIEW PRIOR TO ISSUING A WARRANTY, AND ADDITIONAL COSTS MAY APPLY. PLEASE CONTACT THE SELECTED MANUFACTURER FOR WARRANTY TERMS AND CONDITIONS AND ADDITIONAL INFORMATION.

3. MANUFACTURERS EXTENDED WARRANTIES MUST BE REQUESTED BY THE OWNER PRIOR TO VIMS INSTALLATION BID REQUESTS.

F. JOB CONDITIONS

1. ALL PLUMBING, ELECTRICAL, MECHANICAL AND STRUCTURAL ITEMS THAT ARE LOCATED BENEATH OR THAT PASS THROUGH THE VIMS MEMBRANE SHALL BE POSITIVELY SECURED IN THEIR PROPER POSITIONS AND APPROPRIATELY PROTECTED PRIOR TO INSTALLATION OF THE VIMS MEMBRANE.

2. THE VIMS MEMBRANE SHALL BE INSTALLED BEFORE PLACEMENT OF REINFORCING STEEL. IF REINFORCING STEEL IS PRESENT AT THE TIME OF APPLICATION, ALL EXPOSED REINFORCEMENT SHALL BE MASKED BY THE FOUNDATION SUBCONTRACTOR PRIOR TO INSTALLATION OF THE VIMS MEMBRANE.

3. REINFORCING STEEL, PIPING, FORMS, ETC. SHALL NOT BEAR DIRECTLY ON THE MEMBRANE OR PROTECTIVE LAYER AND EQUIPMENT SHALL NOT BE DRIVEN OVER THE MEMBRANE OR ITS PROTECTIVE LAYER WITHOUT PRIOR APPROVAL FROM THE VIMS DESIGNER AND MANUFACTURER.

4. STAKES USED TO SECURE THE CONCRETE FORMS SHALL NOT PENETRATE THE VIMS MEMBRANE AFTER IT HAS BEEN INSTALLED. IF STAKES NEED TO PUNCTURE THE MEMBRANE AFTER IT HAS BEEN INSTALLED, THE VIMS DESIGNER AND INSTALLER SHOULD BE NOTIFIED, AND NECESSARY REPAIRS NEED TO BE MADE BY THE VIMS SUBCONTRACTOR.

5. FIELD SITUATIONS NOT SPECIALLY DETAILED SHALL BE HANDLED PER THE INTENT OF THESE PLANS AND SPECIFICATIONS WITH THE APPROVAL OF THE VIMS DESIGNER. THE APPLICATOR / CONTRACTOR MAY SUBMIT SHOP DRAWINGS FOR ALTERNATIVE METHODS. SEE STRUCTURAL FOUNDATION PLANS FOR COMPLETE DEPTHS AND DETAILS OF FOOTING AND SLAB. DEPTHS OF FOOTINGS AND SLAB SHOWN IN THESE PLANS ARE GENERALIZED, ACTUAL FOOTING DEPTHS MAY VARY.

6. APPROPRIATE CARE SHALL BE EXERCISED TO PROTECT THE VIMS MEMBRANE AND PREVENT PENETRATIONS SUBSEQUENT TO ITS APPLICATION. THE VIMS MEMBRANE SHALL BE PROTECTED FROM PEDESTRIAN TRAFFIC WITH THE PROTECTIVE GEOTEXTILE LAYER. THE PROTECTIVE GEOTEXTILE SHALL BE KEPT FREE OF DIRT AND DEBRIS, TO THE EXTENT POSSIBLE, UNTIL THE FLOOR SLAB IS POURED. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT THE VIMS MEMBRANE AND THE PROTECTION SYSTEM ARE NOT PENETRATED AFTER THE COMPLETION OF THE INSTALLATION.

G. INSTALLATION

G.1 VAPOR VENT PIPING INSTALLATION

1. VENT PIPING SHALL BE CONNECTED TO PROVIDE A GAS-TIGHT SEAL AT ALL CONNECTIONS AND FITTINGS AND SHALL BE CONSTRUCTED OF MATERIALS THAT COMPLY WITH THE UNIFORM PLUMBING AND MECHANICAL CODES. ALL JOINTS SHALL BE TIGHTLY SEALED WITH APPROVED MATERIALS. ANY GLUE OR SOLVENT USED TO SEAL THE PIPING MUST BE VOC FREE.

2. PLACEMENT OF AGGREGATE ABOVE THE PIPING SHALL NOT BEGIN BEFORE THE VIMS DESIGNER HAS INSPECTED THE GRADE AND ALIGNMENT OF THE PIPING, THE BEDDING OF THE PIPING AND THE JOINTS BETWEEN THE PIPING. ALL PIPING LOCATED WITHIN THE AGGREGATE LAYER SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

3. CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHOULD HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

4. SOLID RISER PIPE SHALL BE LOCATED WITHIN THE WALLS/CHASES OR SHALL BE SIMILARLY PROTECTED FROM PHYSICAL DAMAGE. DAMAGE INCURRED DURING CONSTRUCTION OR OCCUPANCY COULD AFFECT SYSTEM PERFORMANCE.

G.2 VIMS MEMBRANE INSTALLATION

1. THE SUBGRADE SHALL BE MOISTURE CONDITIONED AND COMPACTED BY THE GRADING CONTRACTOR AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. THE FINISHED SURFACE SHALL BE SMOOTH, UNIFORM, AND FREE OF DEBRIS AND STANDING WATER. FINAL SUBGRADE INSPECTION/PREPARATION SHALL NOT PRECEDE THE VIMS INSTALLATION BY MORE THAN 72 HOURS.

2. THE AGGREGATE LAYER SHALL BE MOISTURE CONDITIONED AND COMPACTED AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS.

3. IF THE VIMS MEMBRANE IS TO BE PLACED ON A CONCRETE SURFACE, CONCRETE SURFACES SHALL BE LIGHT BROOM FINISHED OR SMOOTHED, FREE OF ANY DIRT, DEBRIS, LOOSE MATERIAL, RELEASE AGENTS OR CURING COMPOUNDS. ALL VOIDS MORE THAN 1/4-INCH IN WIDTH SHALL BE PROPERLY FILLED WITH NON-SHRINK GROUT OR AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. MASONRY JOINTS SHALL BE STRUCK SMOOTH WITH A METAL TROWEL. ALL PENETRATIONS SHALL BE PREPARED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

4. TRENCHES SHALL BE CUT OVERSIZE AS NECESSARY TO ACCOMMODATE INSTALLATION OF THE VIMS MEMBRANE.

5. THE WALLS OF FOOTING OR UTILITY TRENCHES SHALL BE SMOOTH AND FREE OF ROOTS OR PROTRUDING ROCKS.

6. IF ORGANIC MATERIALS WITH POTENTIAL FOR GROWTH (E.G. SEEDS OR GRASSES) ARE PRESENT WITHIN THE SUBGRADE, THE GENERAL CONTRACTOR SHALL APPLY A SOIL STERILANT AT THE MANUFACTURER'S RECOMMENDED RATE PRIOR TO THE INSTALLATION OF THE VIMS MEMBRANE.

7. THE VIMS MEMBRANE LAYER SHALL BE LAID ON THE AGGREGATE LAYER IN ACCORDANCE WITH THE MATERIAL MANUFACTURER'S SPECIFICATIONS. ALL SEAMS SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES. ANY OPEN UTILITY OR OTHER TRENCH PRESENT AT THE TIME OF APPLICATION SHALL BE LINED WITH THE MEMBRANE EXTENDING AT LEAST 12 INCHES ONTO THE ADJOINING SUBGRADE. THE BASE LAYER SHALL BE IN INTEGRAL CONTACT WITH ALL INTERIOR FOUNDATION CORNERS.

G.3 SEALING PENETRATIONS

1. ALL PENETRATIONS SHALL BE CLEANED AND PREPARED TO PROVIDE PROPER ADHESION OF THE BUTYL TAPE FOR A VAPOR TIGHT SEAL. METAL PENETRATIONS SHALL BE SANDED CLEAN AND PREPARED USING EMERY CLOTH FOR PROPER ADHESION OF THE BUTYL TAPE.

2. ALL PENETRATIONS SHOULD BE SECURED PRIOR TO INSTALLATION OF THE VIMS MEMBRANE SYSTEM. PENETRATIONS SHALL NOT BE IN CONTACT WITH ADJACENT PENETRATIONS OR OTHER OBJECTS TO ALLOW PROPER SEALING AROUND THE ENTIRE PENETRATION CIRCUMFERENCE. WHERE PENETRATIONS SUCH AS ELECTRICAL CONDUITS, PLUMBING PIPING, ETC ARE CONCENTRATED, A CONCRETE PENETRATION BANK WILL BE CONSTRUCTED PRIOR TO VIMS MEMBRANE PLACEMENT. THE CONCRETE PENETRATION BANK WILL CONSIST OF A MINIMUM THICKNESS OF 12 INCHES OF CONCRETE, EXTENDING A MINIMUM OF 8 INCHES BEYOND THE EDGE OF EACH PENETRATION TO ALLOW FOR ATTACHMENT OF THE VIMS MEMBRANE (SEE DETAIL 4, SHEET VIMS-5).

3. THE BASE LAYER SHALL BE CUT AROUND PENETRATIONS SO THAT IT LAYS FLAT ON THE SUBGRADE. THERE SHOULD NOT BE A GAP LARGER THAN 1/8-INCH BETWEEN THE BASE LAYER AND THE PENETRATION (SEE DETAIL 3, SHEET VIMS-5).

H. INSPECTIONS

1. THE INSPECTION OF ALL VAPOR CONTROL MEASURES SHALL BE PERFORMED BY THE VIMS DESIGNER. AT A MINIMUM, INSPECTION SHALL TAKE PLACE AT THE FOLLOWING STAGES OF THE INSTALLATION, AS DEEMED NECESSARY BY THE VIMS DESIGNER:

   - AFTER THE INSTALLATION OF THE VAPOR COLLECTION PIPING AND PRIOR TO INSTALLATION OF THE AGGREGATE LAYER ABOVE THE VENT PIPING;
   - DURING THE INSTALLATION OF THE VIMS MEMBRANE;
   - AFTER THE INSTALLATION OF THE REINFORCING STEEL, AND ALL FOUNDATION FORM WORK, BUT PRIOR TO AND THROUGHOUT THE PLACEMENT OF CONCRETE FOR THE FLOOR SLAB;
   - DURING AND AT THE COMPLETION OF THE VERTICAL VENT RISER PIPING AND ROOF VENT INSTALLATION.

2. FINAL SUBGRADE INSPECTION / PREPARATION SHALL NOT PRECEDE THE VIMS INSTALLATION BY MORE THAN 72 HOURS.

3. FIELD QUALITY CONTROL IS A VERY IMPORTANT PART OF ALL APPLICATIONS. THE VIMS SUBCONTRACTOR SHALL CHECK HIS OWN WORK FOR COVERAGE, THICKNESS, AND ALL-AROUND GOOD WORKMANSHIP.

4. PRIOR TO PLACING THE CONCRETE SLAB OVER THE VIMS MEMBRANE, THE VIMS SUBCONTRACTOR SHALL CERTIFY IN WRITING THAT THE VIMS MEMBRANE HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IS FREE OF LEAKS, AND HAS A MINIMUM THICKNESS OF 60 MILS.

5. SERVICE LISTED IN THIS SPECIFICATION AS BEING REQUIRED BY THE VIMS DESIGNER ARE DEPENDENT UPON OWNER AUTHORIZATION OF SAID SERVICES TO VIMS DESIGNER, AND NOTIFICATIONS TO THE VIMS DESIGNER OF THE PROJECT STATUS BY THE VIMS SUBCONTRACTOR. IF THESE SERVICES ARE NOT PERFORMED BY THE VIMS DESIGNER, THE MANUFACTURER'S WARRANTY MAY BE VOIDED.

RECOMMENDED VAPOR MITIGATION SYSTEM TASKS SUMMARY

TASKS TO BE COMPLETED	RECOMMENDED CONTRACTOR / TRADE RESPONSIBLE FOR TASK	
	GC	VIMS SUB CONTRACTOR
SUBGRADE PREPARATION		
PLACEMENT OF 8-INCH MIN. COMPACTED AGGREGATE LAYER ABOVE SUBGRADE.	X	
PREPARATION OF AGGREGATE TO ALLOW FOR MEMBRANE ATTACHMENT TO VERTICAL AND HORIZONTAL SURFACES	X	
CONSTRUCTION OF 12-INCH THICK CONCRETE PENETRATION BANKS WHERE UTILITY CONDUITS ARE CONCENTRATED.	X	
INSTALLATION OF VENT SYSTEM		
EXCAVATION OF TRENCHES FOR TRANSITION PIPING AND VAPOR COLLECTION PIPING.	X	X
INSTALLATION OF PIPE TRANSITIONS THROUGH GRADE BEAMS OR THICKENED SLABS.	X	
INSTALLATION OF VAPOR COLLECTION PIPING AND TRANSITION PIPING	X	X
CONNECTION OF THE VAPOR COLLECTION PIPE TO PIPE COUPLINGS.		X
BACKFILL OF AGGREGATE OVER THE HEADER PIPE AND VAPOR COLLECTION PIPE AFTER INSTALLATION IS COMPLETED.	X	X
CONNECTION OF THE EXHAUST PIPE TO BLOWER UNIT	X	
INSTALLATION OF 4-INCH VERTICAL VENT RISERS ABOVE FINISHED ROOF INSTALLATION AND TESTING OF ROOF-MOUNTED BLOWER, CONTROL SYSTEMS, AND ALARMS	X	
INSTALLATION OF GAS VAPOR MEMBRANE		
REMOVAL OF EXCESS SOILS FROM BUILDING PAD AND SITE, IF NECESSARY.	X	
PLACEMENT OF VIMS MEMBRANE.		X
SEALING OF ALL FLOOR SLAB PENETRATIONS		X
INSPECTION OF VIMS MEMBRANE DURING INSTALLATION.		X

STANDARD OF CARE AND LIMITATIONS

TERRACON'S SERVICES WILL BE PERFORMED IN A MANNER CONSISTENT WITH GENERALLY ACCEPTED PRACTICES OF THE PROFESSION UNDERTAKEN IN SIMILAR DESIGNS IN THE SAME GEOGRAPHICAL AREA DURING THE SAME TIME PERIOD. PLEASE NOTE THAT TERRACON DOES NOT WARRANTY THE WORK OF THIRD PARTIES SUPPLYING INFORMATION USED IN THE PREPARATION OF THE VAPOR MITIGATION SYSTEM. THESE SERVICES WERE PERFORMED IN ACCORDANCE WITH THE SCOPE OF WORK AGREED WITH YOU, OUR CLIENT, AS REFLECTED IN OUR PROPOSAL.

I, Joseph L. Robichaud, P.E., certify that I am currently a NYS registered professional engineer and that this Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9000

HOBBY LOBBY
Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
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Store address: 811 JEFFERSON RD.
ROCHESTER, NY 14623
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TITLE SHEET AND GENERAL NOTES

VIMS-1

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III. SUB-SLAB DEPRESSURIZATION SYSTEM

A. ROOF-MOUNTED REGENERATIVE BLOWER SYSTEM (SEE DETAILS 7 & 8, VIMS-6)

1. THE PROPOSED ACTIVE SSD SYSTEM MAY UTILIZE A MINIMUM OF THREE BLOWERS TO DRAW A VACUUM FROM EXTRACTION LATERALS BENEATH THE BUILDING'S FLOOR SLAB. EACH BLOWER PERFORMANCE WILL MEET A MINIMUM FLOW OF 400 CUBIC FEET PER MINUTE (SCFM) AT 5 IN. W.C.

2. THE BLOWER SHALL BE UL LISTED AND RATED FOR CONTINUOUS, ALL WEATHER OPERATIONS, WITH AUTOMATIC RESET FEATURES IN THE EVENT OF A POWER FAILURE.

3. THE BLOWERS SHALL HAVE A MINIMUM 12-MONTH MANUFACTURER'S WARRANTY ON PARTS AND LABOR.

4. THE BLOWER UNITS WILL INCLUDE A DURABLE, WEATHER-PROOF, UV-RESISTANT ENCLOSURE, WHICH WILL HOUSE THE BLOWERS, CONDENSATE BYPASS, MANUAL STOP, AND OTHER CONTROLS AND EQUIPMENT ASSOCIATED WITH THE SYSTEM. THE ENCLOSURE WILL BE MOUNTED ON A FRAME AND SECURED IN A MANNER THAT MINIMIZES THE TRANSFER OF VIBRATIONS TO THE STRUCTURE.

5. ACCEPTABLE BLOWER AND MANUFACTURER:

   CINCINNATI FAN PB-10A, ARRANGEMENT 4, 6" INLET, 9-3/4 X 2-7/8, MTR, 3/4 HP

6. THE CONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE BY A LICENSED ELECTRICIAN TO EACH BLOWER AND ASSOCIATED EQUIPMENT, ELECTRICAL WIRING, CONDUIT, AND CONNECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS. EACH BLOWER SHALL REQUIRE A DEDICATED 208 VOLT, THREE-PHASE CIRCUIT.

7. EACH BLOWER DISCHARGE WILL BE CONNECTED TO AN EXHAUST STACK IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH APPLICABLE CODES. THE BLOWER DISCHARGE SHALL BE LOCATED AT A DISTANCE OF NOT LESS THAN 25 FEET FROM ANY BUILDING AIR INTAKE, AND A MINIMUM OF 5 FEET FROM ANY ELECTRICAL DEVICE. COORDINATE LOCATION OF BLOWER DISCHARGE WITH ARCHITECT, HVAC AND STRUCTURAL ENGINEERS.

8. INSTALL BLOWER UNITS, TO INCLUDE BLOWERS, ENCLOSURES, ROOF-MOUNTS AND SUPPORTS, FRAME, CONTROLS, ALARMS, GAUGES, OPERATION EQUIPMENT.

9. THE RISER PIPE SHALL BE EQUIPPED WITH A 6-INCH SHUTOFF VALVE TO ALLOW FOR SHUTOFF OF AIR FLOW ABOVE THE VALVE DURING SAMPLING OR OPERATION OF AN ACTIVE SYSTEM. THIS VALVE SHALL BE INSTALLED INLINE ABOVE THE ROOF LINE (SEE DETAIL 8, SHEET VIMS-6).

10. AT BLOWER EXHAUST PIPES, A PERMANENT LABEL SHALL BE AFFIXED TO THE BLOWER EXHAUST READING: "WARNING - SOIL GAS VENT STACK MAY CONTAIN ORGANIC VAPORS, DO NOT PLACE AIR INTAKE WITHIN 15 FEET."

11. PLACARDS SHALL BE INSTALLED ON EACH VENT RISER APPROXIMATELY EVERY 5 FEET AND AT ANY EXPOSED RISER PIPING (SEE DETAIL 6, SHEET VIMS-6)

B. BLOWER VACUUM PRESSURES AND OVERLOAD SENSORS

1. AN ADJUSTABLE HIGH/LOW VACUUM PRESSURE SWITCH THERMAL OVERLOAD SHALL BE INSTALLED AT THE BLOWER COMPONENTS. THESE COMPONENTS MUST BE CALIBRATED BY THE INSTALLER IN ACCORDANCE WITH THE MANUFACTURER REQUIREMENTS.

2. IF THE VACUUM WITHIN THE SYSTEM FALLS BELOW 0.5 INCHES WATER COLUMN (W.C.) OR GREATER THAN 4.5 INCHES W.C., THE PRESSURE SWITCH WILL SEND A SIGNAL TO A CONTROL PANEL, ILLUMINATING A RED INDICATOR LIGHT ON THE CONTROL PANEL. IF THE VACUUM IS WITHIN THE SELECTED RANGE FOR ALL THREE BLOWERS, A GREEN LIGHT SHALL BE ILLUMINATED.

3. IF THE THERMAL OVERLOAD INDICATES OPERATION OUTSIDE OF THE BLOWER MANUFACTURER'S OPERATING RANGE, THE OVERLOAD SENSOR WILL SEND A SIGNAL TO A CONTROL PANEL TO SHUT DOWN THE SYSTEM.

4. THE SYSTEM WILL HAVE THE CAPABILITY TO SEND AN ALARM SIGNAL TO THE BUILDING ALARM SYSTEM AND/OR OTHER COMMUNICATION EQUIPMENT (AUTODIALER OR MODEM) IF APPROVED BY THE BUILDING OWNER.

5. PROPER WIRING FOR POWER AND COMMUNICATION TO ALL ELECTRICAL DEVICES SHOULD BE CONFIRMED BY THE ELECTRICAL ENGINEER AND INCLUDED ON THE PROJECT ELECTRICAL DRAWINGS.

C. CONTROL PANEL

1. A SSD SYSTEM CONTROL PANEL SHALL BE INSTALLED TO INTEGRATE THE BLOWER CONTROL (ON/OFF), AND VACUUM PRESSURE SENSORS. THE CONTROL PANEL SHALL BE HARD-WIRED TO THE BUILDING NORMAL POWER AND WILL BE LOCATED IN A CENTRALIZED PORTION OF THE BUILDING AS APPROVED BUILDING OWNER AND VIMS DESIGNER. COORDINATE ACTUAL HEIGHT AND LOCATION OF THE PANEL WITH THE BUILDING OWNER AND VIMS DESIGNER.

2. CONTROL PANEL SHALL INCLUDE THE FOLLOWING:
   a. NEMA 4 3RD PARTY LISTED CONTROL PANEL ENCLOSURE
   b. DEADFRONT AND LOCKING INTERIOR PANEL
   c. HAND/OFF/AUTO SWITCHES, MOTOR STARTERS, AND BREAKERS FOR EACH BLOWER
   d. PRIMARY CIRCUIT PROTECTION USING INTERNAL FUSED MAIN DISCONNECT
   e. SURGE AND LIGHTING PROTECTION
   f. MAIN POWER BLOCK BRANCH CIRCUIT PROTECTION WITH CIRCUIT BREAKERS FOR MOTOR
   g. MOTOR STARTER WITH OVERLOAD PROTECTION AND CIRCUIT BREAKER 120 VAC/1P POWER TRANSFORMER
   h. EMERGENCY STOP BUTTON
   i. GREEN LIGHT - VACUUM BLOWERS ON
   j. RED LIGHT/BUTTON - VACUUM BLOWERS OFF (PUSH BUTTON TO CLEAR CONDITION)

3. A SYSTEM OPERATIONS, MONITORING, AND MAINTENANCE (OM&M) MANUAL SHALL BE PROVIDED WITH THE CONTROL PANEL DESCRIBING THE INSTALLATION, OPERATION, TESTING , NOTIFICATION, PERSONEL, AND MAINTENANCE REQUIREMENTS.

4. A VIMS MEMBRANE IDENTIFICATION SIGN SHALL BE INSTALLED IN UTILITY AND MECHANICAL ROOMS (SEE DETAIL 5, SHEET VIMS-6). THIS SIGN IS TO BE PLACED ON THE WALLS AT EYE LEVEL AND SHALL NOT BE COVERED OVER. THE LOCATION OF THIS NOTIFICATION WILL BE DETERMINED BY THE CONTRACTOR, OWNER, OR BUILDING OFFICIAL

D. SSD SYSTEM VACUUM MONITORING

1. VACUUM PRESSURE FOR EACH BLOWER UNIT/SYSTEM SHALL BE MONITORED USING PERMANENT PRESSURE DIFFERENTIAL MAGNEHELIC GAUGES, INSTALLED AT THE BLOWER UNIT. THE SSD VACUUM PRESSURE WILL BE MEASURED IN THE VENT RISERS WITH 1/8-INCH THREADED, BARBED FITTINGS CONNECTED TO 3/16-INCH ID VINYL TUBING AND ROUTED TO MAGNEHELIC GAUGES CAPABLE OF MEASURING 0-10 INCHES OF WATER DIFFERENTIAL.

2. THE GAUGES WILL BE MOUNTED ON THE EXTERIOR OF THE BOWER UNITS IN AN ABS PLASTIC WATHERPROOF ENCLOSURE WITH PRE-INSTALLED THREADED PRESSURE CONNECTIONS.

   ACCEPTABLE MAGNEHELIC GAUGE: ASHCROFT TYPE 1134 4-1/2" LOW PRESSURE DIFFERENTIAL GAUGE OR EQUIVALENT.

E. ON-SITE COMMUNICATION TESTING

1. A COMMUNICATION TEST SHALL BE CONDUCTED BY THE VIMS DESIGNER TO EVALUATE THE ABILITY OF THE PROPOSED BLOWER AND SUB-SLAB SOIL TO TRANSMIT COLLECTED SOIL VAPORS TO THE ANTICIPATED EXTRACTION POINTS, AND TO DETERMINE THE OPTIMAL SIZING OF THE BLOWER UNIT.

2. THE TEST WILL BE CONDUCTED ON A EACH OF THE THREE RISERS CONSTRUCTED FOR THE SSD SYSTEM. TEMPORARY VACUUM MONITORING PROBES WILL BE INSTALLED AT VARYING DISTANCES FROM THE VENT PIPING AS AVAILABLE DURING CONSTRUCTION TO EVALUATE THE EXTENT OF THE EFFECTIVE PRESSURE FIELD BENEATH THE SLAB.

3. A REPORT OF TESTING WILL BE ISSUED TO DOCUMENT THE TESTING RESULTS AND PROVIDE RECOMMENDATIONS FOR THE BLOWER SYSTEM, SIZING, AND LOCATIONS.

F. OPERATION, MONITORING, AND MAINTENANCE (OM&M) PLAN

1. AN ADDENDUM TO THE SITE MANAGEMENT PLAN WILL BE PREPARED AS AN OPERATION, MONITORING, AND MAINTENANCE (OM&M) PLAN AND WILL INCLUDE:

   - SSD SYSTEM INSTALLATION DETAILS (AS-BUILTS),
   - RESULTS OF THE INITIAL SYSTEM EVALUATION/TESTING, AND FOLLOW-UP INDOOR AIR ANALYSES;
   - AN ORGANIZATION CHART FOR THE OM&M OF THE SSD SYSTEM;
   - AN OVERVIEW OF THE SSD SYSTEM WITH DRAWINGS AND MANUFACTURER SPECIFICATIONS;
   - INSPECTION PROCEDURES AND SCHEDULE;
   - MONITORING/SAMPLING PROCEDURES AND SCHEDULE, IF REQUIRED, AND
   - DATA COLLECTION DOCUMENTATION AND REPORTING REQUIREMENTS.

2. THE OM&M PLAN SHALL BE COMPLETED WITHIN 4 WEEKS AFTER SYSTEM STARTUP.

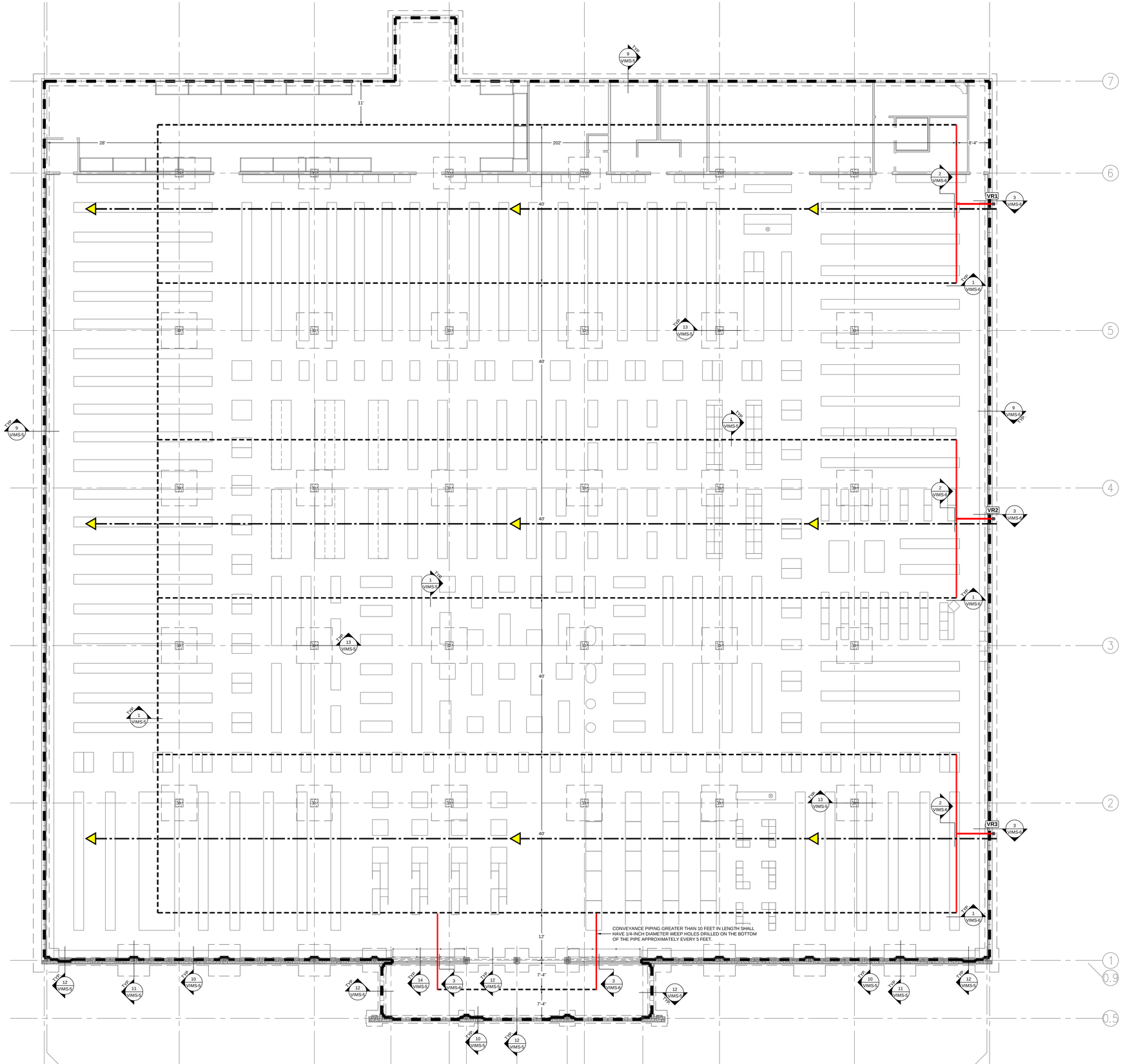
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Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9600

HOBBY LOBBY
Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
Scale: NOT TO SCALE Date: 4/8/2020
Prjct Mngr: PMH
Store address: 811 JEFFERSON RD.
ROCHESTER, NY 14623
STORE NO.

GENERAL NOTES

VIMS-2



LEGEND

- 4" I.D. PERFORATED SCH 40 PVC VAPOR COLLECTION PIPING WITH (4) 1/4-INCH DIAMETER HOLES DRILLED 90° APART EVERY 2 FEET.
- 4" I.D. SOLID SCH 40 PVC BELOW SLAB CONVEYANCE PIPE
- EXTENT OF VAPOR INTRUSION MITIGATION SYSTEM MEMBRANE
- VR1 6" VENT RISER TO ROOF LOCATION
- VACUUM MONITORING POINT
- 3/8-INCH VINYL TUBING INSIDE 3/4-IN TO 1.5-INCH PVC PIPING

SCALE IN FEET

VIMS MEMBRANE AND VAPOR COLLECTION PIPE LAYOUT

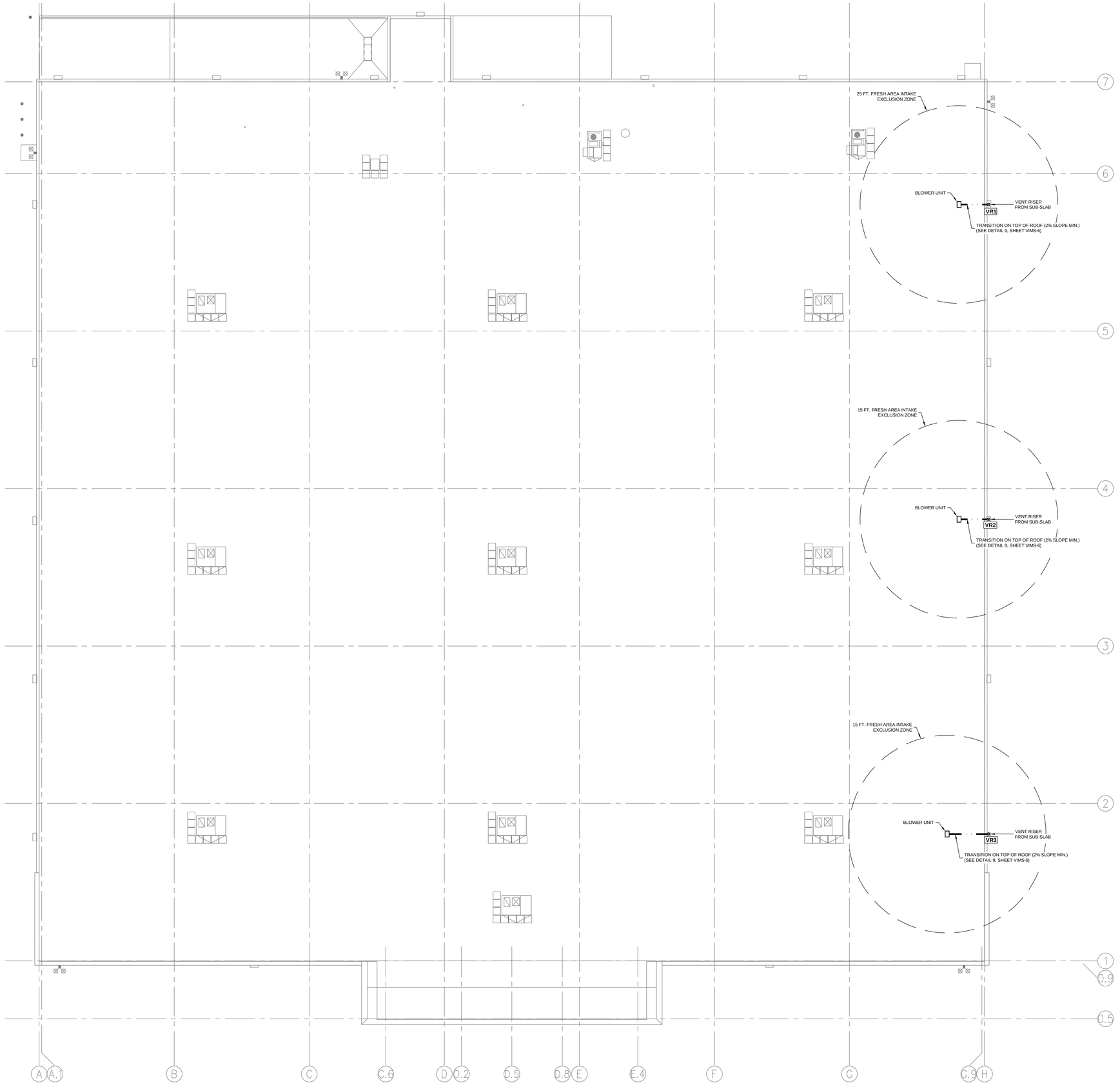
Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9000

HOBBY LOBBY
Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772

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VIMS-3

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LEGEND

4" I.D. STEEL OR CAST IRON CONVEYANCE PIPE

VR1 VENT RISER FROM SUB-SLAB LOCATION

10 0 5 10
SCALE IN FEET

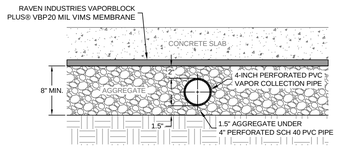
ROOF VENT LAYOUT

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

HOBBY LOBBY
Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
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VIMS-4

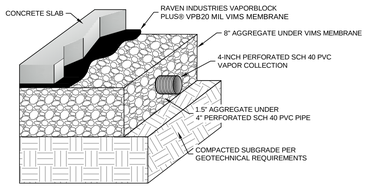
NOTE: ALL PIPE DIMENSIONS SHOWN ARE INSIDE DIAMETER (ID) UNLESS OTHERWISE NOTED.



NOTE:
ARCHITECT AND CONTRACTOR TO ENSURE DRAINAGE FROM AGGREGATE LAYER TO PREVENT BUILD-UP OF WATER INSIDE THE ROCK.

1 TYPICAL VIMS MEMBRANE AT PERFORATED VENT PIPE LOCATIONS

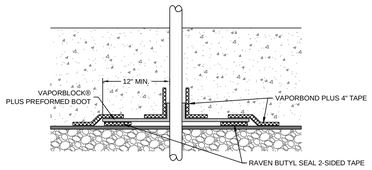
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NOTE:
ARCHITECT AND CONTRACTOR TO ENSURE DRAINAGE FROM AGGREGATE LAYER TO PREVENT BUILD-UP OF WATER INSIDE THE ROCK.

2 VIMS MEMBRANE CONFIGURATION

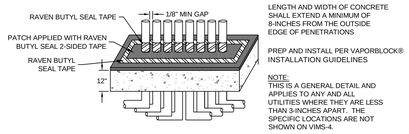
NOT TO SCALE



PREP AND INSTALL PER VAPORBLOCK® INSTALLATION GUIDELINES

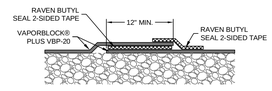
3 VIMS MEMBRANE PENETRATION

NOT TO SCALE



4 VIMS MEMBRANE BANK

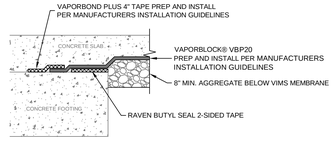
NOT TO SCALE



PREP AND INSTALL PER VAPORBLOCK® INSTALLATION GUIDELINES

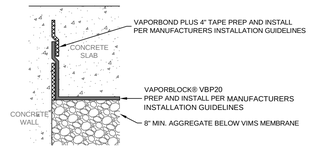
5 TYPICAL MEMBRANE TERMINATION OVERLAP

NOT TO SCALE



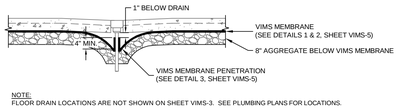
6 TYPICAL HORIZONTAL MEMBRANE TERMINATION

NOT TO SCALE



7 TYPICAL VERTICAL MEMBRANE TERMINATION

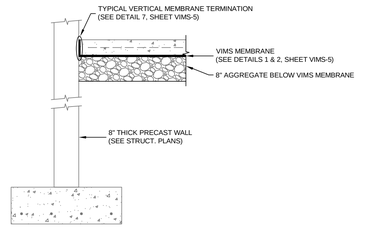
NOT TO SCALE



NOTE:
FLOOR DRAIN LOCATIONS ARE NOT SHOWN ON SHEET VIMS-3. SEE PLUMBING PLANS FOR LOCATIONS.

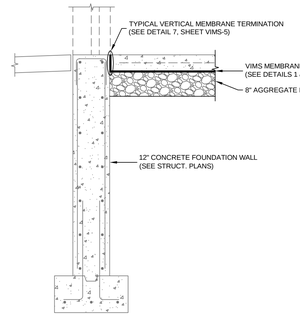
8 TYPICAL VIMS MEMBRANE AT FLOOR DRAIN

NOT TO SCALE



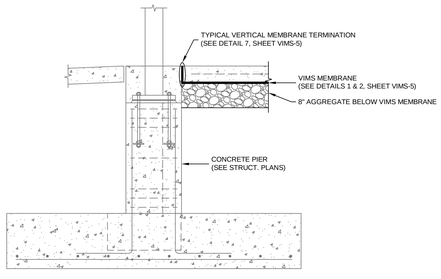
9 VIMS MEMBRANE AT EXTERIOR PRECAST WALL

NOT TO SCALE; REF: STRUCTURAL DETAILS 6 & 7, SHEET S0.2



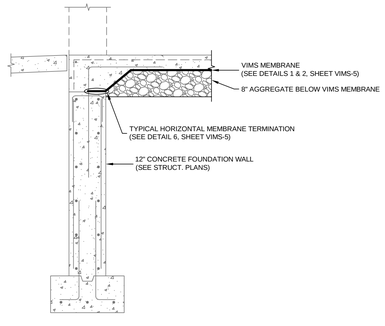
10 VIMS MEMBRANE AT EXTERIOR CONCRETE WALL

NOT TO SCALE; REF: STRUCTURAL DETAIL 10, SHEET S0.2



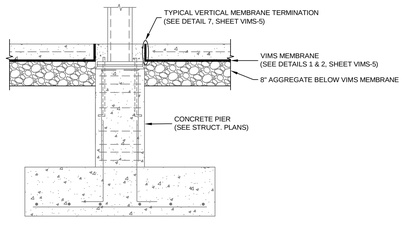
11 VIMS MEMBRANE AT EXTERIOR PIER / FOOTING

NOT TO SCALE; REF: STRUCTURAL DETAIL 11, SHEET S0.2



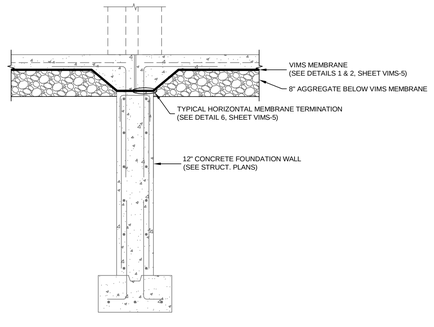
12 VIMS MEMBRANE AT EXTERIOR ENTRANCE

NOT TO SCALE; REF: STRUCTURAL DETAIL 9, SHEET S0.2



13 VIMS MEMBRANE AT INTERIOR PIER / FOOTING

NOT TO SCALE



14 VIMS MEMBRANE AT CONCRETE FOUNDATION WALL

NOT TO SCALE; REF: STRUCTURAL DETAILS 6 & 7, SHEET S0.2

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

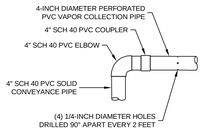
HOBBY LOBBY
Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
Scale: NOT TO SCALE Date: 4/8/2020
Prjct Mngr: PMH
Store address: 811 JEFFERSON RD.
ROCHESTER, NY 14623
STORE NO.

VAPOR INTRUSION MITIGATION SYSTEM DETAILS - MEMBRANE

VIMS-5

N:\ENVIRONMENTAL\GENERAL ENVIRONMENTAL PROJECTS (7000)\2020\73207018 JEFFERSON RD SSD NY\73207018 VIMS.DWG

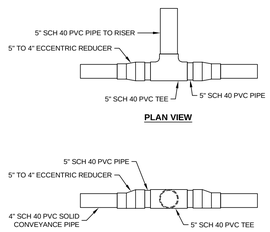
NOTE: ALL PIPE DIMENSIONS SHOWN ARE INSIDE DIAMETER (ID) UNLESS OTHERWISE NOTED.



NOTE:
CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHALL HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

1 VAPOR COLLECTION PIPES TRANSITION TO CONVEYANCE PIPES

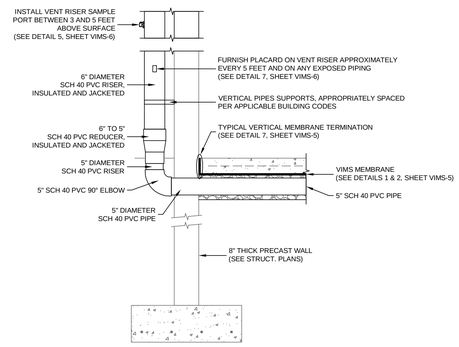
NOT TO SCALE



NOTE:
CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHALL HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

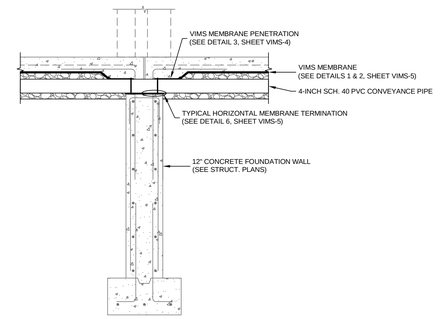
2 CONVEYANCE PIPES TO VENT RISER

NOT TO SCALE



3 VENT RISER AT EXTERIOR WALL

NOT TO SCALE



4 VIMS MEMBRANE AT INTERIOR CONCRETE FOUNDATION WALL

NOT TO SCALE; REF: STRUCTURAL DETAILS 6 & 7, SHEET S0.2



NOTES:
1. INSTALL ON PIPING EXTERIOR BETWEEN 3 AND 5 FEET ABOVE SURFACE GRADE
2. TAP A 1/2-INCH THREAD FOR REDUCING FITTING. SEAL THREADS PERMANENTLY TO PIPE FOR GAS APPLICATIONS WITH PIPE THREAD SEALANT.
3. APPLY GAS-RATED TEFLON TAPE ON INLINE COUPLER THREADS TO ALLOW FOR REMOVAL (YELLOW-THREAD TAPE)

5 VENT RISER SAMPLE PORT

NOT TO SCALE



THIS NOTIFICATION IS TO BE INSTALLED IN UTILITY AND MECHANICAL ROOMS AND PLACED ON THE WALLS AT EYE LEVEL AND SHALL NOT BE COVERED OVER.

LOCATION OF NOTIFICATION TO BE DETERMINED BY PROJECT CONTRACTOR, OWNER OR BUILDING OFFICIAL.

SIGN CAN BE PURCHASED AT http://www.complianceigns.com/terracon.shtml

6 VIMS MEMBRANE IDENTIFICATION SIGN

NOT TO SCALE



PLASTIC STICKER WITH ADHESIVE BACKING.

LARGE LETTERS MIN 1/2" HIGH

RED LETTERS ON WHITE BACKGROUND

3" MIN. REQUIRED

THIS SIGN SHALL BE POSTED ON EACH VENT RISER APPROXIMATELY EVERY FIVE FEET, AND ALSO ON ANY EXPOSED RISER PIPING.

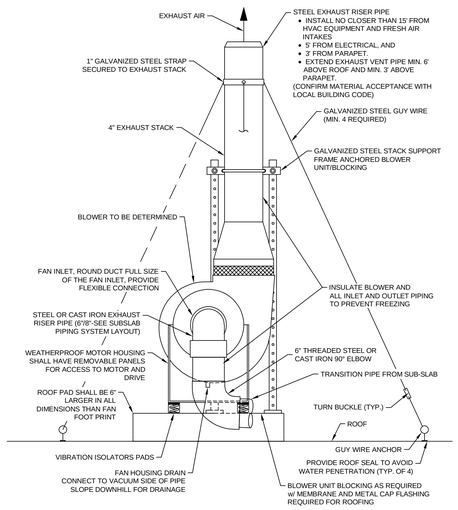
PLACARD CAN BE PURCHASED AT http://www.complianceigns.com/terracon.shtml

7 PLACARD AT VENT RISER OUTLET

NOT TO SCALE

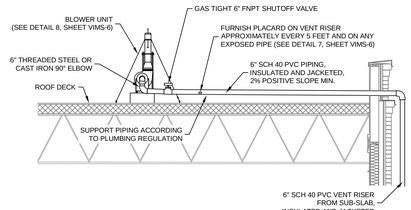
WARNING!

SOIL GAS VENT STACK MAY CONTAIN ELEVATED LEVELS OF CONTAMINANTS, DO NOT PLACE AIR INTAKE WITHIN 25 FEET.



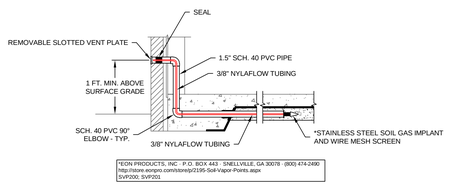
8 BLOWER UNIT DETAIL

NOT TO SCALE



9 VERTICAL TO HORIZONTAL TRANSITION FOR LATER ABOVE ROOF DECK

NOT TO SCALE



*EON PRODUCTS, INC - P.O. BOX 443 - SNELLVILLE, GA 30078 - (800) 474-2490
http://store.eonpro.com/stores/p/2195-Soil-Vapor-Points.aspx
SVP200; SVP201

10 SSDS VACUUM MONITORING POINT

NOT TO SCALE

N:\ENVIRONMENTAL\GENERAL ENVIRONMENTAL PROJECTS (7000)\20207\3207018 JEFFERSON RD SSD NY\73207018 VIMS.DWG

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

HOBBY LOBBY
Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
Scale: NOT TO SCALE Date: 4/8/2020
Prjct Mngr: PMH
Store address: 811 JEFFERSON RD.
ROCHESTER, NY 14623
STORE NO.
VIMS-6

VAPOR INTRUSION MITIGATION SYSTEM DETAILS - PIPING

Appendix F

Terracon November 2020 Installation Observation and Start-Up Report

July 6, 2021

811 Jefferson Partners, LLC
90 Goodway Drive, Suite 2
Rochester, New York, 14623

Attn: Mr. Joe Akel – Project Manager
P: 585 537-5616
E: joea@teamfsi.com

Re: **Annual Summary of Operations and Maintenance**
Sub-Slab Depressurization System
811 Jefferson Road
Henrietta, New York

Dear Mr. Akel:

Terracon Consultants – NY, Inc. (Terracon) provided periodic observations of the Sub-Slab Depressurization System Installation and Start-Up to verify conformance with our design drawings and details. Terracon has prepared this letter report along with associated observation reports as an attachment to document the installation and its operation.

Sub-Slab Depressurization System (SSDS)

The SSDS design was prepared in general accordance with the NYSDOH document titled *Guidance for Evaluating Soil Vapor Intrusion in the State of New York,* October 2006. Installation of the SSDS was completed between May and September 2020. Consistent with the overall objective of the SSD to reduce the potential for soil vapor intrusion into the new 811 Jefferson building, the SSDS was installed beneath the new floor slab. The system included the following:

- Gas Vent System
  - Aggregate Layer
  - Sub-Slab Vapor Vent Piping
  - Above Slab Gas Vent Riser
  - Sub-Slab Vacuum Monitoring Probe
- VIMS Membrane
  - Materials (20 Mil Sheet Membrane)
  - Penetration Seals
- Quality Assurance
  - Trained Subcontractor
  - Pre-Installation Conference
  - Installation Monitoring/Observation
- Submittals (Engineer Approvals, NYSDEC Review)

SSDS Observations

Field observations of the installation during construction and operation were made on:

- 5/4/2020: Initial site visit and review of vacuum monitoring points, initial trench excavation and aggregate construction
- 5/13/2020, 5/18/2020, 5/20/2020, 5/26/2020: Review of the VIMS membrane and aggregate construction
- 9/21/2020: Review of SSDS panel and record pressure readings at monitoring points during SSDS Start-Up.
- 3/17/2021: Review of SSDS panel and record pressure readings at monitoring points.

SSDS Performance Results

The observed operation vacuum readings at the monitoring points are as follows:

- 9/21/2021 – Monitoring point pressures during startup

Location	Monitor Port Pressure (Inches of water)		
	Blue	Green	Yellow
Line 1	0.19	0.42	0.35
Line 2	0.20	0.43	0.38
Line 3	0.20	0.38	0.33

- 3/17/2021 – Yearly monitoring point pressure readings

Location	Monitor Port Pressure (Inches of water)		
	Blue	Green	Yellow
Line 1	0.02	0.31	0.24
Line 2	0.12	0.32	0.28
Line 3	0.02	0.19	0.18

The SSDS is designed to operate continuously and appears to be operating as designed. No modifications are suggested at this time.

If you have any questions, please contact our office at your convenience.

Sincerely,
Terracon Consultants - NY, Inc.

Charles B. Guzzetta
Office Manager

Joseph Robichaud, Jr., P.E.
Office Manager (Albany, NY)

Attachment – Installation Observation Reports

Attachment – Installation Observation Reports

GENERAL OBSERVATION REPORT

Report Number: J5201035.0024
Service Date: 05/04/20
Report Date: 05/11/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of vacuum monitoring points installed under VIMS membrane and aggregate. Each monitoring point utilized all stainless-steel hardware and is color coded along the three runs. See attached diagram and site photos.

.

Weather during today's activities was overcast and 50's degrees Fahrenheit.

Services:

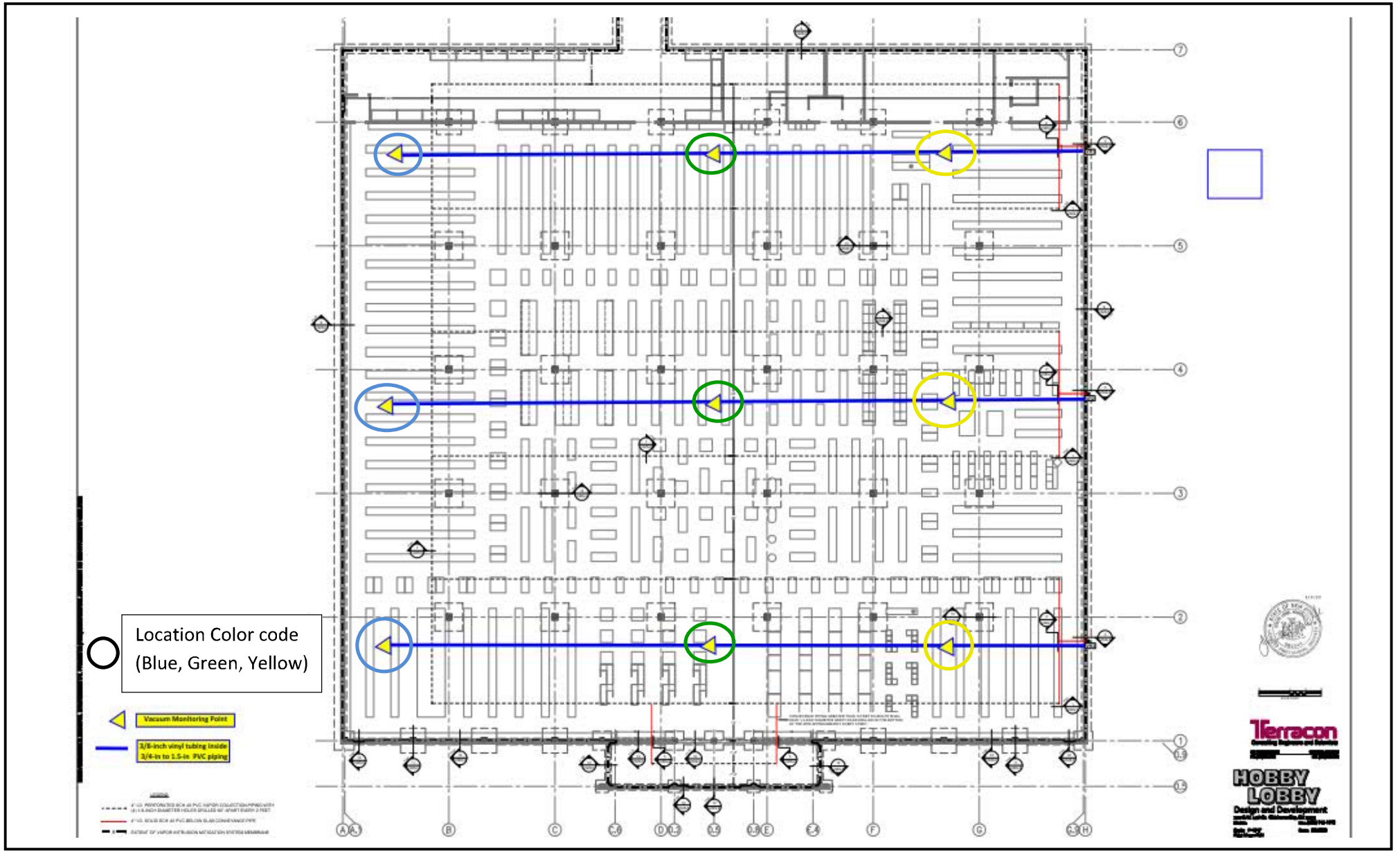
Terracon Rep.: Travis Wooden
Reported To: Team FSI
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia

(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: for

Mark Erteg
Construction Inspector II

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.



811 Jefferson Partners LLC	Site Plan:	Terracon
Attn: Sal Imburgia	Report Number: J5201035.0024	
90 Goodway Drive, Suite 2	Technician: Travis Wooden	15 Marway Cir, Ste 2B
Rochester, NY 14623	Date: 05/04/20	Rochester, NY 14624-2300
	Scale: Not to Scale	585-247-3471





811 Jefferson Partners LLC	Site Plan:	Terracon
Attn: Sal Imburgia	Report Number: J5201035.0024	
90 Goodway Drive, Suite 2	Technician: Travis Wooden	15 Marway Cir, Ste 2B
Rochester, NY 14623	Date: 05/04/20	Rochester, NY 14624-2300
	Scale: Not to Scale	585-247-3471





811 Jefferson Partners LLC	Site Plan:	Terracon
Attn: Sal Imburgia	Report Number: J5201035.0024	
90 Goodway Drive, Suite 2	Technician: Travis Wooden	15 Marway Cir, Ste 2B
Rochester, NY 14623	Date: 05/04/20	Rochester, NY 14624-2300
	Scale: Not to Scale	585-247-3471





811 Jefferson Partners LLC	Site Plan:	Terracon
Attn: Sal Imburgia	Report Number: J5201035.0024	
90 Goodway Drive, Suite 2	Technician: Travis Wooden	15 Marway Cir, Ste 2B
Rochester, NY 14623	Date: 05/04/20	Rochester, NY 14624-2300
	Scale: Not to Scale	585-247-3471

GENERAL OBSERVATION REPORT

Report Number: J5201035.0025
Service Date: 05/13/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of Vapor Intrusion Mitigation System (VIMS) membrane and aggregate. Construction was observed and in general compliance with plan labeled *Jefferson Rd VIMS Plans Specs (Final 2-25-2020) sealed* and dated 2/25/2020. See attached diagram and site photos.

.

Weather during today's activities was overcast and 70's degrees Fahrenheit.

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia

(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

GENERAL OBSERVATION REPORT

Report Number: J5201035.0025
Service Date: 05/13/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 1	VIMS System



Photo No. 1	VIMS System



Photo No. 3	VIMS System



Photo No. 4	VIMS System

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0026
Service Date: 05/18/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of Vapor Intrusion Mitigation System (VIMS) membrane and aggregate. Construction was observed and in general compliance with plan labeled *Jefferson Rd VIMS Plans Specs (Final 2-25-2020) sealed* and dated 2/25/2020. See attached diagram and site photos.

.

Weather during today's activities was overcast and 70's degrees Fahrenheit.

Services:

Terracon Rep.: Travis Wooden
Reported To: Team FSI
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

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Service Date: 05/18/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 1	Water Isolation



Photo No. 2	Water and column isolation



Photo No. 3	VIMS vent isolation



Photo No. 4	VIMS vent isolation

Services:

Terracon Rep.: Travis Wooden
Reported To: Team FSI
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

GENERAL OBSERVATION REPORT

Report Number: J5201035.0026
Service Date: 05/18/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 5	Vapor Block VBP20

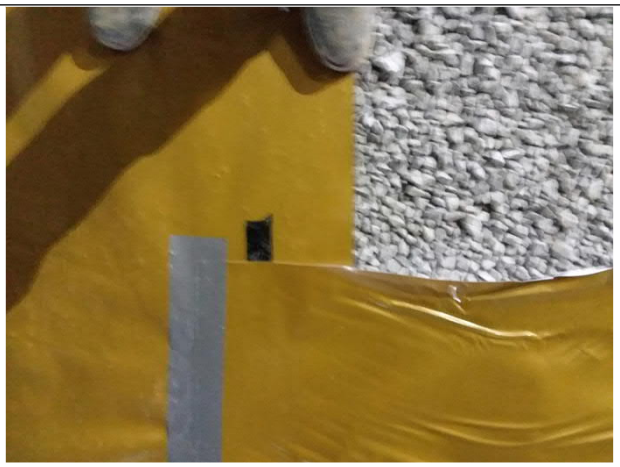


Photo No. 6	Joint, 12" overlab with double sided butyl



Photo No. 7	Penetration boot

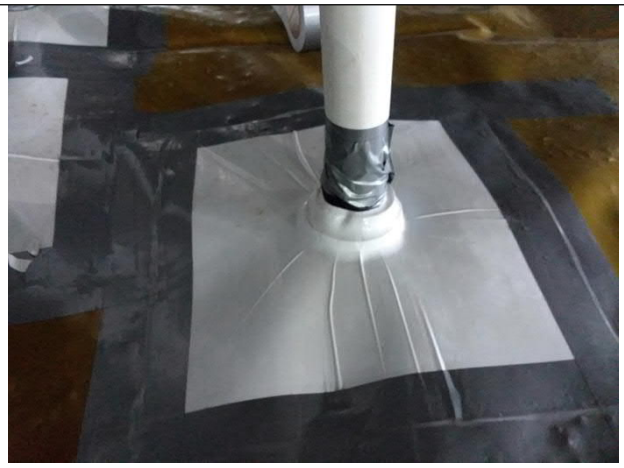


Photo No. 8	Penetration

Services:

Terracon Rep.: Travis Wooden
Reported To: Team FSI
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

GENERAL OBSERVATION REPORT

Report Number: J5201035.0027
Service Date: 05/20/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of Vapor Intrusion Mitigation System (VIMS) membrane and aggregate. Construction was observed and in general compliance with plan labeled *Jefferson Rd VIMS Plans Specs (Final 2-25-2020) sealed* and dated 2/25/2020. See attached diagram and site photos.

.

Weather during today's activities was overcast and 70's degrees Fahrenheit.

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia

(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

GENERAL OBSERVATION REPORT

Report Number: J5201035.0027
Service Date: 05/20/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 1	VIMS monitoring pipe



Photo No. 2	VIMS west side



Photo No. 3	VIMS west side



Photo No. 4	VIMS west side

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0027
Service Date: 05/20/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 5	VIMS system



Photo No. 6	Vims wall termination

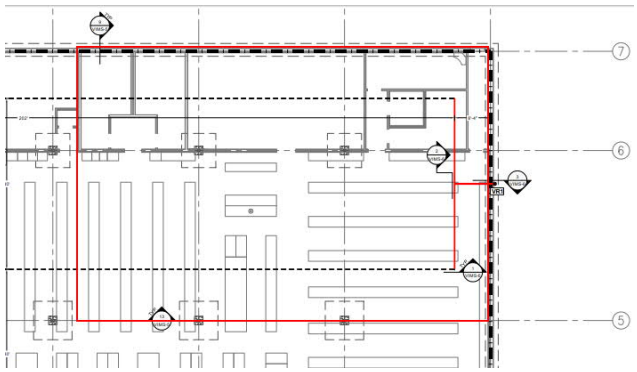


Photo No. 7	VIMS area completed

(Photo No.)	(Enter caption.)

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0028
Service Date: 05/21/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of Vapor Intrusion Mitigation System (VIMS) membrane and aggregate. Construction was observed and in general compliance with plan labeled *Jefferson Rd VIMS Plans Specs (Final 2-25-2020) sealed* and dated 2/25/2020. See attached diagram and site photos.

.

Weather during today's activities was overcast and 70's degrees Fahrenheit.

Services:

Terracon Rep.: Travis Wooden
Reported To: Team FSI
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0028
Service Date: 05/21/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

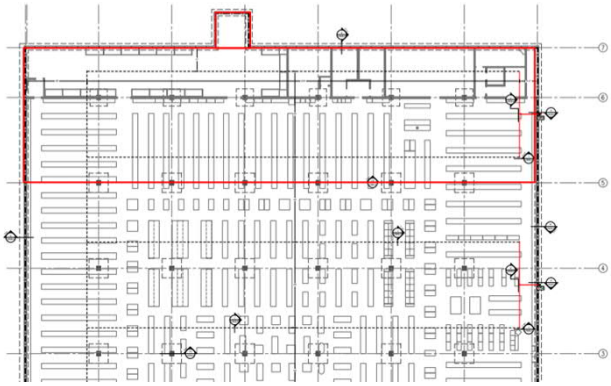


Photo No. 1	Vims and rebar area



Photo No. 2	Looking east



Photo No. 3	Looking west



Photo No. 4	Pump hose spaced off vims system

Services:

Terracon Rep.: Travis Wooden
Reported To: Team FSI
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0029C
Service Date: 05/26/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of Vapor Intrusion Mitigation System (VIMS) membrane and aggregate. Construction was observed and in general compliance with plan labeled *Jefferson Rd VIMS Plans Specs (Final 2-25-2020) sealed* and dated 2/25/2020. See attached diagram and site photos.

.

Weather during today's activities was overcast and 70's degrees Fahrenheit.

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia

(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0029C
Service Date: 05/26/20
Report Date: 11/03/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 1	VIMS System



Photo No. 1	VIMS System



Photo No. 3	VIMS System



Photo No. 4	VIMS System

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0031
Service Date: 06/01/20
Report Date: 11/23/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction observation services limited to review of Vapor Intrusion Mitigation System (VIMS) membrane and aggregate. Construction was observed and in general compliance with plan labeled *Jefferson Rd VIMS Plans Specs (Final 2-25-2020) sealed* and dated 2/25/2020. See attached diagram and site photos.

.

Weather during today's activities was overcast and 70's degrees Fahrenheit.

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia

(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for

Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0031
Service Date: 06/01/20
Report Date: 11/23/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 1	VIMS System



Photo No. 1	VIMS System

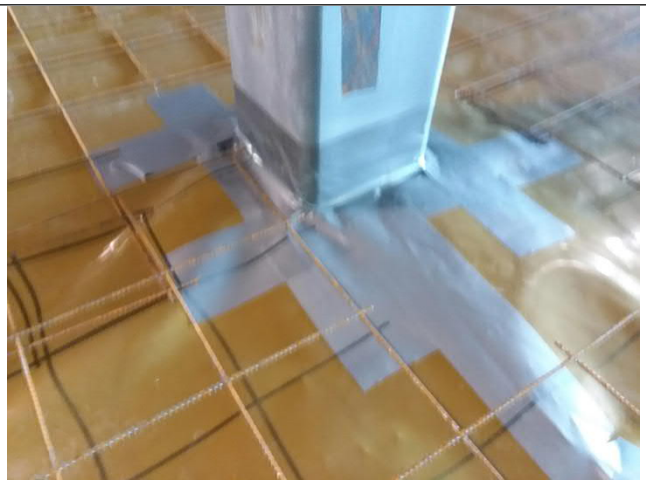


Photo No. 3	VIMS System



Photo No. 4	VIMS System

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: Mark Erceg for
Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0034
Service Date: 09/21/20
Report Date: 09/28/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction monitoring services limited to SSDS panel inspection and pressure readings at monitoring ports. Typical low and high panel settings are in the attached photos. Blowers were set to automatic position and running while testing. Pressure readings were observed at each of the three runs and are summarized below.

Location	Monitor Port Pressure (Inches of water)		
	Blue	Green	Yellow
Line 1	0.19	0.42	0.35
Line 2	0.20	0.43	0.38
Line 3	0.20	0.38	0.33

Weather during today's activities was clear, 70 degrees F.

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: for
Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0034
Service Date: 09/21/20
Report Date: 09/28/20

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

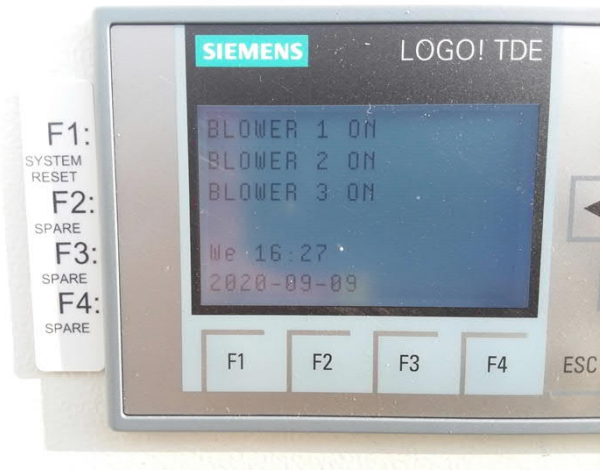


Photo No. 1	Blower overview

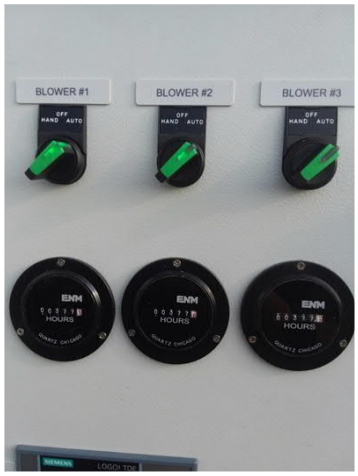


Photo No. 2	Control panel switches and hours

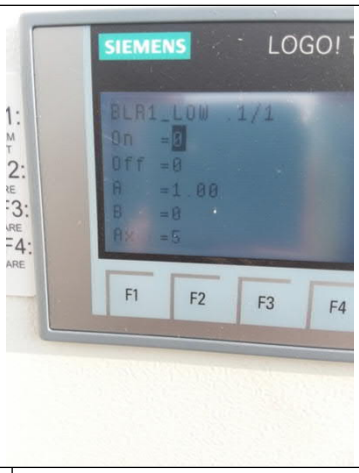


Photo No. 3	Blower Low Settings

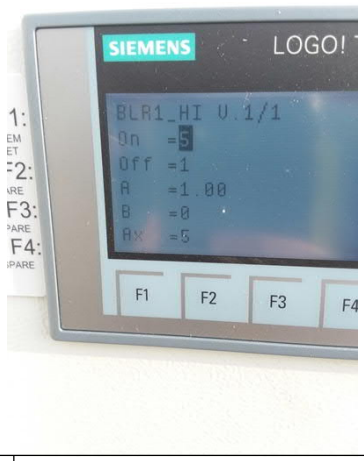


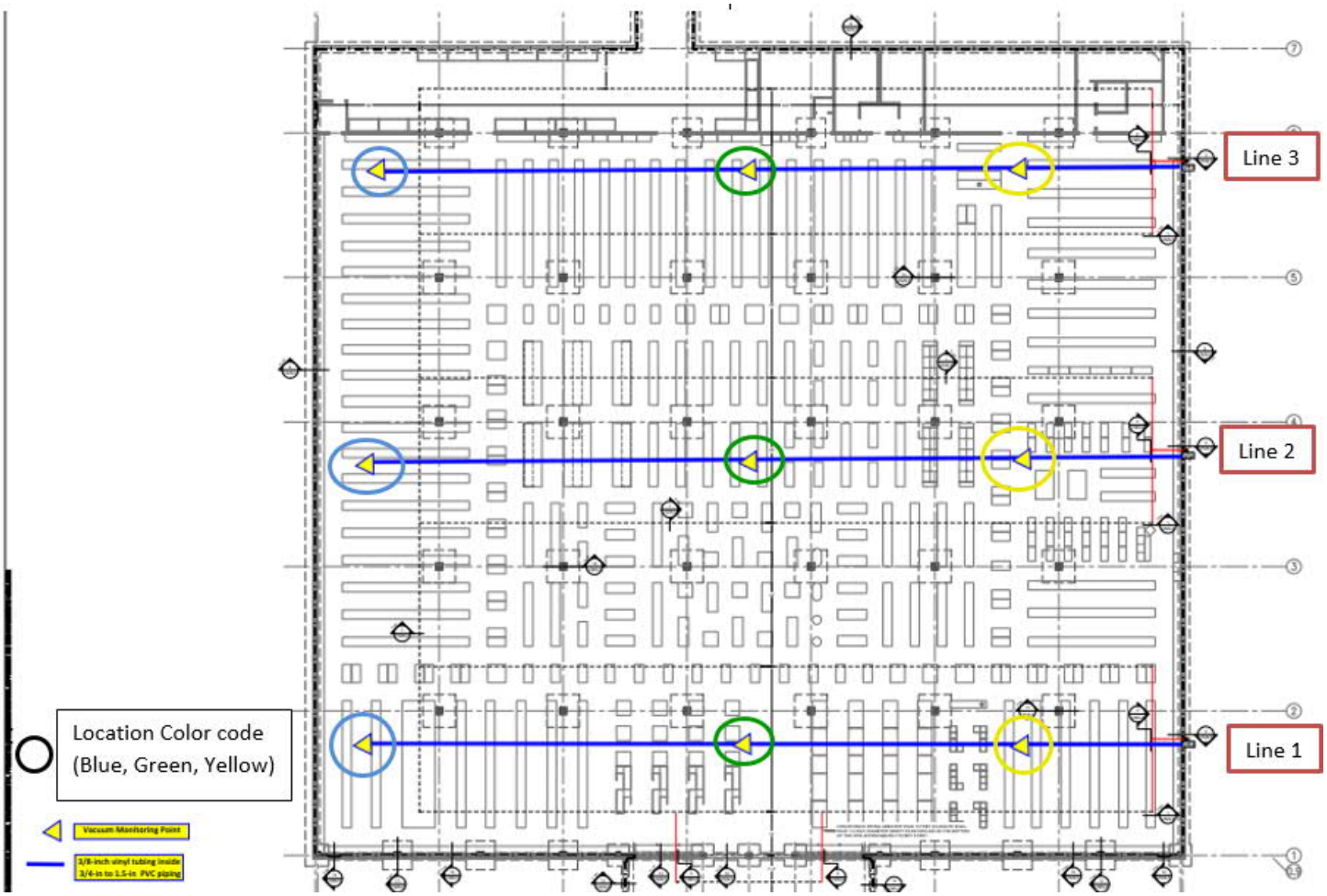
Photo No. 4	Blower High Settings

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: for
Mark Erceg
Construction Inspector II

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Vims color code and layout



Typical pressure reading with Magnehelic

811 Jefferson Partners LLC	Site Plan:	Terracon
Attn: Sal Imburgia	Report Number: J5201035.0034	
90 Goodway Drive, Suite 2	Technician: Travis Wooden	15 Marway Cir, Ste 2B
Rochester, NY 14623	Date: 09/21/20	Rochester, NY 14624-2300
	Scale: Not to Scale	585-247-3471

GENERAL OBSERVATION REPORT

Report Number: J5201035.0035
Service Date: 03/17/21
Report Date: 07/08/21

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035

A Terracon representative visited the above-referenced site to provide construction monitoring services limited to SSDS panel inspection and pressure readings at monitoring ports. Blowers were set to automatic position and running while testing. Pressure readings were observed at each of the three runs and are summarized below.

Location	Monitor Port Pressure (Inches of water)		
	Blue	Green	Yellow
Line 1	0.02	0.31	0.24
Line 2	0.12	0.32	0.28
Line 3	0.02	0.19	0.18

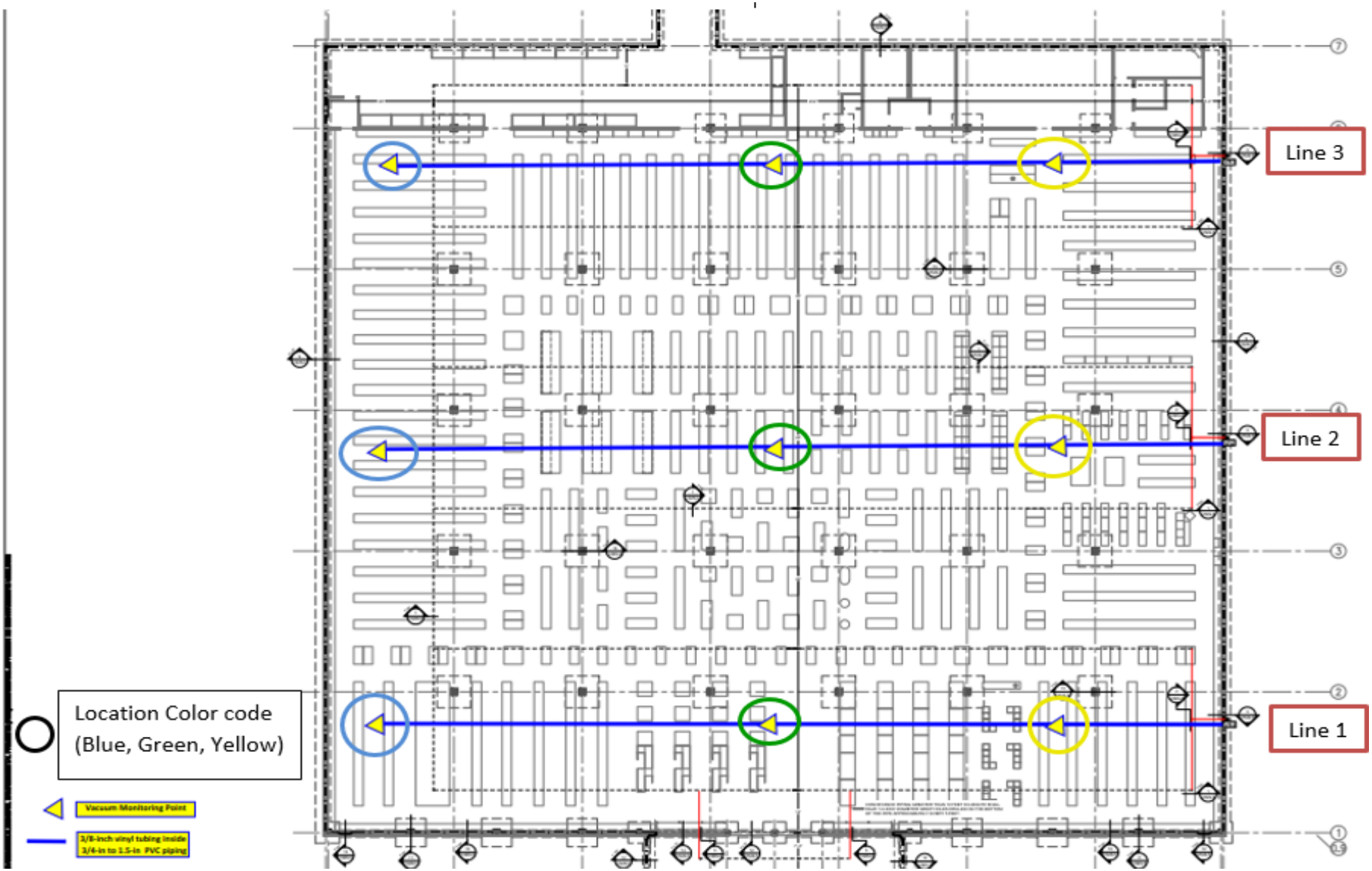
Weather during today's activities was overcast and 60’s degrees F.

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors, Joe Akel

Reviewed By: for
Mark Erceg
Construction Inspector II

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811 Jefferson Partners LLC	Site Plan:	Terracon
Attn: Sal Imburgia	Report Number: J5201035.0035	
90 Goodway Drive, Suite 2	Technician: Travis Wooden	15 Marway Cir, Ste 2B
Rochester, NY 14623	Date: 03/17/21	Rochester, NY 14624-2300
	Scale: Not to Scale	585-247-3471

GENERAL OBSERVATION REPORT

Report Number: J5201035.0035
Service Date: 03/17/21
Report Date: 03/28/21

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 5	Line 2, Green port

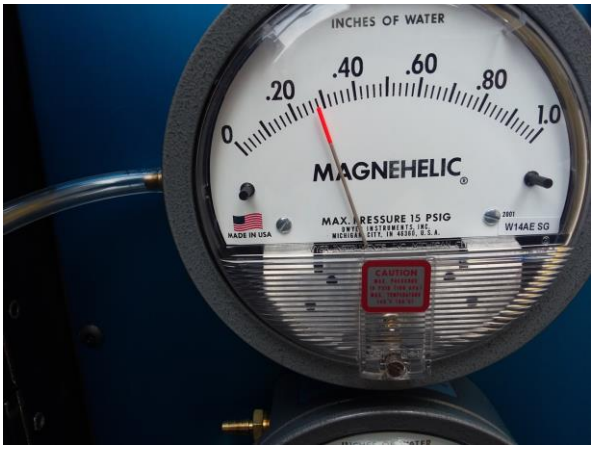


Photo No. 6	Line 2, Yellow port

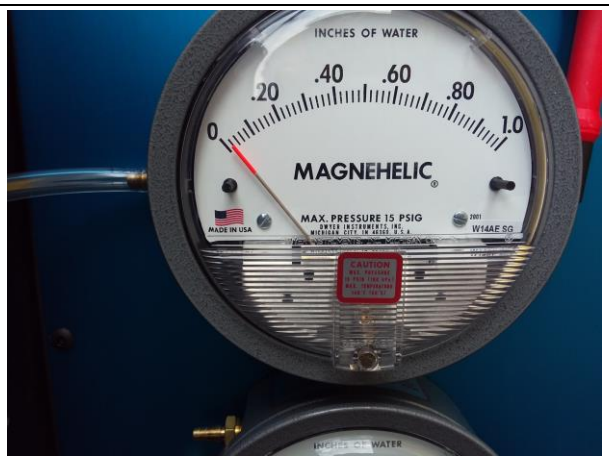


Photo No. 7	Line 3, Blue port



Photo No. 8	Line 3, Green port

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:

(1) 811 Jefferson Partners LLC, Sal Imburgia

(1) Team FSI Acoustical Systems Inc. & General Contractors. Joe Akel

Reviewed By: for

Mark Erceg
Construction Inspector II

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GENERAL OBSERVATION REPORT

Report Number: J5201035.0035
Service Date: 03/17/21
Report Date: 03/28/21

Terracon
15 Marway Cir, Ste 2B
Rochester, NY 14624-2300
585-247-3471

Client

811 Jefferson Partners LLC
Attn: Sal Imburgia
90 Goodway Drive, Suite 2
Rochester, NY 14623

Project

811 Jefferson Rd.
811 Jefferson Rd
Henrietta, NY 14623

Project Number: J5201035



Photo No. 9	Line 3, Yellow Port



Photo No. 10	Blower Panel



Photo No. 11	Main Panel

Photo No. 12	Not Used

Services:

Terracon Rep.: Travis Wooden
Reported To:
Contractor:
Report Distribution:
(1) 811 Jefferson Partners LLC, Sal Imburgia
(1) Team FSI Acoustical Systems Inc. & General Contractors. Joe Akel

Reviewed By: for

Mark Erceg
Construction Inspector II

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Appendix G

Terracon Operation Monitoring and Maintenance Plan/Health and Safety Plan

Operation, Maintenance, and Monitoring Plan

Vapor Intrusion Mitigation System
Hobby Lobby
Former AB Dick Facility Site
Rochester, NY

NYSDEC Site No. BCP # C828148
USEPA ID # NYR000160143

August 3, 2021
Terracon Project No. J5201035

Prepared for:

811 Jefferson Partners, LLC
90 Goodway Dr., Suite 2
Rochester, New York 14623

Prepared by:
Terracon Consultants - NY, Inc.
Rochester, New York

Offices Nationwide Established in 1965
Employee-Owned terracon.com
Terracon
Geotechnical Environmental Construction Materials Facilities

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7)**:**

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **C828148**

Site Name Former A B Dick Facility

Site Address: 811 Jefferson Road Zip Code: 14623
City/Town: Town Of Henrietta
County: Monroe
Site Acreage: 12.213

Reporting Period: April 27, 2019 to May 18, 2021 (SSDS)	YES	NO
1. Is the information above correct?	×	
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	×	
The Site was sold to 811 Jefferson Partners, LLC 11/20/2019. The Site was subdivided into 2 parcels: Lot RA-1, Agree Central, LLC, 11.579 acres and Lot RA-2 RP811 Jeff LLC, 0.334 acres. SSDS on Lot RA-1.		
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		×
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		×
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		×

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	×	
7. Is the SSDS in place and functioning as designed?	×	

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

Box 2A

	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?		×
9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	×	

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C828148 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
162.09-1-3	811 Jefferson Partners LLC	Ground Water Use Restriction Landuse Restriction Monitoring Plan Site Management Plan IC/EC Plan

1. The property may be used for Commercial and/or Industrial Use as defined in 6 NYCRR Part 375-1.8.
2. The use of groundwater underlying the site is prohibited without necessary water quality treatment as determined by NYSDOH and Monroe County Department of Health.
3. The site must be in compliance with the Site Management Plan which includes annual groundwater monitoring to assess the performance and effectiveness of the remedy.

162.09-1-3.1	RP 811 Jeff LLC	Ground Water Use Restriction Monitoring Plan Site Management Plan IC/EC Plan

Box 4

Description of Engineering Controls

Parcel	Lot	Engineering Control
162.09-1-3	RA-1	Vapor Mitigation

1. Sub-slab Depressurization System (SSDS) startup date 9/21/2020 at Hobby Lobby Store. SSDS is designed to operate continuously.
2. The potential for soil vapor intrusion will be evaluated for any building to be constructed on-site or on the Affected Area of the Unither Property to the south of the Area 2 ditch.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Annual OM&M report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the SSDS Engineering Control employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

EC CERTIFICATIONS
SITE NO. C828148

Box 6

to the best of my knowledge, information and belief

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joseph Robichaud, Jr. (print name) at Terracon, 15 Marway Circle, Suite 2B, Rochester, NY, (print business address)

am certifying as Remedial Party (Consultant / Monitor) (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

7/6/2021
Date

IC/EC CERTIFICATIONS

to the best of my knowledge, information and belief

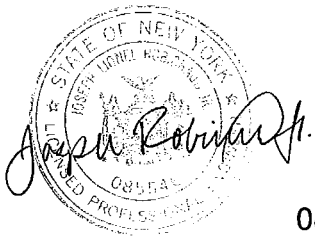
Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joseph Robichaud, Jr. at Terracon, 15 Marway Circle, Suite 2B, Rochester, NY,
print name — print business address

am certifying as a Professional Engineer for the Remedial Party (Consultant / Monitor)
(Owner or Remedial Party)



08/03/2021

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification	Stamp (Required for PE)	Date

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Purposes and Uses 2
1.3 Health and Safety Summary 2
1.4 OM&M Personnel Qualifications 3
1.5 OM&M Organization Table 3
1.6 Roles and Responsibilities 3
1.7 Modification and Update Procedures 4

2.0 OVERVIEW OF THE VAPOR MITIGATION SYSTEM 5
2.1 Vapor Membrane 5
2.2 Vapor Collection Piping 6
2.3 Vacuum Monitoring Points 6
2.4 Active Ventilation Systems 6
2.5 System Operations 7
2.6 Protocols for Activities Potentially Affecting the System 7

3.0 INSPECTION PROCEDURES, SCHEDULE, AND CHECKLIST 8
3.1 Routine Inspection 8
3.1.1 Site Conditions 8
3.1.2 Vapor Mitigation System Conditions 8
3.1.3 Vapor Mitigation System Maintenance and Repair 8
3.1.4 Maintenance and Repair Procedures 8
3.1.5 Troubleshooting 8
3.1.6 Maintenance Schedule and Checklist 8

4.0 MONITORING PROCEDURES, SCHEDULE, AND CHECKLIST 9
4.1 Indoor Air Monitoring 9
4.2 Sub-Slab Vacuum 9
4.3 Vent Riser and Discharge Measurement 9
4.4 Weekly Inspection 9
4.5 System Sampling and Analysis 9

5.0 DATA COLLECTION, DOCUMENTATION, AND REPORTING 10
5.0 Data Collection 10
5.1 Data Assessment 10
5.2 OM&M Reports 10
5.3 Five Year Review Reports 10
5.4 Incident Reports 11

6.0 CONTINGENCY PLAN 12

7.0 GENERAL COMMENTS 14

TABLE OF CONTENTS (CONT'D)

APPENDIX A – SYSTEM DRAWINGS AND DESIGN SPECIFICATIONS

APPENDIX B – HEALTH AND SAFETY PLAN

APPENDIX C – OPERATIONS MAINTENANCE AND MONITORING CHECKLIST

APPENDIX D – MANUFACTURER SPECIFICATIONS

APPENDIX E – INCIDENT REPORT

OPERATION, MAINTENANCE, AND MONITORING PLAN

VAPOR INTRUSION MITIGATION SYSTEM
HOBBY LOBBY
811 JEFFERSON RD., ROCHESTER NY
TERRACON PROJECT NO. J5201035
SEPTEMBER 30, 2020

Former AB Dick Facility Site
NYSDEC Site No. BCP # C828148
USEPA ID # NYR000160143

1.0 INTRODUCTION

This Operations, Maintenance, and Monitoring (OM&M) Plan was developed for the Hobby Lobby building pad located at 811 Jefferson Road, Rochester, New York (site). The purpose of the OM&M Plan is to provide OM&M operators with instructions about how the building vapor mitigation system (VIMS), described below, is operated and maintained in general accordance with the approved VIMS design.

1.1 Background

The development is a Hobby Lobby retail store and associated parking lot. We understand that the site property was formerly operated as the AB Dick Company and others which used hazardous materials to manufacture photocopy imaging equipment. The property is surrounded by residential, commercial and industrial properties.

A chlorinated solvent groundwater plume has been described beneath the building footprint, and concentrations of petroleum-related compounds were detected above EPA screening levels in shallow and deep soils within the proposed building footprint. Contaminants detected include metals, polyaromatic hydrocarbons (PAHs), PCBs, petroleum and chlorinated volatile organic compounds (VOCs). A Site Management Plan was developed for the site in November 2017 to outline the requirements for monitoring the effectiveness of the institutional and engineering controls implemented for the site.

Due to the location of the new building relative to these reported areas, there is a potential for contaminant vapor intrusion (VI) to the new building. Based on this VI potential, an active Sub-Slab Depressurization System (SSDS) is appropriate as a proactive approach for incorporation

into the overall design of the newly constructed facility. The SSDS, combined with an installed sub-slab membrane, incorporates VIMS for the facility.

FSI of Rochester, NY was the general contractor (GC) for the project. The building consists of an approximately 54,300 square foot (ft^2) building pad. Design drawings and specifications for the building's VIMS were completed by Hobby Lobby Design and Development. The design of the VIMS was reviewed by the NYDER and was approved for construction by the above-mentioned entities.

The site is currently in the New York State (NYS) Brownfield Cleanup Program (BCP) Site No. C828148 which is administered by New York State Department of Environmental Conservation (NYSDEC). This Plan is a required element of the remedial program Site Management Plan (SMP)for the Former AB Dick Facility Site located in Henrietta, New York (hereinafter referred to as the "Site").

This VIMS is intended as an engineering control to minimize risks to the buildings tenants, maintenance workers, and customers resulting from potential vapor intrusion. Completion of the VCP requires that the VIMS is operated and maintained in accordance with the approved Site Management Plan (SMP) developed in conjunction with the VCP and an approved OM&M Plan.

1.2 Purposes and Uses

The purpose of the VIMS is to limit and control the migration of volatile organic compound (VOC) vapors from the subsurface into the occupied spaces of the building. VOCs that have migrated vertically and horizontally to the area beneath the building footprint is evacuated from beneath the building using a system consisting of gravel aggregate, collection pipes, a VIMS Membrane barrier, and mechanical blowers, in accordance with the approved SMP. Vapor collection piping laid horizontally in the gravel layer is connected to solid piping that runs to a mechanical extraction system on the building rooftop. The discharge is directly to the atmosphere. A landfill gas barrier is constructed of a composite liner installed above the vapor mitigation piping network and is intended to impede upward vapor migration for vapors not collected by the extraction system. Vacuum monitoring points ate installed to monitor for negative pressure beneath the membrane. System drawings and additional installation specifications are included in Appendix A. The OM&M activities described in this document only apply to work related to vapor mitigation and not any other building maintenance activities.

1.3 Health and Safety Summary

VOCs can have an impact on human health. Tetrachloroethene (PCE) and trichloroethene (TCE) are the primary VOCs found in soil gas at the site. These compounds, and their degradation products, are typically created by volatilization from groundwater, and may be present at the site as accumulation in utility vaults and corridors, crawl spaces, sumps and other underground

structures. All work activities are to be planned and conducted in such a way as to minimize the potential for exposure. Air monitoring will be conducted in accordance with this OM&M plan.

OM&M personnel must comply with applicable Federal, State, and local laws, including Occupational Safety and Health Administration (OSHA) rules and regulations per the Code of Federal Regulations (CFR) Part 29. A Health and Safety Plan is included in Appendix B.

A confined space entry program for the site was not necessary since the building is a slab-on-grade design.

1.4 OM&M Personnel Qualifications

All OM&M activities must be conducted by qualified personnel who have been properly trained and authorized to conduct such activities under the direction and supervision of a qualified engineer. OM&M personnel must be knowledgeable about the details in this plan.

1.5 OM&M Organization Table

The OM&M organization table shows the tiers of responsibility for vapor mitigation, maintenance and monitoring and oversight/regulating organizations.

Table 2 – Origination Table

Organization	Contact	Title	Phone No.
FSI	Joe Akel	Regional Environmental Coordinator	585-537-5616
Terracon	Chuck Guzzetta	OM&M Program Manager	585-363-7001
	Travis Wooden	OM&M Technician	585-363-7005
NYSDEC	Danielle Miles	Project Manager	585-226-5349
NYSDOH	Mark Sergott	Public Health Specialist	518-402-7860

1.6 Roles and Responsibilities

The specific responsibilities and authority of management, safety and health, and other personnel on the site are detailed in the following paragraphs.

Building Operations Manager(s)

The Building Operations Manager is responsible for reading this OM&M Plan and being aware of the VIMS in the building and knowledge of this Plan. The Building Operations Manager is also responsible for notifying the OM&M PM of activities that may affect the VIMS, such as those described in Section 6, prior to conducting any such activity.

Regional Environmental Coordinator

A REC, if designated, is responsible for overall facility regulatory compliance, and to facilitate the building operations to allow for system operations in accordance with the SMP.

Building Owner

The Building Owner is responsible for appointing an OM&M Program Manager (PM) and ensuring that vapor mitigation and OM&M are conducted for the building. The Building Owner is also responsible for notifying the OM&M PM of any activities that may affect the VIMS, such as those described in Section 6, prior to conducting any such activity

OM&M PM

The OM&M PM directs and supervises all personnel assigned VIMS activities and serves as the primary point of contact for the Building Owner regarding OM&M work operations. The OM&M PM will work with the Building Owner to implement the OM&M Plan. The specific duties of the OM&M PM include:

- Preparing and coordinating the VIMS-related work;
- Providing OM&M personnel with work assignments and overseeing their activities;
- Fulfilling reporting requirements;
- Coordinating safety and health efforts;
- Ensuring effective emergency response coordination; and
- Serving as primary site liaison with public agencies and officials, the Building Owner, Store Operations Managers, and OM&M Technicians.

OM&M Technician

OM&M Technicians are responsible for conducting VIMS site activities as directed by the OM&M PM. Example site activities include, but are not limited to, air and system monitoring, reporting, sampling, and data collection.

1.7 Modification and Update Procedures

Certain steps must be taken, and organizations must be notified if modifications to the VIMS, OM&M procedures, or monitoring procedures are planned. Prior to making modifications to the VIMS, approval must first be granted by 811 Jefferson, Hobby Lobby, and/or NYDER. Requests must be formally submitted 30 days prior to the anticipated modification.

Table 2 – Modification Notification

Modification or Update	Entities to Notified
Conversion from an active to passive system	811 Jefferson. Hobby Lobby, NYDER
Frequency of monitoring	811 Jefferson. Hobby Lobby, NYDER
Monitoring analyses	811 Jefferson. Hobby Lobby, NYDER
OM&M firm or PM	811 Jefferson. Hobby Lobby
System alarms	811 Jefferson. Hobby Lobby, NYDER
Equipment	811 Jefferson. Hobby Lobby

Changes to equipment, procedures, or frequency of maintenance or monitoring will be submitted as an addendum to this plan and must include any related documentation. All holders of this plan will receive copies of the addendums to insert in the OM&M Plan. Minor modifications (i.e., a change in the brand of lubricating oil used) do not require notification of changes.

2.0 OVERVIEW OF THE VAPOR MITIGATION SYSTEM

As a means of limiting the intrusion of VOC vapors within the building, Terracon recommended an active VIMS as an engineering control to be incorporated into the design of the building. This section summarizes the design components of the VIMS. In addition, details regarding system operations and activities that have the potential to reduce the effectiveness of the VIMS are discussed.

2.1 Vapor Membrane

The VIMS consists of VaporBlock® VI-20 sheet composite membrane. The membrane and vent system were constructed after all subsurface preparations were completed, just prior to pouring the concrete slab. The membrane was installed in accordance with the manufacturer's instructions. Where utilities, vent lines, piping, electrical conduits, etc. penetrate the vims membrane, a butyl seal tape provided a gas-tight seal around the penetration in accordance with the manufacturers specifications as shown on VIMS Detail 5, Sheet VIMS-5.

The VIMS membrane is constructed immediately beneath the floor slab. Therefore, **it is imperative that no holes, excavations, or other penetration of the barrier is conducted within the floor slab.** This includes any planned modifications to the slab, for example, any relocation or repairs to utilities, alteration to freezer supports, electrical conduits, ATMs, or hydraulic lifts. Should the membrane become damaged, it will be necessary to retain the services of an experienced membrane installation contractor for proper repair, sealing, and testing.

Inspections during the installation of the VIMS system were conducted to document that it was constructed as specified in the construction documents. Oversight included inspection and documentation of the products delivered, observation of smoke testing, coupon sample testing, and subsequent repairs made. Terracon also provided documentation that the VIMS was installed in general accordance with the design plans.

2.2 Vapor Collection Piping

The vent piping is comprised of 4-inch PVC slotted screen piping spaced laterally throughout the foundation. This piping was laid within an 8-inch gravel aggregate layer constructed at subgrade.

The vent system is exhausted to the roof with 4-inch diameter cast iron vent risers and terminated on the building roof. The vent risers are constructed on exterior walls. Sample ports were installed in the vent risers to provide access for monitoring vapors collected within the system. The locations of the risers to the roof are shown on the as-built drawings included in Appendix A.

2.3 Vacuum Monitoring Points

Sub-slab vacuum monitoring probes were installed to measure the sub-slab vacuum created by the VIMS across the building footprint. These probes consist of 3/8-inch OD Nylafow tubing connected to a stainless-steel soil gas implant equipped with a barred fitting and wire mesh screen, terminating in the aggregate layer. The probes were installed in 1.5-inch pvc piping, sealed, and secured to be accessible from the building exterior. The probe locations are shown on sheet VIMS-3, and details of the probe is shown as Detail 10, Sheet VIMS-6 of the VIMS plans.

2.4 Active Ventilation Systems

The active ventilation system consists of three vacuum blowers used to create negative pressure and to extract vapors from beneath the sub-slab. The blower is sized to extract up to 400 cubic feet per minute (CFM) at 6.0 inches of water. The blower's Installation, Operation and Maintenance Manual is included in Appendix D. The location of the blower is shown on the As-built drawings, and the design specifications are depicted on Sheet VMS-3 of Appendix A.

The vacuum blower is attached to a piping system designed to extract vapors from beneath the building slab. Vent risers run from the sub-slab region to the rooftop, connecting the sub-slab gas collection pipes to the mechanical extraction system. The vent riser is constructed of cast iron pipe. Collection pipe and riser layout are shown on VMS-3 of Appendix A. The subsurface gas collection system is laid out such that all surface areas immediately beneath the building slab are located within approximately 25 feet of a collection pipe.

Pressure transducers as an adjustable high/low vacuum pressure switch are installed at each blower system and wired to a control panel. If the vacuum within the system falls below 0.5 inches

water column (w.c.) or greater than 4.5 inches w.c., the pressure switch will send a signal to a control panel, illuminating a red indicator light on the control panel. If the vacuum is within the selected range for each blower, a green light shall be illuminated. These components were calibrated by the installer in accordance with the manufacturer requirements.

2.5 System Operations

The active ventilation system will operate 24 hours a day, unless monitoring demonstrates that pulsing of the system or conversion to a passive system is acceptable. Modification of the system from constant active operation must be approved as noted in Section 1.7, and is generally only considered after 5-years of operation.

System alarms and response requirements are shown in Table 3 below.

Table 3 – Alarms and Responses

Alarm	Response
• **Mechanical Extraction System Shutdown** • **High-vacuum response (> 4.5 In WC)** • **Low-vacuum response (< 0.5 in WC)** • **Motor overload**	• **Notification of OM&M personnel and Building Maintenance** • **Response within less than 8 hours by OM&M personnel for diagnosis and corrective action.**

2.6 Protocols for Activities Potentially Affecting the System

Various activities related to building modifications can impact the competency of the membrane. Any puncture or tear in the membrane reduces the effectiveness of the barrier (e.g., cutting, drilling, or hammering into the building slab, addition of portable structures, removal of building floor slabs, or alterations that could expose the membrane or collection piping). Examples include any planned modifications to the slab, for example, any relocation or repairs to utilities, alteration to freezer supports, electrical conduits, ATMs, or hydraulic lifts.

A work plan for any modifications to the system must be approved by the Departments prior to beginning construction for building alterations and modifications. During planned activities that will penetrate the membrane, the construction contractor needs to have air monitoring equipment, membrane repair materials and equipment, and an individual trained to conduct repairs on-site during the construction activities.

Please refer to Section 6.0 for more details regarding activities and events that could affect the operation of the VIMS and appropriate response actions.

3.0 INSPECTION PROCEDURES, SCHEDULE, AND CHECKLIST

This section discusses procedures for routine inspections and VIMS maintenance and repair. The schedule for conducting inspections, maintenance and repair is also discussed in this section.

3.1 Routine Inspection

Routine inspections must be conducted quarterly. An OM&M checklist is included in Appendix C. This form must be completed for every routine inspection and emergency response visit. The form records site conditions and VIMS conditions as discussed below.

3.1.1 Site Conditions

OM&M personnel will record site conditions, such as date, time, temperature, and weather conditions. OM&M personnel will also record changes to the building operation or layout that could potentially affect the operation of the VIMS.

3.1.2 Vapor Mitigation System Conditions

OM&M personnel will conduct an inspection of the VIMS, including visible components of the extraction system components, to identify if significant site condition changes and damage or degradation of the VIMS components have occurred.

3.1.3 Vapor Mitigation System Maintenance and Repair

Routine maintenance must be conducted quarterly in accordance with manufacturer recommendations included in Appendix D. Routine maintenance on the VIMS must be documented in the OM&M checklist included in Appendix C.

3.1.4 Maintenance and Repair Procedures

During routine site visits, OM&M personnel will check the condition of the blower as applicable. Based on inspections of the other equipment, the OM&M personnel will determine if any additional repairs are necessary. OM&M personnel will inform the OM&M PM and/or the Building Owner if immediate repairs are needed or if the repairs can be scheduled for the next site visit.

3.1.5 Troubleshooting

The manufacturer specifications in Appendix D include information on troubleshooting procedures for the vapor mitigation equipment.

3.1.6 Maintenance Schedule and Checklist

Routine maintenance on the VIMS must be conducted quarterly and documented in the OM&M checklist included in Appendix D.

4.0 MONITORING PROCEDURES, SCHEDULE, AND CHECKLIST

The Sampling and Analysis Plan (SAP) details the requirements for monitoring the VIMS to ensure functionality. The SAP includes requirements for monitoring frequency and recording monitoring events.

Initial monitoring (Baseline) parameters were collected for the system at startup. References to these parameters are included below.

4.1 Indoor Air Monitoring

Indoor air monitoring requirements are discussed in the SMP. This section and the SMP are intended to comply with requirements set forth by the SMP.

4.2 Sub-Slab Vacuum

The OM&M personnel will record sub-slab vacuum from the monitoring points installed beneath the slab and recorded on the OM&M checklist in Appendix C. Readings will be taken during regularly scheduled and emergency response site visits. Vacuum measured beneath the slab should be greater than 0.02 in. WC (5 pascals) for an effective system.

4.3 Vent Riser and Discharge Measurement

Routine monitoring of vent riser and discharge from the extraction blowers is necessary to confirm the methane venting systems are functioning as intended. The OM&M personnel will record various readings on the OM&M Checklist in Appendix C. Volatile organic compound (VOC) measurements will be recorded from the vent riser sample ports with an organic vapor analyzer (OVA). Readings will be taken during regularly scheduled and emergency response site visits. These readings along with the system flow rates, can be used to estimate the system total VOC discharge for the monitoring period.

4.4 Weekly Inspection

Weekly inspection will include a visual inspection of for any broken or damaged interior utilities such as plumbing fixtures, floor drains, electrical conduits, etc. within the floor slab what would serve as a potential entry route for subslab vapors. OM&M personnel shall also note any changes to the facility's operation that could potentially affect the operation of the vapor mitigation system.

4.5 System Sampling and Analysis

System sampling and analysis is outlined in the SMP. It includes data quality objectives, sample collection methods and procedures, laboratory analytical methods, sample containers, sample documentation procedures, and quality control details for VIMS discharge sampling and indoor air sampling.

Site and building conditions (e.g. pressure, temperature, wind speed, heating, ventilation and air conditioning [HVAC] conditions, potential VOC sources in building, etc.) shall be documented during monitoring.

5.0 DATA COLLECTION, DOCUMENTATION, AND REPORTING

This section summarizes the requirements for collecting, recording, and reporting data. Reporting must be conducted on an annual basis. A five-year review is also required in addition to reporting any potential incidents. The Annual Report and Five Year Review Report (if applicable) for the OMM will be submitted with the PRR. Any information pertinent to the SSDS will be included in the PRR such as monitoring analyses, changes to equipment, inspections, etc.

5.0 Data Collection

During the site visits, the OM&M personnel will record readings and observations on the OM&M Checklist (Appendix C). The data from the OM&M Checklist will then be inputted to a spreadsheet or database for electronic storage and transmittal. Additionally, system operational data will be recorded using the data loggers or other data storage means, as appropriate.

5.1 Data Assessment

The OM&M PM will review the OM&M Checklist after each site visit by OM&M personnel. The OM&M PM will assess the site data to determine if the VIMS is operating within design parameters and if any changes to the operation of the system should be implemented. The data will be analyzed graphically to assess performance and trends. Based on the data assessment, the OM&M personnel will make any modifications to the system operation prescribed by the OM&M PM.

5.2 OM&M Reports

OM&M checklists will be submitted to 811 Jefferson on a quarterly basis. Annual reports will summarize OM&M activities, monitoring data and results, equipment calibration, data assessment, system modifications, planned modifications, ventilation rates, incidents, corrective actions, and recommendations. The OM&M Annual report will be submitted to 811 Jefferson, Hobby Lobby, and NYDER for review. Reports will be reviewed by a Professional Engineer. Reporting requirements are listed in Table 5.

5.3 Five Year Review Reports

A review of the completed actions and operations at the site will be conducted every five years by the OM&M PM after initiation of the VIMS. A Five-Year Review Report will include the following components: Introduction, Site Background, Site Chronology, Monitoring Results, System

Performance, Technical Assessment, Issues, Corrective Actions, System Modifications, and Conclusions and Recommendations.

A technical assessment of the five-year review will address the following questions:

- Is the VIMS functioning as intended?
- Are the objectives, goals, and criteria used at the time of the vapor mitigation selection still valid?
- Have there been any significant changes in the distribution, concentration, or pressure of the subsurface gas at the site?
- Has any other information come to light that could call into question the protectiveness of the remedy?
- Should changes be made to the operation of the system?

The 5-year Review Report will be submitted to, 811 Jefferson, Hobby Lobby, and NYDER for review. The report will be reviewed by a State or New York Professional Engineer.

5.4 Incident Reports

An Incident Report will be submitted with quarterly monitoring reports or within 24 hours to, 811 Jefferson, Hobby Lobby, and NYDER should the following conditions occur:

1. Blower failure
2. Membrane damage or intentional breach of membrane (e.g, for utility repairs),
3. Both primary and backup power is lost, and the building is evacuated.
4. A fire occurs in the building.

An incident report form is included in Appendix E.

Table 4 – Reporting Requirements

Report	Receiving Organization(s)	Submittal Date	Individual Responsible
Quarterly OM&M Checklist	811 Jefferson Hobby Lobby	30 days after end of quarter	Building Owner/OM&M Firm
Annual Report	811 Jefferson. Hobby Lobby, NYDER	60 days after end of year	Building Owner/OM&M Firm
Five Year Review Report	811 Jefferson. Hobby Lobby, NYDER	90 days after end of fifth year	Building Owner/OM&M Firm

Incident Report	811 Jefferson Hobby Lobby	With quarterly report; or within 24 hrs if loss of primary and backup power; or fire occurs	Building Owner/OM&M Firm
Vapor Mitigation Operation, Maintenance, and Monitoring Modifications			**Individual Responsible**
Conversion from an active to passive system	811 Jefferson Hobby Lobby NYDER	Requests should be submitted at least 30 days prior to anticipated modification. Modifications will not be performed prior to consent from organizations.	Building Owner/OM&M Firm
Frequency of monitoring			Building Owner/OM&M Firm
Monitoring analyses			Building Owner/OM&M Firm
OM&M Firm(s)	811 Jefferson Hobby Lobby		Building Owner
System Alarms			Building Owner/OM&M Firm
Equipment			Building Owner/OM&M Firm

6.0 CONTINGENCY PLAN

Listed below are events which would trigger a contingency response, and appropriate response actions:

1. A real-time blower sensor activates a power off or high/low vacuum alarm.
    a. Notification of OM&M personnel. Response less than 24 hours by OM&M personnel for diagnosis and corrective action.

2. Any real-time sensor causes a faulty signal alarm.
    a. Notification of OM&M personnel. Response in less than 24 hours by OM&M personnel for diagnosis and corrective action.

3. Periodic indoor air VOC sampling, or vent pipe VOC discharge sampling, exceeds criteria.
    a. Document exceedance in appropriate report and notify Building Owner. If exceedance is in indoor air, notify Building Owner and arrange for resampling

within 48-hours. If exceedance persists for indoor air, system modifications may be required.

4. Primary power is lost at a building.
    a. Temporary loss of extraction blower and HVAC power is not considered a vapor intrusion hazard.

5. Backup power is lost at a building.
    a. If backup power is lost at a building, OM&M personnel will utilize hand-held air monitors to enter the building. The hand-held monitors should monitor for oxygen (O_2), LEL, hydrogen sulfide (H_2S), carbon monoxide (CO), and VOC vapors. After the return of power, additional readings will be collected prior to the re-entry of workers and/or visitors.

6. The building is vacant for extended periods.
    a. The vapor extraction blowers and sensors will be operated continuously, even though the building is vacant.

7. The slab/liner system is perforated due to utilities reworks.
    a. If a slab/liner system must be cored or cut for rework or utilities, then a portable 4-gas meter will be used to monitor the hole and worker breathing space. A temporary seal will be used if more than 5% LEL is detected. A permanent seal must be promptly constructed. See the applicable requirements in Section 2.6 regarding protocols for activities potentially affecting the system.

8. A fire or explosion occurs in a building.
    a. The Rochester Fire Department has primary authority and responsibility in case of fire or explosion. Prior to re-entry of workers and/or visitors, the Rochester Fire Department may direct the Building Owner to engage an approved vapor intrusion consultant to evaluate potential landfill gas sources.

9. Workers and/or visitors in the building submit health-related complaints (e.g., headaches, eyes irritated, trouble breathing, etc.).
    a. The Building Owner and OM&M PM will be immediately notified of any health-related complaints, and the Building Owner will promptly engage a Certified Industrial Hygienist to assess indoor air quality.

10. First year monitoring indicates that “active” sub-slab venting may be changed to “pulsed” or “passive” operation.
    a. The First Year Monitoring Report may recommend and implement reduced vapor intrusion OM&M, if justification is approved by DEC and DOH.

11. Fifth year monitoring recommends system design or operations changes.
    a. The Five-Year Monitoring Report may recommend and implement reduced vapor intrusion OM&M, including design changes or no further action, if justification is approved by DEC and DOH.

7.0 GENERAL COMMENTS

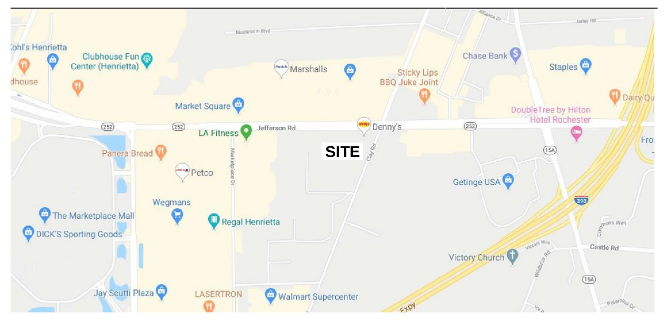
This OM&M Plan was prepared for the exclusive use at the Hobby Lobby 811 Jefferson Road Rochester, New York for specific application to the subject site, and has been prepared in accordance with generally accepted geo-environmental engineering practices. No warranties, either expressed or implied, are made or intended.

PLANS & SPECIFICATIONS FOR

VAPOR INTRUSION MITIGATION SYSTEM

811 JERRERSON ROAD
ROCHESTER, NEW YORK

PROJECT SITE LOCATION



INDEX OF SHEETS

VIMS-1	TITLE SHEET AND GENERAL NOTES
VIMS-2	GENERAL NOTES
VIMS-3	VIMS MEMBRANE AND VAPOR COLLECTION PIPING LAYOUT
VIMS-4	ROOF VENT LAYOUT
VIMS-5	VAPOR MITIGATION SYSTEM DETAILS - MEMBRANE
VIMS-6	VAPOR MITIGATION SYSTEM DETAILS - PIPING

NOTICE FOR CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND ALL LOCAL AND STATE REGULATIONS.

THE OWNER AND THE VIMS DESIGNER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND ALL LOCAL AND STATE REGULATIONS.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE VIMS DESIGNER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE VIMS DESIGNER.

IN CASE OF CONFLICT BETWEEN THESE PLANS AND OTHER SITE DESIGN DOCUMENTS AND/OR MANUFACTURER SPECIFICATIONS / REQUIREMENTS THE APPROPRIATE PARTIES / COMPANIES WITH CONFLICTING DOCUMENTATION SHALL CONFER TO DETERMINE A MUTUALLY AGREED UPON SOLUTION.

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NOTES

I. APPLICABILITY

A. GENERAL

1. THIS VAPOR INTRUSION MITIGATION SYSTEM (VIMS) PLAN PROVIDES DESIGN DRAWINGS, STANDARD DETAILS, AND ASSOCIATED SPECIFICATIONS FOR THE REFERENCED PROJECT. THE SYSTEM TO BE CONSTRUCTED IS AN ACTIVE SUB-SLAB DEPRESSURIZATION (SSD) SYSTEM COMBINED WITH A SEALED, SUB-SLAB MEMBRANE, DESIGNED TO RETARD INFILTRATION OF SOIL GAS VAPORS FROM BENEATH THE BUILDING SLAB TO INDOOR AIR. VENT RISERS INSTALLED IN INTERIOR WALLS ARE CONNECTED TO BLOWERS MOUNTED ON THE ROOF, AND THE SYSTEM ACHIEVES LOWER SUBSLAB AIR PRESSURE RELATIVE TO INDOOR AIR PRESSURE (OR NEGATIVE PRESSURE) BY DRAWING AIR FROM BENEATH THE UNDERSLAB MEMBRANE.

2. VIMS DETAILS PRESENTED IN THESE PLANS AND SPECIFICATIONS SHALL BE UTILIZED IN THE CONSTRUCTION OF THE BUILDING DESIGNATED ON SHEETS VIMS-1 THROUGH VIMS-6. THE BASIS OF DESIGN IS A SHEET MEMBRANE MANUFACTURED BY VAPORBLOCK® PLUS AND ANY ASSOCIATED MATERIALS AS DESCRIBED IN THESE PLANS. REFERENCE TO THESE PRODUCTS ARE PROVIDED TO DESCRIBE THE SYSTEM AND MATERIALS ONLY AND MAY BE SUBSTITUTED FOR EQUIVALENT PRODUCTS IF APPROVED BY THE VIMS DESIGNER.

3. THE VIMS MEMBRANE WILL ALSO SERVE AS A MOISTURE MEMBRANE AND WILL REPLACE ANY VAPOR OR MOISTURE BARRIER SPECIFIED IN THE STRUCTURAL DETAILS. INSTALLATION OF A MOISTURE OR VAPOR BARRIER BETWEEN THE VIMS MEMBRANE AND BUILDING FLOOR SLAB MAY VOID THE WARRANTY PROVIDED BY THE VIMS MEMBRANE MANUFACTURER.

B. SYSTEM COMPONENTS

1. THE VIMS CONSTRUCTION SHALL CONSIST OF, BUT NOT BE LIMITED TO, THE FOLLOWING:

   a. SUPPLY AND INSTALL 8-INCH AGGREGATE LAYER BENEATH CONCRETE SLAB
   b. SUPPLY AND INSTALL 4-INCH PVC PERFORATED VAPOR COLLECTION PIPING AND ASSOCIATED FITTINGS
   c. SUPPLY AND INSTALL PVC MANIFOLD PIPING
   d. SUPPLY AND INSTALL 20-MIL SHEET MEMBRANE LAYER
   e. SEAL 20 MIL MEMBRANE TO SEAMS, FOOTINGS, AND PENETRATIONS PER THE MANUFACTURER'S SPECIFICATIONS
   f. SUPPLY AND INSTALL VERTICAL VENT RISER PIPING, SAMPLE PORTS, AND GAS FITTINGS
   g. COMPLETE CONNECTION OF VERTICAL VENT RISER PIPING TO ROOF
   h. INSTALL ROOF-MOUNTED VACUUM BLOWER AND CONTROL SYSTEM
   i. PROVIDE ELECTRICAL SERVICE TO BLOWER AND CONTROL SYSTEM
   j. SUPPLY AND INSTALL BLOWER CONTROL SYSTEM AND TEST FOR OPERATION / EFFECTIVENESS
   k. SUPPLY AND INSTALL BLOWER CONTROL PANEL WITH MAGNEHELIC GAUGES AND VISUAL AND AUDIBLE ALARM SYSTEM AND TEST OPERATION.

2. ALL MATERIALS AND EQUIPMENT ARE TO BE DELIVERED TO THE PROJECT SITE IN THEIR ORIGINAL UNBROKEN PACKAGES BEARING THE MANUFACTURER'S LABEL SHOWING BRAND, WEIGHT, VOLUME, BATCH NUMBER AND DATE. MATERIALS ARE TO BE STORED AT THE PROJECT SITE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

II. VAPOR INTRUSION MITIGATION SYSTEM

A. GAS VENT SYSTEM

A.1 AGGREGATE LAYER

1. A MINIMUM 8-INCH LAYER OF GRAVEL AGGREGATE SHALL BE PROVIDED BENEATH THE CONCRETE SLAB. THE AGGREGATE LAYER SHALL BE A FINE TO MEDIUM AGGREGATE AND CONTAIN NO MORE THAN 5% FINES (I.E. ≤5% PASSING #200 SIEVE). THE GRADATION OF THE AGGREGATE PLACED BELOW THE MEMBRANE SHALL MEET THE FOLLOWING SPECIFICATIONS OR AS SPECIFIED IN THE GEOTECHNICAL REPORT IF APPROVED BY THE VIMS DESIGNER:

GRAVEL AGGREGATE		
Sieve	Percent Passing	
	3/4"	3/8"
1-1/2"	100	-
1"	95-100	-
3/4"	90-100	100
3/8"	20-55	70-95
No. 4	0-10	0-25
No. 8	0-5	0-10
ASTM C 131 Test Grading	B	C

2. ARCHITECT AND CONTRACTOR TO ENSURE DRAINAGE FROM GRAVEL AGGREGATE LAYER TO PREVENT BUILD-UP OF WATER INSIDE THE AGGREGATE LAYER.

3. THE AGGREGATE WILL BE PLACED 2-INCH ABOVE AND 1.5-INCHES BELOW THE VAPOR COLLECTION PIPING AS SHOWN IN DETAIL 1, SHEET VIMS-5.

4. ANY AGGREGATE REMOVED DURING PLACEMENT OF UTILITIES MUST BE PLACED BACK TO LEVEL GRADE AND COMPACTED AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. UTILITIES PLACED IN THE AGGREGATE LAYER MAY NOT BE LARGER THAN 1-INCH IN DIAMETER. UTILITIES LARGER THAN 1-INCH IN DIAMETER MUST BE BURIED INTO THE SUBGRADE SUCH THAT NO MORE THAN 1 INCH OF THE AGGREGATE LAYER IS AFFECTED.

5. THE SUBGRADE UNDER THE AGGREGATE SHALL BE ROLLED SMOOTH AND MOISTURE CONDITIONED AS NECESSARY TO ACHIEVE THE COMPACTION SPECIFIED IN THE GEOTECHNICAL ENGINEER'S SPECIFICATION.

A.2 SUB-SLAB VAPOR VENT PIPING

1. SUB-SLAB VAPOR COLLECTION PIPING SHALL BE COMPRISED OF SCH. 40 4-INCH DIAMETER POLY VINYL CHLORIDE (PVC) PERFORATE PIPE. THE PERFORATIONS SHALL CONSIST OF FOUR 1/4-INCH DIA. HOLES DRILLED 90° APART FOR EVERY 2 FEET OF STRAIGHT PIPE BY CONTRACTOR OR EQUIVALENT AS APPROVED BY THE VIMS DESIGNER (SEE DETAIL 1, SHEET VIMS-6).

2. VAPOR COLLECTION PIPING SHALL BE INSTALLED AS SHOWN ON VIMS-3 AND PLACED WITHIN THE 8-INCH AGGREGATE LAYER. A MINIMUM OF 1.5-INCHES OF GRAVEL AGGREGATE SHALL BE PLACED BENEATH THE PIPING.

3. VAPOR COLLECTION PIPING SHALL BE CONNECTED TO 4-INCH SOLID SCHEDULE 40 PVC TRANSITION PIPING, CONNECTING TO 5-INCH I.D. COUPLINGS, ELBOWS, AND TEES BENEATH THE FLOOR SLAB THROUGH A PRE-CAST EXTERIOR WALL, AND TURNING UP VERTICALLY ADJACENT TO THE BUILDING EXTERIOR TO THE ROOF.

4. ALL TRANSITION PIPING SHALL BE IN PLACE PRIOR TO POURING THE FOUNDATION GRADE BEAMS OR FOOTINGS WHEN POURED SEPARATELY FROM THE FLOOR SLAB. THE PIPING TRANSITIONS SHALL BE ACCOMPLISHED IN COMPLIANCE WITH APPLICABLE BUILDING CODES AND WITH THE APPROVAL OF THE PROJECT STRUCTURAL ENGINEER AND/OR BUILDING OFFICIAL.

A.3 ABOVE SLAB GAS VENT RISER

1. VENT RISER TO THE ROOF SHALL BE COMPRISED OF 6-INCH DIAMETER SCH 40 PVC MOUNTED ON THE BUILDING EXTERIOR. THE CONTRACTOR SHALL INSTALL THE SCH 40 PVC RISER PIPING USING PIPE SUPPORTS, INSULATION, AND JACKETING RATED FOR OUTDOOR USE.

2. THE RISER PIPE TO THE ROOF SHALL BE FULLY SUPPORTED THROUGH THE ENTIRE HEIGHT OF THE BUILDING. VERTICAL PIPE SUPPORTS SHALL BE SPACED NO GREATER THAN 7 FEET, USING UNISTRUT® P2600 - UNICUSHION PIPE CLAMP SYSTEM, OR APPROVED EQUAL IN ACCORDANCE WITH APPLICABLE PLUMBING CODES.

3. PIPE INSULATION SHALL BE R2 OR GREATER, 1/2-INCH THICK, PIPE INSULATION. PVC JACKETING SHALL BE INSTALLED OVER ALL EXPOSED STRAIGHT PIPE AND FITTINGS, DESIGNED TO PROTECT THE INSULATION FROM LIGHT IMPACT AND MOISTURE, CONFORMING TO ASTM E84 25/50 FOR FLAME AND SMOKE. ALL SEAMS SHALL BE COVERED WITH A TAPING SYSTEM / SEALANT APPROVED BY THE PVC JACKETING MATERIAL MANUFACTURER.

4. A VENT RISER SAMPLE PORT SHALL BE INSTALLED ON THE PIPING EXTERIOR BETWEEN 3 AND 5 FEET ABOVE SURFACE GRADE. THE SAMPLE PORT SHALL CONSIST OF A 304 STAINLESS STEEL HEX REDUCING BUSHING (MNPT X FNPT, 1/2" X 1/4") SHALL BE THREADED INTO THE PIPING AND SEALED PERMANENTLY FOR GAS-TIGHT APPLICATIONS. A QUICK-CONNECT COUPLER SHALL BE INSTALLED IN THE BUSHING AND SEALED WITH GAS-RATED TEFLON TAPE TO ALLOW FOR REMOVAL DURING MONITORING (SEE DETAIL 4, SHEET VIMS-6).

A.4 SUB-SLAB VACUUM MONITORING PROBE

1. SUB-SLAB VACUUM MONITORING PROBES WILL BE USED TO MEASURE THE SUB-SLAB VACUUM CREATED BY THE VIMS SYSTEM ACROSS THE BUILDING FOOTPRINT. THESE PROBES CONSIST OF 3/8-INCH O.D. NYLAFOW TUBING CONNECTED TO A STAINLESS-STEEL SOIL GAS IMPLANT EQUIPPED WITH A BARRED FITTING AND WIRE MESH SCREEN, TERMINATING IN THE AGGREGATE LAYER.

2. THE PROBES WILL BE INSTALLED IN 1.5-INCH PVC PIPING, SEALED, AND SECURED TO BE ACCESSIBLE FROM THE BUILDING EXTERIOR ONE-FOOT ABOVE SURFACE GRADE. THE PROBE LOCATIONS ARE SHOWN ON SHEET VIMS-3, AND DETAILS OF THE PROBE IS SHOWN AS DETAIL 10, SHEET VIMS-6 OF THESE PLANS.

B. VIMS MEMBRANE

B.1 MATERIALS

1. THE VIMS MEMBRANE SHALL CONSIST OF A 20 MIL SHEET MEMBRANE MANUFACTURED AS VAPORBLOCK® PLUS BY RAVEN INDUSTRIES.

2. THE BASE LAYER AND PROTECTIVE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE VIMS DESIGNER.

B.2 PENETRATION SEALS

1. WHERE UTILITIES, VENT LINES, PIPING, ELECTRICAL CONDUITS, ETC. PENETRATE THE VIMS MEMBRANE, A RAVEN BUTYL SEAL TAPE AND VAPORBOND TAPE SHALL BE PROVIDED TO CREATE A GAS-TIGHT SEAL AROUND THE PENETRATION IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AS SHOWN ON DETAIL 5, SHEET VIMS-5.

2. WHERE PENETRATIONS SUCH AS ELECTRICAL UTILITY CONDUITS, PLUMBING PIPING, ETC. ARE CONCENTRATED, A CONCRETE PENETRATION BANK WILL BE CONSTRUCTED TO SECURE THE PENETRATIONS IN-PLACE (SEE DETAIL 4, SHEET VIMS-5). THE PENETRATION BANK SHALL BE CONSTRUCTED USING A MINIMUM THICKNESS OF 12 INCHES EXTENDING A MINIMUM OF 8 INCHES FROM ANY PENETRATION, ALLOWING FOR A MINIMUM 6-INCH ATTACHMENT OF THE VIMS MEMBRANE, SIMILAR TO AN ATTACHMENT TO AN INTERIOR FOOTING. THE TOP OF CONCRETE PENETRATION BANK SHALL BE BELOW THE BOTTOM OF THE SLAB. PENETRATIONS SHALL NOT BE IN CONTACT WITH ADJACENT PENETRATIONS OR OTHER OBJECTS TO ALLOW PROPER SEALING AROUND THE ENTIRE PENETRATION CIRCUMFERENCE.

C. QUALITY ASSURANCE

1. THE VIMS SUBCONTRACTOR SHALL BE TRAINED AND APPROVED BY THE VIMS MATERIAL MANUFACTURER. THE VIMS SUBCONTRACTOR SHALL PROVIDE THE VIMS DESIGNER WITH A LETTER FROM THE MANUFACTURER (A) CONFIRMING THAT THE VIMS SUBCONTRACTOR RETAINED BY THE OWNER FOR THE PERFORMANCE OF THIS SCOPE OF WORK IS CERTIFIED BY THE MANUFACTURER FOR INSTALLATION OF THE MATERIAL; AND (B) WARRANTING ITS MATERIAL TO BE FREE OF DEFECTS WHEN THAT MATERIAL IS INSTALLED BY THE VIMS SUBCONTRACTOR.

2. A PRE-INSTALLATION CONFERENCE SHALL BE HELD PRIOR TO THE APPLICATION OF THE VIMS MEMBRANE TO COORDINATE PROPER SUBSTRATE AND INSTALLATION CONDITIONS AND PROCEDURES. THE VIMS SUBCONTRACTOR, SITE SUPERINTENDENT, THE FOUNDATION SUBCONTRACTOR, SUBSLAB UTILITY CONTRACTORS, AND THE VIMS DESIGNER SHALL BE PRESENT AT THIS MEETING.

3. THE INSTALLATION OF THE VIMS MEMBRANE SHALL BE CLOSELY MONITORED BY THE VIMS DESIGNER OR HIS DESIGNATED REPRESENTATIVE. INSPECTIONS SHALL TYPICALLY BE PERFORMED PRIOR TO, DURING, AND SUBSEQUENT TO THE INSTALLATION OF THE VAPOR VENT PIPING AND APPLICATION OF THE VIMS MEMBRANE. IT IS THE RESPONSIBILITY OF THE VIMS SUBCONTRACTOR TO NOTIFY THE OWNER AND VIMS DESIGNER WITHIN A MINIMUM OF 72 HOURS OF PRIOR TO BEGINNING ANY PORTION OF THIS WORK.

4. ALL SURFACES TO RECEIVE THE VIMS MEMBRANE TERMINATES SHALL BE INSPECTED AND APPROVED BY THE VIMS SUBCONTRACTOR FOR THE PERFORMANCE OF THIS SCOPE OF WORK AND BY THE VIMS DESIGNER PRIOR TO COMMENCING WORK.

5. PRIOR TO PLACING THE FLOOR SLAB OVER THE MEMBRANE, THE VIMS DESIGNER SHALL INSPECT AND APPROVE THE MEMBRANE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. CONSTRUCTION OF THE FLOOR SLAB SHALL NOT PROCEED WITHOUT WRITTEN CERTIFICATION OF THE SUCCESSFUL INSTALLATION BY THE VIMS SUBCONTRACTOR.

D. SUBMITTALS

1. THE VIMS SUBCONTRACTOR SHALL SUBMIT ANY UPDATES OR REVISIONS TO THE MANUFACTURER'S MATERIAL DATA AND RECOMMENDED INSTALLATION PROCEDURES TO THE VIMS DESIGNER FOR REVIEW AND APPROVAL AT LEAST ONE WEEK PRIOR TO THE CONSTRUCTION OF THE VIMS MEMBRANE.

2. THE VIMS SUBCONTRACTOR SHALL SUBMIT REPRESENTATIVE SAMPLES OR MANUFACTURER'S PRODUCT SPECIFICATIONS OF THE FOLLOWING TO THE VIMS DESIGNER FOR APPROVAL:

   - BASE BOND AND UPPER PROTECTIVE MATERIALS
   - VIMS MEMBRANE MATERIAL
   - BASE GEOTEXTILES
   - AGGREGATE MATERIAL

3. AT THE COMPLETION OF INSTALLATION, THE VIMS SUBCONTRACTOR SHALL SUBMIT A LETTER TO THE VIMS DESIGNER AND TO THE OWNER CERTIFYING THAT VIMS INSTALLATION WAS COMPLETED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS AS WELL AS MANUFACTURER SPECIFICATIONS.

E. WARRANTY

1. TERRACON RECOMMENDS THE OWNER OBTAIN A WARRANTY FOR THE VIMS MEMBRANE. THE MANUFACTURER PROVIDES PRODUCT AND/OR SYSTEM WARRANTIES FOR THE VIMS MEMBRANE.

2. THE VIMS MANUFACTURER MAY REQUIRE SUBMITTAL OF DESIGN DOCUMENTS, ENVIRONMENTAL REPORTS, GEOTECHNICAL REPORTS, OR OTHER DOCUMENTATION FOR REVIEW PRIOR TO ISSUING A WARRANTY, AND ADDITIONAL COSTS MAY APPLY. PLEASE CONTACT THE SELECTED MANUFACTURER FOR WARRANTY TERMS AND CONDITIONS AND ADDITIONAL INFORMATION.

3. MANUFACTURERS EXTENDED WARRANTIES MUST BE REQUESTED BY THE OWNER PRIOR TO VIMS INSTALLATION BID REQUESTS.

F. JOB CONDITIONS

1. ALL PLUMBING, ELECTRICAL, MECHANICAL AND STRUCTURAL ITEMS THAT ARE LOCATED BENEATH OR THAT PASS THROUGH THE VIMS MEMBRANE SHALL BE POSITIVELY SECURED IN THEIR PROPER POSITIONS AND APPROPRIATELY PROTECTED PRIOR TO INSTALLATION OF THE VIMS MEMBRANE.

2. THE VIMS MEMBRANE SHALL BE INSTALLED BEFORE PLACEMENT OF REINFORCING STEEL. IF REINFORCING STEEL IS PRESENT AT THE TIME OF APPLICATION, ALL EXPOSED REINFORCEMENT SHALL BE MASKED BY THE FOUNDATION SUBCONTRACTOR PRIOR TO INSTALLATION OF THE VIMS MEMBRANE.

3. REINFORCING STEEL, PIPING, FORMS, ETC. SHALL NOT BEAR DIRECTLY ON THE MEMBRANE OR PROTECTIVE LAYER AND EQUIPMENT SHALL NOT BE DRIVEN OVER THE MEMBRANE OR ITS PROTECTIVE LAYER WITHOUT PRIOR APPROVAL FROM THE VIMS DESIGNER AND MANUFACTURER.

4. STAKES USED TO SECURE THE CONCRETE FORMS SHALL NOT PENETRATE THE VIMS MEMBRANE AFTER IT HAS BEEN INSTALLED. IF STAKES NEED TO PUNCTURE THE MEMBRANE AFTER IT HAS BEEN INSTALLED, THE VIMS DESIGNER AND INSTALLER SHOULD BE NOTIFIED, AND NECESSARY REPAIRS NEED TO BE MADE BY THE VIMS SUBCONTRACTOR.

5. FIELD SITUATIONS NOT SPECIALLY DETAILED SHALL BE HANDLED PER THE INTENT OF THESE PLANS AND SPECIFICATIONS WITH THE APPROVAL OF THE VIMS DESIGNER. THE APPLICATOR / CONTRACTOR MAY SUBMIT SHOP DRAWINGS FOR ALTERNATIVE METHODS. SEE STRUCTURAL FOUNDATION PLANS FOR COMPLETE DEPTHS AND DETAILS OF FOOTING AND SLAB. DEPTHS OF FOOTINGS AND SLAB SHOWN IN THESE PLANS ARE GENERALIZED, ACTUAL FOOTING DEPTHS MAY VARY.

6. APPROPRIATE CARE SHALL BE EXERCISED TO PROTECT THE VIMS MEMBRANE AND PREVENT PENETRATIONS SUBSEQUENT TO ITS APPLICATION. THE VIMS MEMBRANE SHALL BE PROTECTED FROM PEDESTRIAN TRAFFIC WITH THE PROTECTIVE GEOTEXTILE LAYER. THE PROTECTIVE GEOTEXTILE SHALL BE KEPT FREE OF DIRT AND DEBRIS, TO THE EXTENT POSSIBLE, UNTIL THE FLOOR SLAB IS POURED. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT THE VIMS MEMBRANE AND THE PROTECTION SYSTEM ARE NOT PENETRATED AFTER THE COMPLETION OF THE INSTALLATION.

G. INSTALLATION

G.1 VAPOR VENT PIPING INSTALLATION

1. VENT PIPING SHALL BE CONNECTED TO PROVIDE A GAS-TIGHT SEAL AT ALL CONNECTIONS AND FITTINGS AND SHALL BE CONSTRUCTED OF MATERIALS THAT COMPLY WITH THE UNIFORM PLUMBING AND MECHANICAL CODES. ALL JOINTS SHALL BE TIGHTLY SEALED WITH APPROVED MATERIALS. ANY GLUE OR SOLVENT USED TO SEAL THE PIPING MUST BE VOC FREE.

2. PLACEMENT OF AGGREGATE ABOVE THE PIPING SHALL NOT BEGIN BEFORE THE VIMS DESIGNER HAS INSPECTED THE GRADE AND ALIGNMENT OF THE PIPING, THE BEDDING OF THE PIPING AND THE JOINTS BETWEEN THE PIPING. ALL PIPING LOCATED WITHIN THE AGGREGATE LAYER SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

3. CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHOULD HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

4. SOLID RISER PIPE SHALL BE LOCATED WITHIN THE WALLS/CHASES OR SHALL BE SIMILARLY PROTECTED FROM PHYSICAL DAMAGE. DAMAGE INCURRED DURING CONSTRUCTION OR OCCUPANCY COULD AFFECT SYSTEM PERFORMANCE.

G.2 VIMS MEMBRANE INSTALLATION

1. THE SUBGRADE SHALL BE MOISTURE CONDITIONED AND COMPACTED BY THE GRADING CONTRACTOR AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. THE FINISHED SURFACE SHALL BE SMOOTH, UNIFORM, AND FREE OF DEBRIS AND STANDING WATER. FINAL SUBGRADE INSPECTION/PREPARATION SHALL NOT PRECEDE THE VIMS INSTALLATION BY MORE THAN 72 HOURS.

2. THE AGGREGATE LAYER SHALL BE MOISTURE CONDITIONED AND COMPACTED AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS.

3. IF THE VIMS MEMBRANE IS TO BE PLACED ON A CONCRETE SURFACE, CONCRETE SURFACES SHALL BE LIGHT BROOM FINISHED OR SMOOTHED, FREE OF ANY DIRT, DEBRIS, LOOSE MATERIAL, RELEASE AGENTS OR CURING COMPOUNDS. ALL VOIDS MORE THAN 1/4-INCH IN WIDTH SHALL BE PROPERLY FILLED WITH NON-SHRINK GROUT OR AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. MASONRY JOINTS SHALL BE STRUCK SMOOTH WITH A METAL TROWEL. ALL PENETRATIONS SHALL BE PREPARED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

4. TRENCHES SHALL BE CUT OVERSIZE AS NECESSARY TO ACCOMMODATE INSTALLATION OF THE VIMS MEMBRANE.

5. THE WALLS OF FOOTING OR UTILITY TRENCHES SHALL BE SMOOTH AND FREE OF ROOTS OR PROTRUDING ROCKS.

6. IF ORGANIC MATERIALS WITH POTENTIAL FOR GROWTH (E.G. SEEDS OR GRASSES) ARE PRESENT WITHIN THE SUBGRADE, THE GENERAL CONTRACTOR SHALL APPLY A SOIL STERILANT AT THE MANUFACTURER'S RECOMMENDED RATE PRIOR TO THE INSTALLATION OF THE VIMS MEMBRANE.

7. THE VIMS MEMBRANE LAYER SHALL BE LAID ON THE AGGREGATE LAYER IN ACCORDANCE WITH THE MATERIAL MANUFACTURER'S SPECIFICATIONS. ALL SEAMS SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES. ANY OPEN UTILITY OR OTHER TRENCH PRESENT AT THE TIME OF APPLICATION SHALL BE LINED WITH THE MEMBRANE EXTENDING AT LEAST 12 INCHES ONTO THE ADJOINING SUBGRADE. THE BASE LAYER SHALL BE IN INTEGRAL CONTACT WITH ALL INTERIOR FOUNDATION CORNERS.

G.3 SEALING PENETRATIONS

1. ALL PENETRATIONS SHALL BE CLEANED AND PREPARED TO PROVIDE PROPER ADHESION OF THE BUTYL TAPE FOR A VAPOR TIGHT SEAL. METAL PENETRATIONS SHALL BE SANDED CLEAN AND PREPARED USING EMERY CLOTH FOR PROPER ADHESION OF THE BUTYL TAPE.

2. ALL PENETRATIONS SHOULD BE SECURED PRIOR TO INSTALLATION OF THE VIMS MEMBRANE SYSTEM. PENETRATIONS SHALL NOT BE IN CONTACT WITH ADJACENT PENETRATIONS OR OTHER OBJECTS TO ALLOW PROPER SEALING AROUND THE ENTIRE PENETRATION CIRCUMFERENCE. WHERE PENETRATIONS SUCH AS ELECTRICAL CONDUITS, PLUMBING PIPING, ETC ARE CONCENTRATED, A CONCRETE PENETRATION BANK WILL BE CONSTRUCTED PRIOR TO VIMS MEMBRANE PLACEMENT. THE CONCRETE PENETRATION BANK WILL CONSIST OF A MINIMUM THICKNESS OF 12 INCHES OF CONCRETE, EXTENDING A MINIMUM OF 8 INCHES BEYOND THE EDGE OF EACH PENETRATION TO ALLOW FOR ATTACHMENT OF THE VIMS MEMBRANE (SEE DETAIL 4, SHEET VIMS-5).

3. THE BASE LAYER SHALL BE CUT AROUND PENETRATIONS SO THAT IT LAYS FLAT ON THE SUBGRADE. THERE SHOULD NOT BE A GAP LARGER THAN 1/8-INCH BETWEEN THE BASE LAYER AND THE PENETRATION (SEE DETAIL 3, SHEET VIMS-5).

H. INSPECTIONS

1. THE INSPECTION OF ALL VAPOR CONTROL MEASURES SHALL BE PERFORMED BY THE VIMS DESIGNER. AT A MINIMUM, INSPECTION SHALL TAKE PLACE AT THE FOLLOWING STAGES OF THE INSTALLATION, AS DEEMED NECESSARY BY THE VIMS DESIGNER:

   - AFTER THE INSTALLATION OF THE VAPOR COLLECTION PIPING AND PRIOR TO INSTALLATION OF THE AGGREGATE LAYER ABOVE THE VENT PIPING;
   - DURING THE INSTALLATION OF THE VIMS MEMBRANE;
   - AFTER THE INSTALLATION OF THE REINFORCING STEEL, AND ALL FOUNDATION FORM WORK, BUT PRIOR TO AND THROUGHOUT THE PLACEMENT OF CONCRETE FOR THE FLOOR SLAB;
   - DURING AND AT THE COMPLETION OF THE VERTICAL VENT RISER PIPING AND ROOF VENT INSTALLATION.

2. FINAL SUBGRADE INSPECTION / PREPARATION SHALL NOT PRECEDE THE VIMS INSTALLATION BY MORE THAN 72 HOURS.

3. FIELD QUALITY CONTROL IS A VERY IMPORTANT PART OF ALL APPLICATIONS. THE VIMS SUBCONTRACTOR SHALL CHECK HIS OWN WORK FOR COVERAGE, THICKNESS, AND ALL-AROUND GOOD WORKMANSHIP.

4. PRIOR TO PLACING THE CONCRETE SLAB OVER THE VIMS MEMBRANE, THE VIMS SUBCONTRACTOR SHALL CERTIFY IN WRITING THAT THE VIMS MEMBRANE HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IS FREE OF LEAKS, AND HAS A MINIMUM THICKNESS OF 60 MILS.

5. SERVICE LISTED IN THIS SPECIFICATION AS BEING REQUIRED BY THE VIMS DESIGNER ARE DEPENDENT UPON OWNER AUTHORIZATION OF SAID SERVICES TO VIMS DESIGNER, AND NOTIFICATIONS TO THE VIMS DESIGNER OF THE PROJECT STATUS BY THE VIMS SUBCONTRACTOR. IF THESE SERVICES ARE NOT PERFORMED BY THE VIMS DESIGNER, THE MANUFACTURER'S WARRANTY MAY BE VOIDED.

RECOMMENDED VAPOR MITIGATION SYSTEM TASKS SUMMARY

TASKS TO BE COMPLETED	RECOMMENDED CONTRACTOR / TRADE RESPONSIBLE FOR TASK	
	GC	VIMS SUB CONTRACTOR
SUBGRADE PREPARATION		
PLACEMENT OF 8-INCH MIN. COMPACTED AGGREGATE LAYER ABOVE SUBGRADE.	X	
PREPARATION OF AGGREGATE TO ALLOW FOR MEMBRANE ATTACHMENT TO VERTICAL AND HORIZONTAL SURFACES	X	
CONSTRUCTION OF 12-INCH THICK CONCRETE PENETRATION BANKS WHERE UTILITY CONDUITS ARE CONCENTRATED.	X	
INSTALLATION OF VENT SYSTEM		
EXCAVATION OF TRENCHES FOR TRANSITION PIPING AND VAPOR COLLECTION PIPING.	X	X
INSTALLATION OF PIPE TRANSITIONS THROUGH GRADE BEAMS OR THICKENED SLABS.	X	
INSTALLATION OF VAPOR COLLECTION PIPING AND TRANSITION PIPING	X	X
CONNECTION OF THE VAPOR COLLECTION PIPE TO PIPE COUPLINGS.		X
BACKFILL OF AGGREGATE OVER THE HEADER PIPE AND VAPOR COLLECTION PIPE AFTER INSTALLATION IS COMPLETED.	X	X
CONNECTION OF THE EXHAUST PIPE TO BLOWER UNIT	X	
INSTALLATION OF 4-INCH VERTICAL VENT RISERS ABOVE FINISHED ROOF INSTALLATION AND TESTING OF ROOF-MOUNTED BLOWER, CONTROL SYSTEMS, AND ALARMS	X	
INSTALLATION OF GAS VAPOR MEMBRANE		
REMOVAL OF EXCESS SOILS FROM BUILDING PAD AND SITE, IF NECESSARY.	X	
PLACEMENT OF VIMS MEMBRANE.		X
SEALING OF ALL FLOOR SLAB PENETRATIONS		X
INSPECTION OF VIMS MEMBRANE DURING INSTALLATION.		X

STANDARD OF CARE AND LIMITATIONS
TERRACON'S SERVICES WILL BE PERFORMED IN A MANNER CONSISTENT WITH GENERALLY ACCEPTED PRACTICES OF THE PROFESSION UNDERTAKEN IN SIMILAR DESIGNS IN THE SAME GEOGRAPHICAL AREA DURING THE SAME TIME PERIOD. PLEASE NOTE THAT TERRACON DOES NOT WARRANTY THE WORK OF THIRD PARTIES SUPPLYING INFORMATION USED IN THE PREPARATION OF THE VAPOR MITIGATION SYSTEM. THESE SERVICES WERE PERFORMED IN ACCORDANCE WITH THE SCOPE OF WORK AGREED WITH YOU, OUR CLIENT, AS REFLECTED IN OUR PROPOSAL.

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772

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TITLE SHEET AND GENERAL NOTES

III. SUB-SLAB DEPRESSURIZATION SYSTEM

A. ROOF-MOUNTED REGENERATIVE BLOWER SYSTEM (SEE DETAILS 7 & 8, VIMS-6)

1. THE PROPOSED ACTIVE SSD SYSTEM MAY UTILIZE A MINIMUM OF THREE BLOWERS TO DRAW A VACUUM FROM EXTRACTION LATERALS BENEATH THE BUILDING'S FLOOR SLAB. EACH BLOWER PERFORMANCE WILL MEET A MINIMUM FLOW OF 400 CUBIC FEET PER MINUTE (SCFM) AT 5 IN. W.C.

2. THE BLOWER SHALL BE UL LISTED AND RATED FOR CONTINUOUS, ALL WEATHER OPERATIONS, WITH AUTOMATIC RESET FEATURES IN THE EVENT OF A POWER FAILURE.

3. THE BLOWERS SHALL HAVE A MINIMUM 12-MONTH MANUFACTURER'S WARRANTY ON PARTS AND LABOR.

4. THE BLOWER UNITS WILL INCLUDE A DURABLE, WEATHER-PROOF, UV-RESISTANT ENCLOSURE, WHICH WILL HOUSE THE BLOWERS, CONDENSATE BYPASS, MANUAL STOP, AND OTHER CONTROLS AND EQUIPMENT ASSOCIATED WITH THE SYSTEM. THE ENCLOSURE WILL BE MOUNTED ON A FRAME AND SECURED IN A MANNER THAT MINIMIZES THE TRANSFER OF VIBRATIONS TO THE STRUCTURE.

5. ACCEPTABLE BLOWER AND MANUFACTURER:

   CINCINNATI FAN PB-10A, ARRANGEMENT 4, 6" INLET, 9-3/4 X 2-7/8, MTR, 3/4 HP

6. THE CONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE BY A LICENSED ELECTRICIAN TO EACH BLOWER AND ASSOCIATED EQUIPMENT, ELECTRICAL WIRING, CONDUIT, AND CONNECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS. EACH BLOWER SHALL REQUIRE A DEDICATED 208 VOLT, THREE-PHASE CIRCUIT.

7. EACH BLOWER DISCHARGE WILL BE CONNECTED TO AN EXHAUST STACK IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH APPLICABLE CODES. THE BLOWER DISCHARGE SHALL BE LOCATED AT A DISTANCE OF NOT LESS THAN 25 FEET FROM ANY BUILDING AIR INTAKE, AND A MINIMUM OF 5 FEET FROM ANY ELECTRICAL DEVICE. COORDINATE LOCATION OF BLOWER DISCHARGE WITH ARCHITECT, HVAC AND STRUCTURAL ENGINEERS.

8. INSTALL BLOWER UNITS, TO INCLUDE BLOWERS, ENCLOSURES, ROOF-MOUNTS AND SUPPORTS, FRAME, CONTROLS, ALARMS, GAUGES, OPERATION EQUIPMENT.

9. THE RISER PIPE SHALL BE EQUIPPED WITH A 6-INCH SHUTOFF VALVE TO ALLOW FOR SHUTOFF OF AIR FLOW ABOVE THE VALVE DURING SAMPLING OR OPERATION OF AN ACTIVE SYSTEM. THIS VALVE SHALL BE INSTALLED INLINE ABOVE THE ROOF LINE (SEE DETAIL 8, SHEET VIMS-6).

10. AT BLOWER EXHAUST PIPES, A PERMANENT LABEL SHALL BE AFFIXED TO THE BLOWER EXHAUST READING: "WARNING - SOIL GAS VENT STACK MAY CONTAIN ORGANIC VAPORS, DO NOT PLACE AIR INTAKE WITHIN 15 FEET."

11. PLACARDS SHALL BE INSTALLED ON EACH VENT RISER APPROXIMATELY EVERY 5 FEET AND AT ANY EXPOSED RISER PIPING (SEE DETAIL 6, SHEET VIMS-6)

B. BLOWER VACUUM PRESSURES AND OVERLOAD SENSORS

1. AN ADJUSTABLE HIGH/LOW VACUUM PRESSURE SWITCH THERMAL OVERLOAD SHALL BE INSTALLED AT THE BLOWER COMPONENTS. THESE COMPONENTS MUST BE CALIBRATED BY THE INSTALLER IN ACCORDANCE WITH THE MANUFACTURER REQUIREMENTS.

2. IF THE VACUUM WITHIN THE SYSTEM FALLS BELOW 0.5 INCHES WATER COLUMN (W.C.) OR GREATER THAN 4.5 INCHES W.C., THE PRESSURE SWITCH WILL SEND A SIGNAL TO A CONTROL PANEL, ILLUMINATING A RED INDICATOR LIGHT ON THE CONTROL PANEL. IF THE VACUUM IS WITHIN THE SELECTED RANGE FOR ALL THREE BLOWERS, A GREEN LIGHT SHALL BE ILLUMINATED.

3. IF THE THERMAL OVERLOAD INDICATES OPERATION OUTSIDE OF THE BLOWER MANUFACTURER'S OPERATING RANGE, THE OVERLOAD SENSOR WILL SEND A SIGNAL TO A CONTROL PANEL TO SHUT DOWN THE SYSTEM.

4. THE SYSTEM WILL HAVE THE CAPABILITY TO SEND AN ALARM SIGNAL TO THE BUILDING ALARM SYSTEM AND/OR OTHER COMMUNICATION EQUIPMENT (AUTODIALER OR MODEM) IF APPROVED BY THE BUILDING OWNER.

5. PROPER WIRING FOR POWER AND COMMUNICATION TO ALL ELECTRICAL DEVICES SHOULD BE CONFIRMED BY THE ELECTRICAL ENGINEER AND INCLUDED ON THE PROJECT ELECTRICAL DRAWINGS.

C. CONTROL PANEL

1. A SSD SYSTEM CONTROL PANEL SHALL BE INSTALLED TO INTEGRATE THE BLOWER CONTROL (ON/OFF), AND VACUUM PRESSURE SENSORS. THE CONTROL PANEL SHALL BE HARD-WIRED TO THE BUILDING NORMAL POWER AND WILL BE LOCATED IN A CENTRALIZED PORTION OF THE BUILDING AS APPROVED BUILDING OWNER AND VIMS DESIGNER. COORDINATE ACTUAL HEIGHT AND LOCATION OF THE PANEL WITH THE BUILDING OWNER AND VIMS DESIGNER.

2. CONTROL PANEL SHALL INCLUDE THE FOLLOWING:
   a. NEMA 4 3RD PARTY LISTED CONTROL PANEL ENCLOSURE
   b. DEADFRONT AND LOCKING INTERIOR PANEL
   c. HAND/OFF/AUTO SWITCHES, MOTOR STARTERS, AND BREAKERS FOR EACH BLOWER
   d. PRIMARY CIRCUIT PROTECTION USING INTERNAL FUSED MAIN DISCONNECT
   e. SURGE AND LIGHTING PROTECTION
   f. MAIN POWER BLOCK BRANCH CIRCUIT PROTECTION WITH CIRCUIT BREAKERS FOR MOTOR
   g. MOTOR STARTER WITH OVERLOAD PROTECTION AND CIRCUIT BREAKER 120 VAC/1P POWER TRANSFORMER
   h. EMERGENCY STOP BUTTON
   i. GREEN LIGHT - VACUUM BLOWERS ON
   j. RED LIGHT/BUTTON - VACUUM BLOWERS OFF (PUSH BUTTON TO CLEAR CONDITION)

3. A SYSTEM OPERATIONS, MONITORING, AND MAINTENANCE (OM&M) MANUAL SHALL BE PROVIDED WITH THE CONTROL PANEL DESCRIBING THE INSTALLATION, OPERATION, TESTING , NOTIFICATION, PERSONEL, AND MAINTENANCE REQUIREMENTS.

4. A VIMS MEMBRANE IDENTIFICATION SIGN SHALL BE INSTALLED IN UTILITY AND MECHANICAL ROOMS (SEE DETAIL 5, SHEET VIMS-6). THIS SIGN IS TO BE PLACED ON THE WALLS AT EYE LEVEL AND SHALL NOT BE COVERED OVER. THE LOCATION OF THIS NOTIFICATION WILL BE DETERMINED BY THE CONTRACTOR, OWNER, OR BUILDING OFFICIAL

D. SSD SYSTEM VACUUM MONITORING

1. VACUUM PRESSURE FOR EACH BLOWER UNIT/SYSTEM SHALL BE MONITORED USING PERMANENT PRESSURE DIFFERENTIAL MAGNEHELIC GAUGES, INSTALLED AT THE BLOWER UNIT. THE SSD VACUUM PRESSURE WILL BE MEASURED IN THE VENT RISERS WITH 1/8-INCH THREADED, BARBED FITTINGS CONNECTED TO 3/16-INCH ID VINYL TUBING AND ROUTED TO MAGNEHELIC GAUGES CAPABLE OF MEASURING 0-10 INCHES OF WATER DIFFERENTIAL.

2. THE GAUGES WILL BE MOUNTED ON THE EXTERIOR OF THE BOWER UNITS IN AN ABS PLASTIC WATHERPROOF ENCLOSURE WITH PRE-INSTALLED THREADED PRESSURE CONNECTIONS.

   ACCEPTABLE MAGNEHELIC GAUGE: ASHCROFT TYPE 1134 4-1/2" LOW PRESSURE DIFFERENTIAL GAUGE OR EQUIVALENT.

E. ON-SITE COMMUNICATION TESTING

1. A COMMUNICATION TEST SHALL BE CONDUCTED BY THE VIMS DESIGNER TO EVALUATE THE ABILITY OF THE PROPOSED BLOWER AND SUB-SLAB SOIL TO TRANSMIT COLLECTED SOIL VAPORS TO THE ANTICIPATED EXTRACTION POINTS, AND TO DETERMINE THE OPTIMAL SIZING OF THE BLOWER UNIT.

2. THE TEST WILL BE CONDUCTED ON A EACH OF THE THREE RISERS CONSTRUCTED FOR THE SSD SYSTEM. TEMPORARY VACUUM MONITORING PROBES WILL BE INSTALLED AT VARYING DISTANCES FROM THE VENT PIPING AS AVAILABLE DURING CONSTRUCTION TO EVALUATE THE EXTENT OF THE EFFECTIVE PRESSURE FIELD BENEATH THE SLAB.

3. A REPORT OF TESTING WILL BE ISSUED TO DOCUMENT THE TESTING RESULTS AND PROVIDE RECOMMENDATIONS FOR THE BLOWER SYSTEM, SIZING, AND LOCATIONS.

F. OPERATION, MONITORING, AND MAINTENANCE (OM&M) PLAN

1. AN ADDENDUM TO THE SITE MANAGEMENT PLAN WILL BE PREPARED AS AN OPERATION, MONITORING, AND MAINTENANCE (OM&M) PLAN AND WILL INCLUDE:

   - SSD SYSTEM INSTALLATION DETAILS (AS-BUILTS),
   - RESULTS OF THE INITIAL SYSTEM EVALUATION/TESTING, AND FOLLOW-UP INDOOR AIR ANALYSES;
   - AN ORGANIZATION CHART FOR THE OM&M OF THE SSD SYSTEM;
   - AN OVERVIEW OF THE SSD SYSTEM WITH DRAWINGS AND MANUFACTURER SPECIFICATIONS;
   - INSPECTION PROCEDURES AND SCHEDULE;
   - MONITORING/SAMPLING PROCEDURES AND SCHEDULE, IF REQUIRED, AND
   - DATA COLLECTION DOCUMENTATION AND REPORTING REQUIREMENTS.

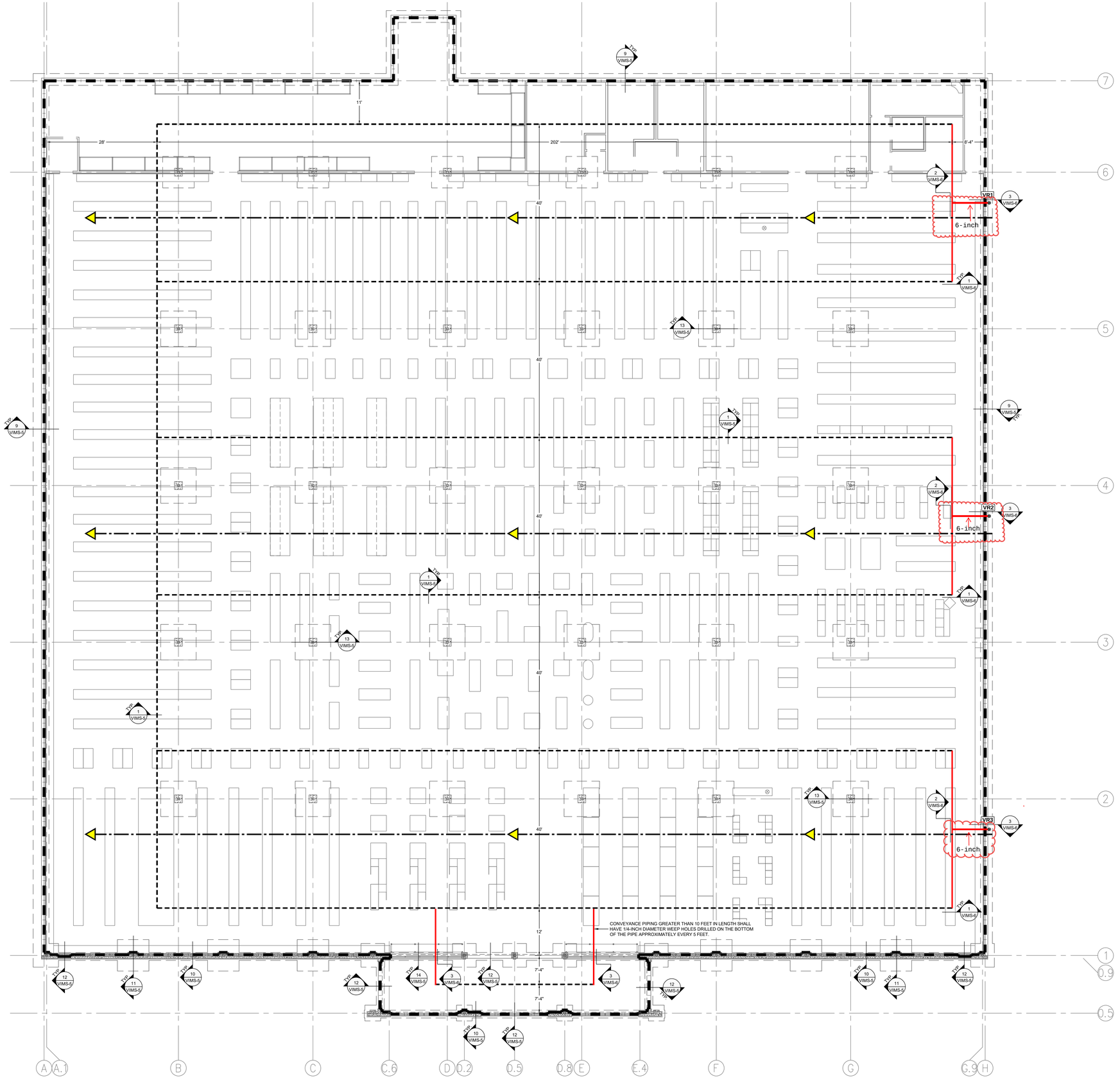
2. THE OM&M PLAN SHALL BE COMPLETED WITHIN 4 WEEKS AFTER SYSTEM STARTUP.

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Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9600

Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
Scale: NOT TO SCALE Date: 10/23/2020
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GENERAL NOTES



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LEGEND

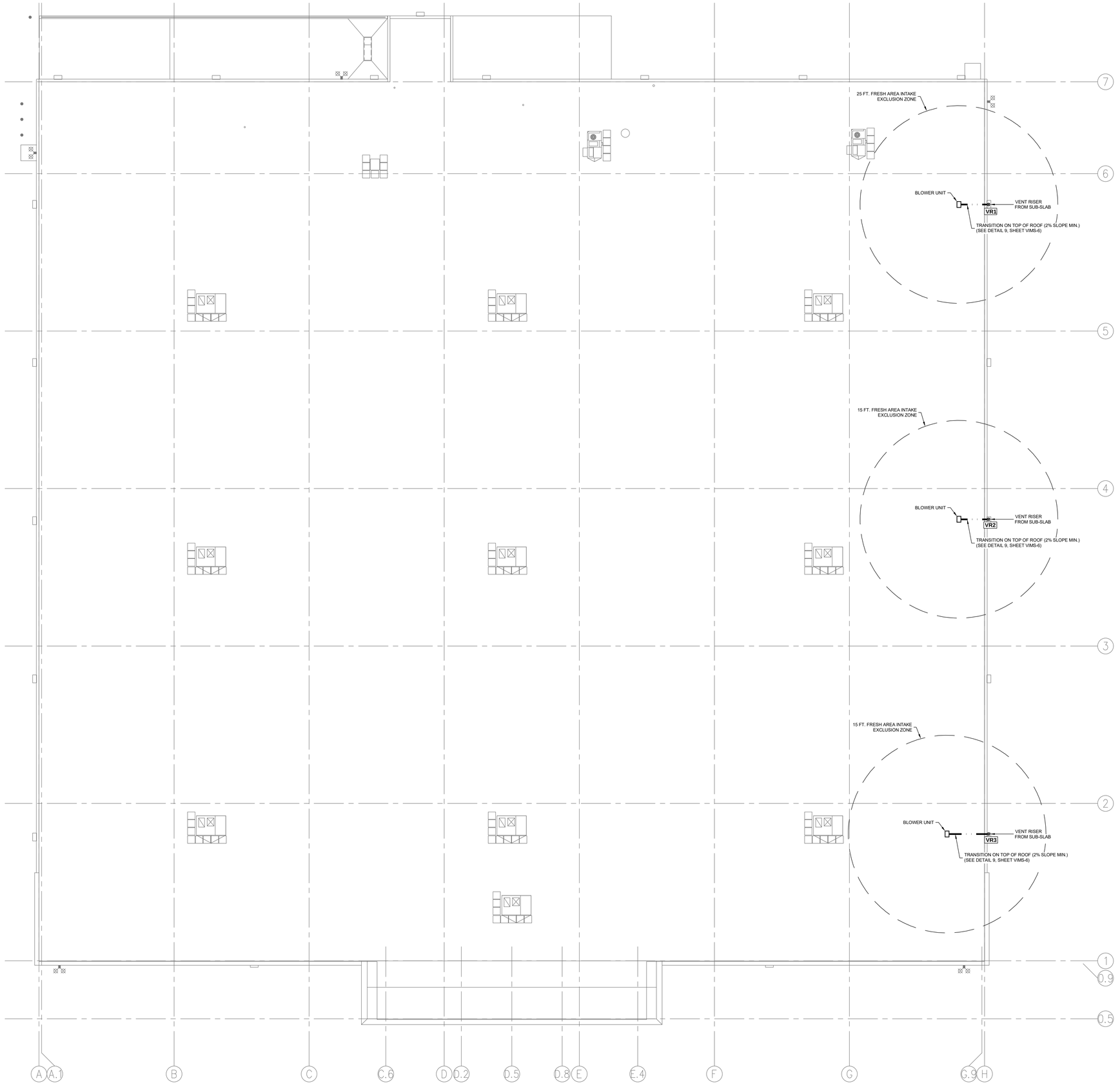
- 4" I.D. PERFORATED SCH 40 PVC VAPOR COLLECTION PIPING WITH (4) 1/4-INCH DIAMETER HOLES DRILLED 90° APART EVERY 2 FEET.
- 4" I.D. SOLID SCH 40 PVC BELOW SLAB CONVEYANCE PIPE (U.N.O)
- EXTENT OF VAPOR INTRUSION MITIGATION SYSTEM MEMBRANE
- VR1 — 6" VENT RISER TO ROOF LOCATION
- VACUUM MONITORING POINT
- 3/8-INCH VINYL TUBING INSIDE 3/4-IN TO 1.5-INCH PVC PIPING

10 0 5 10
SCALE IN FEET

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Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9000

Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
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VIMS-3

VIMS MEMBRANE AND VAPOR COLLECTION PIPE LAYOUT



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LEGEND

4" I.D. STEEL OR CAST IRON CONVEYANCE PIPE

VR1 ⊗ VENT RISER FROM SUB-SLAB LOCATION

10 0 5 10
SCALE IN FEET

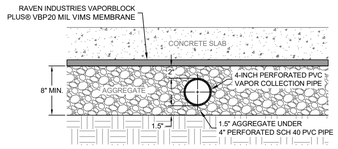
ROOF VENT LAYOUT

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772
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VIMS-4

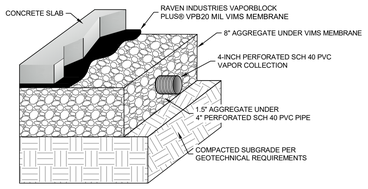
NOTE: ALL PIPE DIMENSIONS SHOWN ARE INSIDE DIAMETER (ID) UNLESS OTHERWISE NOTED.



NOTE:
ARCHITECT AND CONTRACTOR TO ENSURE DRAINAGE FROM AGGREGATE LAYER TO PREVENT BUILD-UP OF WATER INSIDE THE ROCK.

1 TYPICAL VIMS MEMBRANE AT PERFORATED VENT PIPE LOCATIONS

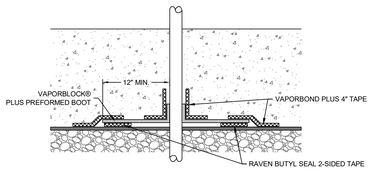
NOT TO SCALE



NOTE:
ARCHITECT AND CONTRACTOR TO ENSURE DRAINAGE FROM AGGREGATE LAYER TO PREVENT BUILD-UP OF WATER INSIDE THE ROCK.

2 VIMS MEMBRANE CONFIGURATION

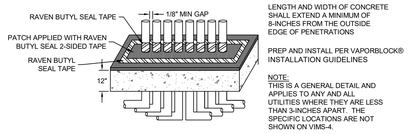
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PREP AND INSTALL PER VAPORBLOCK® INSTALLATION GUIDELINES

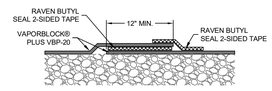
3 VIMS MEMBRANE PENETRATION

NOT TO SCALE



4 VIMS MEMBRANE BANK

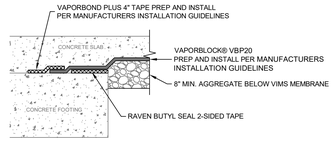
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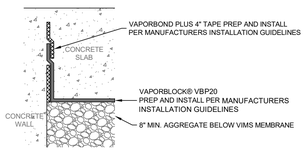
5 TYPICAL MEMBRANE TERMINATION OVERLAP

NOT TO SCALE



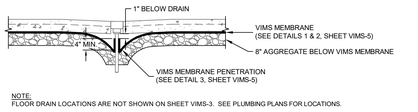
6 TYPICAL HORIZONTAL MEMBRANE TERMINATION

NOT TO SCALE



7 TYPICAL VERTICAL MEMBRANE TERMINATION

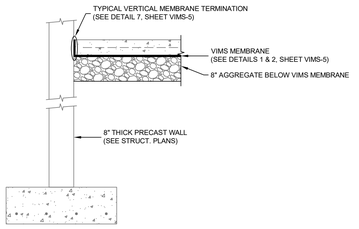
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NOTE:
FLOOR DRAIN LOCATIONS ARE NOT SHOWN ON SHEET VIMS-3. SEE PLUMBING PLANS FOR LOCATIONS.

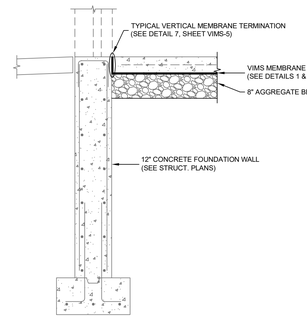
8 TYPICAL VIMS MEMBRANE AT FLOOR DRAIN

NOT TO SCALE



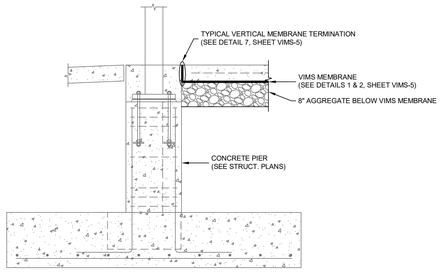
9 VIMS MEMBRANE AT EXTERIOR PRECAST WALL

NOT TO SCALE; REF: STRUCTURAL DETAILS 6 & 7, SHEET S0.2



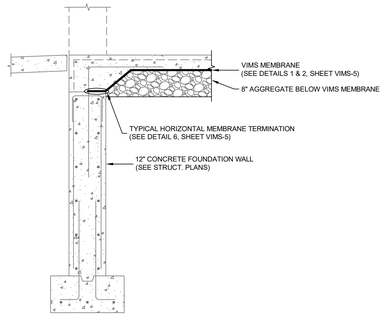
10 VIMS MEMBRANE AT EXTERIOR CONCRETE WALL

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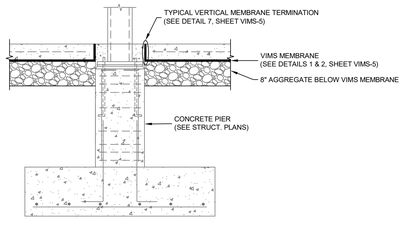
11 VIMS MEMBRANE AT EXTERIOR PIER / FOOTING

NOT TO SCALE; REF: STRUCTURAL DETAIL 11, SHEET S0.2



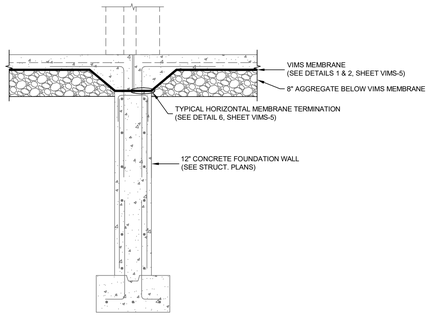
12 VIMS MEMBRANE AT EXTERIOR ENTRANCE

NOT TO SCALE; REF: STRUCTURAL DETAIL 9, SHEET S0.2



13 VIMS MEMBRANE AT INTERIOR PIER / FOOTING

NOT TO SCALE



14 VIMS MEMBRANE AT CONCRETE FOUNDATION WALL

NOT TO SCALE; REF: STRUCTURAL DETAILS 6 & 7, SHEET S0.2

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772

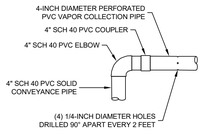
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VAPOR INTRUSION MITIGATION SYSTEM DETAILS - MEMBRANE

VIMS-5

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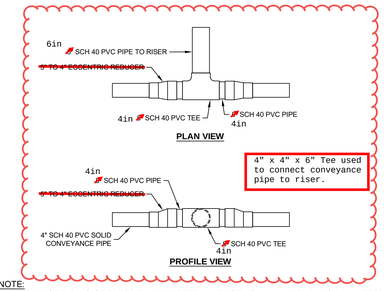
NOTE: ALL PIPE DIMENSIONS SHOWN ARE INSIDE DIAMETER (ID) UNLESS OTHERWISE NOTED.



NOTE:
CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHALL HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

1 VAPOR COLLECTION PIPES TRANSITION TO CONVEYANCE PIPES

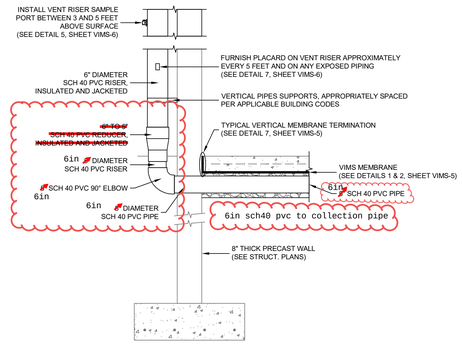
NOT TO SCALE



NOTE:
CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHALL HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

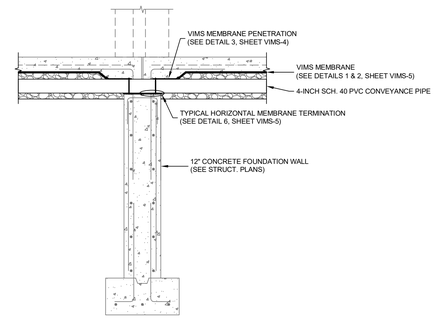
2 CONVEYANCE PIPES TO VENT RISER

NOT TO SCALE



3 VENT RISER AT EXTERIOR WALL

NOT TO SCALE



4 VIMS MEMBRANE AT INTERIOR CONCRETE FOUNDATION WALL

NOT TO SCALE; REF: STRUCTURAL DETAILS 6 & 7, SHEET S0.2



NOTES:
1. INSTALL ON PIPING EXTERIOR BETWEEN 3 AND 5 FEET ABOVE SURFACE GRADE
2. TAP A 1/2-INCH THREAD FOR REDUCING FITTING. SEAL THREADS PERMANENTLY TO PIPE FOR GAS APPLICATIONS WITH PIPE THREAD SEALANT.
3. APPLY GAS-RATED TEFLON TAPE ON INLINE COUPLER THREADS TO ALLOW FOR REMOVAL (YELLOW-THREAD TAPE)

5 VENT RISER SAMPLE PORT

NOT TO SCALE



THIS NOTIFICATION IS TO BE INSTALLED IN UTILITY AND MECHANICAL ROOMS AND PLACED ON THE WALLS AT EYE LEVEL AND SHALL NOT BE COVERED OVER.

LOCATION OF NOTIFICATION TO BE DETERMINED BY PROJECT CONTRACTOR, OWNER OR BUILDING OFFICIAL.

SIGN CAN BE PURCHASED AT
http://www.complianceigns.com/terracon.shtml

6 VIMS MEMBRANE IDENTIFICATION SIGN

NOT TO SCALE



PLASTIC STICKER WITH ADHESIVE BACKING.

LARGE LETTERS MIN 1/2" HIGH

RED LETTERS ON WHITE BACKGROUND

3" MIN. REQUIRED

THIS SIGN SHALL BE POSTED ON EACH VENT RISER APPROXIMATELY EVERY FIVE FEET, AND ALSO ON ANY EXPOSED RISER PIPING.

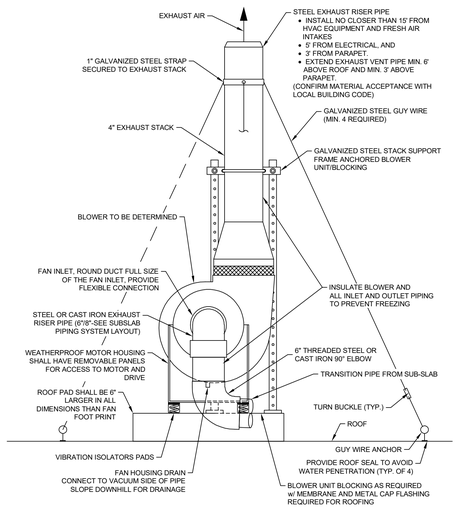
PLACARD CAN BE PURCHASED AT
http://www.complianceigns.com/terracon.shtml

7 PLACARD AT VENT RISER OUTLET

NOT TO SCALE

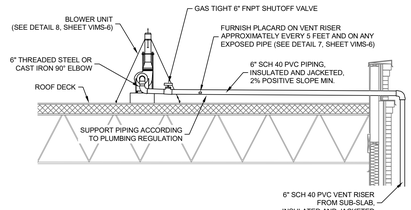
WARNING!

SOIL GAS VENT STACK MAY CONTAIN ELEVATED LEVELS OF CONTAMINANTS, DO NOT PLACE AIR INTAKE WITHIN 25 FEET.



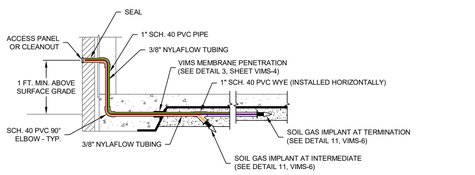
8 BLOWER UNIT DETAIL

NOT TO SCALE



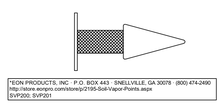
9 VERTICAL TO HORIZONTAL TRANSITION FOR LATER ABOVE ROOF DECK

NOT TO SCALE



10 SSDS VACUUM MONITORING POINT

NOT TO SCALE



11 SOIL GAS IMPLANT

NOT TO SCALE

C:\USERS\PTKIRK\PATRICKONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\TEMP\73207018 AS-BUILT VIMS.DWG

Terracon
Consulting Engineers and Scientists
521 CLEMSON ROAD COLUMBIA, SC 29229
PH. (803) 791-9000 FAX. (803) 791-9900

Design and Development
7707 S.W. 44th St. Oklahoma City, OK 73179
Phone: Fax: (405) 745-1772

Scale: NOT TO SCALE Date: 10/23/2020
Prjct Mngr: PMH
Store address: 811 JEFFERSON RD.
ROCHESTER, NY 14623
STORE NO.

VIMS-6

VAPOR INTRUSION MITIGATION SYSTEM DETAILS - PIPING

APPENDIX B

HEALTH AND SAFETY PLAN

Safety and Health Plan

Remedial System Construction Observations

Vapor Intrusion Mitigation System - Retail Building

Rochester, New York

Terracon Project No. J5201035

Prepared for:

811 Jefferson Partners, LLC

Prepared by:

Terracon Consultants, Inc.
15 Marway Circle, Suite 2B, Rochester, NY

Offices Nationwide Established in 1965
Employee-Owned terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

1.0 APPLICABILITY

This Site Safety and Health Plan has been developed for the safety of Terracon personnel engaged in site observations at the Retail Building site located in Henrietta, NY. The purpose of this plan is to help assure that personnel assigned to field activities on this site leave uninjured at the conclusion of every work day. Safety expectations of Terracon personnel working on this site will adhere to Our Rules to Live By:

RULES

Personal Protective Equipment (PPE)

R1. Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. Your Core PPE Kit includes:

- Safety glasses with lateral protection
- Approved safety footwear
- Gloves when engaged in physical activity in accordance with the Hand Protection Chart
- Hard hat on construction sites, around drill rigs, and when overhead or projectile hazards are present
- High-visibility apparel on project sites (note: Minimum Class II), and
- Hearing protection in high-noise areas.

Exception: PPE-Free Zones

R2. Inspect approved PPE for defects before and during use. If defective, repair or discard and replace with defect-free PPE.

Equipment and Tools

R3. Inspect Terracon-approved tools, equipment, and safety devices for defects before and during use. If defective, repair, or tag with "do not use" and report to supervisor to remove from service.

R4. Use tools, equipment, and safety devices according to manufacturer's instructions only. Never modify or override safety devices.

R5. Never enter the swing radius of equipment until the operator has acknowledged you and brought movement to a full stop.

Working at Heights and Depths

R6. Work at heights:

- Only if trained in Terracon Fall Protection and Scaffold Safety requirements, and
- Always use fall protection when working on lifts or scaffolding at a height of 6 feet or more.

R7. Use Terracon-approved ladders and stepladders:

- Only if trained in Terracon Ladder Safety requirements, and
- After confirming which type has been approved for use according to project-specific requirements.

R8. Enter an excavation only if trained in Terracon Excavation Safety requirements.

Motorized Vehicles

R9. Secure loads, equipment, and tools with Terracon-approved methods.

R10. Wear seat belt while operating or riding in any motorized vehicle. Driver must ensure passengers fasten seat belts before driver operates motorized vehicle.

R11. Do not use cell phone while driving on company business. Use of a navigation feature is permitted so long as location information is entered while vehicle is safely stopped and not adjusted by the driver while driving.

R12. On project sites, use a Terracon-approved cone when parked.

Reporting an Injury

R13. Call WorkCare immediately in the event of an injury or as soon as injury becomes apparent; report an injury to your supervisor as soon as possible after contacting WorkCare.

PRACTICES

Employees have the right and responsibility to:

P1. Take the time you need to do the job safely.

P2. Prior to performing physical activity, take the time to Warm-Up for Work.

P3. Step back for safety. Stop your work if you feel it is unsafe to continue or if someone questions the safety of your behavior. Inform a supervisor of the situation, and work together to identify and mitigate any hazard.

P4. Where safety training and certification are required for a job task, only do the task you have been trained and certified to do.

P5. Redirect a co-worker performing an unsafe act to safe work practices immediately.

P6. While in a work area, protect against controllable hazards and unsafe conditions. Report hazards outside of your control immediately to a supervisor or appropriate person.

P7. Monitor and keep clear of equipment moving in work area in any direction and at all times.

P8. Plan lifting or moving based upon size and weight of object and body position required to make the lift or move. Use proper techniques, and ask for support with a lift that is awkward or heavy.

P9. While conducting company business or on company property, park company or personal vehicle to prevent the need for backing to exit the space or work area.

2.0 SAFETY AND HEALTH RESPONSIBILITIES

The Project Manager will be ultimately responsible for seeing that work is performed in accordance with the provisions contained in this Plan and with applicable State, Federal and local safety regulations. The Project Manager ensure that a copy of this Plan is available on site for the duration of project activities will monitor compliance with this Plan during field activities. All field team members engaged in project activities will be required to sign Appendix B to acknowledge understanding of this plan.

The individuals listed below are responsible for implementation and enforcement of the Plan. This information must be completed before site mobilization.

TITLE	NAME	PHONE
Terracon Project Manager:	Travis Wooden	607-339-9094
Terracon Corporate Safety Contact	Adam Maier	913-202-7579
Client Contact(s):	Joe Akel	585 314-5271

If hazardous conditions develop or appear imminent during project activity, the Project Manager will coordinate actions required to safeguard site personnel and members of the general public. Additional safety measures will be verbally communicated to all project personnel, recorded in writing and appended to this Plan.

The Terracon Project Manager are responsible for:

- Providing subordinate personnel a copy of this Plan, and briefing them on its content.
- Enforcing the applicable provisions of this Plan.
- Inspecting and maintaining equipment in compliance with applicable federal, state or local safety regulations.
- Enforcement of corrective actions.
- Investigation of accidents or injuries.

3.0 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

At a minimum, Terracon *Our Rules to Live By* Rule 1 must be followed. Wear and maintain Terracon-approved PPE as required by project, task, and/or work environment. This includes use of the core “PPE Kit” at project sites and in laboratories (exception - PPE-Free Zones). Required PPE includes:

- Safety glasses with lateral protection
- Safety Footwear
- Gloves properly selected per the Hand-Protection Chart
- Hard hat when:
  - On active construction sites, around a drill rig or anytime overhead hazards are present
- On project sites, high-visibility apparel (minimum Class II)
- Hearing protection in high-noise areas

Inspect approved PPE for defects before and during use. If defective, repair or discard and replace with defect-free PPE (R2).

4.0 EMPLOYEE TRAINING REQUIREMENTS

Our Rules to Live By P4 asks that, “Where safety training and certification are required for a job task, only do the task that you have been trained and certified to do”. Personnel engaged in activities on this project site must have completed Terracon safety orientation, defensive driver and general task qualifications. In addition, the 4-hour Introduction to Incident and Injury-Free training is required for each individual, and an additional 8-hour IIF supervisory skills training course for the Supervisor. General safety training in issues such as personal protective equipment and motor vehicle operations safety are also required for the general knowledge and awareness of site safety hazards.

Prior to the start of site activities, all project personnel will participate in safety and health pre-task planning outlining the contents of this Plan. The personnel responsible for project safety and health (Site Safety Supervisor) will be addressed, as will site history, scope of work, site control measures, emergency procedures and site communications. Daily Pre-Task Planning will be conducted by the Site Safety Supervisor or by the single Terracon worker at the start of each work day.

5.0 SITE HISTORY/SCOPE OF SERVICES

Terracon personnel will mobilize to the site May 2020 to perform September 2020.

.

6.0 HAZARD ASSESSMENT

6.1 Chemical Hazards

If chemical contamination is encountered during the course of this investigation, work will stop, and project requirements will be reevaluated.

Personal Hygiene - Smoking, drinking, eating, or tobacco chewing are not allowed in the work area. Site personnel will wash face, hands and forearms as soon as possible upon completion of activities. An adequate supply of soap and water should be available prior to beginning intrusive activities.

6.2 Physical Hazards

Activities to be performed on site will involve only site observations. Personnel should be aware that as personal protective equipment increases, dexterity and visibility may be impacted and performing some tasks may be more difficult.

Back injuries due to improper lifting – some operations expose employees to heavy objects. Workers must follow *Our Rules to Live By* P2 Prior to performing physical activity, take the time to Warm-Up for Work and P8 Plan lifting or moving based upon size and weight of object and body position required to make the lift or move. Use proper techniques and ask for support with a lift that is awkward or heavy to reduce injury risk. Other proactive measures for safe lifting include: Use proper lifting techniques. Lift with the legs, not the back. Keep loads close to the body and avoid twisting. Loads heavier than 50 pounds (lbs) require a team lift (second person) or mechanical device for lifting. Use mechanical devices such as drum dollies, hand trucks, and tool hoists (for lifting augers) to lift or move heavy loads whenever possible.

Lift carefully with load close to body with the legs taking most of the weight. Get help with lifts greater than 40 lbs. When working with a heavy tool or object, keep legs under the load and do not overreach or twist to the side. Reposition body to be square to the load and work. Push loads, rather than pull, whenever feasible. Do not persist with lifting when the load is too heavy. Use a mechanical lifting aid or have a coworker assist with the lift. Rotate repetitive tasks to avoid soft-tissue fatigue.

Falls from Elevated Surfaces - Our Rules to Live By R6 requires that only properly trained and equipped employees work at heights greater than 6 feet not protected by a guard rail system. A safety harness and self-retracting lanyard will be provided. Employees must wear them when working 6 ft or higher above the platform or main work deck, or when work exhibits a chance of falling. All fall protection must conform to 29 CFR 1926.502(d). Work at height is not anticipated.

Noise - Wear hearing protection when speech becomes difficult to understand at a distance of 10 ft and while standing within 20 ft of heavy equipment, pneumatic power tools, steam cleaners, and other equipment in operation that can generate more than 85 decibels (dBA). Label equipment as a noise hazard if it generates, or is capable of generating, more than 85 dBA.

Slips, Trips, and Falls - Clear work area of obstructions and debris before setting up. Alter work areas as necessary to provide a safe, reasonably level area. All walking and working surfaces

shall continually be inspected and maintained to be free of slip, trip, and fall hazards. Keep platforms, stairs, and immediate work areas clear. Do not allow oil, grease, or excessive mud to accumulate in these areas. Eliminate slip, trip, and fall hazards or identify them clearly with caution tape, barricades, or equivalent means. Store loose or light material and debris in designated areas or containers. Secure tools, materials, and equipment subject to displacement or falling.

6.5 Vehicle Operations

Terracon *Our Rules to Live By* Rule address vehicle safety in:

R 9 Secure loads, equipment, and tools with Terracon-approved methods.

R 10 Wear seat belt while operating or riding in any motorized vehicle. Drivers must ensure passengers fasten seatbelt before driver operates motorized vehicle.

R 11 Do not use cell phone when driving company vehicles or while conducting company business in your personal vehicle.

R12 On project sites, use Terracon-approved cone when parked.

P9 While conducting company business or on company property, park company or personal vehicle to prevent the need for backing to exit the space or work area.

Site workers must also obey all site traffic signs and speed limits. Operators shall regularly inspect their vehicle for defective parts, such as brakes, controls, motor, chassis and drives. Always be aware and stay alert to traffic around the work area.

APPENDIX C

OPERATIONS MAINTENANCE AND MONITORING CHECKLIST

VIMS OPERATION, MONITORING, AND MAINTENANCE INFORMATION CHECKLIST

PROJECT NAME Building **Date:**

PROJECT NO. **Temp: (^{0}F):**

Barometric Pressure (atm):

1. VIMS OPERATION

Are all blowers operational upon inspection on roof? YES NO (circle one)

All valves open on roof? (fully turned counter clockwise) YES NO (circle one)

Inspect Fan operation - any excesive noise or vibrations? YES NO (circle one)

Inspect other VIMS components for wear, damage, water, obstructions, vibrations, noise, etc.

Comments:

2. VIMS SYSTEM PERFORMANCE MONITORING

Blower	FLOW (CFM)	FID/PID READING (ppm)	System / Sub-Slab Vacuum Measurements (in. WC)			
1			Sample Port	1-1	1-2	1-3
2			Sample Port	2-1	2-2	2-3
3			Sample Port	3-1	3-2	3-3

Equipment used:

Comments:

Response Action:

Inspection Completed By:

Signature:

APPENDIX D

MANUFACTURER SPECIFICATIONS AND OPERATIONS MANUAL

Blower Control Panel

August 2020

OPERATION GUIDE
Manual WO-6142

Prepared for:
Callea Electric
30 Ridgeland Rd
Rochester, NY 14623

Prepared by:
Product Recovery Management
200 20th Street
Butner, North Carolina 27509
(919) 957-8890

1.0 SYSTEM OVERVIEW

Product Recovery Management (PRM) is pleased to provide you, our Client, with this remediation system for pollution abatement. All PRM systems are built off of designs and specifications supplied by the Client.

Remediation systems have inherent potential hazards which need to be addressed on a case by case basis. It is the Client's responsibility to know and assess any associated hazard. As an example, your system may have been designed for a Class 1 Division 2 Hazardous Location. It is the Client's responsibility to confirm that the hazardous location is addressed properly. In the event that a system is used in a location where site conditions and hazards have changed, it is the Client's responsibility to assess the new conditions and evaluate the remediation system properly. The Client needs to contact PRM ASAP if any operation/design discrepancies arise due to changing conditions.

A licensed electrical contractor must be used to connect power to the system. Please tell the electrical contractor to contact PRM corporate office (919)-957-8890 with any questions about connecting power to the system. Failure to use a licensed electrician will void the warranty.

If a high leg exists make sure that it is connected to the center phase (L2) of the distribution block in the panel.

Field wiring interconnections are not to cross the intrinsically safe zone of the panel because intrinsic safety may be impaired.

Hearing protection should be worn at all times when equipment is operating. Permanent hearing damage may occur if proper protection is not worn.

This SSDS Control Panel has been constructed with a NEMA 4 rated painted Steel enclosure, with the controls mounted on the interior door. A Siemens LOGO! PLC controls the alarm conditions and auto restart functions. The SSDS Blowers are controlled by the Hand-Off-Auto Switches mounted on the interior door and their run times are displayed on the hour meter under each switch. When the Blowers are running the TDE will illuminate green and will turn red during a fault alarm situation.

2.0 DESIGN SPECIFICATIONS

PRM has provided a monitoring control panel for your project in accordance with the design specifications. The equipment is itemized in the written proposal below

SSDS Custom Control Panel

- NEMA 4 Painted steel control panel
    - Panel rated for 120V 1ph power
    - Dead-front panel mounted controls
- 3 Hand-Off-Auto Switches
- 3 Run Time Meters
- Green light indicator for Vacuum Blowers on
- Red light indicator for Vacuum Blowers off
- Relay output for customer use for vacuum
- Contactors, breakers and overloads for motors
- Surge and lightning protection
- Distribution block
- 120v transformer to 24vdc power for vacuum sensors
- Circuit breaker is used in lieu of fused disconnect
- Siemens LOGO! PLC for auto restart and hi/low vacuum alarms
- Front door mounted Emergency Stop button
- Panel as built drawings

3.0 SYSTEM OPERATION

A System Operation Plan should be developed for the remediation system that ensures continuous draw down from the recovery wells and proper operation of the treatment system. This plan should be developed based on actual site conditions such as overall water flow rate. During the first two weeks of operation, daily inspections should be made of the system. Components should be adjusted for maximum system efficiency.

To prepare the system to start:

1. Follow any guidelines set for maintenance and inspections.
2. Ensure the HOA Switches for the Blowers located on the front of the Control Panel are in the Off position before engaging the Main Power Disconnect.
3. Use the door mounted TDE Display Panel to ensure the setpoints are set to the desired value.
    3.1. To access the setpoints, use the arrow keys to view the Time/Date screen and press ESC > Highlight 'LOGO! Settings' and press Enter > Highlight 'Program' and press Enter > Highlight 'Set Parameter' and press Enter > Adjustable setpoints are Blower #1 Low Vac, Blower #1 High Vac, Blower #2 Low Vac, Blower #2 High Vac, Blower #3 Low Vac and Blower #3 High Vac. Highlight the parameter to be changed and press Enter.
        3.1.1. Once the parameter has been selected, highlight the ON field and adjust the number to the desired value by pressing enter and use the arrow keys to make the adjustment. Press ESC a few times to return to the Home Screen.
4. Turn the desired Blowers on by toggling the corresponding HOA Switch to the Auto position. The total run time is tracked by the Hour Meters located beneath each HOA Switch.

System Alarms

In the event of a Fault Alarm, the TDE Display will turn red and the system will shutdown. The active alarm will be displayed on the panel for easy identification. Once the issue has been resolved the alarm can be cleared by pressing the F1 key on the TDE which will automatically restart the system.

Blower High Vacuum - The Vacuum Sensor has detected a vacuum level that has exceeded the maximum designated threshold.

Blower Low Vacuum - The Vacuum Sensor has detected a vacuum level that is below the designated minimum threshold.

Overload Fault - A Motor Overload has faulted and needs to be reset. Press the reset button on the corresponding Overload inside the panel before resetting the alarm.

LIMITED EQUIPMENT WARRANTY

PRM warrants its equipment to be free of defects in materials and workmanship for a period of 12 months from the date of completed manufacture. Equipment must be operated and maintained in accordance with the Maintenance manual provided with the equipment. This includes the site specific manual as provided by PRM as well as the individual component manuals with the guidelines established in the Operation & Maintenance manual provided. Warranty service shall not be applicable unless a complete logbook of monthly maintenance is kept. Warranty service shall not be applicable unless all outstanding invoices which are overdue are paid in full. To ensure equipment longevity all equipment must be protected from the elements.

In the event of a problem or failure, immediately contact PRM's corporate office and request technical assistance and have the PRM Project Number available. A technician will assist in determining if the equipment is operating properly and if not will guide the onsite technician in proper settings and adjustments. If a failure of a component has occurred, PRM will request the component be shipped back to PRM for repair or replacement. In the event that the repair requires PRM to be onsite for the repair, PRM will send a qualified technician to the site to make the repair.

PRM systems are thoroughly tested prior to shipment and we have an extremely low component failure record. Most calls are about equipment that has been incorrectly adjusted and a few minutes on the phone with the onsite technician can correct the problem. If there is a component failure, it is our commitment to the customer to remedy any problems as soon as possible.

All technical support matters are EXTREMELY important to PRM. We strive to make sure that all systems and equipment manufactured by PRM have high percentages of uptime and long life.

Sincerely,
Product Recovery Management

Mel Phillips
President

Mandatory: You are required to complete this form for warranty consideration

PRM is committed to using the highest quality control components in all of our systems. We only use copper wiring to ensure that we provide the utmost protection of all controls. Despite our attempts to ensure the safe operation of our systems, it is always possible for control components to become loose in transit or during operation. Any system that we ship should always be inspected at start-up, and all power conductors within the control panel should be re-torqued once the system has arrived on site.

Once power has been supplied to the system and it has been running for 1 week, all wiring should be re-inspected and re-torqued. During the early run time of any system, there is always a possibility of wires loosening as thermal expansion and contraction occurs with power cycles at the terminals. After 2 months of operation, this process should be completed again to ensure there are no abnormalities. PRM also recommends that this type of inspection is done yearly, or as frequently as needed, to ensure system integrity. If the system is relocated from one site to another, the entire inspection process should be repeated. This applies to rental systems as well.

If the system is under the warranty period provided by PRM, it is required that the client provide proof of these inspections to PRM in order to maintain the warranty. The proof of these inspections, and the results, should be provided to PRM as they occur. This proof should be provided through email with an attached inspection document (included) and an image of the panel interior. If a condition on site causes power terminal failure due to damage to the control panel components, and the client has not provided PRM with proof of these inspections in advance, the client accepts liability of costs necessary to repair the system. Please keep in mind that these failures can also lead to auxiliary equipment failures such as motors, resistive heaters, and other loads. In the event that a power anomaly occurs on site, such as lightning and other surges, PRM is not responsible for the downtime and/or loss of income due to such damages. It is the clients responsibility to mitigate and repair such damages as soon as possible. By operating the system after delivery, the client agrees to default to PRM's judgement in the event a disagreement occurs after such damages occur.

Only qualified technicians should be allowed to work inside of the system control cabinet or with other electrical components, and power should always be disconnected prior to conducting such work. PRM will always support the client to expedite repairs when possible.

Mandatory Electrical Inspection Form

Start-Up Inspection **Date:**_____
Signature:_____
Electrical Notes:_____

Week 1 Inspection **Date:**_____
Signature:_____
Electrical Notes:_____

2 Month Inspection **Date:**_____
Signature:_____
Electrical Notes:_____

Annual Inspection **Date:**_____
Signature:_____
Electrical Notes:_____

Please email the completed form to warrantyfulfillment@prmfiltration.com

REMEDIATION EQUIPMENT TERMS OF ACCEPTANCE AND WARRANTY CARD

1. All remediation equipment supplied by PRM must be wired by a licensed electrician. The electrician to perform the work should be familiar with typical applications and all work must conform to the NEC. Failure to have a licensed electrician perform connections will void the system warranty.

2. All mechanical work should be done in a neat and orderly fashion without kinks and strains imposed on hoses and piping systems.

3. Each system supplied by PRM must be registered with PRM a minimum of 2 days prior to startup. This allows PRM to assign a technical support number to the project for start up and technical assistance. Failure to register the equipment will cause technical support delays.

4. Equipment supplied by PRM that will be powered by a generator will require low voltage protection across each phase. Equipment with electronic or solid state controls must be provided with clean power that is supplied with surge protection and appropriate equipment to provide a regulated power source. Failure to provide this power protection will void the warranty on the control system and possibly on the equipment itself.

5. Technical support is available 8:30am to 4:30pm Eastern Standard Time. Monday through Friday except for Holidays. Technical support offered after hours will be billable at a rate of $85.00 per hour with a minimum 1 hour billing.

WARRANTY CARD WO-6142

WARRANTY CARD WO-6142

Site Name_____

Electrician _____ License No. / Ph. No._____

Size of service _____ Conductors _____

THIS CARD MUST BE RETURNED TO PRM FOR TECHNICAL SUPPORT TO BE ACTIVATED.

TECHNICAL SUPPORT

SUPPORT

Technical support calls are handled on a case by case basis. When calling PRM for support, please have the PRM project Work Order Number (WO-6142).

PRM provides free technical support for warranty related repairs and issues. Technical support provided for troubleshooting assistance or training in system operation is not covered as free support.

Due to the high volume of troubleshooting calls, PRM will invoice for these support services. Fees for technical support are $50 per support call up to 30 minutes. Additional phone based support is invoiced at $85.00 per hour. Fees are subject to change without notice.

PROGRAMMING

PRM will modify system programs for a programmable logic controller (PLC) only by issuance of a purchase order or approved payment method if applicable. Certain PLC programming logic is proprietary information to PRM and PRM will not share logic that it deems proprietary. PRM will make logic changes to systems for a nominal fee.

If during the system warranty period, PRM finds a programming bug or error, PRM will make program repairs at no charge to the client.

Form: OMM-01-0509
Effective: 5/4/09
Supersedes OMM-01-0207
Part No.: 01218

Installation, Safety, Operation & Maintenance Instructions And Parts List

For Models PB, PBS, SPB, LM and LMF.

Arrangement 4 Blowers

NOTE

READ ENTIRE MANUAL, INCLUDING "SECTION IV. INITIAL UNIT STARTUP" BEFORE ATTEMPTING TO INSTALL AND OPERATE THIS EQUIPMENT.

BLOWER SPECIFICATIONS

BLOWER SERIAL NUMBER: 2006083 **MFG. DATE:** _____

NOTE: The serial number above is a required reference for any assistance. It is stamped on the blower nameplate.

BLOWER SPECIFICATIONS:

Model: PB-10A **Arrangement:** Arr. 4 **Rotation:** CCW **Discharge:** UB

Nominal Inlet Size: 6 (in Inches) **Wheel Size and Type:** 11 X 3 (BC)

BLOWER PERFORMANCE DATA: (If entered on order)

CFM: 400 **SP:** 6" (Inches of Water Gauge) **Motor BHP:** .69

Density: .075 **Altitude:** _____ (Ft. above S.L.) **Airstream Temperature:** 70 °**F.**

Fan RPM: 3450 **Maximum Safe Fan RPM:** _____ **DO NOT EXCEED THIS RPM**

MOTOR DATA: (This section is completed only if the motor was supplied by Cincinnati Fan)

HP: .75 **RPM:** 3450 **Voltage:** 200/400V **Phase:** 3

Hz: 60 **Frame Size:** 56 **Enclosure:** TEFC **Efficiency:** 57.2%

IF Motor is EXP, Class(es) & Group(s) are: _____

Manufacturers Model Number: _____ **CFV Part Number:** _____

ATTENTION: RECEIVING DEPARTMENT

All Cincinnati Fan products are packaged to minimize any damage during shipment. The freight carrier is responsible for delivering all items in their original condition as received from Cincinnati Fan. The individual receiving this equipment is responsible for inspecting this unit for any obvious or concealed damage. If any damage is found, it should be noted on the bill of lading before the freight is accepted and the receiver must file a claim with the freight carrier.

LONG TERM STORAGE NOTICE

If this blower will NOT be installed and put into operation within 30 days, refer to the "Long Term Storage Instructions" on pages 12 and 13. Failure to follow all applicable long term storage instructions, will void your warranty. This blower should be stored indoors in a clean, dry location.

⚠ DANGER

				
Hazardous voltage can cause electrical shock and death.	High speed rotating equipment can cause severe personal injury.	Lock out/Tag out to prevent personal injury BEFORE starting ANY service or inspection.	Avoid injury. NEVER operate without ALL required safety guards in place.	Avoid injury. You MUST read and understand all instructions in this manual BEFORE installing.

TABLE OF CONTENTS

I. GENERAL
- A. Unpacking and Handling 2
- B. Safety Accessories & Instructions.....2-3

II. INSTALLATION
- A. Vibration.....3
- B. Mounting Methods.....3-4
- C. Duct Work Connections.....4
- D. Safety Guards.....4
- E. Dampers and Valves.....4
- F. Set Screw & Taper-lock Bushing Torque Values 5

III. ELECTRICAL
- A. Disconnect Switches 5
- B. Motors.....5-6
- C. Maximum Blower Speed.....6

IV. INITIAL UNIT STARTUP
- A. Pre-Startup & Post-Startup Checks.....7
- B. Vibration.....8-9

V. ROUTINE INSPECTION & MAINTENANCE.....9
- A. Hardware 10
- B. Motor Bearing Lubrication 10
- C. Wheel Balance 10
- D. Vibration.....10
- E. Dampers and Valves.....10
- F. Safety Equipment or Accessories 10-11

VI. ORDERING PARTS.....11

VII. TROUBLESHOOTING.....11-12

VIII. LONG TERM STORAGE.....12-13

IX. WARRANTY, LIABILITY & RETURNS.....14

X. PARTS DRAWING.....15

I. GENERAL

A. Unpacking:

Be careful not to damage or deform any parts of the blower when removing it from the packaging container. **All the packaging material should be kept in the event the blower needs to be returned.**

Handling:

Handling of the blower should be performed by trained personnel and be consistent with all safe handling practices. Verify that all lifting equipment is in good operating condition and has the proper lifting capacity. The blower should be lifted using well-padded chains, cables or lifting straps with spreader bars. Some blower models have lifting eye locations provided in the blower base. **NEVER lift the blower by an inlet or discharge flange, motor shaft, motor eye bolt, or any other part of the blower assembly that could cause distortion of the blower assembly.**

B. Safety Instructions & Accessories:

1. **Safety Instructions:**
   All installers, operators and maintenance personnel should read AMCA Publication 410-96, **"Recommended Safety Practices for Users and Installers of Industrial and Commercial Fans".** This manual is included with the blower. Additional copies can be requested by writing us at Cincinnati Fan, 7697 Snider Rd., Mason, OH 45040-9135
2. **Sound:**
   Some blowers can generate sound that could be hazardous to personnel. It is the responsibility of the user to measure the sound levels of the blower and/or system, determine the degree of personnel exposure, and comply with all applicable safety laws and requirements to protect personnel from excessive noise.

3. Air Pressure and Suction:

In addition to the normal dangers of rotating machinery, the blower can present additional hazards from the suction or pressure created at the blower inlet or discharge. Suction at the blower inlet can draw materials into the blower where they become high velocity projectiles at the discharge and cause severe personal injury or death. It can also be extremely dangerous to persons in close proximity to the inlet or discharge as the forces involved can overcome the strength of most individuals.

⚠ WARNING

NEVER OPERATE A BLOWER WITH A NON-DUCTED INLET AND/OR DISCHARGE. IF THE BLOWER INLET AND/OR DISCHARGE IS NON-DUCTED, IT IS THE USERS RESPONSIBILITY TO INSTALL AN INLET AND/OR DISCHARGE GUARD.

4. Temperature:

Many blowers, blower components and all motors operate at temperatures that could burn someone if they come in contact with them. If this potential hazard could exist in your installation, steps must be taken by the user to protect anyone from coming in contact with this equipment.

5. Spark Resistance; (Per AMCA Standard 99-0401-86 and ISO 13499)

⚠ DANGER

NO GUARANTEE OF ANY LEVEL OF SPARK RESISTANCE IS IMPLIED BY SPARK RESISTANT CONSTRUCTION. IT HAS BEEN DEMONSTRATED THAT ALUMINUM IMPELLERS RUBBING ON RUSTY STEEL CAN CAUSE HIGH INTENSITY SPARKS. AIR STREAM MATERIAL AND DEBRIS OR OTHER SYSTEM FACTORS CAN ALSO CAUSE SPARKS.

6. Safety Accessories;

Guards:

All moving parts must be guarded to protect personnel. Safety requirements can vary, so the number and types of guards required to meet company, local, state and OSHA regulations must be determined and specified by the actual user or operator of the equipment.

NEVER start any blower without having all required safety guards properly installed. All blowers should be checked on a regular schedule, for missing or damaged guards. If any required guards are found to be missing or defective, the power to the blower should be immediately turned off and locked out in accordance with OSHA regulations. Power to the blower should NOT be tuned back on until the required guards have been repaired or replaced.

This blower can become dangerous due to a potential “windmill” effect, even though all electrical power has been turned off or disconnected. The blower wheel should be **carefully** secured to prevent any rotational turning ***BEFORE*** working on any parts of the blower/motor assembly that could move.

7. Access or Inspection Doors:

⚠ DANGER

NEVER OPEN ANY ACCESS OR INSPECTION DOORS WHILE THE BLOWER IS OPERATING. SERIOUS INJURY OR DEATH COULD RESULT FROM THE AFFECTS OF AIR PRESSURE, AIR SUCTION OR MATERIAL THAT IS BEING CONVEYED. DISCONNECT OR LOCK OUT POWER TO THE BLOWER AND LET THE BLOWER WHEEL COME TO A COMPLETE STOP *BEFORE* OPENING ANY TYPE OF ACCESS OR INSPECTION DOOR.

II. INSTALLATION

A. Vibration:

Before any mounting method is selected, the user should be aware of the effects vibration will have on the blower, motor and other parts. Improper blower installation can cause excessive vibration causing premature wheel and/or motor bearing failure, that is not covered under warranty. Vibration eliminator pads, springs or bases should be properly installed to prevent any blower vibration from transmitting to the foundation, support structure or ducting.

⚠ WARNING

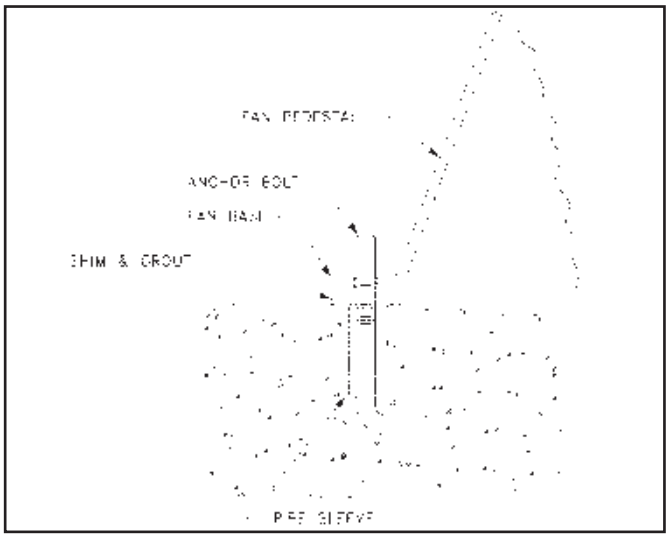
SHUT THE BLOWER DOWN IMMEDIATELY IF THERE IS ANY SUDDEN INCREASE IN VIBRATION.

B. Mounting Methods:

1. Floor Mounted Units;

Centrifugal blowers should be mounted on a flat, level, concrete foundation weighing 2-3 times the weight of the complete blower/motor assembly. It is recommended that the foundation be at least 6 inches larger than the base of the blower. The foundation should include anchor bolts such as shown in **Fig. 1** on page 4. Place the blower over the anchor bolts and shim under each bolt until the blower is level. After shimming, flat washers, lock washers and lock nuts should be tightened at each anchor bolt. Any gaps between the blower base and the foundation should be grouted. If the blower will be sitting on some type of vibration pads or mounts, follow the recommended mounting procedures supplied with the vibration elimination equipment.

Fig. 1



2. Elevated Units;

Improper mounting of elevated blowers can cause vibration problems. The structure that the blower/motor assembly will be mounted on must be strong enough to support at least 3 times the weight of the entire blower/motor assembly. **An insufficient support will cause excessive vibration and lead to premature wheel and/or motor bearing failure**. Bracing of the support structure must be sufficient enough to prevent any side sway. The entire structure should be welded at all connection joints to maintain constant alignment of the platform.

⚠ DANGER

THE IMPROPER DESIGN OF AN ELEVATED PLATFORM STRUCTURE COULD RESULT IN A RESONANT CONDITION, AND CONSEQUENTLY, CAUSE A LIFE THREATENING, CATASTROPHIC, STRUCTURAL FAILURE.

C. Duct Work Connections:

All duct connections to the blower should include flexible connectors between the ducting and the blower inlet and/or discharge. This will eliminate distortion, noise and vibration from transmitting to the duct and building. The connectors should be selected to handle the operating conditions for air volume and pressure that the blower will produce. **All ducting or accessories, added by the user, should be independently supported. DO NOT use the blower/motor assembly to support any additional weight.** Inlet and/or discharge duct elbows should be located a minimum of 2 blower wheel diameters from the blower. Any duct elbows located closer than 2 wheel diameters to the blower inlet or discharge **WILL** reduce the air performance and blower efficiency. Any duct elbows near the blower discharge should be in the **same rotational direction** as the **blower rotation**.

Non-Ducted Blower Inlet:

Any blower with no ducting on the inlet **must** have an inlet guard. The blower should be located so the blower inlet is, at least, 1 wheel diameter away from any wall or bulkhead to eliminate a reduction in air flow.

Non-Ducted Blower Discharge:

Any blower with no ducting on the discharge **must** have a discharge guard.

D. Safety Guards:

Cincinnati Fan offers guards, as optional, to keep your blower in compliance with OSHA safety regulations. These include inlet or discharge guards. Any blowers built with high temperature construction, a “heat slinger guard” is standard. It is the responsibility of the user to make sure this blower meets all local, state and OSHA safety regulations. If you have a specific guard requirement not covered by OSHA, please contact the local Cincinnati Fan sales office for assistance.

E. Dampers and Valves: (Airflow control devices)

If the blower is supplied with any type of air flow control device, it should be closed before initial start-up of the blower to minimize overloading of the motor. Any airflow control device, with bearings, should be maintained in accordance with the manufacturers instructions. Any air flow control device, with an automatic control mechanism, should be adjusted per the manufacturers recommendations.

F. Set Screw and Taper-lock Bushing Torque Values:

All blower wheel set screws are tightened to the proper torque prior to shipment. Some wheels may have taper-lock hubs and split, taper-lock bushings to secure the wheel to the motor shaft.

NOTE: Check all set screw or taper-lock bushing torques. Forces encountered during shipment, handling, rigging and temperature can affect factory settings. For correct torque values, see **Tables 1** and **2** below.

Table 1

SET SCREW TORQUE VALUES		
Diameter & Number of Treads/Inch	**Hex Wrence Size (Across Flats)**	**Required Torque (Inch Pounds)**
1/4-20	1/8"	65
5/16-18	5/32"	165
3/8-16	3/16"	228
7/16-14	7/32"	348
1/2-13	1/4"	504
5/8-11	5/16"	1104

Table 2

TORQUE VALUES FOR TAPER-LOCK BUSHINGS	
Taper-lock Bushing Size	**Required Torque (Inch Pounds)**
H	95
B	192
P	192
Q	350
R	350

⚠ CAUTION

Set screws should NEVER be used more than once. If the set screws are loosened, they MUST be replaced. Use only knurled, cup-point, set screws with a nylon locking patch.

III. ELECTRICAL

A. Disconnect Switches:

All blower motors should have an independent disconnect switch located in close visual proximity to turn off the electrical service to the blower motor. **Disconnects must be locked out in accordance with OSHA "lock out-tag out" procedures any time inspection or maintenance is being performed on the blower and/or motor assembly. The "lock out-tag out" procedure should be performed by a licensed electrician or authorized personnel.** All disconnects should be sized in accordance with the latest NEC codes (National Electric Codes) and any local codes and should be installed only by a licensed electrician. "Slow blow" or "time delay" fuses or breakers should be used since the initial start-up time for the blower motor, although rare, can be up to 10 seconds.

B. Motors:

⚠ DANGER

ALL WIRING CONNECTIONS, INSPECTION AND MAINTENANCE OF ANY MOTOR MUST BE PERFORMED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH THE MOTOR MANUFACTURERS RECOMMENDATIONS, ALL ELECTRICAL CODES AND OSHA REGULATIONS. FAILURE TO PROPERLY INSTALL, MAKE WIRING CONNECTIONS, INSPECT OR PERFORM ANY MAINTENANCE TO A MOTOR CAN RESULT IN MOTOR FAILURE, PROPERTY DAMAGE, EXPLOSION, ELECTRICAL SHOCK AND DEATH.

1. **DO NOT connect or operate a motor without reading the motor manufacturers instructions supplied with the blower.** The basic principle of motor maintenance is: **KEEP THE MOTOR CLEAN AND DRY.** This requires periodic inspections of the motor. The frequency of the inspections depends on the type of motor, the service and environment it will be subjected to and the motor manufacturers instructions.
2. **Cleaning:** Cleaning should be limited to exterior surfaces only. **Follow motor manufacturers cleaning instructions.**
3. **Lubrication:** Most small motors have sealed bearings that are permanently lubricated for the life of the motor. Some larger motors have grease plugs that should be replaced with grease fittings to perform re-lubrication. These motors, or any motor with grease fittings, should be lubricated in accordance with the motor manufacturers recommendations. Lubrication frequency depends on the motor horsepower, speed and service. **BE SURE** you use compatible grease and **DO NOT** over grease.
4. **Location:** If the motor will be outside and subjected to the weather, it is recommended that a weather cover be installed to keep rain and snow off of the motor. No motors are guaranteed to be "watertight". Be careful to allow enough openings between the motor and the motor cover to let the motor "breath". If the back end of the motor is covered, the cover should be no closer than 3" to the back of the motor for proper ventilation.

5. **Wiring Connections:** All wiring connections should be made for the proper voltage and phase as shown on the motor nameplate. Connections should follow the motor manufacturers recommendations as shown on the wiring schematic. This wiring diagram will be located on the outside of the motor, inside of the motor conduit box or on the motor nameplate. **Reversing some wires might be necessary to get the correct blower rotation.**
6. **Motors with Thermal Overload Protection:** If a motor is equipped with thermal overloads, the thermal overload must be wired per the wiring schematic to be operable. ***There are 3 types of thermal overloads:***
   a. **Automatic:** These will automatically shut the motor down if the internal temperature exceeds the design limits.

⚠ DANGER

MAKE SURE YOU LOCK OUT THE POWER TO THE MOTOR BEFORE INSPECTING ANY MOTOR WITH AUTOMATIC THERMALS. WHEN THE THERMALS COOL DOWN, THEY WILL ALLOW THE MOTOR TO AUTOMATICALLY START UP AGAIN, UNLESS YOU HAVE LOCKED OUT THE POWER TO THE MOTOR.

   b. **Manual:** These motors will have a button on them. If the motor overheats, it will shut down. After you have inspected the motor and eliminated the over heating problem, you will need to "reset" it by pushing the button. **You should still lock out the power BEFORE inspecting the motor.**
   c. **Thermostats:** This type of thermal is a temperature sensing device **ONLY**. If the motor overheats, the thermostats will open or close (depending on the type) and send a **"signal"** to the electrical box. ***THEY WILL NOT TURN THE MOTOR OFF.*** **These are pilot circuit devices that must be connected to the magnetic starter circuit.**

7. **EXPLOSION PROOF Motors:** No motor is explosion proof. Explosion proof (EXP) motors are designed so if there is an explosion **WITHIN** the motor, the explosion will be **CONTAINED INSIDE** the motor and not allowed to get out to the atmosphere. All explosion proof motors must be selected based on the atmosphere and/or the environment the motor will be operating in. Explosion proof motors are designed, rated, and labeled for their operating conditions based on Classes, Groups and "T" Codes. **The Class, Group and "T" Code of an EXP motor MUST be selected based on the atmosphere and/or environmental conditions the motor will be operating in. Consult the NEC (National Electric Code) and the NFPA (National Fire Protection Association) for the proper EXP motor Class, Group and "T" Code required for your specific application and location.**

⚠ DANGER

IF AN EXPLOSION PROOF MOTOR IS USED IN AN AREA CONTAINING VOLITILE LIQUIDS, GASES, FUMES OR DUST FOR WHICH THE MOTOR WAS NOT DESIGNED TO OPERATE IN, AN EXPLOSION AND/OR FIRE CAN OCCUR.

NOTICE:

   a. **All EXP motors have some type of thermal overload as required by UL (Underwriters Laboratories). Refer to all of Section 6 above.**
   b. **All EXP motors are required to have the UL (Underwriters Laboratories) and CSA (Canadian Standards Association) listing numbers on the motor name plate or on a separate plate attached to the motor. The Class, Group and "T" Code the motor is designed for must also be listed.**

8. **Normal Motor Operating Temperatures:**
   Using your hand to test the normal running temperature of a motor can be a very painful experience;
   The normal operating temperature of a fully loaded, open type, electric motor operating in a 70°F. (21° C.) ambient temperature is 174°F. (79° C.)

C. Maximum Blower Speed and Motor Speed Controllers:

If you will be using any type of motor speed controller with this blower, **DO NOT** exceed the **maximum safe blower speed**. Installing and using a speed control device requires special training and certification as required by the speed control manufacturer. See the manufacturers instructions for proper use, installation and wiring connections for the maximum speed settings. It may also be necessary to "block out" some speeds to eliminate a resonant vibration problem. The maximum safe blower speed is shown on the data sheet shipped with the blower. If you have lost the data sheet, contact Cincinnati Fan or our sales office for your area. You must have the serial number from the **blower** name plate for us to determine the maximum safe blower speed. Cincinnati Fan will only extend the motor manufacturers warranty, when used with a speed controlling device, if the motor has the words **"Inverter Duty"** marked on the motor name plate. If the motor does not have **"Inverter Duty"** marked on the motor name plate, and you have a motor failure, you will be required to contact the motor manufacturer for any service or warranty claims.

IV. INITIAL UNIT STARTUP

NOTICE: Failure to complete and document all the following pre-startup and both post-startup checks, listed in sections A (below) and B on page 8, could void all warranties.

A. Pre-Startup & Post-Startup Checks: (Check blocks as each step is completed. Retain this for your records.)

A1. Pre-Startup Checks Completed By: _____ DATE: _____

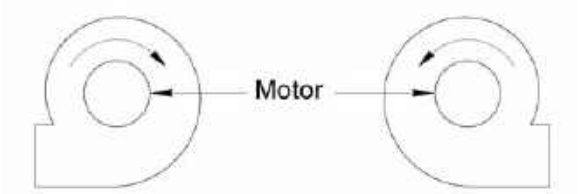
A2. 8 Hour, Post-Startup Checks Completed By: _____ DATE: _____

A3. 3 Day, Post-Startup Checks Completed By: _____ DATE: _____

MAKE SURE POWER TO THE MOTOR IS LOCKED OUT BEFORE STARTING PRE-STARTUP OR POST-STARTUP CHECKS.

1. ☐☐☐ If possible, *CAREFULLY* spin the blower wheel by hand to ensure it rotates freely and no rubbing or clicking noise is heard.
2. ☐☐☐ Check all blower, foundation and duct work hardware to make sure it is tight.
3. ☐☐☐ Check all blower wheel set screws to make sure they are tight per **Table 1** on page 5.
4. ☐☐☐ If the wheel has a taper-lock bushing, make sure the bolts are tightened per **Table 2** on page 5.
5. ☐☐☐ Make certain there is no foreign material in the blower or duct work that can become a projectile.
6. ☐☐☐ Make sure any inspection doors in the duct work are securely bolted or locked.
7. ☐☐☐ Ensure all electrical power components are properly sized and matched for your electrical system.
8. ☐☐☐ Check that all required guards are properly secured.
9. ☐☐☐ Any dampers should be fully opened and closed to make sure there is no binding or interference.
10. ☐☐☐ If your blower is mounted on an elevated support structure, make sure the structure is welded at all the joint connections and the structure is properly braced to prevent “side sway”.
11. ☐☐☐ Close any dampers to minimize load on motor. Especially on blowers with high temperature construction. **Never** subject a “cold” blower to a “hot” gas stream. If the blower will be handling “hot gases” greater than 150°F (65°C) it is imperative that the blower be subjected to a gradual rate of temperature increase, not to exceed 15°F/minute (8°C/minute). The same temperature limits are also important when the blower is experiencing a drop in temperature until the temperature drops down to 150°F (65°C). Only, when the entire blower has reached an equilibrium temperature of 150°F (65°C), or less, should the power be turned off.
12. ☐☐☐ Make sure the power source connections to the blower motor are per the motor manufacturers instructions.
13. ☐☐☐ Make sure the blower wheel is stationary prior to startup. **Starting a blower with a wheel that is rotating backwards can cause wheel damage.**
14. ☐☐☐ Apply power to the blower motor momentarily (i.e. “bump start”) to check for proper blower wheel rotation. If the blower is rotating in the wrong direction, reconnect the motor leads per the motor manufacturers wiring schematic. **Blower rotation is determined by viewing the blower from the motor side of the blower, NOT from the inlet side**. After reconnecting the leads, repeat this step. **See Fig. 2 below.**

Fig. 2



Clockwise (CW) Rotation **Counter-Clockwise (CCW) Rotation**

15. ☐☐☐ Apply power to the blower motor and let it come up to full speed. **Turn off the power.** Look and listen for any unusual noise or mechanical abnormality while the blower wheel is still spinning. If any are noticed, lock out the power, wait for the blower wheel to come to a complete stop, locate the cause and correct it.
16. ☐☐☐ Unlock power and start the blower.
17. ☐☐☐ Measure, record and keep the following motor data for future reference and comparison:
(Single phase motors will only have L1 and L2 leads)

Amperage draw on each motor lead: L1 _____ L2 _____ L3 _____
(Running amps **SHOULD NOT** exceed the motor nameplate amps for the voltage being operated on)

Voltage coming to motor leads: L1_____ L2_____ L3_____
(Should be about the same input voltage on all leads)

B. Vibration:

The blower was balanced at the factory to comply with ANSI/AMCA Standard 204-05, Category BV-2. However, rough handling in shipment and/or erection, weak and/or non-rigid foundations, and misalignment may cause a vibration problem after installation. After installation, the vibration levels should be checked by personnel experienced with vibration analysis and vibration analysis equipment.

NOTE:

The blower SHOULD NOT be operated if the vibration velocity of the fan exceeds 0.50 inches per second, filter out, if the blower is rigidly mounted. If the blower is mounted on isolators or on an isolator base, it SHOULD NOT be operated if the vibration velocity of the blower exceeds 0.75 inches per second, filter out.

Vibration readings for direct driven blowers should be taken on the motor at the top, sides and end as per **Fig. 3** below. After you have taken your vibration readings, write them down in the spaces below and keep for future comparison.

⚠ DANGER

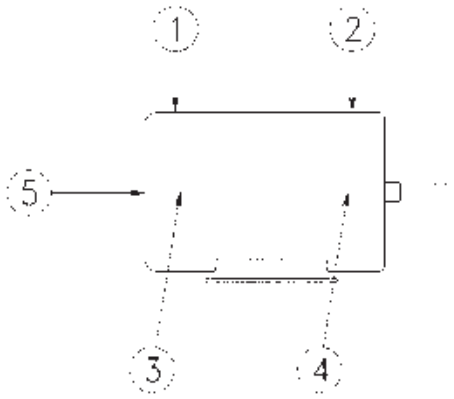
If the blower is going to be conveying material, it is the users responsibility to periodically turn the blower off and lock out the power. The blower wheel should then be checked for material build-up and/or erosion. If material has built up on any parts of the wheel, it MUST be removed and cleaned before it is put back into service. If any parts of the wheel have been eroded, the wheel MUST be replaced. Failure to perform this inspection can cause excessive vibration that will damage the blower and/or motor bearings. When vibration becomes excessive, it will lead to complete blower failure that could cause property damage, severe personal injury and death. The user must determine the frequency of this inspection based on the actual circumstances of their operation, BUT checking the vibration readings should NEVER exceed a 12 month period. For the AMCA/ANSI standard for vibration limits, see Fig. 4 on page 9.

Fig. 3

VIBRATION METER PROBE POSITIONS

For Arrangement 4 Blowers

	1	2	3	4	5
A					
B					
C					

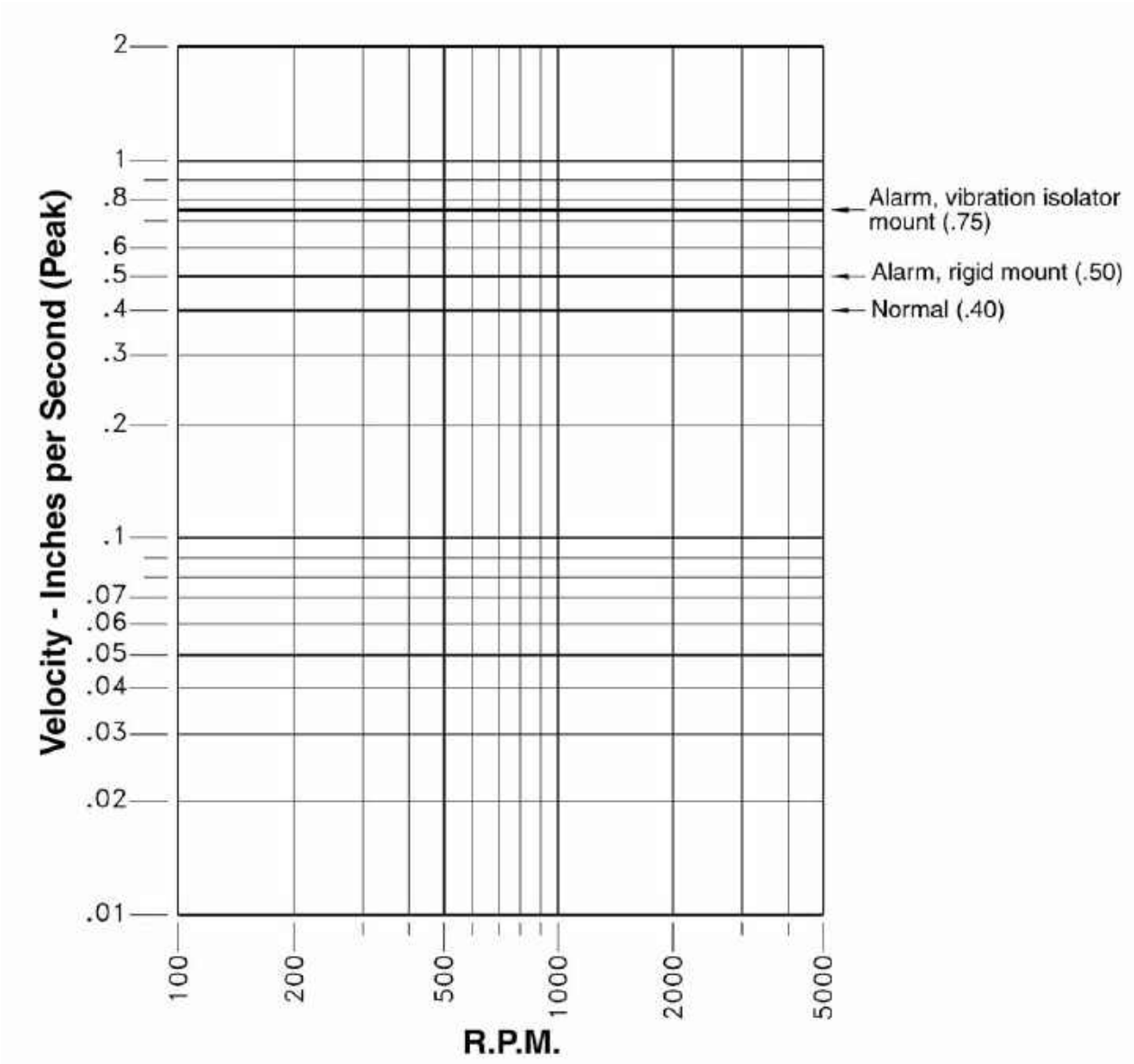


A Pre-Startup ..... Readings taken by: _____ **Date:** _____

B 8 Hour Post-Startup ..... Readings taken by: _____ **Date:** _____

C 3 Day Post-Startup ..... Readings taken by: _____ **Date:** _____

Fig. 4 Vibration Severity Chart



V. ROUTINE INSPECTION & MAINTENANCE

Periodic inspection of all the blower parts is the key to good maintenance and trouble-free operation. The frequency of inspections must be determined by the user and is dependent upon the severity of the application. **BUT,** it should **NEVER** exceed a 12 month period. The user should prepare an inspection and maintenance schedule and make sure it is adhered to.

⚠ WARNING

BEFORE STARTING ANY INSPECTION OR MAINTENANCE, BE SURE BLOWER IS TURNED OFF, POWER IS LOCKED OUT AND THE BLOWER WHEEL HAS BEEN CAREFULLY SECURED TO PREVENT WIND MILLING. IF THE OPERATING CONDITIONS OF THE BLOWER ARE TO BE CHANGED (SPEED, PRESSURE, TEMPERATURE, ETC.) CONSULT CINCINNATI FAN, OR OUR SALES OFFICE FOR YOUR TERRITORY, TO DETERMINE IF THE UNIT WILL OPERATE SAFELY AT THE NEW CONDITIONS.

A. Hardware:

All blower and foundation hardware should be checked to make sure it is tight. Wheel set screws or taper-lock bushings should be tightened to the torque values shown in **Tables 1 and 2** on page 5.

NOTE: If any set screws have come loose, they must be thrown away and replaced. **NEVER** use set screws more than once. **Replace with knurled, cup-point set screws with a nylon locking patch.**

B. Motor Bearing Lubrication:

1. Motor Bearings:

Most smaller motors have sealed bearings that never require re-lubrication for the life of the motor. For any motors with grease fittings, consult the motor manufacturers recommendations with reference to the lubrication frequency and the type of grease that should be used.

DO NOT over grease the motor bearings. Generally, 1-2 shots should be enough. Use a hand operated grease gun at no more than 40 PSI. ***IF POSSIBLE, CAREFULLY*** **lubricate the motor bearings while the motor is running.**

C. Wheel Balance:

All blower wheels are balanced at the factory. It is not uncommon that additional "trim balancing" is required after the blower is assembled. Trim balancing of the blower assembly, in the field, is typically always necessary for all replacement wheels. **After any wheel is installed, the final balance of the entire blower assembly should be checked.** Refer to Section B on page 8 and Fig. 4 on page 9. Air stream material or chemicals can cause abrasion or corrosion of the blower parts. This wear is generally uneven and, over time, will lead to the wheel becoming unbalanced, causing excessive vibration. When that happens, the wheel must be rebalanced or replaced. The other air stream components should also be inspected for wear or structural damage and cleaned or replaced if necessary. **After cleaning any blower wheel, it should be balanced and then "trim balanced" on the motor shaft.**

There are three ways to balance a blower wheel:

1. **Add balancing weights for fabricated aluminum, steel or stainless steel wheels:**
   Balance weights should be rigidly attached to the wheel at a location that will not interfere with the blower housing nor disrupt air flow. They should (if at all possible) be welded to the wheel. When trim balancing the wheel, **on the blower,** be sure to ground the welder **directly** to the blower wheel. Otherwise, the welding current will likely pass through the motor and damage the motor bearings.
2. **Grinding off material for cast aluminum wheels:**
   If you are grinding on the wheel to remove material, be very careful not to grind too much in one area. That could affect the structural integrity of the wheel.
3. **Forward curved wheels, Model LM only (also known as squirrel cage or multivane wheels).**
   These wheels have balancing clips attached to individual blades around the wheel. That is the only proper way to balance this type of wheel.
   NOTE:
   Removing any forward curve wheel from the blower to clean it, requires special attention when reinstalling the wheel back into the blower housing. Make sure you reinstall the wheel so the proper wheel-to-inlet clearance is maintained. Failure to do this will affect the blowers airflow (CFM), static pressure (SP) capabilities and efficiency. Consult Cincinnati Fan or our local sales office for your area for assistance if necessary.

D. Vibration:

As mentioned previously in this manual, excessive vibration can cause premature motor bearing failure that could lead to catastrophic failure of the blower. After performing any routine maintenance, the vibration readings should be taken again. New readings should be taken (maximum every 12 months) and compared to the readings you recorded in **Figure 3**, on page 8, during the initial startup. **If any major differences are present, the cause should be determined and corrected before the blower is put back into operation.**

The most common causes of vibration problems are:

1. Wheel unbalance.
2. Mechanical looseness.
3. Poor blower inlet and/or discharge conditions.
4. Foundation stiffness.

E. Dampers and Valves: (Airflow control devices)

Turn off and lock out power to the blower motor. Any dampers or valves should be periodically inspected to make sure all parts are still operable within their full range and there is no interference with any other damper or blower components. Any bearings or seals should be checked for their proper function. The manufacturers maintenance instructions should be followed.

F. Safety Equipment & Accessories:

It is the users responsibility to make sure that all safety guards required by the company, local, state and OSHA regulations are properly attached and fully functional at all times. If any guards become defective or non-functional at any time, **the power to the blower MUST be turned off and locked out** until complete repairs and/or replacements have been made, installed and inspected by authorized personnel.

Any accessories used in conjunction with the blower should also be inspected to make sure they are functioning within their intended limits and design specifications. The manufacturers maintenance manuals should be referred to for correct maintenance procedures. These accessories include, but are not limited to, the following:

Shaft seals, inspection doors, vibration isolators or vibration bases, air flow or pressure measuring equipment, hoods, controls, special coatings, silencers, expansion joints, valves, flexible connectors and filters.

VI. ORDERING REPLACEMENT PARTS:

Under normal conditions, you should not need any spare or replacement parts for at least 24 months after shipment from Cincinnati Fan. That does not include any wear due to abrasion, corrosion, excessive temperatures, abuse, misuse, accident or any severe conditions the fan was not designed for.

NOTICE:

1. **If this blower is vital to any process that could cost you lost revenue, we strongly recommend that you keep a replacement blower wheel and motor at your location.**

2. **If this blower is vital for the safety of any people and/or animals, we strongly recommend that you keep a complete blower/motor assembly, as originally ordered, at your location.**

To order any parts or complete units, contact us for the name of our sales office for your area. Or you can find them on our website at: **www.cincinnatifan.com**

WE MUST HAVE THE BLOWER SERIAL NUMBER FROM THE BLOWER NAME PLATE TO IDENTIFY PARTS CORRECTLY.

VII. TROUBLESHOOTING

⚠ DANGER

Troubleshooting should only be performed by trained personnel. Any potential electrical problems should only be checked by a licensed electrician. All safety rules, regulations and procedures MUST be followed. Failure to follow proper procedures can cause property damage, severe bodily injury and death.

Potential problems and causes listed below are in no order of importance or priority. The causes are only a list of the most common items to check to correct a problem. If you find the cause of a problem, **DO NOT** assume it is the **ONLY** cause of that problem. Different problems can have the same causes.

PROBLEM	CAUSE
Excessive Vibration	1. Loose mounting bolts, wheel set screws, taper-lock hubs. 2. Worn or corroded blower wheel. 3. Accumulation of foreign material on blower wheel. 4. Bent motor shaft. 5. Worn motor bearings. 6. Motor out of balance. 7. Inadequate structural support. 8. Support structure not sufficiently cross braced. 9. Weak or resonant foundation. 10. Foundation not flat and level.
Airflow (CFM) Too Low	1. Blower wheel turning in wrong direction (**rotation**). 2. Actual system static pressure (**SP**) is higher than expected. 3. Motor speed (**RPM**) too low. 4. Dampers or valves not adjusted properly. 5. Leaks or obstructions in duct work. 6. Filters dirty. 7. Inlet and/or discharge guards are clogged. 8. Duct elbow too close to blower inlet and/or discharge. 9. Improperly designed duct work 10. Blower wheel not properly located relative to the inlet bell (**LM** Model only).
Airflow (CFM) Too High	1. Actual system static pressure (**SP**) is lower than expected. 2. Motor speed (**RPM**) too high. 3. Filter not in place. 4. Dampers or valves not adjusted properly.

PROBLEM	CAUSE
Motor Overheating	**NOTE: A normal motor will operate at 174°F. See B-8 on page 6.** 1. Actual system static pressure **(SP)** is lower than expected. 2. Voltage supplied to motor is too high or too low. 3. Motor speed (**RPM**) too high or defective motor. 4. Air density higher than expected. 5. Motor wired incorrectly or loose wiring connections. 6. Cooling fan cover on back of motor is clogged. (Fan cooled motors only.)
Excessive Noise	1. Wheel rubbing inside of housing. 2. Worn or corroded blower wheel. 3. Accumulation of foreign material on blower wheel. 4. Loose mounting bolts, wheel set screws, or taper-lock hubs. 5. Bent motor shaft. 6. Worn motor bearings. 7. Motor out of balance. 8. Motor bearings need lubrication. 9. Vibration originating elsewhere in system. 10. System resonance or pulsation. 11. Inadequate or faulty design of blower support structure. 12. Blower operating near "stall" condition due to incorrect system design or installation.
Fan Doesn't Operate	1. Motor wired incorrectly. 2. Incorrect voltage supply. 3. Defective fuses or circuit breakers. 4. Power turned off elsewhere. 5. Motor wired incorrectly or loose wiring connections. 6. Defective motor.

VIII. LONG TERM STORAGE INSTRUCTIONS: (Storage exceeding 30 days after receipt of equipment)

NOTE: Failure to adhere to these instructions voids all warranties in their entirety.

1. Storage site selection:
   a. Level, well-drained, firm surface, in clean, dry and warm location. Minimum temperature of 50°F (10°C).
   b. Isolated from possibility of physical damage from construction vehicles, erection equipment, etc.
   c. Accessible for periodical inspection and maintenance.
2. The blower should be supported under each corner of its base to allow it to "breath". Supports (2 x 4's, timbers, or railroad ties) should be placed diagonally under each corner.
3. If the equipment is to be stored for more than three (3) months, the entire blower assembly must be loosely covered with plastic, **but not tightly wrapped**.
4. Storage Maintenance:

   A periodic inspection and maintenance log, by date and action taken, must be developed and maintained for each blower. See example below. Each item must be checked monthly.

EXAMPLE:

Storage / Maintenance Schedule Log

ITEM	ACTION	DATES CHECKED
1	Re-inspect units to insure any protective devices used are functioning properly. Check for scratches in the finish which will allow corrosion or rust to form.	
2	Rotate wheel a minimum of 10 full revolutions to keep the motor bearing grease from separating and drying out. ***This is a critical step.***	

Long Term Storage instructions continued on page 13.

5. General Motor Procedure:

   If the motor is not put into service immediately, the motor must be stored in a clean, dry, warm location. Minimum temperature of 50°F. (10°C,). Several precautionary steps must be performed to avoid motor damage during storage.

   a. Use a “Megger” each month to ensure that integrity of the winding insulation has been maintained. Record the Megger readings. Immediately investigate any significant drop in insulation resistance.
   b. **DO NOT** lubricate the motor bearings during storage. Motor bearings are packed with grease at the factory.
   c. If the storage location is damp or humid, the motor windings **must** be protected from moisture. This can be done by applying power to the motor’s space heaters, (IF AVAILABLE) while the motor is in storage. If the motor does not have space heaters, storing it in a damp or humid location will, very quickly, cause internal corrosion and motor failure which is not warranted.

   ***NOTE*:**
   For specific storage instructions, for the actual motor and any accessory parts that were supplied, refer to the manufacturer’s instructions.

IX. LIMITED WARRANTY:

Cincinnati Fan & Ventilator Company (Seller) warrants products of its own manufacture, against defects of material and workmanship under normal use and service for a period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever occurs first. This warranty does not apply to any of Seller's products or any part thereof which has been subject to extraordinary wear and tear, improper installation, accident, abuse, misuse, overloading, negligence or alteration. This warranty does not cover systems or materials not of Seller's manufacture. On products furnished by Seller, but manufactured by others, such as motors, Seller extends the same warranty as Seller received from the manufacturer thereof. Expenses incurred by Purchaser's in repairing or replacing any defective product will not be allowed except where authorized in writing and signed by an officer of the Seller.

The obligation of the Seller under this warranty shall be limited to repairing or replacing F.O.B. the Seller's plant, or allowing credit at Seller's option. **THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND OF ALL OTHER OBLIGATIONS AND LIABILITIES OF THE SELLER. THE PURCHASER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS WERE MADE TO PURCHASER OR RELIED UPON BY PURCHASER WITH RESPECT TO THE QUALITY OR FUNCTION OF THE PRODUCTS HEREIN SOLD.**

Removal of the Sellers nameplate or any generic fan nameplate containing the fan serial number voids all warranties, either written or implied. Failure to complete and document all the pre-startup and post startup checks and perform the suggested routine maintenance checks voids all warranties, either written or implied.

LIMITATION OF LIABILITY:

Notice of any claim, including a claim for defect in material or workmanship, must be given to Seller in writing within 30 days after receipt of the equipment or other products. Seller reserves the right to inspect any alleged defect at Purchaser's facility before any claim can be allowed and before adjustment, credit, allowance replacement or return will be authorized. See **RETURNS** below. Seller's liability with respect to such defects will be limited to the replacement, free of charge, of parts returned at Purchaser's expense F.O.B. Seller's plant and found to be defective by the Seller.

IN NO EVENT WILL SELLER BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION DAMAGES FOR INJURY TO PERSONS OR PROPERTY, LOST PROFITS OR REVENUE, LOST SALES OR LOSS OF USE OF ANY PRODUCT SOLD HEREUNDER. PURCHASER'S SOLE AND EXCLUSIVE REMEDY AGAINST SELLER WILL BE THE REPLACEMENT OF DEFECTIVE PARTS AS PROVIDED HEREIN OR REFUND OF THE PURCHASE PRICE FOR DEFECTIVE PRODUCTS, AT SELLER'S SOLE OPTION. SELLER'S LIABILITY ON ANY CLAIM, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, FOR ANY LOSS OR DAMAGE ARISING OUT OF OR IN CONNECTION WITH PURCHASER'S ORDER OR THE PRODUCTS OR EQUIPMENT PURCHASED HEREUNDER, SHALL IN NO CASE EXCEED THE PURCHASE PRICE OF THE EQUIPMENT GIVING RISE TO THE CLAIM.

RESPONSIBILITY:

It is the understanding of the Seller that Purchaser and/or User will use this equipment in conjunction with additional equipment or accessories to comply with all Federal, State and local regulations. The Seller assumes no responsibility for the Purchaser's or Users compliance with any Federal, State and local regulations.

RETURNS:

Cincinnati Fan & Ventilator Company assumes no responsibility for any material returned to our plant without our permission. An **RMA** (Return Material Authorization) number must be obtained and clearly shown on the outside of the carton or crate and on a packing slip. Any items returned must be shipped freight prepaid. Failure to comply will result in refusal of the shipment at our receiving department.

DISCLAIMER

This manual, and all its content herein, is based on all applicable known material at the time this manual was created. **Any parts of this manual are subject to change at any time and without notice.**

If any statements, diagrams and/or instructions contained herein, **for components not manufactured by the Seller,** conflict with instructions in the manufacturer's manual (i.e.: motors, dampers, etc.), the instructions in the manufacturer's manual, for that component take precedent.

Should you want the latest version of this manual, please contact us or our sales office for your area. Or, you can print a current version by going to our website at: **www.cincinnatifan.com**

cincinnati fan

7697 Snider Road, Mason, OH 45040-9135
Phone: (513) 573-0600 Fax: (513) 573-0640
E-Mail: sales@cincinnatifan.com

X. PARTS DRAWING:

PLEASE NOTE

Cincinnati Fan manufactures many models and arrangements with special variations. For that reason, the maintenance manuals contained on our website do not include a parts drawing nor the completed blower or fan specifications on page 1. For the parts drawing of all the standard components and specifications for the specific blower or fan that you have, please contact our local Cincinnati Fan sales office for your area.

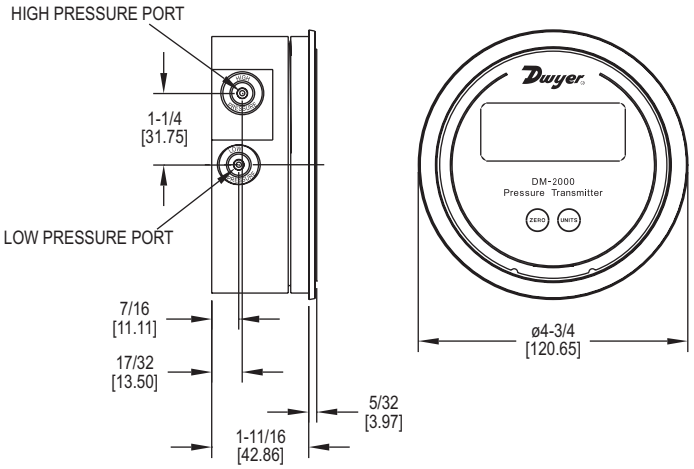
You will need to give them the serial number shown on the blower or fan nameplate so they can supply you the correct information.

Click on ***"Contact a Sales Rep"*** on our website for the name and contact information for our local sales office for your area. **www.cincinnatifan.com**

Series DM-2000 Differential Pressure Transmitter

Specifications - Installation and Operating Instructions





The **Dwyer Series DM-2000 Differential Pressure Transmitter** senses the pressure of air and compatible gases and sends a standard 4-20 mA output signal. The DM-2000 housing is specifically designed to mount in the same diameter cutout as a standard Magnehelic® differential gage. A wide range of models are available factory calibrated to specific ranges.

Pressure connections are inherent to the glass filled plastic molded housing making installation quick and easy. Digital push-button zero simplifies calibration over typical turn-potentiometers. Single push button allows field selection of 5 engineering units (LCD models only). An optional 3.5 digit LCD shows process and engineering.

Accessories
Mounting Lugs
6-20 x 2″ Screws - 3
6-19 x 1/2″ Screws - 3

INSTALLATION

1. Location
Select a clean, dry mounting location free from excess vibration where the temperature will remain between 20 and 120˚F (-6.7 and 48.9˚C). Distance from the receiver is limited only by total loop resistance. See Electrical Connections on next page. The tubing supplying pressure to the instrument can be practically any length required, but long lengths will increase response time slightly.

2. Position
A vertical position required. That is the position in which all standard models are spanned and zeroed at the factory.

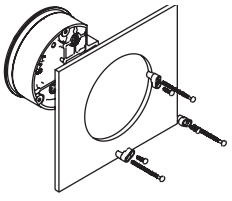
Pressure Connections
Two integral tubing connections are provided on the side of the gage. They are sized to fit 1/8″ (3.12 mm) I.D. tubing. Be sure the pressure rating of the tubing exceeds that of the operating ranges.
Note: The tubing connections on the back of the gage are not to be used as process connections.

3. Mounting
Panel - Provide a 4-9/16″ diameter opening in panel. Insert gage and secure in place with provided screws and adapters.
Surface - Provide three 3/16″ diameter holes in panel on a 4-1/8″ diameter bolt circle. Cut opening for terminal block as shown in diagram to right.

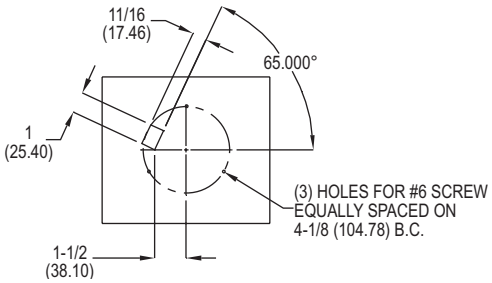
SPECIFICATIONS

Service: Air and non-combustible, compatible gases.
Wetted Materials: Consult Factory.
Accuracy: ±1% FS, ±30 Pa model ±4% FS at 70°F.
Stability: ±1% FS/yr.
Temperature Limits: 20 to 120°F (-6.67 to 48.9°C).
Pressure Limits: 10 psig (0.69 bar).
Thermal Effect: ±0.055% FS/°F (0.099% FS/°C), ±30 Pa model ±0.13% FS/°F (.234% FS/°C).
Power Requirements: 10-35 VDC (2 wire).
Output Signal: 4-20 mA.
Zero and Span Adjustments: Digital push-button zero and span.
Loop Resistance: DC: 0-1250 Ω maximum.
Current Consumption: DC: 38 mA maximum.
Electrical Connections: Screw-type terminal block.
Process Connections: 1/8″ I.D. tubing.
Mounting Orientation: Vertical.
Weight: 4.8 oz (136 g).

Panel



Surface



DWYER INSTRUMENTS, INC.
P.O. BOX 373 • MICHIGAN CITY, INDIANA 46360, U.S.A.
Phone: 219/879-8000 **www.dwyer-inst.com**
Fax: 219/872-9057 **e-mail: info@dwyermail.com**

ELECTRICAL CONNECTIONS

⚠ CAUTION Do not exceed specified supply voltage ratings. Permanent damage not covered by warranty will result. This unit is not designed for 120 or 240 volts AC line operation.

Electrical connections are made to the terminal block located in back of the transmitter. Terminals are marked + and - (see Fig. B below).

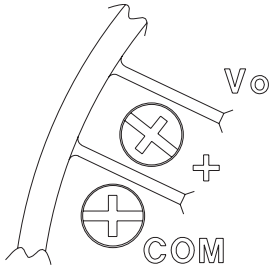


Figure B

Wire Length

The maximum length of wire connecting transmitter and receiver is a function of wire size and receiver resistance. Wiring should not contribute more than 10% of the receiver resistance to total loop resistance. For extremely long runs (over 1000 feet), choose receivers with higher resistance to minimize size and cost of connecting leads. Where wiring length is under 100 feet, hook-up wire as small as 22 AWG can be used.

2-Wire Operation

An external power supply delivering 10-35 VDC with minimum current capability of 40 mA DC (per transmitter) must be used to power the control loop. See Fig. C for connection of the power supply, transmitter and receiver. The range of appropriate receiver load resistance (RL) for the DC power supply voltage available is expressed by the formula and graph in Fig. D. Shielded two wire cable is recommended for control loop wiring. If grounding is required, use the negative side of the control loop after the receiver.

2-Wire Connections

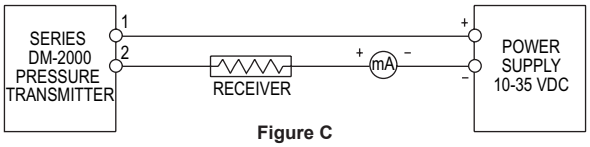


Figure C

Power Supply Voltage – VDC (2-wire)

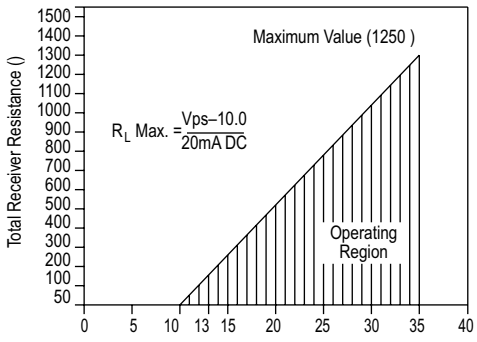


Figure D

USER CALIBRATION

The transmitter may be user calibrated with two buttons on the front. The standard models have buttons labeled “ZERO” and “SPAN”. LCD models have buttons labeled “ZERO” and “UNITS”. The “UNITS” button on the LCD models has 2 functions. If pushed for less than 2 seconds and released the pressure units that are displayed on the LCD will change when the button is released. If pushed and held for 4 - 5 seconds the “UNITS” button serves the same function as the “SPAN” button on the standard models.

To calibrate the transmitter you will need three pieces of equipment. You will need a calibrated pressure source capable of generating a stable pressure value for the maximum range of the unit under test, an instrument capable of validating the calibration pressure, and an ampmeter, capable of measuring mA, to measure the current output from the unit under test. The transmitter is calibrated using the following procedure.

Preparation – Connect the ampmeter and power supply, being careful to observe polarities. The transmitter must be calibrated in a vertical position.

Performing ZERO Calibration, SPAN Calibration or Restore Factory Calibration Coefficients:

1. Press both the ZERO and UNITS/SPAN buttons simultaneously for 6 or more seconds. Release both buttons. The units indicator on the LCD should blink on and off. This indicates the gage is ready for calibration or restoration of coefficients. The units indicator blinks for approximately 10 minutes, then stops blinking.
2. a) ZERO calibrate the gage by applying no pressure to the gage and then pressing the ZERO button for 3 seconds.
   b) SPAN calibrate the gage by applying full-scale pressure to the gage and then pressing the UNITS/SPAN button for 3 seconds.
   c) Restore the gage’s factory calibration coefficient by pressing both the ZERO and UNITS/SPAN buttons simultaneously for 3 seconds.

MAINTENANCE

Upon final installation of the Series DM2000 Differential Pressure Transmitter and the companion receiver no routine maintenance is required. The Series DM2000 Transmitter is not field serviceable and should be returned, freight prepaid, to the factory if repair is required. Please enclose a description of the problems encountered plus any available application information.

This symbol indicates waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

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DWYER INSTRUMENTS, INC.
P.O. BOX 373 • MICHIGAN CITY, INDIANA 46360, U.S.A.
Phone: 219/879-8000 **dwyer-inst.com**
Fax: 219/872-9057 **e-mail: info@dwyermail.com**

APPENDIX E

INCIDENT REPORT

Appendix H

INCIDENT/EVENT REPORT

DATE / TIME:_____

CONTRACTOR / REPRESENTATIVE: _____

LOCATION / DESCRIPTION: _____

INCIDENT / EVENT DESCRIPTION

ALARM TYPE:_____

ALARM LOCATION:_____

SUMMARY OF INCIDENT (INCLUDE PROBABLE CAUSE AND ANY CORRECTIVE ACTION TAKEN):

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Printed Name: _____ *Signature:*_____ *Date:*_____

Appendix H
Excavation Work Plan

APPENDIX D – EXCAVATION WORK PLAN (EWP)

D-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination on the Site, the Site owner or their representative will notify the NYSDEC. With respect to the impacted portion of the Unither property to the south of Area 2 bounded on the west by the eastern face of Unither Building 3, on the north by the common boundary line between the Site and the Unither Property, on the east by Clay Road, and on the south by a line one hundred and ninety feet (190') to the south of and paralleling the current common boundary line ("Affected Area"), the Site owner or their representative (and not Unither) will be responsible for promptly making any required notifications to the NYSDEC for implementation of this Excavation Work Plan on the Affected Area; provided that Unither provides sufficient advance written notice to Site owner that the covering soils will be breached, penetrated or temporarily removed, and underlying remaining contamination will be disturbed, and includes in such advance written notice the relevant technical description sufficient to satisfy the Excavation Work Plan notification requirements set forth in detail below Table D-1. Table D-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B.

Table D-1: Notifications*

Danielle Miles	585.226.5349 Danielle.miles@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for Site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix I of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

D-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section 7 of this Appendix.

D-3 SOIL STAGING METHODS

Soil stockpiles will be encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected weekly at a minimum and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC.

D-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

D-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

D-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from this Site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this Site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

D-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Prior to determining whether excavated on-site materials can be reused on-site, adequate sampling and characterization (VOCs, SVOCs, metals, PCBs, pesticides, herbicides) should be completed to ensure that excavated materials meet the applicable Part

375 SCOs. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

D-8 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

D-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the decision document. The existing cover system is comprised of a minimum of 12 inches of clean soil, concrete or asphalt pavement. The demarcation layer, consisting of orange snow fencing material, white geotextile or equivalent material, etc. will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone (if present) that requires adherence to special conditions with respect to a particular use for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that

which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

D-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the Site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the Site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial Sites, spill Sites, or other environmental remediation Sites or potentially contaminated Sites will not be imported to the Site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed for the Site in NYSDEC DER-10 Appendix 5 Allowable Constituent for Imported Fill or Soil Commercial Use Criteria, and for the Affected Area of the Unither property to the south of the Area 2 ditch in NYSDEC DER-10 Appendix 5 Allowable Constituent for Imported Fill or Soil Unrestricted Use Criteria. Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

D-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

D-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

D-13 COMMUNITY AIR MONITORING PLAN

Community air monitoring will be performed according to the NYSDOH generic Community Air Monitoring Plan (CAMP). This plan requires real-time monitoring of VOCs and particulates at the upwind and downwind perimeter of designated work areas when certain activities are in progress. The location of air sampling stations will be based on generally prevailing wind conditions (upwind, and downwind). These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

The CAMP will contain monitoring threshold values established by the NYSDOH and provisions requiring that response actions are promptly implemented, if necessary, to reduce emissions at the work Site perimeter to levels deemed acceptable by NYSDOH and NYSDEC. The CAMP will include procedures to account for nuisance odors that may migrate off-site and negatively affect nearby receptors. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

D-14 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

Appendix I
Community Air Monitoring Plan

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is 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 and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion 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, particularly if wind direction changes. 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.

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

2. 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 of 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.

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

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. 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 all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/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 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/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 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix E

SUPPLEMENTAL COMMUNITY AIR MONITORING PLAN - SITE SPECIFIC REQUIREMENTS

This supplement to the New York State Department of Health Generic Community Air Monitoring Plan (CAMP) specifies instructions to be implemented upon detection of nuisance odors. The Site controls described below will be used to assist with odor mitigation to minimize, and to prevent where practicable, the migration of nuisance odors generated during work activities.

Site odor controls are intended to limit nuisance odors from work zone activities. If nuisance odors are identified within the work area and at potential downwind receptors, the following controls will be implemented:

Primary Odor Controls:

- Efforts will be made to minimize the amount of time that ambient air is exposed to odiferous material at the site. During excavation activities, polyethylene sheeting/tarps may be used to cover these soils to prevent or minimize fugitive odors.

- Soil stockpiles and excavations will be covered to the extent practical when they are not being actively generated.

Secondary Odor Controls:

- If moderate or strong odors remain after primary odor controls have been implemented, secondary control measures will be employed. Secondary controls may include agents like a suppressant foam that can be sprayed over impacted soil and that have been determined to be effective in controlling emissions. These agents may be used where tarps cannot be effectively deployed over the source material such as during active excavation and stockpiling, where tarps are ineffective in controlling odors, or in addition to tarps.

- Odor suppressant foam can provide immediate, localized control of odor emissions. The foam is made by the injection of air into a foam concentrate/water mixture using a Pneumatic Foam Unit (PFU). The foam is applied via a hose to cover source areas to a depth of 3 to 6 inches. Short-term foam (such as Rusmar AC-645) is recommended to control odor emissions from active excavations and stockpiles. It is shipped as a concentrate and diluted with water at the site. Under normal conditions this foam can last for between 12-17 hours. However, it has been observed to degrade quickly in direct sunlight, so frequent and liberal application to all areas that require odor control is advisable. For odor suppression needs, such as covered stockpiles, long-term foam should be used.

Appendix J
Quality Assurance Project Plan

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QUALITY ASSURANCE PROJECT PLAN
FORMER AB DICK FACILITY
811 JEFFERSON ROAD
ROCHESTER, NEW YORK

by Haley & Aldrich of New York
Rochester, New York

for 811 Jefferson Road, LLC
Rochester, New York

File No. 128437-010
November 2017



Executive Summary

This Quality Assurance Project Plan (QAPP) outlines the scope of the quality assurance and quality control (QA/QC) activities associated with the site monitoring activities associated with the Site Management Plan (SMP) for the Former AB Dick Facility (Site) located at 811 Jefferson Road, Rochester, New York.

Protocols for sample collection, sample handling and storage, chain-of-custody procedures, and laboratory and field analyses are described herein or specifically referenced to related project documents.

Executive Summary i
List of Tables iv

1. Project Description 1

1.1 PROJECT OBJECTIVES 1
1.2 SITE DESCRIPTION AND HISTORY 1
1.3 LABORATORY PARAMETERS 1
1.4 SAMPLING LOCATIONS 1

2. Project Organization and Responsibilities 2

2.1 MANAGEMENT RESPONSIBILITIES 2
2.2 QUALITY ASSURANCE RESPONSIBILITIES 2
2.3 LABORATORY RESPONSIBILITIES 3
2.4 FIELD RESPONSIBILITIES 4

3. Sampling Procedures 5

3.1 SAMPLE CONTAINERS 5
3.2 SAMPLE LABELING 5
3.3 FIELD QC SAMPLE COLLECTION 5
3.3.1 Equipment Rinse Blank Sample Collection 5
3.3.2 Field Duplicate Sample Collection 5

4. Custody Procedures 7

4.1 FIELD CUSTODY PROCEDURES 7
4.1.1 Field Procedures 8
4.1.2 Transfer of Custody and Shipment Procedures 8
4.2 LABORATORY CHAIN-OF-CUSTODY PROCEDURES 9
4.3 STORAGE OF SAMPLES 9
4.4 FINAL PROJECT FILES CUSTODY PROCEDURES 9

5. Calibration Procedures and Frequency 11

5.1 FIELD INSTRUMENT CALIBRATION PROCEDURES 11
5.2 LABORATORY INSTRUMENT CALIBRATION PROCEDURES 11

6. Analytical Procedures 12

6.1 FIELD ANALYTICAL PROCEDURES 12
6.2 LABORATORY ANALYTICAL PROCEDURES 12
6.2.1 List of Project Target Compounds and Laboratory Detection Limits 12
6.2.2 List of Method Specific Quality Control (QC) Criteria 12

7. Internal Quality Control Checks 13

7.1 FIELD QUALITY CONTROL 13
7.1.1 Equipment Rinse Blanks 13
7.1.2 Trip Blanks 13
7.2 LABORATORY PROCEDURES 13
7.2.1 Field Duplicate Samples 13
7.2.2 Matrix Spike Samples 14
7.2.3 Laboratory Control Sample (LCS) Analyses 14
7.2.4 Surrogate Compound/Internal Standard Recoveries 14
7.2.5 Calibration Verification Standards 15
7.2.6 Laboratory Method Blank Analyses 15

8. Data Quality Objectives 16

8.1 PRECISION 16
8.1.1 Definition 16
8.1.2 Field Precision Sample Objectives 16
8.1.3 Laboratory Precision Sample Objectives 16
8.2 ACCURACY 16
8.2.1 Definition 16
8.2.2 Field Accuracy Objectives 18
8.3 LABORATORY ACCURACY OBJECTIVES 18
8.4 REPRESENTATIVENESS 18
8.4.1 Definition 18
8.4.2 Measures to Ensure Representativeness of Field Data 19
8.4.3 Measures to Ensure Representativeness of Laboratory Data 19
8.5 COMPLETENESS 19
8.5.1 Definition 19
8.5.2 Field Completeness Objectives 19
8.5.3 Laboratory Completeness Objectives 19
8.6 COMPARABILITY 19
8.6.1 Definition 19
8.6.2 Measures to Ensure Comparability of Laboratory Data 19
8.7 LEVEL OF QUALITY CONTROL EFFORT 20

9. Data Reduction, Validation and Reporting 21

9.1 DATA REDUCTION 21
9.1.1 Field Data Reduction Procedures 21
9.1.2 Laboratory Data Reduction Procedures 21
9.1.3 Quality Control Data 21
9.2 DATA VALIDATION 21
9.3 DATA REPORTING 22

10. Performance and System Audits 23

10.1 FIELD PERFORMANCE AND SYSTEM AUDITS 23

10.1.1 Internal Field Audit Responsibilities 23
10.1.2 External Field Audit Responsibilities 23
10.2 LABORATORY PERFORMANCE AND SYSTEM AUDITS 23
10.2.1 Internal Laboratory Audit Responsibilities 23
10.2.2 External Laboratory Audit Responsibilities 24

11. Preventive Maintenance 25

11.1 FIELD INSTRUMENT PREVENTIVE MAINTENANCE 25
11.2 LABORATORY INSTRUMENT PREVENTIVE MAINTENANCE 25

12. Specific Routine Procedures Used to Assess Data Precision, Accuracy, and Completeness 26

12.1 FIELD MEASUREMENTS 26
12.2 LABORATORY DATA 26

13. Quality Assurance (QA) Reports 28

References 29

Tables

List of Tables

Table No.	Title
I	Analyte Detection Limits in Groundwater, Soil, and Air
II	Summary of Analysis Method, Preservation Method, Holding Time, Sample Size Requirements and Sample Containers

1. Project Description

This Quality Assurance Project Plan (QAPP) has been prepared on behalf of 811 Jefferson Road, LLC. The QAPP is a component of the Site Management Plan (SMP).

1.1 PROJECT OBJECTIVES

The primary objective for data collection activities is to collect sufficient data necessary to monitor the nature of any remaining groundwater, soil, or soil vapor impacts.

1.2 SITE DESCRIPTION AND HISTORY

The general Site description and site history is provided in Section 2 of the SMP and incorporated herein by reference.

1.3 LABORATORY PARAMETERS

Laboratory parameters are listed in Table I.

The laboratory parameters for the program groundwater monitoring wells includes all volatile organic compounds (VOCs) within the target compound list for EPA method 8260C including, trichloroethene (TCE), tetrachloroethene (PCE), 1,1 dichloroethene (1,1-DCE), cis-1,2 dichloroethene (cis-1,2-DCE), and vinyl chloride. Performance monitoring wells will be analyzed for dissolved and total Fe, total sulfate (SO_4^{2-}), total organic carbon (TOC), ethene, and chloride.

During the collection of groundwater samples, pH, specific conductivity, temperature, dissolved oxygen (DO), and oxidation/reduction potential (ORP) will be measured.

Laboratory parameters for soil samples may change and will be determined by the Excavation Work Plan. Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

Laboratory parameters for soil vapor, indoor air, and outdoor ambient air include volatile organic compounds.

1.4 SAMPLING LOCATIONS

The SMP provides the location of groundwater monitoring wells that will be sampled as a part of the sampling program. Soil, soil vapor, indoor air, and outdoor/ambient air sampling locations will be determined by the specific work plan for those media.

2. Project Organization and Responsibilities

This section defines the roles and responsibilities of the individuals who will perform the SMP monitoring activities. A NYSDOH certified analytical laboratory will perform the analyses of environmental samples collected at the Site.

2.1 MANAGEMENT RESPONSIBILITIES

The Project Manager is responsible for managing the implementation of the SMP monitoring and coordinating the collection of data. The Project Manager is responsible for technical quality control and project oversight. The Project Manager responsibilities include the following:

- Acquire and apply technical and corporate resources as needed to ensure performance within budget and schedule restraints;
- Review work performed to ensure quality, responsiveness, and timeliness;
- Communicate with the client point of contact concerning the progress of the monitoring activities;
- Assure corrective actions are taken for deficiencies cited during audits of SMP monitoring activities; and
- Overall Site health and safety plan compliance.

2.2 QUALITY ASSURANCE RESPONSIBILITIES

The Quality Assurance team will consist of a Quality Assurance Officer and the Data Validation staff. Quality Assurance responsibilities are described as follows:

Quality Assurance (QA) Officer

The QA Officer reports directly to the Project Manager and will be responsible for overseeing the review of field and laboratory data. Additional responsibilities include the following:

- Assure the application and effectiveness of the QAPP by the analytical laboratory and the project staff;
- Conduct internal audits of the SMP monitoring activities;
- Provide input to the Project Manager as to corrective actions that may be required as a result of the above-mentioned evaluations;
- Prepare and/or review data validation and audit reports.

The QA Officer will be assisted by the data validation staff in the evaluation and validation of field and laboratory generated data.

Data Validation Staff

The data validation staff will be independent of the laboratory and familiar with the analytical procedures performed. The validation will include a review of each validation criterion as prescribed by the guidelines presented in Section 9.2 of this document and be presented in a Data Usability Report (DUR) for submittal to the QA Officer.

2.3 LABORATORY RESPONSIBILITIES

Laboratory services in support of the SMP monitoring include the following personnel:

Laboratory Project Manager

The Laboratory Project Manager will report directly to the QA Officer and Project Manager, and will be responsible for ensuring all resources of the laboratory are available on an as-required basis. The Laboratory Project Manager will also be responsible for the approval of the final analytical reports.

Laboratory Operations Manager

The Laboratory Operations Manager will report to the Laboratory Project Manager and will be responsible for coordinating laboratory analysis, supervising in-house chain-of-custody reports, scheduling sample analyses, overseeing data review and overseeing preparation of analytical reports.

Laboratory QA Officer

The Laboratory QA Officer will have sole responsibility for review and validation of the analytical laboratory data. The Laboratory QA Officer will provide Case Narrative descriptions of any data quality issues encountered during the analyses conducted by the laboratory. The QA Officer will also define appropriate QA procedures, overview QA/QC documentation.

Laboratory Sample Custodian

The Laboratory Sample Custodian will report to the Laboratory Operations Manager and will be responsible for the following:

- Receive and inspect the incoming sample containers;
- Record the condition of the incoming sample containers;
- Sign appropriate documents;
- Verify chain-of-custody and its correctness;
- Notify the Project Manager and Operations Manager of sample receipt and inspection;
- Assign a unique identification number and enter each into the sample receiving log;
- Initiate transfer of samples to laboratory analytical sections; and
- Control and monitor access/storage of samples and extracts.

Laboratory Technical Personnel

The laboratory technical staff will have the primary responsibility in the performance of sample analysis and the execution of the QA procedures developed to determine the data quality. These activities will include the proper preparation and analysis of the project samples in accordance with the laboratory's Quality Assurance Manual (QAM) and associated Standard Operating Procedures (SOP).

2.4 FIELD RESPONSIBILITIES

Field Coordinator

The Field Coordinator is responsible for the overall operation of the field team and reports directly to the Project Manager. The Field Coordinator works with the project Health & Safety Officer (HSO) to conduct operations in compliance with the project Health & Safety Plan (HASP). The Field Coordinator will facilitate communication and coordinate efforts between the Project Manager and the field team members.

Other responsibilities include the following:

- Develop and implement field-related work plans, ensuring schedule compliance, and adhering to management-developed project requirements;
- Coordinate and manage field staff;
- Perform field system audits;
- Oversee quality control for technical data provided by the field staff;
- Prepare and approve text and graphics required for field team efforts;
- Coordinate and oversee technical efforts of subcontractors assisting the field team;
- Identify problems in the field; resolve difficulties in consultation with the Project QAO, and Project Manager; implement and document corrective action procedures and,
- Participate in preparation of the final reports.

Field Team Personnel

Field Team Personnel will be responsible for the following:

- Perform field activities as detailed in the SMP and in compliance with the Field Sampling Plan (FSP) and QAPP.
- Immediately report any accidents and/or unsafe conditions to the Site Health & Safety Officer and take reasonable precautions to prevent injury.

3. Sampling Procedures

The FSP provides the SOPs for sampling of each environmental media required by the SMP.

3.1 SAMPLE CONTAINERS

Sample containers for each sampling task will be provided by the laboratory performing the analysis. The containers will be cleaned by the manufacturer to meet or exceed the analyte specifications established in the U.S. EPA, "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers", April 1992, OSWER Directive #9240.0-0.5A. Certificates of analysis for each lot of sample containers used will be maintained by the laboratory.

The appropriate sample containers, preservation method, maximum holding times, and handling requirements for each sampling task are provided in Table II.

3.2 SAMPLE LABELING

Each sample will be labeled with a unique sample number that will facilitate tracking and cross-referencing of sample information:

- Employee ID-Day/Month/Year-Sample Time

Equipment rinse blank and field duplicate samples also will be numbered with a unique sample number to prevent analytical bias of field QC samples.

Refer to the FSP for the sample labeling procedures.

3.3 FIELD QC SAMPLE COLLECTION

3.3.1 Equipment Rinse Blank Sample Collection

Equipment rinse blank samples will be collected when non-dedicated sampling equipment is used to collect samples. Equipment rinse blanks consist of distilled water that has been routed through decontaminated sampling equipment and collected into the appropriate containers. The containers will be filled in order of decreasing analyte volatility (i.e., VOC first, SVOC second and followed by the containers for the remaining analyses).

3.3.2 Field Duplicate Sample Collection

3.3.2.1 Water Samples

Field duplicate samples will be collected by filling the first sample container to the proper level and sealing and then repeated for the second set of sample container.

1. The samples are properly labeled as specified in Section 3.2.
2. Steps 1 through 4 are repeated for the bottles for each analysis. The samples are collected in order of decreasing analyte volatility as detailed in Section 3.3.1.

3. Chain-of-custody documents are executed.
4. The samples will be handled as specified in Table II.

3.3.2.2 Soil Samples

Soil field duplicates will be collected as specified in the following procedure:

1. The split-spoon sampler or trowel will be retrieved from the sampling point.
2. Soil for VOC analysis will be removed from the sampling device as specified in the FSP.
3. Soil for non-VOC analysis will be removed from the sampling device and placed in a stainless-steel mixing bowl. The soil will be thoroughly homogenized using stainless steel utensils and the sample containers will be filled in order of decreasing analyte volatility.

3.3.2.3 Soil Vapor, Indoor Air, and Outdoor Ambient Air Samples

Field duplicate samples for soil vapor, indoor air, and outdoor ambient air will be collected as specified in the following procedure:

1. The samples are properly labeled as specified in Section 3.2.
2. Chain-of-custody documents are executed.
3. The samples will be handled as specified in Table II.

4. Custody Procedures

Sample custody is addressed in three parts: field sample collection, laboratory analysis and final project files. Custody of a sample begins when it is collected by or transferred to an individual and ends when that individual relinquishes or disposes of the sample.

A sample is under custody if:

1. The item is in actual possession of a person;
2. The item is in the view of the person after being in actual possession of the person;
3. The item was in actual possession and subsequently stored to prevent tampering; or
4. The item is in a designated and identified secure area.

4.1 FIELD CUSTODY PROCEDURES

Field personnel will keep written records of field activities on applicable preprinted field forms or in a bound field notebook to record data collecting activities. These records will be written legibly in ink and will contain pertinent field data and observations. Entry errors or changes will be crossed out with a single line, dated and initialed by the person making the correction. Field forms and notebooks will be periodically reviewed by the Field Coordinator.

The beginning of each entry in the logbook or preprinted field form will contain the following information:

- Date
- Start time
- Weather
- Names of field personnel (including subcontractors)
- Level of personal protection used at the Site
- Names of all visitors and the purpose of their visit.

For each measurement and sample collected, the following information will be recorded:

- Detailed description of sample location,
- Equipment used to collect sample or make measurement and the date equipment was calibrated,
- Time sample was collected,
- Description of the sample conditions,
- Depth sample was collected (if applicable),
- Volume and number of containers filled with the sample; and,
- Sampler's identification.

4.1.1 Field Procedures

The following procedure describes the process to maintain the integrity of the samples:

- Upon collection samples are placed in the proper containers. In general, samples collected for organic analysis will be placed in pre-cleaned glass containers and samples collected for inorganic analysis will be placed in pre-cleaned plastic (polyethylene) bottles. Refer to the FSP for sample packaging procedures.

- Samples will be assigned a unique sample number and will be affixed to a sample label. Refer to the FSP for sample labeling procedures.

- Samples will be properly and appropriately preserved by field personnel in order to minimize loss of the constituent(s) of interest due to physical, chemical or biological mechanisms.

- Appropriate volumes will be collected to ensure that the appropriate reporting limits can be successfully achieved and that the required QC sample analyses can be performed.

4.1.2 Transfer of Custody and Shipment Procedures

- A chain-of-custody (COC) record will be completed at the time of sample collection and will accompany each shipment of project samples to the laboratory. The field personnel collecting the samples will be responsible for the custody of the samples until the samples are relinquished to the laboratory. Sample transfer will require the individuals relinquishing and receiving the samples to sign, date and note the time of sample transfer on the COC record.

- Samples will be shipped or delivered in a timely fashion to the laboratory so that holding-times and/or analysis times as prescribed by the methodology can be met.

- Samples will be transported in containers (coolers) which will maintain the refrigeration temperature for those parameters for which refrigeration is required in the prescribed preservation protocols.

- Samples will be placed in an upright position and limited to one layer of samples per cooler. Additional bubble wrap or packaging material will be added to fill the cooler. Shipping containers will be secured with strapping tape and custody tape for shipment to the laboratory.

- When samples are split with the NYSDEC representatives, a separate chain-of-custody will be prepared and marked to indicate with whom the samples are shared. The person relinquishing the samples will require the representative's signature acknowledging sample receipt.

- If samples are sent by a commercial carrier, a bill of lading will be used. A copy of the bill of lading will be retained as part of the permanent record. Commercial carriers will not sign the custody record as long as the custody record is sealed inside the sample cooler and the custody tape remains intact.

- Samples will be picked up by a laboratory courier or transported to the laboratory the same day they are collected unless collected on a weekend or holiday. In these cases, the samples will be

stored in a secure location until delivery to the laboratory. Additional ice will be added to the cooler as needed to maintain proper preservation temperatures.

4.2 LABORATORY CHAIN-OF-CUSTODY PROCEDURES

A sample custodian will be designated by the laboratory and will have the responsibility to receive all incoming samples. Once received, the custodian will document if the sample is received in good condition (i.e., unbroken, cooled, etc.) and that the associated paperwork, such as chain-of-custody forms have been completed. The custodian will sign the chain-of-custody forms.

The custodian will also document if sufficient sample volume has been received to complete the analytical program. The sample custodian will then place the samples into secure, limited access storage (refrigerated storage, if required). The sample custodian will assign a unique number to each incoming sample for use in the laboratory. The unique number will then be entered into the sample-receiving log with the verified time and date of receipt also noted.

Consistent with the analyses requested on the chain-of-custody form, analyses by the laboratory's analysts will begin in accordance with the appropriate methodologies. Samples will be removed from secure storage with internal chain-of-custody sign-out procedures followed.

4.3 STORAGE OF SAMPLES

Empty sample bottles will be returned to secure and limited access storage after the available volume has been consumed by the analysis. Upon completion of the entire analytical work effort, samples will be disposed of by the sample custodian. The length of time that samples are held will be at least thirty (30) days after reports have been submitted. Disposal of remaining samples will be completed in compliance with all Federal, State and local requirements.

4.4 FINAL PROJECT FILES CUSTODY PROCEDURES

The final project files will be the central repository for all documents with information relevant to sampling and analysis activities as described in this QAPP. The Haley & Aldrich Project Manager will be the custodian of the project file. The project files including all relevant records, reports, logs, field notebooks, pictures, subcontractor reports and data reviews will be maintained in a secured, limited access area and under custody of the Project Director or his designee.

The final project file will include the following:

- Project plans and drawings
- Field data records
- Sample identification documents and soil boring/monitoring well logs
- All chain-of-custody documentation
- Correspondence
- References, literature
- Laboratory data deliverables
- Data validation and assessment reports
- Progress reports, QA reports
- Final report

The laboratory will be responsible for maintaining analytical logbooks, laboratory data and sample chain of custody documents. Raw laboratory data files and copies of hard copy reports will be inventoried and maintained by the laboratory for a period of six (6) years at which time the laboratory will contact the Haley & Aldrich Project Manager regarding the disposition of the project related files.

5. Calibration Procedures and Frequency

5.1 FIELD INSTRUMENT CALIBRATION PROCEDURES

Several field instruments will be used for both on-site screening of samples and for health and safety monitoring, as described in the Health and Safety Plan (HASP). On-site air monitoring for health and safety purposes may be accomplished using several different organic vapor detection devices, such as a Photo-ionization Detector (PID), Combustible Gas Indicator (CGI), and/or Helium (He) detector.

Field instruments will be calibrated at the beginning of each day and checked during field activities to verify performance. Instrument specific calibration procedures will be performed in accordance with the instrument manufacturer's requirements.

5.2 LABORATORY INSTRUMENT CALIBRATION PROCEDURES

Reference materials of known purity and quality will be utilized for the analysis of environmental samples. The laboratory will carefully monitor the preparation and use of reference materials including solutions, standards and reagents through well-documented procedures.

All solid chemicals and acids/bases used by the laboratory will be rated as "reagent grade" or better. All gases will be "high" purity or better. All Standard Reference Materials (SRMs) or Performance Evaluation (PE) materials will be obtained from approved vendors of the National Institute of Standards and Technology (formerly National Bureau of Standards), the U.S. EPA Environmental Monitoring Support Laboratories (EMSL), or reliable Cooperative Research and Development Agreement (CRADA) certified commercial sources.

6. Analytical Procedures

Analytical procedures to be utilized for analysis of environmental samples will be based on referenced USEPA analytical protocols and/or project specific SOP.

6.1 FIELD ANALYTICAL PROCEDURES

Field analytical procedures include the measurement of pH, temperature, ORP, DO and specific conductivity during sampling of groundwater, and the qualitative measurement of Volatile Organic Compounds (VOC) during the collection of soil samples.

6.2 LABORATORY ANALYTICAL PROCEDURES

Laboratory analyses will be based on the U.S. EPA methodology requirements promulgated in:

- "Test Methods for Evaluating Solid Waste," SW-846 EPA, Office of Solid Waste, and promulgated updates, 1986.

6.2.1 List of Project Target Compounds and Laboratory Detection Limits

The laboratory reporting limits (RLs) and associated method detection limits (MDLs) for the target analytes and compounds for the environmental media to be analyzed are presented in Table II . MDLs have been experimentally determined by the project laboratory using the method provided in 40 CFR, Part 136 Appendix B.

Laboratory parameters for soil samples may change and will be determined by the Excavation Work Plan. Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

6.2.2 List of Method Specific Quality Control (QC) Criteria

The laboratory SOPs include a section that presents the minimum QC requirements for the project analyses. Section 7.0 references the frequency of the associated QC samples for each sampling effort and matrix.

7. Internal Quality Control Checks

This section presents the internal quality control checks that will be employed for field and laboratory measurements.

7.1 FIELD QUALITY CONTROL

7.1.1 Equipment Rinse Blanks

Internal quality control checks will include analysis of equipment blanks to validate successful equipment cleaning activities. Whenever possible, dedicated equipment will be employed to reduce the possibility of cross-contamination of samples.

The frequency of equipment rinse sample preparation will be for each type of sampling equipment on which decontamination procedures have been performed as part of each sampling event.

7.1.2 Trip Blanks

Trip blanks samples will be prepared by the project laboratory using ASTM Type II or equivalent water placed within pre-cleaned 40 milliliter (ml) VOC vials equipped with Teflon septa. Trip blanks will accompany each sample delivery group (SDG) of environmental samples collected for analysis of VOCs.

Trip blank samples will be placed in each cooler that stores and transports project samples that are to be analyzed for VOCs.

7.2 LABORATORY PROCEDURES

Procedures which contribute to maintenance of overall laboratory quality assurance and control include appropriately cleaned sample containers, proper sample identification and logging, applicable sample preservation, storage and analysis within prescribed holding times, and use of controlled materials.

7.2.1 Field Duplicate Samples

The precision or reproducibility of the data generated will be monitored through the use of field duplicate samples. Field duplicate analysis will be performed at a frequency of 1 in 20 project samples.

Precision will be measured in terms of the absolute value of the relative percent difference (RPD) as expressed by the following equation:

$$RPD = \frac{\left| \frac{R1 - R2}{(R1 - R2)} \right|}{2} X100\%$$

Acceptance criteria for duplicate analyses performed on solid matrices will be 100% and aqueous matrices will be 35%. RPD values outside these limits will require an evaluation of the sampling and/or

analysis procedures by the project QA Officer and/or laboratory QA Director. Corrective actions may include re-analysis of additional sample aliquots and/or qualification of the data for use.

7.2.2 Matrix Spike Samples

Ten percent of each project sample matrix for each analytical method performed will be spiked with known concentrations of the specific target compounds/analytes.

The amount of the compound recovered from the sample compared to the amount added will be expressed as a percent recovery. The percent recovery of an analyte is an indication of the accuracy of an analysis within the site-specific sample matrix. Percent recovery will be calculated for MS/MSD using the following equation.

$$\%\ Recovery = \frac{Spiked\ Sample - Background}{Known\ Value\ of\ Spike} x100\%$$

If the quality control value falls outside the control limits (UCL or LCL) due to sample matrix effects, the results will be reported with appropriate data qualifiers. To determine the effect a non-compliant MS recovery has on the reported results, the recovery data will be evaluated as part of the validation process.

7.2.3 Laboratory Control Sample (LCS) Analyses

The laboratory will perform LCS analyses prepared from Standard Reference Materials (SRMs). The SRMs will be supplied from an independent manufacturer and traceable to NIST materials with known concentrations of each target analyte to be determined by the analytical methods performed. In cases where an independently supplied SRM is not available, the LCS may be prepared by the laboratory from a reagent lot other than that used for instrument calibration.

The laboratory will evaluate LCS analyses in terms of percent recovery using the most recent laboratory generated control limits.

LCS recoveries that do not meet acceptance criteria will be deemed invalid. Analysis of project samples will cease until an acceptable LCS analysis has been performed. If sample analysis is performed in association with an out-of-control LCS sample analysis, the data will be deemed invalid.

Corrective actions will be initiated by the Haley & Aldrich QA Officer and/or Laboratory QA Officer to investigate the problem. After the problem has been identified and corrected, the solution will be noted in the instrument run logbook and re-analysis of project samples will be performed, if possible.

The analytical anomaly will be noted in the sample delivery group (SDG) Case Narrative and reviewed by the data validator. The data validator will confirm that appropriate corrective actions were implemented and recommend the applicable use of the affected data.

7.2.4 Surrogate Compound/Internal Standard Recoveries

For VOCs, surrogates will be added to each sample prior to analysis to establish purge and trap efficiency. Quantitation will be accomplished via internal standardization techniques.

The recovery of surrogate compounds and internal standards will be monitored by laboratory personnel to assess possible site-specific matrix effects on instrument performance.

For semi-volatile organics analyses, surrogates will be added to the raw sample to assess extraction efficiency. Internal standards will be added to all sample extracts and instrument calibration standard immediately before analysis for quantitation via internal standardization techniques.

Method specific quality control (QC) limits are provided in the attached laboratory method SOPs. Surrogate compound/internal standard recoveries that do not fall within accepted QC limits for the analytical methodology performed will have the analytical results flagged with data qualifiers as appropriate by the laboratory and will not be noted in the laboratory report Case Narrative.

To ascertain the effect non-compliant surrogate compound/internal standard recoveries may have on the reported results, the recovery data will be evaluated as part of the validation process. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

7.2.5 Calibration Verification Standards

Calibration verification (CV) standards will be utilized to confirm instrument calibrations and performance throughout the analytical process. CV standards will be prepared as prescribed by the respective analytical protocols. Continuing calibration will be verified by compliance with method-specific criteria prior to additional analysis of project samples.

Non-compliant analysis of CV standards will require immediate corrective action by the project laboratory QA officer and/or designated personnel. Corrective action may include re-analysis of each affected project sample, a detailed description of the problem, the corrective action undertaken, the person who performed the action, and the resolution of the problem.

7.2.6 Laboratory Method Blank Analyses

Method blank sample analysis will be performed as part of each analytical batch for each methodology performed. If target compounds are detected in the method blank samples, the reported results will be flagged by the laboratory in accordance with standard operating procedures. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

8. Data Quality Objectives

Sampling that will be performed as described in the SMP are designed to produce data of the quality necessary to achieve the minimum standard requirements of the field and laboratory analytical procedures described below. These data are being obtained with the primary objective to assess levels of COCs associated with the Site.

The overall project data quality objective (DQO) is to implement procedures for field data collection, sample collection, handling, and laboratory analysis and reporting that achieve the project objectives. The following section is a general discussion of the criteria that will be used to measure the project DQO.

8.1 PRECISION

8.1.1 Definition

Precision is defined as a quantitative measure of the degree to which two or more measurements are in agreement. Precision will be determined by collecting and analyzing field duplicate samples and by creating and analyzing laboratory duplicates from one or more of the field samples. The overall precision of measurement data is a mixture of sampling and analytical factors. The analytical results from the field duplicate samples will provide data on sampling precision. The results from duplicate samples created by the laboratory will provide data on analytical precision. The measurement of precision will be stated in terms of relative percent difference (RPD).

8.1.2 Field Precision Sample Objectives

Field precision will be assessed through collection and measurement of field duplicate samples at a rate of 1 duplicate per 20 investigative samples. The RPD criteria for the project field duplicate samples will be +/- 100% for soil, +/- 35 % for groundwater for parameters of analysis detected at concentrations greater than 5 times (5X) the laboratory reporting limit (RL).

8.1.3 Laboratory Precision Sample Objectives

Laboratory precision will be assessed through the analysis of laboratory control and laboratory control duplicate samples (LCS/LCSD) and matrix spike and matrix spike duplicate (MS/MSD) samples for groundwater and soil samples and the analysis of laboratory duplicate samples for air and soil vapor samples. Air and soil vapor laboratory duplicate sample analyses will be performed by analyzing the same SUMMA canister twice. The RPD criteria for the air/soil vapor laboratory duplicate samples will be +/- 35 % for parameters of analysis detected at concentrations greater than 5 times (5X) the laboratory reporting limit (RL).

8.2 ACCURACY

8.2.1 Definition

Accuracy relates to the bias in a measurement system. Bias is the difference between the observed and the "true" value. Sources of error are the sampling process, field contamination, preservation techniques, sample handling, sample matrix, sample preparation and analytical procedure limitations.

8.2.2 Field Accuracy Objectives

Sampling bias will be assessed by evaluating the results of field equipment rinse and trip blanks. Equipment rinse and trip blanks will be collected as appropriate based on sampling and analytical methods for each sampling effort.

If non-dedicated sampling equipment is used, equipment rinse blanks will be collected by passing ASTM Type II water over and/or through the respective sampling equipment utilized during each sampling effort. One equipment rinse blank will be collected for each type of non-dedicated sampling equipment used for the sampling effort. Equipment rinse blanks will be analyzed for each target parameter for the respective sampling effort for which environmental media have been collected. (Note: If dedicated or disposable sampling equipment is used, equipment rinse samples will not be collected as part of that field effort.)

Trip blank samples will be prepared by the laboratory and provided with each shipping container that includes containers for the collection of groundwater samples for the analysis of VOC. Trip blank samples will be analyzed for each VOC for which groundwater samples have been collected for analysis

8.3 LABORATORY ACCURACY OBJECTIVES

Analytical bias will be assessed through the use of laboratory control samples (LCS) and Site-specific matrix spike (MS) sample analyses. LCS analyses will be performed with each analytical batch of project samples to determine the accuracy of the analytical system.

One (1) set of MS/MSD analyses will be performed with each batch of twenty (20) project samples collected for analysis to assess the accuracy of the identification and quantification of analytes within the Site-specific sample matrices. Additional sample volume will be collected at sample locations selected for the preparation of MS/MSD samples so that the standard laboratory reporting limits (RLs) are achieved.

The accuracy of analyses that include a sample extraction procedure will be evaluated through the use of system monitoring or surrogate compounds. Surrogate compounds will be added to each sample, standard, blank, and QC sample prior to sample preparation and analysis. Surrogate compound percent recoveries will provide information on the effect of the sample matrix on the accuracy of the analyses.

8.4 REPRESENTATIVENESS

8.4.1 Definition

Representativeness expresses the degree to which sample data represent a characteristic of a population, a parameter variation at a sampling point or an environmental condition. Representativeness is a qualitative parameter that is dependent upon the design of the sampling program. The representativeness criterion is satisfied through the proper selection of sampling locations, the quantity of samples and the use of appropriate procedures to collect and analyze the samples.

8.4.2 Measures to Ensure Representativeness of Field Data

Representativeness will be addressed by prescribing sampling techniques and the rationale used to select sampling locations. Sampling locations may be biased (based on existing data, instrument surveys, observations, etc.) or unbiased (completely random or stratified-random approaches).

8.4.3 Measures to Ensure Representativeness of Laboratory Data

Representativeness will be addressed by prescribing sampling techniques and the rationale used to select sampling locations. Sampling locations may be biased (based on existing data, instrument surveys, observations, etc.) or unbiased (completely random or stratified-random approaches).

8.5 COMPLETENESS

8.5.1 Definition

Completeness is a measure of the amount of valid (usable) data obtained from a measuring system compared to the total amount of the anticipated to be obtained. The completeness goal for all data uses is that a sufficient amount of valid data be generated so that determinations can be made related to the intended data use with a sufficient degree of confidence.

8.5.2 Field Completeness Objectives

Completeness is a measure of the amount of valid measurements obtained from measurements taken in this project versus the number planned. Field completeness objective for this project will be greater than (>) 90%.

8.5.3 Laboratory Completeness Objectives

Laboratory data completeness objective is a measure of the amount of valid data obtained from laboratory measurements. The evaluation of the data completeness will be performed at the conclusion of each sampling and analysis effort.

The completeness of the data generated will be determined by comparing the amount of valid data, based on independent validation, with the total laboratory data set. The completeness goal will be >90%.

8.6 COMPARABILITY

8.6.1 Definition

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another.

8.6.2 Measures to Ensure Comparability of Laboratory Data

Comparability of laboratory data will be measured from the analysis of Standard Reference Materials (SRM) obtained from either EPA Cooperative Research and Development Agreement (CRADA) suppliers

or the National Institute of Standards and Technology (NIST). The reported analytical data will also be presented in standard units of mass of contaminant within a known volume of environmental media. The standard units for various sample matrices are as follows:

- Solid Matrices – mg/kg of media (Dry Weight).
- Aqueous Matrices – ug/L of media for organic analyses, and mg/L for inorganic analyses.

8.7 LEVEL OF QUALITY CONTROL EFFORT

Equipment rinse blanks for non-dedicated sampling equipment will be prepared by field personnel and submitted for analysis of target parameters. Equipment rinse blank samples will be analyzed to check for potential cross-contamination between sampling locations that may be introduced during the investigation. One (1) equipment rinse blank will be collected per sampling event to the extent that non-dedicated sampling equipment is used.

Trip blanks will be used to assess the potential for contamination during sample storage and shipment. Trip blanks will be provided with the sample containers to be used for the collection of groundwater samples for the analysis of VOC. Trip blanks will be preserved and handled in the same manner as the project samples. One (1) trip blank will be included along with each shipping container containing project samples to be analyzed for VOC.

Method blank samples will be prepared by the laboratory and analyzed concurrently with all project samples to assess potential contamination introduced during the analytical process.

Field duplicate samples will be collected and analyzed to determine sampling and analytical reproducibility. One (1) field duplicate will be collected for every 20 or fewer investigative samples collected for off-Site laboratory analysis.

Matrix spikes will provide information to assess the precision and accuracy of the analysis of the target parameters within the environmental media collected. One (1) matrix spike/matrix spike duplicate (MS/MSD) will be collected for every 20 or fewer investigative samples per sample matrix.

(Note: Soil MS/MSD samples require triple sample volume for VOC only. Aqueous MS/MSD samples require triple the normal sample volume for VOC analysis and double the volume for the remaining parameters.)

9. Data Reduction, Validation and Reporting

Data generated by the laboratory operation will be reduced and validated prior to reporting in accordance with the following procedures:

9.1 DATA REDUCTION

9.1.1 Field Data Reduction Procedures

Field data reduction procedures will be minimal in scope compared to those implemented in the laboratory setting. The pH, conductivity, temperature, turbidity, DO, ORP and breathing zone VOC readings collected in the field will be generated from direct read instruments. The data will be written into field logbooks immediately after measurements are taken. If errors are made, data will be legibly crossed out, initialed and dated by the field member, and corrected in a space adjacent to the original entry.

9.1.2 Laboratory Data Reduction Procedures

Laboratory data reduction procedures are provided by the appropriate chapter of USEPA, “Test Methods for Evaluating Solid Waste”, SW-846, Third Edition. Errors will be noted; corrections made with the original notations crossed out legibly. Analytical results for soil samples will be calculated and reported on a dry weight basis.

9.1.3 Quality Control Data

Quality control data (e.g., laboratory duplicates, surrogates, matrix spikes, and matrix spike duplicates) will be compared to the method acceptance criteria. Data determined to be acceptable will be entered into the laboratory information management system.

Unacceptable data will be appropriately qualified in the project report. Case narratives will be prepared which will include information concerning data that fell outside acceptance limits and any other anomalous conditions encountered during sample analysis.

9.2 DATA VALIDATION

Data validation procedures of the analytical data will be performed by the Haley & Aldrich QA Officer or designee using the following documents as guidance for the review process:

- "U.S. EPA National Functional Guidelines for Organic Data Review”, and the "U.S. EPA National Functional Guidelines for Inorganic Data Review".

- The specific data qualifiers used will be applied to the reported results as presented and defined in the EPA National Functional Guidelines. Validation will be performed by qualified personnel at the direction of the Haley & Aldrich QAO.

- The completeness of each data package will be evaluated by the Data Validator. Completeness checks will be administered on all data to determine that the deliverables are consistent with

the NYSDEC Analytical Services Protocol (ASP) Category A and Category B data package requirements. The validator will determine whether the required items are present and request copies of missing deliverables (if necessary) from the laboratory.

9.3 DATA REPORTING

Data reporting procedures will be carried out for field and laboratory operations as indicated below:

- Field Data Reporting: Field data reporting will be conducted principally through the transmission of report sheets containing tabulated results of measurements made in the field and documentation of field calibration activities.

- Laboratory Data Reporting: The laboratory data reporting package will enable data validation based on the protocols described above. The final laboratory data report format will include the QA/QC sample analysis deliverables to enable the development of a data usability summary report (DUSR) based on Department DER-10 Appendix 2B.

10. Performance and System Audits

A performance audit is an independent quantitative comparison with data routinely obtained in the field or the laboratory. Performance audits include two separate, independent parts: internal and external audits.

10.1 FIELD PERFORMANCE AND SYSTEM AUDITS

10.1.1 Internal Field Audit Responsibilities

Internal audits of field activities will be initiated at the discretion of the Project Manager and will include the review of sampling and field measurements. The audits will verify that all procedures are being followed. Internal field audits will be conducted periodically during the project. The audits will include examination of the following:

- Field sampling records, screening results, instrument operating records
- Sample collection
- Handling and packaging in compliance with procedures
- Maintenance of QA procedures
- Chain-of-custody reports

10.1.2 External Field Audit Responsibilities

External audits may be conducted by the Project Coordinator at any time during the field operations. These audits may or may not be announced and are at the discretion of the NYSDEC. The external field audits can include (but are not limited to) the following:

- Sampling equipment decontamination procedures
- Sample bottle preparation procedures
- Sampling procedures
- Examination of health and safety plans
- Procedures for verification of field duplicates
- Field screening practices

10.2 LABORATORY PERFORMANCE AND SYSTEM AUDITS

10.2.1 Internal Laboratory Audit Responsibilities

The laboratory system audits are typically conducted by the laboratory QA Officer or designee on an annual basis. The system audit will include an examination of laboratory documentation including: sample receiving logs, sample storage, chain-of-custody procedures, sample preparation and analysis and instrument operating records.

At the conclusion of internal system audits, reports will be provided to the laboratory's operating divisions for appropriate comment and remedial/corrective action where necessary. Records of audits and corrective actions will be maintained by the Laboratory QA Officer.

10.2.2 External Laboratory Audit Responsibilities

External audits will be conducted as required, by the NYSDOH or designee. External audits may include any of the following:

- Review of laboratory analytical procedures
- Laboratory on-site visits
- Submission of performance evaluation samples for analysis

Failure of any of the above audit procedures can lead to laboratory de-certification. An audit may consist of but not limited to:

- Sample receipt procedures
- Custody, sample security and log-in procedures
- Review of instrument calibration logs
- Review of QA procedures
- Review of log books
- Review of analytical SOPs
- Personnel interviews

A review of a data package from samples recently analyzed by the laboratory can include (but not be limited to) the following:

- Comparison of resulting data to the SOP or method
- Verification of initial and continuing calibrations within control limits
- Verification of surrogate recoveries and instrument timing results
- Review of extended quantitation reports for comparisons of library spectra to instrument spectra, where applicable
- Assurance that samples are run within holding times

11. Preventive Maintenance

11.1 FIELD INSTRUMENT PREVENTIVE MAINTENANCE

The field equipment preventive maintenance program is designed to ensure the effective completion of the sampling effort and to minimize equipment down time. Program implementation is concentrated in three areas:

- Maintenance responsibilities.
- Maintenance schedules.
- Inventory of critical spare parts and equipment.

The maintenance responsibilities for field equipment will be assigned to the task leaders in charge of specific field operations. Field personnel will be responsible for daily field checks and calibrations and for reporting any problems with the equipment. The maintenance schedule will follow the manufacturer's recommendations. In addition, the field personnel will be responsible for determining that an inventory of spare parts will be maintained with the field equipment. The inventory will primarily contain parts that are subject to frequent failure, have limited useful lifetimes and/or cannot be obtained in a timely manner.

11.2 LABORATORY INSTRUMENT PREVENTIVE MAINTENANCE

Analytical instruments at the laboratory will undergo routine and/or preventive maintenance. The extent of the preventive maintenance will be a function of the complexity of the equipment.

Generally, annual preventive maintenance service will involve cleaning, adjusting, inspecting and testing procedures designed to deduce instrument failure and/or extend useful instrument life. Between visits, routine operator maintenance and cleaning will be performed according to manufacturer's specifications by laboratory personnel.

Maintenance records will be placed on file at the laboratory and can be made available upon request.

12. Specific Routine Procedures Used to Assess Data Precision, Accuracy, and Completeness

12.1 FIELD MEASUREMENTS

Field generated information will be reviewed by the Field Coordinator and typically include evaluation of bound logbooks/forms, data entry and calculation checks. Field data will be assessed by the Project Coordinator who will review the field results for compliance with the established QC criteria that are specified in Section 7.0 of this QAPP. The accuracy of pH and specific conductance will be assessed using daily instrument calibration, calibration check, and blank data. Accuracy will be measured by determining the percent recovery (% R) of calibration check standards. Precision of the pH and specific conductance measurements will be assessed on the basis of the reproducibility of duplicate readings of a field sample and will be measured by determining the relative percent difference (RPD). Accuracy and precision of the soil VOC screening will be determined using duplicate readings of calibration checks. Field data completeness will be calculated using the following equation:

$$\text{Completeness} = \frac{\text{Valid (usable) Data Obtained}}{\text{Total Data Planned}} \text{ X } 100$$

12.2 LABORATORY DATA

Surrogate, internal standard and matrix spike recoveries will be used to evaluate data quality. The laboratory quality assurance/quality control program will include the following elements:

- Precision, in terms of relative percent difference (RPD), will be determined by relative sample analysis at a frequency of one duplicate analysis for each batch of ten project samples or a frequency of 10 percent (10%). RPD is defined as the absolute difference of duplicate measurements divided by the mean of these analyses normalized to percentage.

- Accuracy, in terms of percent recovery (recovery of known constituent additions or surrogate recoveries), will be determined by the analysis of spiked and unspiked samples. MS/MSD will be used to determine analytical accuracy. The frequency of MS/MSD analyses will be one project sample MS/MSD per set of 20 project samples.

- One method blank will be prepared and analyzed with each batch of project samples. The total number of method blank sample analyses will be determined by the laboratory analytical batch size.

- Standard Reference Materials (SRMs) will be used for each analysis. Sources of SRM's include the U.S. EPA, commercially available material from CRADA certified vendors and/or laboratory produced solutions. SRMs, when available and appropriate, will be processed and analyzed on a frequency of one per set of samples.

- Completeness is the evaluation of the amount of valid data generated versus the total set of data produced from a particular sampling and analysis event. Valid data is determined by independent confirmation of compliance with method-specific and project-specific data quality

objectives. The calculation of data set completeness will be performed by the following equation.

$$\frac{Number\ of\ Valid\ Sample\ Results}{Total\ Number\ of\ Samples\ Planned}\ X\ 100 = \%\ Complete$$

13. Quality Assurance (QA) Reports

Critically important to the successful implementation of the QA Plan is a reporting system that provides the means by which the program can be reviewed, problems identified and programmatic changes made to improve the plan.

QA reports to management include:

- Audit reports, internal and external audits with responses
- Performance evaluation sample results; internal and external sources
- Daily QA/QC exception reports/corrective actions

QA/QC corrective action reports will be prepared by the Haley & Aldrich QA Officer when appropriate and presented to the project and/or laboratory management personnel so that performance criteria can be monitored for all analyses from each analytical department. The updated trend/QA charts prepared by the laboratory QA personnel will be distributed and reviewed by various levels of the laboratory management.

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3. United States Environmental Protection Agency, (1993). Data Quality Objectives Process for Superfund Interim Final Guidance. U.S. EPA/540/R-93-071, Office of Solid Waste and Emergency Response (OSWER), September 1993.

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8. New York State Department of Environmental Conservation, NYSDEC Analytical Services Protocol (ASP), Bureau of Environmental Investigation, 1991 with updates.

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TABLES

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
GROUNDWATER				
Wet Chemistry				
Chloride	16887-00-6	mg/l	0.2	1
Total Organic Carbon	7440-44-0	mg/l	0.5	0.114
Sulfate	14808-79-8	mg/l	10	1.37
Volatile Organic Compounds (8260C)				
Methylene chloride	75-09-2	ug/l	0.7	2.5
1,1-Dichloroethane	75-34-3	ug/l	0.7	2.5
Chloroform	67-66-3	ug/l	0.7	2.5
Carbon tetrachloride	56-23-5	ug/l	0.134	0.5
1,2-Dichloropropane	78-87-5	ug/l	0.137	1
Dibromochloromethane	124-48-1	ug/l	0.149	0.5
1,1,2-Trichloroethane	79-00-5	ug/l	0.5	1.5
Tetrachloroethene	127-18-4	ug/l	0.181	0.5
Chlorobenzene	108-90-7	ug/l	0.7	2.5
Trichlorofluoromethane	75-69-4	ug/l	0.7	2.5
1,2-Dichloroethane	107-06-2	ug/l	0.132	0.5
1,1,1-Trichloroethane	71-55-6	ug/l	0.7	2.5
Bromodichloromethane	75-27-4	ug/l	0.192	0.5
trans-1,3-Dichloropropene	10061-02-6	ug/l	0.164	0.5
cis-1,3-Dichloropropene	10061-01-5	ug/l	0.144	0.5
1,3-Dichloropropene, Total	542-75-6	ug/l	0.144	0.5
Bromoform	75-25-2	ug/l	0.65	2
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	0.167	0.5
Benzene	71-43-2	ug/l	0.159	0.5
Toluene	108-88-3	ug/l	0.7	2.5
Ethylbenzene	100-41-4	ug/l	0.7	2.5
Chloromethane	74-87-3	ug/l	0.7	2.5
Bromomethane	74-83-9	ug/l	0.7	2.5
Vinyl chloride	75-01-4	ug/l	0.0714	1
Chloroethane	75-00-3	ug/l	0.7	2.5
1,1-Dichloroethene	75-35-4	ug/l	0.169	0.5
trans-1,2-Dichloroethene	156-60-5	ug/l	0.7	2.5
Trichloroethene	79-01-6	ug/l	0.175	0.5
1,2-Dichlorobenzene	95-50-1	ug/l	0.7	2.5
1,3-Dichlorobenzene	541-73-1	ug/l	0.7	2.5
1,4-Dichlorobenzene	106-46-7	ug/l	0.7	2.5
Methyl tert butyl ether	1634-04-4	ug/l	0.7	2.5
p/m-Xylene	179601-23-1	ug/l	0.7	2.5
o-Xylene	95-47-6	ug/l	0.7	2.5
Xylene (Total)	1330-20-7	ug/l	0.7	2.5
cis-1,2-Dichloroethene	156-59-2	ug/l	0.7	2.5
1,2-Dichloroethene (total)	540-59-0	ug/l	0.7	2.5
Styrene	100-42-5	ug/l	0.7	2.5
Dichlorodifluoromethane	75-71-8	ug/l	1	5
Acetone	67-64-1	ug/l	1.46	5
Carbon disulfide	75-15-0	ug/l	1	5
2-Butanone	78-93-3	ug/l	1.94	5
4-Methyl-2-pentanone	108-10-1	ug/l	1	5
2-Hexanone	591-78-6	ug/l	1	5
Bromochloromethane	74-97-5	ug/l	0.7	2.5
1,2-Dibromoethane	106-93-4	ug/l	0.65	2
n-Butylbenzene	104-51-8	ug/l	0.7	2.5
sec-Butylbenzene	135-98-8	ug/l	0.7	2.5

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
tert-Butylbenzene	98-06-6	ug/l	0.7	2.5
1,2-Dibromo-3-chloropropane	96-12-8	ug/l	0.7	2.5
Isopropylbenzene	98-82-8	ug/l	0.7	2.5
p-Isopropyltoluene	99-87-6	ug/l	0.7	2.5
Naphthalene	91-20-3	ug/l	0.7	2.5
n-Propylbenzene	103-65-1	ug/l	0.7	2.5
1,2,3-Trichlorobenzene	87-61-6	ug/l	0.7	2.5
1,2,4-Trichlorobenzene	120-82-1	ug/l	0.7	2.5
1,3,5-Trimethylbenzene	108-67-8	ug/l	0.7	2.5
1,2,4-Trimethylbenzene	95-63-6	ug/l	0.7	2.5
Methyl Acetate	79-20-9	ug/l	0.234	2
Cyclohexane	110-82-7	ug/l	0.271	10
1,4-Dioxane	123-91-1	ug/l	60.8	250
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ug/l	0.7	2.5
Methyl cyclohexane	108-87-2	ug/l	0.396	10
Inorganics (6010)				
Iron, Total	7439-89-6	mg/l	0.05	0.0191
Iron, Dissolved	7439-89-6	mg/l	0.05	0.0191
Dissolved Gases (5310C)				
Ethene	74-85-1	mg/l	0.5	0.5
SOIL				
Wet Chemistry				
Chromium, Hexavalent (Method EPA 7199 SW-846)	18540-29-9	mg/kg	0.16	0.8
Chromium, Trivalent	16065-83-1	mg/kg	0.8	NA
Cyanide, Total (Method SM 4500)	57-12-5	mg/kg	1	0.212
Volatile Organic Compounds (8260C)				
Methylene chloride	75-09-2	ug/kg	1.65	10
1,1-Dichloroethane	75-34-3	ug/kg	0.27	1.5
Chloroform	67-66-3	ug/kg	0.37	1.5
Carbon tetrachloride	56-23-5	ug/kg	0.345	1
1,2-Dichloropropane	78-87-5	ug/kg	0.228	3.5
Dibromochloromethane	124-48-1	ug/kg	0.176	1
1,1,2-Trichloroethane	79-00-5	ug/kg	0.313	1.5
Tetrachloroethene	127-18-4	ug/kg	0.302	1
Chlorobenzene	108-90-7	ug/kg	0.348	1
Trichlorofluoromethane	75-69-4	ug/kg	0.417	5
1,2-Dichloroethane	107-06-2	ug/kg	0.246	1
1,1,1-Trichloroethane	71-55-6	ug/kg	0.35	1
Bromodichloromethane	75-27-4	ug/kg	0.308	1
trans-1,3-Dichloropropene	10061-02-6	ug/kg	0.208	1
cis-1,3-Dichloropropene	10061-01-5	ug/kg	0.231	1
1,3-Dichloropropene, Total	542-75-6	ug/kg	0.208	1
1,1-Dichloropropene	563-58-6	ug/kg	0.328	5
Bromoform	75-25-2	ug/kg	0.237	4
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	0.298	1
Benzene	71-43-2	ug/kg	0.193	1
Toluene	108-88-3	ug/kg	0.195	1.5
Ethylbenzene	100-41-4	ug/kg	0.17	1
Chloromethane	74-87-3	ug/kg	0.436	5
Bromomethane	74-83-9	ug/kg	0.338	2
Vinyl chloride	75-01-4	ug/kg	0.315	2
Chloroethane	75-00-3	ug/kg	0.316	2
1,1-Dichloroethene	75-35-4	ug/kg	0.372	1
trans-1,2-Dichloroethene	156-60-5	ug/kg	0.241	1.5

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
Trichloroethene	79-01-6	ug/kg	0.302	1
1,2-Dichlorobenzene	95-50-1	ug/kg	0.182	5
1,3-Dichlorobenzene	541-73-1	ug/kg	0.218	5
1,4-Dichlorobenzene	106-46-7	ug/kg	0.182	5
Methyl tert butyl ether	1634-04-4	ug/kg	0.153	2
p/m-Xylene	179601-23-1	ug/kg	0.351	2
o-Xylene	95-47-6	ug/kg	0.338	2
Xylene (Total)	1330-20-7	ug/kg	0.338	2
cis-1,2-Dichloroethene	156-59-2	ug/kg	0.342	1
1,2-Dichloroethene (total)	540-59-0	ug/kg	0.241	1
Dibromomethane	74-95-3	ug/kg	0.239	10
Styrene	100-42-5	ug/kg	0.401	2
Dichlorodifluoromethane	75-71-8	ug/kg	0.5	10
Acetone	67-64-1	ug/kg	2.29	10
Carbon disulfide	75-15-0	ug/kg	1.1	10
2-Butanone	78-93-3	ug/kg	0.69	10
Vinyl acetate	108-05-4	ug/kg	0.153	10
4-Methyl-2-pentanone	108-10-1	ug/kg	0.244	10
1,2,3-Trichloropropane	96-18-4	ug/kg	0.177	10
2-Hexanone	591-78-6	ug/kg	0.666	10
Bromochloromethane	74-97-5	ug/kg	0.357	5
2,2-Dichloropropane	594-20-7	ug/kg	0.45	5
1,2-Dibromoethane	106-93-4	ug/kg	0.199	4
1,3-Dichloropropane	142-28-9	ug/kg	0.183	5
1,1,1,2-Tetrachloroethane	630-20-6	ug/kg	0.318	1
Bromobenzene	108-86-1	ug/kg	0.219	5
n-Butylbenzene	104-51-8	ug/kg	0.228	1
sec-Butylbenzene	135-98-8	ug/kg	0.217	1
tert-Butylbenzene	98-06-6	ug/kg	0.247	5
o-Chlorotoluene	95-49-8	ug/kg	0.221	5
p-Chlorotoluene	106-43-4	ug/kg	0.183	5
1,2-Dibromo-3-chloropropane	96-12-8	ug/kg	0.396	5
Hexachlorobutadiene	87-68-3	ug/kg	0.348	5
Isopropylbenzene	98-82-8	ug/kg	0.194	1
p-Isopropyltoluene	99-87-6	ug/kg	0.202	1
Naphthalene	91-20-3	ug/kg	0.138	5
Acrylonitrile	107-13-1	ug/kg	0.514	10
n-Propylbenzene	103-65-1	ug/kg	0.215	1
1,2,3-Trichlorobenzene	87-61-6	ug/kg	0.251	5
1,2,4-Trichlorobenzene	120-82-1	ug/kg	0.215	5
1,3,5-Trimethylbenzene	108-67-8	ug/kg	0.161	5
1,2,4-Trimethylbenzene	95-63-6	ug/kg	0.186	5
1,4-Dioxane	123-91-1	ug/kg	14.4	40
1,4-Diethylbenzene	105-05-5	ug/kg	4	4
4-Ethyltoluene	622-96-8	ug/kg	0.234	4
1,2,4,5-Tetramethylbenzene	95-93-2	ug/kg	0.156	4
Ethyl ether	60-29-7	ug/kg	0.26	5
trans-1,4-Dichloro-2-butene	110-57-6	ug/kg	0.392	5
Semivolatile Organic Compounds (8270D)				
Acenaphthene	83-32-9	ug/kg	17.3012	133.6
1,2,4-Trichlorobenzene	120-82-1	ug/kg	19.1048	167
Hexachlorobenzene	118-74-1	ug/kg	18.704	100.2
Bis(2-chloroethyl)ether	111-44-4	ug/kg	22.6452	150.3
2-Chloronaphthalene	91-58-7	ug/kg	16.5664	167
1,2-Dichlorobenzene	95-50-1	ug/kg	29.9932	167
1,3-Dichlorobenzene	541-73-1	ug/kg	28.724	167

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
1,4-Dichlorobenzene	106-46-7	ug/kg	29.1582	167
3,3'-Dichlorobenzidine	91-94-1	ug/kg	44.422	167
2,4-Dinitrotoluene	121-14-2	ug/kg	33.4	167
2,6-Dinitrotoluene	606-20-2	ug/kg	28.6572	167
Fluoranthene	206-44-0	ug/kg	19.1716	100.2
4-Chlorophenyl phenyl ether	7005-72-3	ug/kg	17.869	167
4-Bromophenyl phenyl ether	101-55-3	ug/kg	25.4842	167
Bis(2-chloroisopropyl)ether	108-60-1	ug/kg	28.5236	200.4
Bis(2-chloroethoxy)methane	111-91-1	ug/kg	16.7334	180.36
Hexachlorobutadiene	87-68-3	ug/kg	24.4488	167
Hexachlorocyclopentadiene	77-47-4	ug/kg	151.302	477.62
Hexachloroethane	67-72-1	ug/kg	27.0206	133.6
Isophorone	78-59-1	ug/kg	21.6766	150.3
Naphthalene	91-20-3	ug/kg	20.3406	167
Nitrobenzene	98-95-3	ug/kg	24.716	150.3
NitrosoDiPhenylAmine(NDPA)/DPA	86-30-6	ug/kg	19.0046	133.6
n-Nitrosodi-n-propylamine	621-64-7	ug/kg	25.7848	167
Bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg	57.782	167
Butyl benzyl phthalate	85-68-7	ug/kg	42.084	167
Di-n-butylphthalate	84-74-2	ug/kg	31.6632	167
Di-n-octylphthalate	117-84-0	ug/kg	56.78	167
Diethyl phthalate	84-66-2	ug/kg	15.4642	167
Dimethyl phthalate	131-11-3	ug/kg	35.07	167
Benzo(a)anthracene	56-55-3	ug/kg	18.8042	100.2
Benzo(a)pyrene	50-32-8	ug/kg	40.748	133.6
Benzo(b)fluoranthene	205-99-2	ug/kg	28.1228	100.2
Benzo(k)fluoranthene	207-08-9	ug/kg	26.72	100.2
Chrysene	218-01-9	ug/kg	17.368	100.2
Acenaphthylene	208-96-8	ug/kg	25.7848	133.6
Anthracene	120-12-7	ug/kg	32.565	100.2
Benzo(ghi)perylene	191-24-2	ug/kg	19.6392	133.6
Fluorene	86-73-7	ug/kg	16.2324	167
Phenanthrene	85-01-8	ug/kg	20.3072	100.2
Dibenzo(a,h)anthracene	53-70-3	ug/kg	19.3052	100.2
Indeno(1,2,3-cd)Pyrene	193-39-5	ug/kg	23.2798	133.6
Pyrene	129-00-0	ug/kg	16.5998	100.2
Biphenyl	92-52-4	ug/kg	38.744	380.76
4-Chloroaniline	106-47-8	ug/kg	30.394	167
2-Nitroaniline	88-74-4	ug/kg	32.1976	167
3-Nitroaniline	99-09-2	ug/kg	31.4962	167
4-Nitroaniline	100-01-6	ug/kg	69.138	167
Dibenzofuran	132-64-9	ug/kg	15.7982	167
2-Methylnaphthalene	91-57-6	ug/kg	20.1736	200.4
Acetophenone	98-86-2	ug/kg	20.6746	167
2,4,6-Trichlorophenol	88-06-2	ug/kg	31.6632	100.2
P-Chloro-M-Cresol	59-50-7	ug/kg	24.883	167
2-Chlorophenol	95-57-8	ug/kg	19.7394	167
2,4-Dichlorophenol	120-83-2	ug/kg	26.8536	150.3
2,4-Dimethylphenol	105-67-9	ug/kg	55.11	167

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
2-Nitrophenol	88-75-5	ug/kg	62.792	360.72
4-Nitrophenol	100-02-7	ug/kg	68.136	233.8
2,4-Dinitrophenol	51-28-5	ug/kg	77.822	801.6
4,6-Dinitro-o-cresol	534-52-1	ug/kg	80.16	434.2
Pentachlorophenol	87-86-5	ug/kg	36.74	133.6
Phenol	108-95-2	ug/kg	25.217	167
2-Methylphenol	95-48-7	ug/kg	25.885	167
3-Methylphenol/4-Methylphenol	106-44-5	ug/kg	26.1522	240.48
2,4,5-Trichlorophenol	95-95-4	ug/kg	31.9972	167
Benzoic Acid	65-85-0	ug/kg	169.004	541.08
Benzyl Alcohol	100-51-6	ug/kg	51.102	167
Carbazole	86-74-8	ug/kg	16.2324	167
Pesticides (8081B)				
Delta-BHC	319-86-8	ug/kg	1.56651	7.9992
Lindane	58-89-9	ug/kg	1.489851	3.333
Alpha-BHC	319-84-6	ug/kg	0.946572	3.333
Beta-BHC	319-85-7	ug/kg	3.03303	7.9992
Heptachlor	76-44-8	ug/kg	1.793154	3.9996
Aldrin	309-00-2	ug/kg	2.816385	7.9992
Heptachlor epoxide	1024-57-3	ug/kg	4.49955	14.9985
Endrin	72-20-8	ug/kg	1.36653	3.333
Endrin aldehyde	7421-93-4	ug/kg	3.49965	9.999
Endrin ketone	53494-70-5	ug/kg	2.059794	7.9992
Dieldrin	60-57-1	ug/kg	2.49975	4.9995
4,4'-DDE	72-55-9	ug/kg	1.849815	7.9992
4,4'-DDD	72-54-8	ug/kg	2.853048	7.9992
4,4'-DDT	50-29-3	ug/kg	6.43269	14.9985
Endosulfan I	959-98-8	ug/kg	1.889811	7.9992
Endosulfan II	33213-65-9	ug/kg	2.673066	7.9992
Endosulfan sulfate	1031-07-8	ug/kg	1.523181	3.333
Methoxychlor	72-43-5	ug/kg	4.6662	14.9985
Toxaphene	8001-35-2	ug/kg	41.9958	149.985
cis-Chlordane	5103-71-9	ug/kg	2.786388	9.999
trans-Chlordane	5103-74-2	ug/kg	2.639736	9.999
Chlordane	57-74-9	ug/kg	26.49735	64.9935
Herbicides (8151A)				
2,4-D	94-75-7	ug/kg	10.4895	166.5
2,4,5-T	93-76-5	ug/kg	5.1615	166.5
2,4,5-TP (Silvex)	93-72-1	ug/kg	4.4289	166.5
Polychlorinated biphenyls (PCBs) (8082A)				
Aroclor 1016	12674-11-2	ug/kg	3.7989	33.5
Aroclor 1221	11104-28-2	ug/kg	5.0987	33.5
Aroclor 1232	11141-16-5	ug/kg	3.2964	33.5
Aroclor 1242	53469-21-9	ug/kg	4.1004	33.5
Aroclor 1248	12672-29-6	ug/kg	3.7587	33.5
Aroclor 1254	11097-69-1	ug/kg	2.7336	33.5
Aroclor 1260	11096-82-5	ug/kg	3.4974	33.5
Aroclor 1262	37324-23-5	ug/kg	2.7537	33.5
Aroclor 1268	11100-14-4	ug/kg	2.3718	33.5
PCBs, Total	1336-36-3	ug/kg	1.541	33.5
Metals (6010C)				
Aluminum, Total	7429-90-5	mg/kg	1.08	4
Antimony, Total	7440-36-0	mg/kg	0.152	2

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

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Arsenic, Total	7440-38-2	mg/kg	0.0832	0.4
Barium, Total	7440-39-3	mg/kg	0.0696	0.4
Beryllium, Total	7440-41-7	mg/kg	0.0132	0.2
Cadmium, Total	7440-43-9	mg/kg	0.0392	0.4
Calcium, Total	7440-70-2	mg/kg	1.4	4
Chromium, Total	7440-47-3	mg/kg	0.0384	0.4
Cobalt, Total	7440-48-4	mg/kg	0.0664	0.8
Copper, Total	7440-50-8	mg/kg	0.1032	0.4
Iron, Total	7439-89-6	mg/kg	0.3612	2
Lead, Total	7439-92-1	mg/kg	0.1072	2
Magnesium, Total	7439-95-4	mg/kg	0.616	4
Manganese, Total	7439-96-5	mg/kg	0.0636	0.4
Nickel, Total	7440-02-0	mg/kg	0.0968	1
Potassium, Total	7440-09-7	mg/kg	5.76	100
Selenium, Total	7782-49-2	mg/kg	0.1032	0.8
Silver, Total	7440-22-4	mg/kg	0.1132	0.4
Sodium, Total	7440-23-5	mg/kg	1.26	80
Thallium, Total	7440-28-0	mg/kg	0.126	0.8
Vanadium, Total	7440-62-2	mg/kg	0.0812	0.4
Zinc, Total	7440-66-6	mg/kg	0.1172	2
Mercury, Total	7439-97-6	mg/kg	0.016896	0.08
AIR				
Volatile Organic Compounds (TO-15)				
1,1,1-Trichloroethane	71-55-6	ppbV	0.057	0.2
1,1,2,2-Tetrachloroethane	79-34-5	ppbV	0.0548	0.2
1,1,2-Trichloroethane	79-00-5	ppbV	0.0667	0.2
1,1-Dichloroethane	75-34-3	ppbV	0.0771	0.2
1,1-Dichloroethene	75-35-4	ppbV	0.0566	0.2
1,2,3-Trimethylbenzene	526-73-8	ppbV	0.0751	0.2
1,2,4-Trichlorobenzene	120-82-1	ppbV	0.0611	0.2
1,2,4-Trimethylbenzene	95-63-6	ppbV	0.0694	0.2
1,2,4,5-Tetramethylbenzene	95-93-2	ppbV	0.0795	0.2
1,2-Dibromoethane	106-93-4	ppbV	0.0779	0.2
1,2-Dichlorobenzene	95-50-1	ppbV	0.0614	0.2
1,2-Dichloroethane	107-06-2	ppbV	0.0552	0.2
1,2-Dichloropropane	78-87-5	ppbV	0.0697	0.2
1,3,5-Trimethylbenzene	108-67-8	ppbV	0.0584	0.2
1,3-Butadiene	106-99-0	ppbV	0.0799	0.2
1,3-Dichlorobenzene	541-73-1	ppbV	0.0637	0.2
1,4-Dichlorobenzene	106-46-7	ppbV	0.0418	0.2
1,4-Dioxane	123-91-1	ppbV	0.078	0.2
2,2,4-Trimethylpentane	540-84-1	ppbV	0.0659	0.2
2-Butanone	78-93-3	ppbV	0.0522	0.5
2-Hexanone	591-78-6	ppbV	0.0604	0.2
2-Methylthiophene	554-14-3	ppbV	0.0789	0.2
3-Methylthiophene	616-44-4	ppbV	0.0669	0.2
3-Chloropropene	107-05-1	ppbV	0.0812	0.2
2-Ethylthiophene	872-55-9	ppbV	0.0571	0.2
4-Ethyltoluene	622-96-8	ppbV	0.0776	0.2
Acetone	67-64-1	ppbV	0.165	1
Benzene	71-43-2	ppbV	0.0537	0.2
Benzyl chloride	100-44-7	ppbV	0.0645	0.2
Benzothiophene	95-15-8	ppbV	0.0468	0.5
Bromodichloromethane	75-27-4	ppbV	0.0656	0.2
Bromoform	75-25-2	ppbV	0.0523	0.2
Bromomethane	74-83-9	ppbV	0.0696	0.2

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
BCP Site # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
Carbon disulfide	75-15-0	ppbV	0.0345	0.2
Carbon tetrachloride	56-23-5	ppbV	0.0471	0.2
Chlorobenzene	108-90-7	ppbV	0.0789	0.2
Chloroethane	75-00-3	ppbV	0.0767	0.2
Chloroform	67-66-3	ppbV	0.0452	0.2
Chloromethane	74-87-3	ppbV	0.0958	0.2
cis-1,2-Dichloroethene	156-59-2	ppbV	0.0587	0.2
cis-1,3-Dichloropropene	10061-01-5	ppbV	0.0745	0.2
Cyclohexane	110-82-7	ppbV	0.0656	0.2
Carbon tetrachloride	56-23-5	ppbV	0.007	0.02
Tetrachloroethene	127-18-4	ppbV	0.008	0.02
Trichloroethene	79-01-6	ppbV	0.007	0.02
Vinyl chloride	75-01-4	ppbV	0.006	0.02

Notes:
1. The information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.
2. Laboratory parameters for soil samples will be determined by the Excavation Work Plan. Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

TABLE II
SUMMARY OF ANALYSIS METHOD, PRESERVATION METHOD, HOLDING TIME, SAMPLE SIZE REQUIREMENTS AND SAMPLE CONTAINERS
BCP SITE # C828148 - FORMER AB DICK FACILITY
ROCHESTER, NEW YORK

Analysis/Method	Sample Type	Preservation	Holding Time	Volume/Weight	Container
Volatile Organic Compounds/8260C	Groundwater	HCl, Cool, 4 ± 2 °C	14 days	120 mL	3 - 40ml glass vials
Volatile Organic Compounds/8260C	Soil	1 - 1 Vial MeOH/2 Vial Water	14 days	120 mL	3 - 40ml glass vials
Semivolatile Organic Compounds/8270D	Soil	Cool, 4 ± 2 °C	14 days	250 mL	1 - 8 oz Glass
Pesticides/8081B	Soil	Cool, 4 ± 2 °C	14 days	250 mL	1 - 8 oz Glass
Herbicides/8151A	Soil	Cool, 4 ± 2 °C	14 days	250 mL	1 - 8 oz Glass
Polychlorinated Biphenyls/8082A	Soil	Cool, 4 ± 2 °C	14 days	250 mL	1 - 8 oz Glass
Metals/6010C	Soil	Cool, 4 ± 2 °C	180 days	60 mL	1 - 2 oz Glass
Total Organic Carbon/Lloyd Kahn	Groundwater	H_2SO_4, Cool, 4 ± 2 °C	28 days	120 mL	3 - 40ml glass vials
Total Iron/6010	Groundwater	HNO_3Cool, 4 ± 2 °C	180 days	250 mL	250 mL plastic bottle
Dissolved Iron/6010	Groundwater	HNO_3Cool, 4 ± 2 °C	180 days	250 mL	250 mL plastic bottle
Sulfate/SM 4500 CL-E	Groundwater	Cool, 4 ± 2 °C	28 days	120 mL	120 mL plastic bottle
Chloride (9251)	Groundwater	HNO_3Cool, 4 ± 2 °C	28 days	250 mL	250 mL plastic bottle
Ethene (5310C)	Groundwater	HNO_3Cool, 4 ± 2 °C	14 days	120 mL	2 - 20ml glass vials
Volatile Organic Compounds/TO-15	Air	None	30 days	2.7 Liters	1 - 2.7 Liter Summa Canister

Notes:
1. Refer to text for additional information.

Appendix K
Site Management Form

Site Inspection Form

Reporting Period: _____

Location (Site/Facility Name): _____

Location (Address): _____

Client: _____

Reason for Inspection: ☐ Annual Inspection ☐ Severe Weather Condition ☐ Other *(Describe)* _____

Date: _____

Performed By: _____

Job Number: _____

1. Site Use & Ownership

a. Current Site Use & Owner _____

b. Has site use or owner changed since previous inspection? ☐ YES ☐ NO

If "yes", describe: _____

If "yes", was notification made to the NYSDEC? ☐ YES ☐ NO

c. Have permits been issued for the property since previous inspection? ☐ YES ☐ NO

If "yes", describe: _____

2. Engineering Controls

a. Are engineering controls in place and functioning as designed? ☐ YES ☐ NO

i. Site Cover ☐ intact ☐ needs repair *describe* : _____

b. Have excavations occurred that breached the cover system? ☐ YES ☐ NO

If "yes", describe: _____

If "yes", was SMP followed (attach documentation to PRR)? ☐ YES ☐ NO

3. Institutional Controls

a. Is the site in compliance with the environmental easement? ☐ YES ☐ NO ☐ UNKNOWN

b. Is the site being used for commercial/industrial use? ☐ YES ☐ NO ☐ UNKNOWN

c. Has groundwater been used for any purpose? ☐ YES ☐ NO ☐ UNKNOWN

d. Is work at the site being conducted in accordance with the SMP? ☐ YES ☐ NO ☐ UNKNOWN

Site Inspection Form

Reporting Period: _____

Location (Site/Facility Name): _____

Location (Address): _____

Client: _____

Reason for Inspection: ☐ Annual Inspection
☐ Severe Weather Condition
☐ Other *(Describe)* _____

Date: _____

Performed By: _____

Job Number: _____

4. Monitoring (indicate if/when monitoring was conducted during the reporting period)

a. Groundwater monitoring ☐ YES ☐ NO Dates: _____

5. Soil Export, Import, Re-Use During Reporting Period

a. Was soil imported to or excavated and re-used on the site? ☐ YES ☐ NO

If "yes", describe: _____

If "yes", was SMP followed (attach documentation to PRR)? ☐ YES ☐ NO

b. Was soil excavated and disposed? ☐ YES ☐ NO

If "yes", describe: _____

If "yes", was SMP followed (attach documentation to PRR)? ☐ YES ☐ NO

Other Notes and Information:

Appendix L
Field Sampling Plan

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FIELD SAMPLING PLAN
811 JEFFERSON ROAD
ROCHESTER, NEW YORK

by Haley & Aldrich of New York
Rochester, New York

for 811 Jefferson Road LLC
Rochester, New York

File No. 128437-010
November 2017



Table of Contents

Page

1. Introduction 1

2. Field Program 2

3. Utility Clearance 3

4. Field Data Recording 6

4.1 WRITTEN FIELD DATA 6
4.2 ELECTRONIC DATA 7

5. Aquifer Characterization 9

5.1 PROCEDURE 9

6. Sample Collection for Laboratory Analysis 11

6.1 SOIL SAMPLE COLLECTION FOR LABORATORY ANALYSIS 11
6.1.1 Preparatory Requirements 11
6.1.2 Excavation Soil Sampling 11
6.1.3 Stockpile Soil Sampling 11
6.1.4 Sampling Techniques 11
6.1.5 Stockpile Sampling Procedure 12
6.1.6 Excavation Sample Collection 13
6.2 GROUNDWATER SAMPLE COLLECTION FOR LABORATORY ANALYSIS 13
6.2.1 Preparatory Requirements 14
6.2.2 Well Purging and Stabilization Monitoring (Low Stress/Low Flow Method) 14
6.2.3 Sampling Techniques 15
6.3 NON-AQUEOUS PHASE LIQUID (LNAPL) MONITORING AND SAMPLE COLLECTION 18
6.3.1 NAPL Level Measurements 18
6.3.2 Well NAPL Sampling 19
6.4 SOIL VAPOR, INDOOR AIR, AND OUTDOOR AMBIENT AIR SAMPLE COLLECTION USING SUMMA® CANISTERS 20
6.4.1 Preparatory Requirements 20
6.4.2 Soil Vapor Sampling Techniques 20
6.4.3 Indoor Air and Outdoor Ambient Air Sampling Techniques 22
6.5 SAMPLE HANDLING AND SHIPPING 24
6.5.1 Sample Handling 24
6.5.2 Sample Labeling 24
6.5.3 Field Code 26
6.5.4 Packaging 26
6.5.5 Chain-of-Custody Records 27
6.5.6 Shipment 27

Table of Contents

Page

7. Field Instruments – Use and Calibration 28

7.1 GENERAL PROCEDURE DISCUSSION 28
7.2 DECONTAMINATION OF MONITORING EQUIPMENT 29
7.3 DISPOSAL OF WASH SOLUTIONS AND CONTAMINATED EQUIPMENT 29

8. Investigation Derived Waste Disposal 31

8.1 RATIONALE/ASSUMPTIONS 31
8.2 PROCEDURE 31

APPENDIX A – Field Forms

1. Introduction

This Field Sampling Plan (FSP) has been prepared on behalf of 811 Jefferson Road, LLC as a component of the Site Management Plan (SMP) for the Former AB Dick, Henrietta, New York. This document was prepared to establish field procedures for field data collection to be performed in support of the SMP for the Site.

The SMP includes this Field Sampling Plan, a Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), and Community Air Monitoring Plan (CAMP), which are included as part of this plan by reference.

The standard operating procedures (SOP) included as components of this plan will provide the procedures necessary to meet the project objectives. The SOPs will be used as reference for the methods to be employed for field sample collection and handling and the management of field data collected in the execution of the approved SMP. The SOPs includes numerous methods to execute the tasks of the SMP. The Project Manager will select the appropriate method as required by field conditions and/or the objective the respective project task at the time of sample collection. Field procedures will be conducted in general accordance with the New York State Department of Conservation (NYSDEC) Technical Guidance for Site Investigation and Remediation (DER-10) when applicable.

2. Field Program

This FSP provides the general purpose of sampling as well as procedural information. The SMP contains the details on sampling and analysis (locations, depths, frequency, analyte lists, etc.).

The field program has been designed to acquire the necessary data to comply with the SMP and includes the following tasks:

- Excavation soil sampling;
- Stockpile sampling;
- Groundwater sampling;
- Soil vapor, indoor air, and outdoor ambient air sampling; and
- Sampling of decommissioned equipment and investigation of derived wastes (IDW) as needed for disposal.

The primary objective of sampling activities is to monitor environmental conditions post remedial actions and accurately to evaluate the potential for additional remedial actions. The sampling will be conducted so that samples collected will retain, as much as possible, its original physical form and chemical composition.

These standard operating procedures (SOP) presented herein may be changed as required, dependent on-site conditions, or equipment limitations, at the time of sample collection. If the procedures employed differ from the SOP, the deviations will be documented in the associated sampling report.

3. Utility Clearance

Invasive field investigation activities such as drilling, soil gas surveys, test pit excavation or remedial construction activities require location of underground utilities prior to initiating work. Such clearance is sound practice in that it minimizes the potential for damage to underground facilities and more importantly, is protective of the health and safety of personnel. Under no circumstances will invasive activities be allowed to proceed without obtaining proper utility clearance by the appropriate public agencies and/or private entities. This clearance requirement applies to all work on both public and private property, whether located in a dense urban area or a seemingly out-of-the-way rural location.

The drilling contractor performing the work will be responsible for obtaining utility clearance.

Utility clearance is required by law, and obtaining clearance includes contacting a public or private central clearance agency via a "one-call" telephone service and providing the proposed exploration location information. It is important to note that public utility agencies may not, and usually do not have information regarding utility locations on private property.

Before making any proposed exploration or underground construction locations, it is critical that all readily-available information on underground utilities and structures be obtained. This includes publicly-available information as well as information in the possession of private landowners. Any drawings obtained must be reviewed in detail for information pertaining to underground utilities.

Using the information obtained, the site should be viewed in detail for physical evidence of buried lines or structures, including pavement cuts and patches, variation in or lack of vegetation, variations in grading, etc. (Care must also be taken to avoid overhead utilities as well). Presence of surface elements of buried utilities should be documented, such as manholes, gas or water service valves, catch basins, monuments or other evidence.

Overhead utility lines must be taken into account when choosing exploration and excavation locations. Most states require a minimum of 10 ft. of clearance between equipment and energized wires. Such separation requirements may also be voltage-based and may vary depending on state or municipality regulations. In evaluating clearance from overhead lines, the same restrictions may apply to "drops", or wires on a utility pole connecting overhead and underground lines.

Using the information obtained and observations made, proposed exploration or construction locations should be marked in the field. Marking locations can be accomplished using spray paint on the ground, stakes, or other means. All markings of proposed locations should be made in white, in accordance with the generally-accepted universal color code for facilities identification (AWMA 4/99):

- White: Proposed Excavation or Drilling location
- Pink: Temporary Survey Markings
- Red: Electrical Power Lines, Cables, Conduit and Lighting Cables
- Yellow: Gas, Oil, Steam, Petroleum or Gaseous Materials
- Orange: Communication, Alarm or Signal Lines, Cables or Conduits
- Blue: Potable Water
- Purple: Reclaimed Water, Irrigation and Slurry Lines
- Green: Sewers and Drain Lines

In order to effectively evaluate the proposed locations with these entities, detailed, accurate measurements between the proposed locations and existing surface features should be obtained. Such features can be buildings, street intersections, utility poles, guardrails, etc.

Obtaining the utility clearance generally involves two entities:

- The designated "One-Call" underground facilities protection organization for the area; and the landowner.
- In addition, a third-party utility locator company will be utilized to locate underground utilities outside of the public right-of-way followed by "soft dig" excavation techniques to confirm or deny the presence of underground utilities in the area.

Both entities must be contacted and the proposed locations evaluated in light of information available for existing underground facilities. The detailed measurement information described above will be required by the "one call" agency. The owners of the applicable, participating underground utilities are obligated to mark their respective facilities at the site in the colors described above. Utility stake-out activities will typically not commence for approximately 72 hours after the initial request is made.

The public and private utility entities generally only mark the locations of their respective underground facilities within public rights-of-way. Determination of the locations of these facilities on private property will be the responsibility of the property owner or Contractor. If available information does not contain sufficient detail to locate underground facilities with a reasonable amount of confidence, alternate measures may be appropriate, as described below. In some cases, the memory of a long-time employee of a facility on private property may be the best or only source of information. It is incumbent on the Consultant or Contractor to exercise caution and use good judgement when faced with uncertainty.

Note: It is important to note that not all utilities are participants in the "one-call" agency or process. As such, inquiries must be made with the "one-call" agency to determine which entities do not participate, so they can be contacted independently.

Most utility stake-outs have a limited time period for which they remain valid, typically two to three weeks. It is critical that this time period be taken into account to prevent expiration of clearance prior to completion of the invasive activities, and the need to repeat the stake-out process.

Care must be exercised to document receipt of notice from the involved agencies of the presence or absence of utilities in the vicinity of the proposed locations.

Most agencies will generally provide a telephone or fax communication indicating the lack of facilities in the project area. If contact is not made by all of the agencies identified by the "one-call" process, do not assume that such utilities are not present. Re-contact the "one-call" agency to determine the status.

For complicated sites with multiple proposed locations and multiple utilities, it is advisable to arrange an on-site meeting with utility representatives. This will minimize the potential for miscommunication amongst the involved parties.

Completion of the utility stake out process is not a guarantee that underground facilities will not be encountered in excavations or boreholes; in fact, most "one-call" agencies and individual utilities do not offer guarantees, nor do they accept liability for damage that might occur. In areas outside the public right-of-way, a utility locating service will be utilized to locate underground utilities. It is advisable that any invasive activities proceed with extreme caution in the upper four to five feet in the event the clearance has failed to identify an existing facility. This may necessitate hand-excavation or probing to confirm potential presence of shallow utilities. If uncertainty exists for any given utility, extra activities can be initiated to solve utility clearance concerns. These options include:

- Screening the proposed work areas with utility locating devices, and/or hiring a utility locating service to perform this task. The private utility locating service is a growing industry that has formed a national organization. The National Utility Locate Contractors Association (NULCA) can be reached at 715-635-6004.
- Hand digging, augering or probing to expose or reveal shallow utilities and confirm presence and location. In northern climates, this may require advancing to below frost line, typically at least four feet.
- Using "soft dig" techniques that utilize specialized tools and compressed air to excavate soils and locate utilities. This technique is effective in locating utilities to a depth of four to five feet.

Equipment/Materials:

- White Spray paint
- Wooden stakes, painted white or containing white flagging
- Color-code key
- Available drawings

References:

- New York State Code Rule 753
- American Public Works Association, April 1999, Uniform Color Code (http://www.apwa.net/)

4. Field Data Recording

This procedure describes protocol for documenting the investigation activities in the field. Field data serves as the cornerstone for an environmental project, not only for site characterization but for additional phases of investigation or remedial design. Producing defensible data includes proper and appropriate recording of field data as it is obtained in a manner to preserve the information for future use. This procedure provides guidelines for accurate, thorough collection and preservation of written and electronic field data.

Field data to be recorded during the project generally includes, but is not limited to, the following:

- general field observations;
- numeric field measurements and instrument readings;
- quantity estimates;
- sample locations and corresponding sample numbers;
- relevant comments and details pertaining to the samples collected;
- documentation of activities, procedures and progress achieved;
- contractor pay item quantities;
- weather conditions;
- a listing of personnel involved in site-related activities;
- a log of conversations, site meetings and other communications; and
- field decisions and pertinent information associated with the decisions.

4.1 WRITTEN FIELD DATA

Written field data will be collected using a standardized, pre-printed field log form. In general, use of a field log form is preferable as it prompts field personnel to make appropriate observations and record data in a standardized format. This promotes completeness and consistency from one person to the next. Otherwise, electronic data collection using a handheld device produces equal completeness and consistency using a preformatted log form.

In the absence of an appropriate pre-printed form, the data should be recorded in an organized and structured manner in a dedicated project field log book. Log books must be hard-cover, bound so that pages cannot be added or removed, and should be made from high-grade 50% rag paper with a water-resistant surface.

The following are guidelines for use of field log forms and log books:

1. Information must be factual and complete. Do not abbreviate.

2. All entries will be made in black indelible ink with a ballpoint pen and will be written legibly. Do not use “rollerball” or felt tip-style pens, since the water-soluble ink can run or smear in the presence of moisture.

3. All pages in a log book must be consecutively numbered. Field log forms should also be consecutively numbered.

4. Each day's work must start a new log book page.

5. At the end of each day, the current log book page must be signed and dated by the field personnel making the entries.

6. When using field log forms, they must also be signed and dated.

7. Make data entries immediately upon obtaining the data. Do not make temporary notes in other locations for later transfer to log forms or log books; this only increases the potential for error or loss of data.

8. Entry errors are to be crossed out with a single line, dated and initialed by the person making the correction.

9. Do not leave blanks on log forms, if no entry is applicable for a given data field, indicate so with "NA" or a dash ("--").

10. At the earliest practical time, photocopies of log forms and log book pages should be made and placed in the project file as a backup in the event the book or forms are lost are damaged.

11. Log books should be dedicated to one project only, i.e., do not record data from multiple projects in one log book.

4.2 ELECTRONIC DATA

Electronic data recording involves electronic measurement of field information through the use of monitoring instruments, sensors, gauges, and equipment controls. The following is a list of guidelines for proper recording and management of electronic field data:

1. Field data management should follow requirements of a project-specific data management plan (DMP), if applicable.

2. Use only instruments that have been calibrated in accordance with manufacturer's recommendations.

3. Usage of instruments, controls and computers for the purpose of obtaining field data should only be performed by personnel properly trained and experienced in the use of the equipment and software.

4. Use only fully-licensed software on personal computers and laptops.

5. Loss of electronic files may mean loss of irreplaceable data. Every effort should be made to back up electronic files obtained in the field as soon as practical. A backup file placed on a disk and kept in a separate location from the original will minimize the potential for loss.

6. Electronic files, once transferred from field instruments or laptops to office computers, should be protected if possible to prevent unwanted or inadvertent manipulation or modification of data. Several levels of protection are usually available for spreadsheets, including making a file "read-only" or assigning a password to access the file.

7. Protect CD disks from exposure to moisture, excessive heat or cold, magnetic fields, or other potentially damaging conditions.

8. Remote monitoring is often used to obtain stored electronic data from site environmental systems. A thorough discussion of this type of electronic field data recording is beyond the scope of this Section. Such on-site systems are generally capable of storing a limited amount of data as a comma-delimited or spreadsheet file. Users must remotely access the monitoring equipment files via modem or other access, and download the data. In order to minimize the potential for loss of data, access and downloading of data should be performed frequently enough to insure the data storage capacity of the remote equipment is not exceeded.

Equipment/Materials:

- Appropriate field log forms or iPad® or equivalent with preformatted log forms.
- Indelible ball point pen (do not use "rollerball" or felt-tip style pens);
- Straight edge;
- Pocket calculator; and
- Laptop computer (if required).

5. Aquifer Characterization

This procedure describes measurement of water levels in groundwater monitoring and extraction wells, piezometers and boreholes. This procedure does not cover automated measurement of water levels with a transducers/datalogger, and does not cover measurement of phase-separated liquids.

Water levels in monitoring wells will be measured prior to each sampling event and at other times as indicated in the project Work Plan. Water levels will be acquired in a manner that provides accurate data that can be used to calculate vertical and horizontal hydraulic gradients and other hydrogeologic parameters. Accuracy in obtaining the measurements is critical to insure the usability of the data.

5.1 PROCEDURE

In order to provide reliable data, water level monitoring events should be collected over as short a period of time as practical. Barometric pressure can affect groundwater levels and, therefore, observation of significant weather changes during the period of water level measurements must be noted. Rainfall events and groundwater pumping can also affect groundwater level measurements. Personnel collecting water level data must note if any of these controls are in effect during the groundwater level collection period. Due to possible changes during the groundwater level collection period, it is imperative that the time of data collection at each station be accurately recorded.

The depth to groundwater will be measured with an electronic depth-indicating probe. Prior to obtaining a measurement, a fixed reference point on the well casing will be established for each well to be measured. Unless otherwise established, the reference point is typically established and marked on the north side of the well casing. Do not use protective casings or flush-mounted road boxes as a reference, due to the potential for damage or settlement. The elevation of the reference point shall be obtained by accepted surveying methods, to the nearest 0.01 ft.

The water level probe will be lowered into the well until the meter indicates (via indicator light or tone) the water is reached. The probe will be raised above water level and slowly lowered again until water is indicated. The cable will be held against the side of the inner protective casing at the point designated for water level measurements and a depth reading taken. This procedure will be followed three times or until a consistent value is obtained. The value will be recorded to the nearest 0.01 feet on the Groundwater Level Monitoring Report form or other designated data recording location if specified in the project Work Plan.

Upon completion, the probe will be raised to the surface and together with the amount of cable that entered the well casing, will be decontaminated in accordance with methods described in Equipment Decontamination Procedure.

Equipment/Materials:

- Battery-operated, non-stretch electronic water level probe with permanent markings at 0.01 ft. increments (traceable to national measurement standards), such as the Solinst Model 101 or equivalent.
- The calibrated cable on the depth indicator will be checked against a surveyor's steel tape once per quarter year. A new cable will be installed if the cable has changed by more than 0.01%

(0.01 feet for a 100-foot cable). See also the Field Instruments – Use and Calibration Procedure.
- Groundwater Level Monitoring Report form.

References:

1. ASTM 4750 Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well (Observation Well)
2. ASTM D6000 Guide for Presentation of Water Level Information from Ground Water Sites

6. Sample Collection for Laboratory Analysis

6.1 SOIL SAMPLE COLLECTION FOR LABORATORY ANALYSIS

The following procedure is an introduction to excavation and stockpile soil sampling techniques and an outline of field staff responsibilities.

6.1.1 Preparatory Requirements

Prior to the beginning of any remedial activities, staff must attend a project briefing for the purpose of reviewing the project work plan, site and utility plans, drawings, applicable regulations, sampling location, depth, and criteria, site restoration, site contacts, and other related documents. The individual nature of these concerns will be addressed by a site-specific Health & Safety Plan.

A file folder for the field activities should be created and maintained such that all relevant documents and log forms likely to be useful for the completion of field activities by others are readily available in the event of personnel changes.

6.1.2 Excavation Soil Sampling

Excavation programs are by nature more destructive than other subsurface remedial methods. Field staff should be clear as to the expectations of the client and project manager with regard to site damage and restoration efforts, prior to the start of work. All applicable safety standards must be complied with including establishment of exclusion zones, installation of safety fencing, use of trench boxes, maintenance of proper slopes or benching, and provision of access and egress. The Occupational Safety and Health Administration's (OSHA) Excavation and Trenching Standard Title 29 of the Code of Federal Regulation (CFR) Part 1926.650 covers requirements for excavation and trenching standards which may be accessed through their website www.OSHA.gov or from your Health & Safety Administrator.

6.1.3 Stockpile Soil Sampling

Excavated soil should be temporarily placed in secure stockpiles pending characterization and off-Site disposal at licensed waste management facilities. Impacted soil should be placed in dedicated stockpiles on top of and completely covered with polyethylene sheeting of at least 6 millimeters in thickness to prevent exposure to the elements. Covers should be anchored when the stockpile is not in active use or during non-working periods and inspected at least weekly and after each rain event. The sheeting should be repaired or replaced as needed.

6.1.4 Sampling Techniques

The following procedure describes typical soil sample collection methods for submission of samples to a laboratory for chemical analysis. The primary goal of soil sampling is to collect representative samples for examination and chemical analysis (if required).

Environmental soil samples obtained for chemical analyses are collected with special attention given to the rationale behind determining the precise zone to sample, the specifics of the method of soil extraction and the requisite decontamination procedures. Preservation, handling and glassware for

environmental soil samples varies considerably depending upon several factors including the analytical method to be conducted, and the analytical laboratory being used.

6.1.4.1 Grab Versus Composite Samples

A grab sample is collected to identify and quantify conditions at a specific location or interval. The sample is comprised of the minimum amount of soil necessary to make up the volume of sample dictated by the required sample analyses. Composite samples may be obtained from several locations or along a linear trend (in a test pit or excavation). Sampling may occur within or across stratification.

6.1.5 Stockpile Sampling Procedure

Soil sampling techniques are dependent upon the sample interval of interest, the type of soil material to be sampled, and the requirements for handling the sample after retrieval. The most common method for collection of surficial soil samples involves the use of a stainless-steel trowel. Soil samples may also be collected with stainless-steel spoons. The sampling equipment is cleaned between sample locations. The stockpile soil sampling procedure is outlined below:

- Stockpile soil samples will be collected using a pre-cleaned stainless-steel trowel or other appropriate tool. Each sample will consist of soil from 6 inches below the soil pile surface. If a composite sample is required, then the composite sample will be comprised of soil collected from four randomly selected areas of the pile.;

- A new pair of disposable gloves will be used at each sample location;

- Any surficial debris (i.e., grass cover, gravel) should be removed from the area where the sample is to be collected using a separate pre-cleaned device. Gravel presents difficulties for the laboratory in terms of sample preparation and is typically not representative of contaminant concentrations in nearby soil.

- A pre-cleaned sampling tool will be used to remove the sample from the layer of exposed soil.

- When only one sample container is required, the collected soil will be placed directly into the clean, pre-labeled sample jar. When more than one sample container is required for non-volatiles parameters of analysis (i.e. total metals) or samples will be split for field duplicate analyses, the soil sample will be placed in a pre-cleaned stainless-steel bowl, mixed, and then placed into the respective sample containers. It is important that soil samples be mixed as thoroughly as possible to ensure that the sample is as representative as possible of the sample interval. Soil samples collected for volatile organic compounds analyses shall not be mixed.

- Samples will be placed on ice or cooler packs in laboratory supplied shipping coolers after collection.

Note: For the collection of soil samples for the analysis of volatile organic compounds (VOCs), soil samples will be transferred directly into a sample jar without headspace. Samples for VOCs will be collected first, without homogenization or extra handling to limit the loss of the constituents of interest.

6.1.6 Excavation Sample Collection

The following describes the collection of soil samples for chemical analysis from an excavation pit or trench.

- Using the backhoe, excavate a trench as specified in the Work Plan. Place excavated soils on plastic sheets. Trenches greater than five feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.

- Record in the Field Log book the depth intervals from which the samples are being collected.

- Samples are taken using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling to remove any soil that may have fallen from above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket.

- If volatile organic analyses are required, transfer the sample into an appropriate, labeled sample container with a stainless-steel spoon or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or,

- If a composite sample is collected, place a sample from each sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

- The test pit/excavation should be backfilled in accordance with the project-specific work plan or related document.

Soil samples must be placed into laboratory glassware and labeled. Analytical samples are kept in a cooler with ice, and a Chain of Custody form is maintained until transfer to the analytical laboratory. Applicable environmental sampling protocols must be followed as given in OP3000 General Environmental Field Procedures and Protocol, OP3001 Preservation and Shipment of Environmental Samples, and OP3006 Procedures for Subsurface Soil Sampling for Chemical Analysis.

6.2 GROUNDWATER SAMPLE COLLECTION FOR LABORATORY ANALYSIS

The following section describes two techniques for groundwater sampling: "Low Stress/Low Flow Methods" and "Typical Sampling Methods."

"Low Stress/Low Flow" methods will be employed when collecting groundwater samples for the evaluation of volatile constituents (i.e. dissolved oxygen (DO)) or in fine-grained formations where sediment/colloid transport is possible. Analyses typically sensitive to colloidal transport issues include Polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs) and metals.

The "Typical Sampling Methods" will be employed where the collection of parameters less sensitive to turbidity/sediment issues are being collected (general chemistry, pesticides and other Semi volatile compounds (SVOCs)).

NOTE: If Non-aqueous phase liquids (NAPL) (light or dense) are detected in a monitoring well, groundwater sample collection will not be conducted and the Project Manager must be contacted to determine a course of action.

6.2.1 Preparatory Requirements

- Verify well identification and location using borehole log details and location layout figures. Note the condition of the well and record any necessary repair work required.

- Prior to opening the well cap, measure the breathing space above the well casing with a handheld organic vapor analyzer to establish baseline breathing space VOC levels. Repeat this measurement once the well cap is opened. If either of these measurements exceeds the air quality criteria in the HASP, field personnel should adjust their PPE accordingly.

- Prior to commencing the groundwater purging/sampling, a water level must be obtained to determine the well volume for hydraulic purposes. In some settings, it may be necessary to allow the water level time to equilibrate. This condition exists if a water tight seal exists at the well cap and the water level has fluctuated above the top of screen; creating a vacuum or pressurized area in this air space. Three water level checks will verify static water level conditions have been achieved.

- Calculate the volume of water in the well. Typically overburden well volumes consider only the quantity of water standing in the well screen and riser; bedrock well volumes are calculated on the quantity of water within the open core hole and within the overburden casing.

6.2.2 Well Purging and Stabilization Monitoring (Low Stress/Low Flow Method)

- The preferred method for groundwater sampling will be the low stress/low flow method described below.

- Bladder pumps/submersible variable rate pumps (i.e., Grundfos™ Rediflo or equivalent) are typically employed.

- Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified by the project requirements. The pump intake must be at the midpoint of the well screen to prevent disturbance and resuspension of any sediment in the screen base.

- Before starting the pump, measure the water level again with the pump in the well leaving the water level measuring device in the well when completed.

- Purge the well at 100 to a maximum of 500 milliliters per minute (mL/min). During purging, the water level should be monitored approximately every 5 minutes, or as appropriate. A steady flow rate should be maintained that results in drawdown of 0.3 feet or less. The rate of pumping should not exceed the natural flow rate conditions of the well. Care should be taken to

maintain pump suction and to avoid entrainment of air in the tubing. Record adjustments made to the pumping rates and water levels immediately after each adjustment.

- During the purging of the well, monitor and record the field indicator parameters (pH, temperature, conductivity, oxidation-reduction (redox) reaction potential (ORP), dissolved oxygen (DO), and turbidity) approximately every five minutes. Stabilization is considered to be achieved when the final groundwater flow rate is achieved, and three consecutive readings for each parameter are within the following limits:

  - pH: 0.1 pH units of the average value of the three readings;
  - temperature: 3 percent of the average value of the three readings;
  - conductivity: 0.005 milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity <1 mS/cm and 0.01 mS/cm of the average value of the three readings for conductivity >1 mS/cm;
  - ORP: 10 millivolts (mV) of the average value of the three readings;
  - DO: 10 percent of the average value of the three readings; and
  - Turbidity: 10 percent of the average value of the three readings, or a final value of less than 50 nephelometric turbidity units (NTU).

- The pump must not be removed from the well between purging and sampling.

6.2.3 Sampling Techniques

- If an alternate pump is utilized, the first pump discharge volumes should be discarded to allow the equipment a period of acclimation to the groundwater.

- Samples are collected directly from the pump with the groundwater being discharged directly into the appropriate sample container. Avoid handling the interior of the bottle or bottle cap and don new gloves for each well sampled to avoid contamination of the sample.

- Order of sample collection:

  - Volatile organic compounds (VOC)
  - Semi-volatile organic compounds (SVOC)
  - Total organic carbon (TOC)
  - Total organic halogens (TOX)
  - Total metals
  - Dissolved metals
  - Phenols
  - Cyanide
  - Sulfate and chloride
  - Nitrate and ammonia

- For low stress/low flow sampling, samples should be collected at a flow rate between 100 and 500 mL/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 feet.

- The pumping rate used to collect a sample for VOC should not exceed 100 mL/min. Samples should be transferred directly to the final container 40 mL glass vials completely full and topped with a Teflon cap. Once capped the vial must be inverted and tapped to check for headspace/air presence (bubbles). If air is present, the sample will be discarded, and recollected until free of air.

- All samples must be labeled with:

  - A unique sample number
  - Date and time
  - Parameters to be analyzed
  - Project Reference ID
  - Samplers initials

- Labels should be written in indelible ink and secured to the bottle with clear tape.

Equipment/Materials:

- pH meter, Conductivity meter, Dissolved Oxygen (DO) meter, Oxidation reduction (redox) potential (ORP) meter, Nephelometer, Temperature gauge
- Field filtration units (if required)
- Purging/sampling equipment
  - Peristaltic Pump (not suitable for VOCs/SVOCs or depths >25 feet);
  - Suction Pumps (not suitable for VOCs/SVOCs, or depths >25 feet);
  - Submersible Pumps (suitable for VOCs/SVOCs at low flow rates (LFR));
  - Air Lift Pumps (not suitable for VOCs/SVOCs);
  - Bladder Pumps (suitable for LFR and VOCs/SVOCs);
  - Inertia Pumps (gaining acceptability for VOCs/SVOCs); and
- Water Level Probe
- Sampling Materials (containers, log book/forms, coolers, chain of custody)
- Work Plan
- Health and Safety Plan

Note: peristaltic pump use for VOC collection is not acceptable on NYSDEC/EPA/RCRA sites; this technique has gained acceptance in select areas where it is permissible to collect VOCs using a peristaltic pump at a low flow rate (ex. Michigan).

Field Notes:

- Field notes must document all the events, equipment used, and measurements collected during the sampling activities. Section 2.0 describes the data/recording procedure for field activities.
- The log book should document the following for each well sampled:
  - Identification of well
  - Well depth
  - Static water level depth and measurement technique
  - Sounded well depth
  - Presence of immiscible layers and detection/collection method
  - Well yield – high or low

  - Purge volume and pumping rate
  - Time well purged
  - Measured field parameters
  - Purge/sampling device used
  - Well sampling sequence
  - Sampling appearance
  - Sample odors
  - Sample volume
  - Types of sample containers and sample identification
  - Preservative(s) used
  - Parameters requested for analysis
  - Field analysis data and method(s)
  - Sample distribution and transporter
  - Laboratory shipped to
  - Chain of custody number for shipment to laboratory
  - Field observations on sampling event
  - Name collector(s)
  - Climatic conditions including air temperature
  - Problems encountered and any deviations made from the established sampling protocol.

A standard log form for documentation and reporting groundwater purging and sampling events are presented on the Groundwater Sampling Record, Low Flow Groundwater Sampling Form, and Low Flow Monitored Natural Attenuation (MNA) Field Sampling Form. Refer to Appendix A for example field forms.

Groundwater/Decon Fluid Disposal:

- Groundwater disposal methods will vary on a case-by-case basis but may range from:
  - Off-site treatment at private treatment/disposal facilities or public owned treatment facilities
  - On-site treatment at Facility operated facilities
  - Direct discharge to the surrounding ground surface, allowing groundwater infiltration to the underlying subsurface regime
- Decontamination fluids should be segregated and collected separately from wash waters/groundwater containers.

References:

1. ASTM D5474: Guide for selection of Data Elements for Groundwater Investigations
2. ASTM D4696: Guide for pore-liquid sampling from the vadose zone
3. ASTM D5979: Guide for conceptualization and characterization of groundwater systems
4. ASTM D5903: Guide for planning and preparing for a groundwater sampling event
5. ASTM D4448: Standard guide for sampling groundwater wells
6. ASTM D6001: Standard guide for direct push water sampling for geo-environmental investigations.
7. USEPA: Low-flow (minimal drawdown) ground-water sampling procedures (EPA/540/S-95/504)

8. USEPALL: RCRA Groundwater Monitoring: Draft Technical guidance (EPA/530 R 93 001)

6.3 NON-AQUEOUS PHASE LIQUID (LNAPL) MONITORING AND SAMPLE COLLECTION

This procedure is for monitoring the presence of dense and light non-aqueous phase liquids (DNAPL and LNAPL), and collection of NAPL samples for laboratory analysis in monitoring, observation, and extraction wells.

It should be noted that groundwater samples should not be obtained for analysis at locations where NAPL has been identified.

6.3.1 NAPL Level Measurements

- Conduct well identification, inspection, and opening in accordance with the Manual Water Level Measurement Procedures.

- NAPL level measurements are best conducted using a dual phase interface probe. The interface probe uses an optical liquid sensor, in conjunction with an electric circuit to detect the top of a phase separated liquid and the interface between the phase layer and water (water level). The procedure for use of this probe is:

- For LNAPL:

  - Lower the probe tip into the center of the well until discontinuous beeping is heard (this indicates the top of the LNAPL has been detected). Grasp the calibrated tape at the reference point and note reading. Confirm the reading by slowly raising and lowering the probe to the level of the phase layer.
  - Once the top of the phase layer is confirmed, slowly lower the probe until a continuous sound is heard. This indicates that the water level has been encountered. Grasp the tape at the reference point and note the reading. Confirm this water level measurement.
  - Decontaminate the submerged end of the tape and probe prior to the next use.

- For DNAPL:

  - Lower the probe tip in the center of the well to the bottom of the well, a discontinuous beeping will be heard if DNAPL is present. Grasp the calibrated tape at the reference point and note reading.
  - Once the bottom of the well is confirmed, slowly raise the probe until a continuous sound is heard. This indicates that the water level has been encountered and represents the top of the DNAPL layer. Grasp the tape at the reference point and note the reading. Confirm this water level measurement.
  - Decontaminate the submerged end of the tape and probe prior to the next use.

- Alternative NAPL measurement methods exist in the event an interface probe is unavailable or not functioning properly. These methods tend to be less accurate than the interface probe but may be used to establish an estimated NAPL measurement.

- Clear Bailer: A clear bottom loading bailer may be used to estimate NAPL thickness if floating or denser than water. If NAPL presence is suspected, the bailer is carefully lowered to the location of suspected NAPL presence (top of water column/base of water column), and slowly removed and examined for NAPL. If present, the column of NAPL within the clear bailer can be measured to estimate the NAPL thickness within the groundwater column.
- Weighted Cord: Primarily used for DNAPL measurements, a weighted "cotton" string or cord may be lowered to the base of the well and inspected upon retrieval. Typically, the lower DNAPL layer will "coat" the string indicating the approximate thickness of this layer.

6.3.2 Well NAPL Sampling

- Prior to sampling, the level of NAPL in the well should be measured as identified above.

- Various sampling devices can be employed to acquire fluid samples from the top and bottom of the well, including the following:

  - Bottom-loading bailer;
  - Double check value bailer (produces most reliable results);
  - Peristaltic pump for shallow wells (<25 feet in depth); or
  - Inertia pump for deeper wells (up to 300 feet in depth).

- Transfer NAPL to sample containers for shipment to laboratory. NAPL can be sampled to evaluate the physical properties of the fluid or to evaluate chemical composition. NAPL samples should be shipped in a separate cooler(s) from groundwater samples to avoid cross contamination of the groundwater samples.

- Decontaminate equipment prior to next use.

Note: Groundwater sampling shall not be performed in locations where NAPL is present.

Equipment/Materials:

- Interface Probe;
- Bottom-loading bailer;
- Double check valve bailer;
- Peristaltic pump;
- Inertia pump
- ICM Work Plan
- Health and Safety Plan
- Field Log Book

References:

1. Cohen, Robert M., Mercer, James W. (GeoTrans, Inc.), Robert S. Kerr Environmental Research Laboratory "DNAPL Site Evaluation" Office Research and Development. U.S. Environmental Protection Agency

2. Cohen, R.M., Brayda, A.P., Shaw, S.T., and Spaulding, C.P.; Fall 1992 "Evaluation of Visual Methods to Detect NAPL in Soil and Water", Groundwater Monitoring Review, Vol. 12 No. 4, pp. 132-141.

6.4 SOIL VAPOR, INDOOR AIR, AND OUTDOOR AMBIENT AIR SAMPLE COLLECTION USING SUMMA® CANISTERS

The following procedure is for the collection of soil vapor samples from temporary or permanent monitoring wells, indoor air samples, and outdoor ambient air samples for laboratory analysis by USEPA Method TO-15.

6.4.1 Preparatory Requirements

Personal protective equipment will be donned in accordance with the requirements of the project Health and Safety Plan.

- Don a new pair of Nitrile gloves prior to sampling activities at each location.
- Verify sample location identification using sampling plan figures. For soil vapor sampling, note the condition of the well completion and determine the integrity of the installation to mitigate infiltration of ambient air to the subsurface during sample collection.
- Prior to commencing purging/sampling tasks for soil vapor sampling, groundwater elevation measurements will be obtained at nearby monitoring wells in the groundwater monitoring well network. If the groundwater elevation is above the bottom of the soil vapor point well screen (creating a direct route of volatilization of contaminants to the well casing), sampling will be abandoned at this location. If the groundwater elevation is below the bottom of the soil vapor point well screen, proceed to well point purging and sampling.

6.4.2 Soil Vapor Sampling Techniques

- Soil vapor well points will be sampled in order of increasing chemical concentrations (if known or anticipated). Equipment calibration, field documentation, sampling, and shipping will be conducted in accordance with the FSP.
- Lay out sheet of clean polyethylene around the soil vapor well point for placement of the sampling equipment.
- Purge the installed well by connecting the well point to a pre-calibrated personal sampling pump (or equivalent device) using High Density Polyethylene (HDPE) tubing and extract at least 3 well volumes of soil vapor from the well point. The sampling pump may be connected to the well point using a stainless-steel hose barb, quick connect fitting, or Swagelock® pressure fitting.
- Using the well point installation report to obtain well depth, calculate the volume of air present in the well, using the formula $\pi r^2 h$. (1”=2.54 cm, 1L= 1,000 cm^3). For example, a ½” diameter well that is six (6) feet deep contains approximately 0.23L of air.

- Purge the well at flow rates not to exceed 0.2 L/minute to remove at least 3 well volumes. This will ensure the sample collected for analysis is representative of soil gas located in the vadose zone.

- After purging, immediately shut off the pump and close off the well point to the atmosphere using a hose clamp or similar device. The soil vapor well point is now ready to be sampled.

- Verify the vacuum level in the passivated SUMMA® canister (or equivalent device) to be used for sample collection using the vacuum gauge supplied by the laboratory. Attach the gauge to the ¼" male fitting on the SUMMA® canister and open the valve approximately 1¼ turn. Record the initial vacuum on the sampling record, close the valve, and remove the vacuum gauge.

- Attach a 7µ moisture/particle filter between the well point HDPE tubing and the pre-calibrated integrated flow controller.

- Attach the integrated flow controller to the ¼" male fitting on the SUMMA® canister using a stainless steel open end wrench. (Note: Do not over tighten. ¼ turn past finger tight should be adequate to create a proper seal.)

- Prior to the initiation of sampling, conduct a confirmation of the installation integrity using a Helium (He) tracer gas test. To conduct He tracer test, place an enclosure over the sample point. Extend the HDPE tubing from the soil vapor through the enclosure and connect to a He selective hand-held analyzer.

- Flood the enclosure with commercial grade He from a disposable compressed gas cylinder. (commercial grade can be purchased from retail stores or provided by an industrial gas supplier (i.e. welding supply).

- Turn on the He selective handheld analyzer and monitor for a deflection from background. If a negative deflection is noted, modify the surface seal for the vapor sampling point and re-test. If no deviation is noted, proceed with sample collection.

- Connect the SUMMA canister to the sampling HDPE tubing, open the valve on the SUMMA® canister gradually at least 1¼ turn and record the sample start time on the sampling record.

- At the conclusion of the sample collection, record the final time on the sampling record and close the valve.

- Disconnect the SUMMA® canister from the integrated flow controller, remove the filter, and reattach the vacuum gauge. Open the valve and record the final vacuum reading on the sampling record. Close the valve, remove the vacuum gauge and replace the ¼" cap on the canister inlet. Label the SUMMA® canister sample tag with proper well ID, vacuum readings and sampling time interval (e.g. 4 hours).

- Remove the sampling train tubing apparatus for the individual well and place into a sealable storage bag, and store for future sampling events. Label the storage bag with relevant soil vapor well designation, date of sampling, project name, and file number. Fill out Chain of Custody with project name, file number, sample identifications, Summa canister and related equipment

serial numbers, date and time collected, and analysis requirements. Retain copies of the Chain of Custody record and relevant shipping information. Place canisters back into their original boxes and ship them to the laboratory via an overnight courier.

- Prior to shipment, confirm that the canister is labeled with the information recorded on the Sample Identification Key and chain of -custody form. Labels will be written in indelible ink secured to the canister.

- For decommissioning of temporary well points after sampling has been completed:

  - Mix Portland cement and water (7lb. Portland cement : 1/2-gallon potable water)

  - Remove and discard the bentonite surface seal from the top of the borehole, pour the Portland cement/water mix into the open borehole to within 0.3 ft of ground surface.

  - Place concrete mix or asphalt patch as appropriate from 0.3 ft to ground surface.

- Clean/decontaminate all sampling equipment.

Equipment/Materials:

- Adjustable rate, positive displacement pumps for soil vapor point well purging. The pump will be easily adjustable and capable of operating reliably at flow rates from 100 to 500 mL/minute.
- HDPE or Teflon-lined polyethylene tubing. The tubing wall thickness will be maximized (3/8 to ½ inch) and the tubing length will be minimized (i.e. do not have excess tubing outside of the well).
- Polyethylene sheeting
- Nitrile gloves
- Power source (e.g. generator, nitrogen tank, etc). The generator should not be oversized for the pump.
- Helium Selective detector (Mark 9822, or equivalent)
- Nylon stay-ties
- Decontamination supplies
- Soil vapor well point/indoor air/outdoor ambient air sampling form
- Passivated SUMMA® Canister (or equivalent)
- Sample Identification Key
- Sample tags or labels
- Chain of custody
- Soil vapor well point construction data, location map, field data from last sampling event (if available)
- Project Health & Safety Plan

6.4.3 Indoor Air and Outdoor Ambient Air Sampling Techniques

- Place the SUMMA® canister on a table or bench so that the intake of the flow controller is at the approximate height of the breathing zone for facility workers (36 – 54 inches above the floor).

- Verify the vacuum level in the passivated SUMMA® canister (or equivalent device) to be used for sample collection using the vacuum gauge supplied by the laboratory. Attach the gauge to the ¼" male fitting on the SUMMA® canister and open the valve approximately 1¼ turn. Record the initial vacuum on the sampling record, close the valve, and remove the vacuum gauge.

- Attach a 7µ moisture/particle filter at the end of the pre-calibrated integrated flow controller.

- Attach the integrated flow controller to the ¼" male fitting on the SUMMA® canister using a stainless steel open end wrench. (Note: Do not over tighten. ¼ turn past finger tight should be adequate to create a proper seal.)

- Open the valve on the SUMMA® canister gradually at least 1¼ turn and record the sample start time on the sampling record.

- At the conclusion of the sample collection, record the final time on the sampling record and close the valve.

- Disconnect the SUMMA® canister from the integrated flow controller, remove the filter, and reattach the vacuum gauge. Open the valve and record the final vacuum reading on the sampling record. Close the valve, remove the vacuum gauge and replace the ¼" cap on the canister inlet. Label the SUMMA® canister sample tag with proper sampling location ID, vacuum readings and sampling time interval (e.g. 8 hours).

- Fill out the chain of custody with the project name, file number, sample identifications, SUMMA® canister and related equipment serial numbers, date and time collected, and analysis requirements. The final vacuum reading recorded at the end of the sampling period will also be placed on the sample chain of custody form prior to shipping to the laboratory, and each canister vacuum will be checked upon arrival at the laboratory to confirm sample integrity during shipment. Retain copies of the chain of custody record and relevant shipping information. Place canisters back into their original boxes and ship them to the laboratory via an overnight courier.

- Prior to shipment, confirm that the canister is labeled with the information recorded on the Sample Identification Key and chain of custody form. Labels will be written in indelible ink secured to the canister.

Equipment/Materials:

-
- Nitrile gloves
- Passivated SUMMA® Canister (or equivalent)
- Sample Identification Key
- Sample tags or labels
- Chain of custody
- Location map, field data from last sampling event (if available)
- Project Health & Safety Plan

6.5 SAMPLE HANDLING AND SHIPPING

Sample management is the continuous care given to each sample from the point of collection to receipt at the analytical laboratory. Good sample management ensures that samples are properly recorded, properly labeled, and not lost, broken, or exposed to conditions which may affect the sample's integrity.

All sample submissions must be accompanied with a chain of custody (COC) document to record sample collection and submission. Personnel performing sampling tasks must check the sample preparation and preservation requirements to ensure compliance with the Quality Assurance Project Plan.

The following sections provide the minimum standards for sample management.

6.5.1 Sample Handling

Prior to entering the field area where sampling is to be conducted, especially at sites with defined exclusion zones, the sampler should ensure that all materials necessary to complete the sampling are on hand. If samples must be maintained at a specified temperature after collection, dedicated coolers and ice must be available for use. Conversely, when sampling in cold weather, proper protection of water samples, trip blanks, and field blanks must be considered. Sample preservation will involve pH adjustment, cooling to 4°C, and sample filtration and preservation.

6.5.2 Sample Labeling

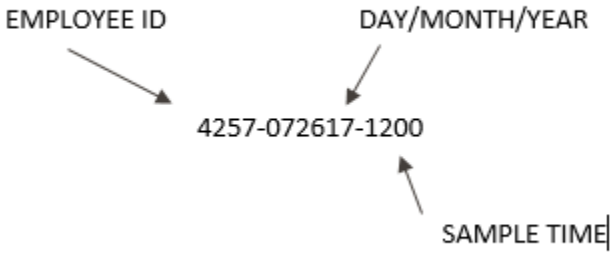
Samples must be properly labeled immediately upon collection.

Note that the data shown on the sample label is the minimum data required. The sample label data requirements are listed below for clarity.

- Project name.
- Sample number.
- Sampler's initials.
- Date of sample collection.
- Time of sample collection.
- Analysis required.
- Preservatives.

However, to ensure that samples are not confused, a clear notation should be made on the container with a permanent marker indicating the last three digits of the sample number. If the containers are too soiled for marking, the container can be put into a "zip lock" bag which can then be labeled.

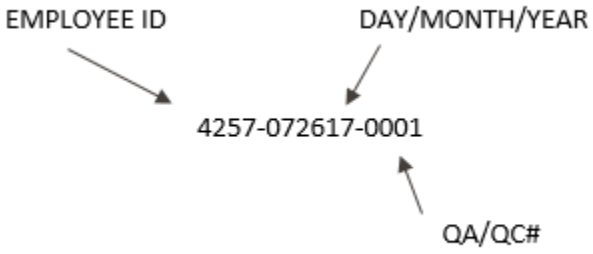
The unique sample identification number will follow the format below.



All sample names will be as follows:

- Employee ID
- Date: Enter the six-digit date when the sample was collected. Note that for one-digit days, months, and/or years, add zeros so that the format is mmddyy (050210). There should be NO slashes, dashes, or periods in the date.
- Time: Enter the four-digit time in MILITARY TIME. Note that for one-digit times a zero should be added to four digits, (i.e. 8 AM is 0800 military time, 1:30 PM is 1330). There should be NO colons, slashes, dashes, or periods in the time. This should match the time on the chain of custody. (Note: For Field Duplicates, Field Blanks, Equipment Blanks, Trip Blanks, and other QA/QC samples, sample time will NOT be used. This will simplify sample naming for the QA/QC samples and avoid identifying the parent sample for blind duplicates.

The unique sample identification number for QA/QC samples will follow the format below.



The QA/QC samples will be numbered consecutively as collected.

Examples of this naming convention are as follows:

Sample Name:	Comments
1234-050202-0001	TB
1234-050202-0002	TB
1234-050202-0003	FD

1234-050202-0004 EB

NOTE: The QA/QC Sample # resets to 0001 EACH DAY, this will avoid having to look back to the previous day for the correct sequential number.

6.5.3 Field Code

The field code will be written in the 'Comments' field on the chain of custody for EVERY sample, but will not be a part of the actual sample name. Enter the one/two-character code for type of sample (must be in CAPITALS):

N	Normal Field Sample
FD	Field Duplicate (note sample number (i.e. 0001) substituted for time)
TB	Trip Blank (note sample number (i.e. 0001) substituted for time)
EB	Equipment Blank (note sample number (i.e. 0001) substituted for time)
FB	Field Blank (note sample number (i.e. 0001) substituted for time)
KD	Known Duplicate
FS	Field Spike Sample
MS	Matrix Spike Sample (note on 'Comments' field of COC – laboratory to spike matrix.
MD	Matrix Spike Duplicate Sample (note on 'Comments' field of COC – laboratory to spike matrix.
RM	Reference Material

The sample labeling – both chain and sample bottles must be EXACTLY as detailed above. In addition, the Field Sample Key for each sample collected must be filled out

6.5.4 Packaging

Sample container preparation and packing for shipment should be completed in a well-organized and clean area, free of any potential cross contamination. The following is a list of standard guidelines which must be followed when packing samples for shipment.

- Double bag ice in "Zip Lock" bags.
- Double check to ensure trip and temperature blanks have been included for all shipments containing VOCs, or where otherwise specified in the QAPP.
- Enclose the Chain of Custody form in a "Zip Lock" bag.
- Ensure custody seals (two, minimum) are placed on each cooler. Coolers with hinged lids should have both seals placed on the opening edge of the lid. Coolers with "free" lids should have seals placed on opposite diagonal corners of the lid. Place clear tape over custody seals.
- Containers should be wiped clean of all debris/water using paper towels (paper towels must be disposed of with other contaminated materials).
- Clear, wide packing tape should be placed over the sample label for protection.
- Do not bulk pack. Each sample must be individually padded.
- Large glass containers (1 liter and up) require much more space between containers.
- Ice is not a packing material due to the reduction in volume when it melts.

Note: Never store sterile sample containers in enclosures containing equipment which use any form of fuel or volatile petroleum based product. When conducting sampling in freezing conditions at sites

without a heated storage area (free of potential cross contaminants), unused trip blanks should be isolated from coolers immediately after receipt. Trip blanks should be double bagged and kept from freezing.

6.5.5 Chain-of-Custody Records

Chain of custody (COC) forms will be completed for all samples collected. The form documents the transfer of sample containers. The COC record, completed at the time of sampling, will contain, but not be limited to, the sample number, date and time of sampling, and the name of the sampler. The COC document will be signed and dated by the sampler when transferring the samples.

Each sample cooler being shipped to the laboratory will contain a COC form. The cooler will be sealed properly for shipment. The laboratory will maintain a copy for their records. One copy will be returned with the data deliverables package.

The following list provides guidance for the completion and handling of all COCs:

- COCs used should be a Haley & Aldrich standard form or supplied by the analytical laboratory.
- COCs must be completed in black ball point ink only.
- COCs must be completed neatly using printed text.
- If a simple mistake is made, cross out the error with a single line and initial and date the correction.
- Each separate sample entry must be sequentially numbered.
- If numerous repetitive entries must be made in the same column, place a continuous vertical arrow between the first entry and the next different entry.
- When more than one COC form is used for a single shipment, each form must be consecutively numbered using the "Page ___ of ___" format.
- If necessary, place additional instructions directly onto the COC in the Comment Section. Do not enclose separate instructions.
- Include a contact name and phone number on the COC in case there is a problem with the shipment.
- Before using an acronym on a COC, define clearly the full interpretation of your designation [i.e., Polychlorinated Biphenyls (PCBs)].

6.5.6 Shipment

Prior to the start of the field sampling, the carrier should be contacted to determine if pickup at the field site location. If pick-up is not available at the Site, the nearest pick-up or drop off location should be determined. Sample shipments must not be left at unsecured drop locations.

Copies of all shipment manifests must be maintained in the field file.

7. Field Instruments – Use and Calibration

A significant number of field activities involve usage of electronic instruments to monitor for environmental conditions and health and safety purposes. It is imperative the instruments are used and maintained properly to optimize their performance and minimize the potential for inaccuracies in the data obtained. This section provides guidance on the usage, maintenance and calibration of electronic field equipment.

- All monitoring equipment will be in proper working order, and operated in accordance with manufacturer's recommendations.
- Field personnel will be responsible for insuring that the equipment is maintained and calibrated in the field in accordance with manufacturer's recommendations.
- Instruments will be operated only by personnel trained in the proper usage and calibration.
- Personnel must be aware of the range of conditions such as temperature and humidity for instrument operation. Usage of instruments in conditions outside these ranges will only proceed with approval of the Project Manager and/or Health and Safety Officer as appropriate.
- Instruments that contain radioactive source material, such as x-ray fluorescence (XRF) analyzers or moisture-density gauges require specific transportation, handling and usage procedures that are generally associated with a license from the Nuclear Regulatory Commission (NRC) or an NRC-Agreement State. Under no circumstance will operation of such instruments be allowed on site unless by properly authorized and trained personnel, using the proper personal dosimetry badges or monitoring instruments.

7.1 GENERAL PROCEDURE DISCUSSION

Decontamination activities must be performed in a controlled area outside any exclusion zones established on the site. Care must be taken to minimize the potential for transfer of contaminated materials to the ground or onto other materials. Regardless of the size or nature of the equipment being decontaminated, the process will utilize a series of steps that involve removal of gross material (dirt, grease, oil etc.), washing with a detergent, and multiple rinsing steps. In lieu of a series of washes and rinse steps, steam cleaning with low-volume, high-pressure equipment (i.e. steam cleaner) is acceptable.

Drill rigs, backhoes and other exploration equipment, and all monitoring equipment in contact with the sampling media must be decontaminated prior to initiating site activities, in-between exploration locations to minimize cross- contamination, and prior to mobilizing off site after completion of site work.

A decontamination pad must be constructed that is appropriate for the size and type of equipment being decontaminated. At a minimum, the decontamination pad will have the following elements:

- An impermeable barrier capable of containing decontaminated fluids;
- A low point where fluids will collect and can be transferred into appropriate containers;
- Durability to withstand equipment such as vehicle and foot traffic;

- Appropriate ancillary equipment such as racks to place decontaminated equipment to drain without further exposure to contaminated fluids; and
- Labels to alert personnel as to the potential presence of contaminated materials.

The following specific decontamination procedure is recommended for sampling equipment and tools:

- Brush loose soil off equipment;
- Wash equipment with laboratory grade detergent (i.e. Alconox or equivalent);
- Rinse with tap water;
- Rinse equipment with distilled water;
- Allow water to evaporate before reusing equipment; and
- Wrap equipment in aluminum foil when not being used.

7.2 DECONTAMINATION OF MONITORING EQUIPMENT

Because monitoring equipment is difficult to decontaminate, care should be exercised to prevent contamination. Sensitive monitoring instruments should be protected when they are at risk of exposure to contaminants. This may include enclosing them in plastic bags allowing an opening for the sample intake. Ventilation ports should not be covered.

If contamination does occur, decontamination of the equipment will be required; however, immersion in decontamination fluids is not possible. As such, care much be taken to wipe the instruments down with detergent-wetted wipes or sponges, and then with de-ionized water-wetted wipes or sponges.

7.3 DISPOSAL OF WASH SOLUTIONS AND CONTAMINATED EQUIPMENT

All contaminated wash water, rinses, solids and materials used in the decontamination process that cannot be effectively decontaminated (such as polyethylene sheeting) will be containerized and disposed of in accordance with applicable regulations. All containers will be labeled with an indelible marker as to contents and date of placement in the container, and any appropriate stickers required (such as PCBs). Storage of decontamination wastes on site will not exceed 90 days under any circumstances.

Equipment/Materials:

Decontamination equipment and solutions are generally selected based on ease of decontamination and disposability.

- Polyethylene sheeting;
- Metal racks to hold equipment;
- Soft-bristle scrub brushes or long-handle brushes for removing gross contamination and scrubbing with wash solutions;
- Large galvanized wash tubs, stock tanks, or wading pools for wash and rinse solutions;
- Plastic buckets or garden sprayers for rinse solutions;
- Large plastic garbage cans or other similar containers lined with plastic bags can be used to store contaminated clothing;
- Contaminated liquids and solids should be segregated and containerized in DOT-approved plastic or metal drums, appropriate for offsite shipping/disposal if necessary.

Reference:

1. ASTM D5088 - Practice for Decontamination of Field Equipment Used at Non-Radioactive Waste Sites

8. Investigation Derived Waste Disposal

8.1 RATIONALE/ASSUMPTIONS

This procedure applies to the disposition of investigation derived waste including soils and/or groundwater. Investigative derived wastes are dealt with following "Best Management Practices"; and are not considered a listed waste due to the lack of generator knowledge concerning chemical source, chemical origin, and timing of chemical introduction to the subsurface.

Consequently, waste sampling and characterization is performed to determine if the wastes exhibit a characteristic of hazardous waste. The disposal of soil cuttings, test pit soils and/or purged groundwater will be reviewed on a case by case basis prior to initiation of field activities. Two scenarios typically exist:

- When no information is available in the area of activity or investigation, and impacted media/soils are identified. Activities such as new construction and /or maintenance below grade may encounter environmental conditions that were unknown.

- Disposal Required/Containerization Required – When sufficient Site information regarding the investigative Site conditions warrant that all materials handled will be contained and disposed.

If a known listed hazardous and/or characteristically hazardous waste/contaminated environmental media is being handled, then handling must be performed in accordance with RCRA Subtitle C (reference 2, Part V, Section 1(a),(b),(c)).

The following outlines the waste characterization procedures to be employed when IDW disposal is required.

The following procedure describes the techniques for characterization of investigation derived waste (IDW) for disposal purposes. IDW may consist of soil cuttings (augering, boring, well installation soils, test pit soils), rock core or rock flour (from coring, reaming operations), groundwater (from well development, purging and sampling activities), decontamination fluids, personal protective equipment (PPE), and disposal equipment (DE).

8.2 PROCEDURE

The procedures for handling and characterization of field activity generated wastes are:

A.) Soil/Rock Cuttings - Soils removed from boring activities and well construction tasks (including rock flour from bedrock coring) will be contained within an approved container, suitable for transportation and disposal.

- Once placed into the approved container, any free - liquids (i.e., groundwater) will be removed for disposal as waste fluids, or solidified within the approved container using a solidification agent such as speedy dri (or equivalent).
- Contained soils will be screened for the presence of Volatile Organic Compounds (VOCs), using a Photo ionization detector (PID); this data will be logged for future reference.

- Once screened, full and closed; the container will be labeled and placed into the container storage area. At a minimum, the following information will be shown on each container label: date of filling/generation, Site name, source of soils (i.e., borehole or well), and contact.
- Prior to container closure, representative samples from the containers will be collected for waste characterization purposes and submitted to the project laboratory.
- Typically, at a location where an undetermined site-specific parameter group exists, sampling and analysis may consist of the full RCRA Waste Characterization (ignitability, corrosivity, reactivity, toxicity), or a subset of the above based upon data collected, historical information, and generator knowledge.

B.) Groundwater - Well construction development, purging, and sampling groundwater, which requires disposal, will be contained.

- Containment may be performed in 55-gallon drums, tanks suitable for temporary storage (i.e., Nalgene tanks 500 to 1,000 gallons) or if large volumes of groundwater are anticipated, tanker trailer (5,000 to 10,000 gallons ±), or drilling "Frac" tanks may be utilized (20,000 gallons ±). In all cases the container/tank used for groundwater storage must be clean before use such that cross contamination does not occur.

C.) Decon Waters/Decon Fluids - Decon waters and/or fluids will be segregated, contained, and disposed accordingly.

- Decon waters may be disposed of with the containerized groundwater once analytical results have been acquired.

D.) PPE/DE – A number of disposal options exists for spent PPE/DE generated from investigation tasks. The options typically employed are:

- Immediately disposed of within on-Site dumpster/municipal trash; or
- If known to be contaminated with RCRA hazardous waste, dispose off-Site at a RCRA Subtitle C facility.
- Spent Solvent/Acid Rinses - The need for sampling must be determined in consultation with the waste management organization handling the materials. If known that only the solvent and/or acids are present, then direct disposal/treatment using media specific options may be possible without sampling (i.e. incineration).
- PPE/DE – Typically not sampled and included with the disposal of the solid wastes.

Equipment/Materials:

- Sample spoons, trier, auger,
- Sample mixing bowl,
- Sampling bailer, or pump,
- Sample glassware.

References:

1. New York State Department of Environmental Conservation Technical Guidance for Site Investigation and Remediation, DER-10, (3 May 2010).
2. USEPA RCRA - Guidance and Policies: Management of Remediation Waste Under RCRA (October 1998).
3. USEPA RCRA - Management of Contaminated Media (October 1998).
4. USEPA CERCLA Guidance (Options Relevant to RCRA Facilities): Guide to Management of Investigation - Derived Wastes (January 1992).
5. USEPA Office of Solid Waste- SW846 Chapter 9 Sampling Plan, Chapter 10 Sampling Methods (September 1986).
6. The Occupational Safety and Health Administration's (OSHA) Excavation and Trenching Standard Title 29 of the Code of Federal Regulation (CFR) Part 1926.650

APPENDIX A

Field Forms

DAILY FIELD REPORT

Page of

Project		**Report No.**	20
Location		**Date**	
Client		**Page**	of
Contractor		**File No.**	
Weather		**Temperature**	

Field Representative(s)	Time on site	Report/Travel/Other	Total hours

Distribution:

Form 4004

EQUIPMENT CALIBRATION LOG

Project:
Location:
Model Name:
Model Number: **Serial Number:**
Cal. Standards:

Instruments will be calibrated in accordance with manufacturer's recommendations at least once per day.

Date	Time	Calibration Satandard Solution	Calibration Result	Calibrated by

Other Comments:

LOW FLOW/MNA FIELD SAMPLING FORM

Page of

PROJECT _____ **H&A FILE NO.** _____

LOCATION _____ **PROJECT MGR.** _____

CLIENT _____ **FIELD REP.** _____

SAMPLING DATE _____

Sampling Data:

Well ID: _____ Well Depth: _____ ft Initial Depth To Water: _____ ft Purging Device: _____

Start time: _____ Depth To Top Of Screen: _____ ft Depth Of Pump Intake: _____ ft Tubing Present In Well: Yes No

Finish Time: _____ Depth To Bottom Of Scree _____ ft Date Well Installed: _____ Tubing Type: _____

Elapsed Time (min:sec)	Depth To Water From Casing (ft)	Pump Setting (sec/sec)	Purge Rate (ml/min)	Cumulative Purge Vol. (gal)	Temp-erature (°C) +/- 10%	pH +/- 0.1	Conduct-ivity (us/cm) +/- 3%	Dissolved Oxygen (mg/L) +/- 10%	Turbidity (NTU) <50	ORP/eH (mv) +/- 10 mv	Comments

Soil Gas SUMMA Canister Sampling Form

PROJECT _____ **H&A FILE NO.** _____

LOCATION _____ **PROJECT MGR.** _____

CLIENT _____ **FIELD REP** _____

CONTRACTOR _____ **DATE** _____

Sampling Data:

Well ID: _____ Probe Depth: _____ ft Purging Device: _____

Start time: _____ Top Of Screen: _____ ft Purge Rate: _____ ml/min

Finish Time _____ Bottom Of Screen: _____ ft Purge Time: _____ min

Sample Location	Start Time (24 hrs)	Initial Vacuum (inHg)	Interim Time (24 hrs)	Interim Vacuum (inHg)	Final Time (24 hrs)	Final Vacuum (inHg)	Comments

SAMPLE IDENTIFICATION KEY

PROJECT _____ **H&A FILE NO.** _____

LOCATION _____ **PROJECT MGR.** _____

CLIENT _____

CONTRACTOR _____

Sample ID	Parent Sample ID	Location ID	Sample Date	Sample Time (military)	Sample Type Code	Filtered (Water Only T/D/N)	Composite Y/N	Soil Type	Depth To Top Of Sample	Depth To Bottom Of Sample	C.O.C. Number	Notes	Collected By

Notes:

Common Sample Type Codes:

N Normal Environmental Samp WG Groundwater WS Surface Water SO Soil GS Soil Gas SE Sediment

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the Former AB Dick Facility Site (the "Site"), number #C828148, are divided between the Site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:
811 Jefferson Road, LLC

Solely for the purposes of this document and based upon the facts related to a particular Site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or Site management, the NYSDEC and/or an agent acting on its behalf. The RP is:
811 Jefferson Road, LLC

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the Site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the Site.

2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in a(n) Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the Site's Periodic Review Report (PRR) certification to the NYSDEC.

3) In the event the Site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.

4) The owner shall grant access to the Site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the Site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.

6) In the event some action or inaction by the owner adversely impacts the Site, the owner must notify the Site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3- Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.

7) The owner must notify the RP and the NYSDEC of any change in ownership of the Site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the Site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.4 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the Site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the Site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the Site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the Site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3- Notifications of the SMP.

7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in Site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the Site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or Site ownership does not affect the RP's obligations with respect to the Site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future Site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

Appendix M
Health and Safety Plan

HEALTH AND SAFETY PLAN

Former AB Dick Facility
811 Jefferson Road
Rochester, New York

NYSDEC BCP Site #C828148

Prepared for:
811 Jefferson Partners, LLC
90 Goodway Drive
Rochester, New York 14623

Prepared by:
Leader Professional Services, Inc.
271 Marsh Road, Suite 2
Pittsford, New York 14534

January 2020, Revised April 2020

713.032A

Leader

Table of Contents

Work Scope 2
Projected Start Date(s): 3
Projected Completion Date: 3
Estimated Number of Days to Complete Field Work: 3
Directions to the Nearest Hospital: 4
Site History and Remediation Activities 5
Overview of Hazards 7
Site Plan 7
Work Areas (see site plans) 7
Chemical Hazards 8
Impacted Environments 9
Estimated Concentrations 9
Chemicals of Concern 10
Physical Hazards 10
COVID-19 Construction Field Safety Guidelines 10
Decontamination (Equipment) 15
Utility Locators and Underground Hazards 16
Heavy Equipment 16
Noise Reduction 16
Work Site Access & Controls (Standard Precautions) Excavations 17
Excavation and Trenching Safety 17
Excavation Cave-In Hazards 19
Site Security 20
Weather Related Hazards 20
Heat Stress 20
Effects of Heat Stress 21
Cold Stress 22
Frostbite 22
Hypothermia 23
Poison Ivy 23
Personal Protective Equipment Requirements: 25
Site Safety Equipment 27
Required Monitoring/Screening Equipment 28
The required equipment checked in any box above must be on site. Work shall not commence unless the equipment is present 28
Standard Air Monitoring Plan (Volatiles) 29
Specific Monitoring Requirements: 29
Calibration and Use of Equipment 31
Respirable Aerosol Monitors for Particulate 31
Respirator Use and Maintenance Overview 32
Personal Hygiene Safeguards 34
Standard Personal Decontamination Procedures 34
Location of Decontamination Station 35
Disposal of PPE 35
Tools & Equipment Decontamination 35
Standard Equipment Decontamination Procedures 35
Standard Disposal Methods for Contaminated Materials 36
Fire 37
Medical 37
Hazardous Materials Spill 38
Rescue 38
Weather Related Emergencies 38
Evacuation Alarms 38

Medical 36
Hazardous Materials Spill 37
Rescue 37
Weather Related Emergencies 37
Evacuation Alarms 37
Emergency Services 37
Emergency Evacuation Plan 37
Reporting Incidents 38
Printed Name Signature Date 40

APPENDICES

Appendix A HASP Amendment Form
Appendix B Issuance and Compliance Site Safety Officer Role and Responsibilities

1. PROJECT INFORMATION AND EMERGENCY RESOURCES

Project Name: BCP Site #C828148 Remediation Project	**Leader Project No. 713.032A**
Location: Former AB Dick Facility	
Client/Site Contact: Phone Number	811 Jefferson Partners, LLC – Joseph Akel 585.292.1580
Leader Project Manager: Phone Number:	Matthew Drury 585.248.2413
Leader Health & Safety Coordinator: Office Phone Number:	Robert Murphy 585.248.2413
Nearest Hospital: Address: Phone Number:	Strong Memorial Hospital 601 Elmwood Ave 585.275.4551 Emergency Room
Emergency Response Number:	**911**
Other Ambulance, Fire, Police, or Environmental Emergency Resources:	359-7065 Town of Henrietta Fire Marshall 226-2466 NYSDEC Region 8 Office

Work Scope

This Site-Specific Health and Safety Plan ("HASP") addresses the health and safety practices and procedures that will be employed by all Leader Professional Services, Inc. ("Leader") and their contractors participating in activities at the Project Site. This HASP was originally developed by Haley and Aldrich and approved as part of the Site Management Plan ("SMP") in 2017. This updated version reflects the current and projected use of the site.

This HASP is based on an assessment of the site-specific health and safety risks available to Leader and Leader's experience with other project sites. The scope of work for this project could include:

- Leader personnel to conduct semi-annual groundwater monitoring and sampling to monitor performance of the remedial action, which included excavation, in-situ chemical reduction (ISCR) and biodegradation of the residual Site Chemicals of Concern (COCs).
- Leader personnel will also be responsible for excavation oversight and collection of excavation area and disposal samples (if necessary) for excavation work completed under the Excavation Work Plan portion of the SMP. Detailed sampling plans should be provided in a task specific Work Plan. Excavated soil will be temporarily placed in secure stockpiles on the Site pending characterization and off-Site disposal at licensed waste management facilities. Stockpiles will be inspected at least weekly and after each storm event. Representative samples of the stockpiled impacted material will be sampled and analyzed as necessary for off-Site disposal as solid or hazardous waste at licensed waste management facilities. When excavation activities in the former source areas occur, Leader personnel will implement Community Air Monitoring according to the NYSDOH generic Community Air Monitoring Plan (CAMP). This HASP requires real- time monitoring of VOCs and particulates at the upwind and downwind perimeter of designated work areas when certain activities are in progress.
- Proposed excavation and development activities associated with the proposed development of the property.

Projected Start Date(s):

- TBD

Projected Completion Date:

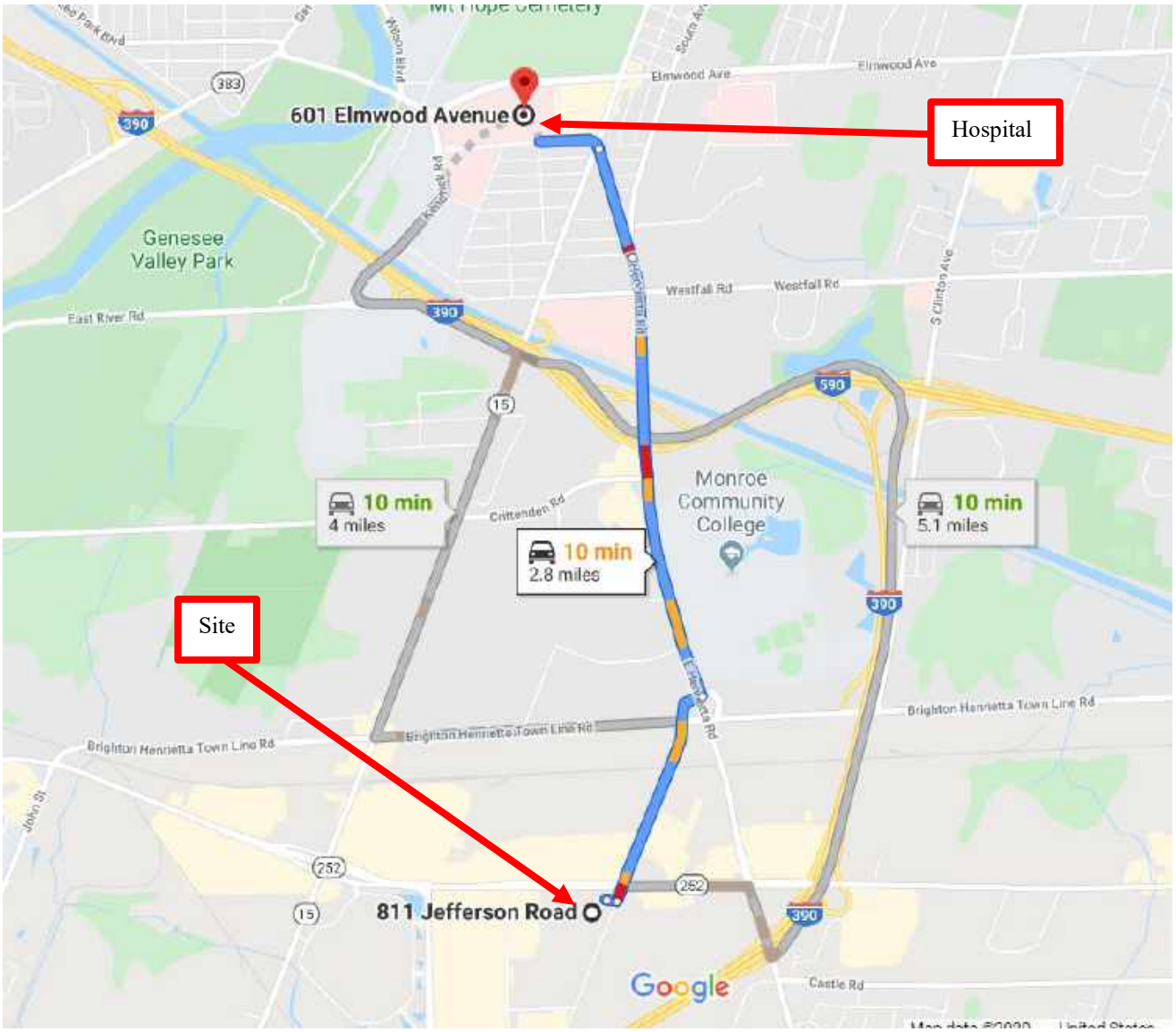
- TBD

Estimated Number of Days to Complete Field Work:

- TBD

Directions to the Nearest Hospital:

Strong Memorial Hospital, 601 Elmwood Avenue, Rochester, New York



2. SITE DESCRIPTION

Site Classification: Brownfield Cleanup Project

General Description:

The Site is located at 811 Jefferson Road in the Town of Henrietta, Monroe County, New York. The property (Tax I.D. No. 162.09-1-3) is currently zoned within a Commercial/Industrial Zoning District and is owned by 811 Jefferson Partners, LLC ("Owner"). The Site is approximately 11.9 acres in size comprised of vacant land. The Site boundaries are shown on the attached Figure 1 relative to the former building layout including pavements and former floor slabs and foundations that remain in place over a portion of the Site. Jefferson Road and a Denny's Restaurant bound the Site to the north. The Denny's restaurant and Clay Road bound the site to the east. The Unither, a biopharmaceutical manufacturing company, parking lots, driveways and lawns bound the Site on the south and west.

Site History and Remediation Activities

The Site is currently unimproved except for sections of concrete floor slabs remaining from prior development. The Site formerly contained a manufacturing building with additions, which were occupied by a series of industrial operations from the mid-1950s to 2005. Manufacturing activities conducted at the property included cleaning/degreasing of metal parts and equipment. The AB Dick Company, Itek Corporation, and Photostat Corporation leased and occupied the building and property from 1955 through 2004. In November 2004, the AB Dick Company sublet the building to Silver Acquisition Corp., Inc. (also known as ABDI International Inc.) which occupied the premises until June 2005.

The former building was comprised of a 167,200± square feet (sq. ft.) slab on grade building included both office and industrial areas and a 27,200± sq. ft. second floor office area. The former building was constructed in 1955-1956 with additions in 1968 and 1979. The building was razed, and all waste and demolition debris were removed in early 2007 in anticipation of commercial redevelopment. A portion of the former building's slab and a contiguous portion of the asphalt parking lot pavement, which cover a 3±-acre area at the southwest corner of the Site, were left in place to serve as a surface cover over an area of soil and groundwater impacts identified during previous Site investigations.

In accordance with the Brownfield Cleanup Program Agreement, a Remedial Investigation (RI) program was conducted at the Site consistent with the applicable NYSDEC Brownfield Cleanup Program regulations and related guidance. The RI activities characterized and delineated the nature and extent of Site-related contamination that was first identified in the Phase I/Phase II Environmental Site Assessment Report for the Former AB Dick Facility (Stantec, March 2007). The RI activities also included assessments of potential source areas that had not been previously investigated. The initial RI activities were conducted from May 2008 through May 2009. Supplemental investigation activities were conducted from May through August 2010. Initial RI and supplemental investigation activities were conducted in accordance with NYSDEC-approved work plans and results documented in NYSDEC-approved RIR and SIR reports (Stantec, October 2010). A Pre- Design Assessment (Haley & Aldrich, 2011) supporting the chemical treatment component of the selected remedy documents the efficacy of naturally occurring microorganisms to attenuate the Site's COCs.

The RI identified the COCs for the Site, including trichloroethylene, tetrachloroethylene and their daughter products, cis-1,2-dichloroethene and vinyl chloride. The RI detected the COCs in soil and groundwater at concentrations above the applicable NYSDEC SCGs in two locations, Area 1 on the Site and Area 2 on both the Site and off-site on the adjacent property occupied by Unither, as shown on attached site Figure 2. These areas are described as follows:

- Area 1 is located in and adjacent to the southwest corner of the former manufacturing facility building where Site-related COCs were identified in soil and groundwater at concentrations above Site cleanup goals. The RI findings indicate that the Area 1 impacts are likely related to a release(s) of chlorinated solvent compounds used in industrial cleaning operations of one or more of the prior Site tenants which were released from the former building's storage areas, sub-floor piping and/or a former underground storage tank related to those operations.

- Area 2 is located at the outfall of a 36-inch diameter stormwater pipe that runs from the former on-Site building's roof drains to the drainage ditch which runs east-west along the southern property line. Area 2 extends on the property just to the south of the southern property boundary of the Site, where a plume of groundwater containing Site-related COCs above applicable NYSDEC SCGs extends southwest to the loading dock apron for Unither Building 3.

- An additional isolated area of shallow soil impact from petroleum substances was also identified on the Site during the RI program and subsequently addressed by removal and off-Site disposal, as documented in the 30 August 2013 IRM Completion Report approved by the NYSDEC in November 2013.

During 2017, the owner conducted a remedial action under the NYSDEC-approved Remedial Action Work Plan (RAWP), dated January 2017. The following remediation activities were completed to address contamination in Area 1, Area 2 and the area south of Area 2 on Unither's property:

(1) Excavation and off-site disposal of contaminant source area sediments and soils in Area 1 and Area 2, to the extent feasible.

(2) Injection of in-situ chemical reduction (ISCR) amendments consisting of zero valent iron (ZVI), emulsified vegetable oil (EVO) and emulsified zero valent iron (EZVI) below the planned excavation limits before the excavation to treat COCs in subsurface soil below the water table and the groundwater. ZVI was also mixed into exposed soils following the soil excavation program and prior to backfilling.

Overview of Hazards

The Site soils and groundwater are known to contain TCE and PCE at concentrations greater than 10 ppm at the AB Dick property. Personnel Protective Equipment will be required to limit exposure to volatile compounds via dermal adsorption and/or inhalation.

Any access required to the south of Area 2 will need to be coordinated and cleared with UCB/Unither security personnel.

Site Status: Inactive, Certificate of Completion issued in December 2017.

Site is currently vacant, and gates restrict access; remediation site activity will include truck activity, heavy equipment traffic in travel areas throughout the workday.

Site Plan

See Figure 3.

Work Areas (see site plans)

List/identify each specific work area(s) on the job site and indicate its location(s) on the site plan:

1. Work areas involve the entire site as shown in the proposed development (see Figure 3).

3. PROJECT TASK BREAKDOWN

List and describe each distinct work task below.

Task No.	Detailed Task Description	Employee(s)	Anticipated Work Date(s) or Duration
1	Groundwater Monitoring/Sampling Events	TBD	Semi-annual
2	Demolition of existing concrete pad	TBD	TBD
3	Decommission select monitoring wells	TBD	TBD
4	Excavation and site prep for building(s)	TBD	TBD
5	Implement Community Air Monitoring Program (CAMP)	TBD	TBD
6	Foundation excavation and installation of footers and building pads	TBD	TBD
7	Replace select monitoring wells with vertical and/or angled wells	TBD	TBD
8	Install sub-slab depressurization system	TBD	TBD

4. HAZARD ASSESSMENT

Safety Data Sheets (SDS) of hazardous materials used during the execution of work shall be available on site. SDS are required for construction materials or chemicals used to prepare samples, calibration gases, etc. SDS are not required for waste materials.

Chemical Hazards

No data exists for potential presence of contamination at the neighboring site UCB however there was previously a documented release of methylene chloride on the property that was the subject of a NYSDEC spill report and cleanup activity.

Potential physical state of the hazardous materials at the site.

- Gas/Vapor
- Liquid
- Solid/Particulate

Anticipated or actual class of compound at the site.

- Chlorinated Solvents

Impacted Environments

Media in which contamination is expected.

- Air
- Groundwater
- Soil
- Sediment

Estimated Concentrations

Indicate medium of major chemicals expected to be encountered by onsite personnel.

No data is available for potential contamination on the UCB site.

Work Activity	Media	Chemical	Anticipated Concentration
Soil sampling, drilling, SSDS installation, building foundation	S, GW, A	Chlorinated solvents including TCE, PCE, DCE, Vinyl Chloride	TCE, PCE (10 ppm or greater possible in all media) Vinyl Chloride, DCE (1-10 ppm or greater possible in all media)
CAMP monitoring	A		
Excavation Oversight	S, GW, A		
Groundwater Sampling	GW		

(Media key: A = Air; GW = Groundwater; SW = Surface Water; SO = Soil; SE = Sediment)

Table 1
HAZARD MONITORING

CONTAMINANTS OF CONCERN	ROUTES OF EXPOSURE	IDLH	PEL	TLV	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
1,1-Dichloroethylene (Vinylidene chloride, 1,1-DCE	R,I	Ca	--	5 Cv 20	*	40	190	--	--
1,2-Dichloroethylene	R,I,C	1000	200	200	9.65	50	0.85	--	Ether-like acrid
Tetrachloroethylene (Perchloroethylene)	R,I,C	Ca	100	25	9.32	70	4.68	N.T513-690	Ether, chloroform-like
Trichloroethylene	R,I,C	Ca (1000)	100	50	9.47	70	21.4	--	Solventy, chloroform-like
Vinyl Chloride	R	Ca	1	2	9.995	--	3000	--	Ethereal

Chemicals of Concern

Chemical hazards or potential chemicals of concern (COC) are associated with the historical use of the site. The potential COCs include: 1,1-Dichloroethylene, 1,2-Dichloroethylene, Tetrachloroethylene, Trichloroethylene (TCE) and Vinyl Chloride.

These potential COCs relate to inhalation, ingestion, and dermal exposure to workers at the site. Although it is anticipated that exposure to unprotected works is low, monitoring equipment and handling procedures shall be used during intrusive activities conducted at the site. It is understood that Leader will maintain equipment at the site to monitor for volatile organic compounds ("VOCs") at the site during work activities. Leader will make an effort to communicate to notify workers at the site if monitoring equipment indicates exposures to chemical hazards. Where necessary, PPE will be specified for that job task.

Physical Hazards

Indicate all hazards that may be present for each task. If any of these potential hazards are checked, it is the project manager's responsibility to determine how to eliminate/minimize the hazard to protect onsite personnel.

COVID-19 Construction Field Safety Guidelines

https://www.osha.gov/Publications/OSHA3990.pdf

These field guidelines have been developed collaboratively by construction industry professional organizations, contractors, and workers' representatives in response to the need for work on construction projects that are permissible to continue as safely as possible. These guidelines may need to be updated as the COVID-19 pandemic evolves.

1. Establish an assembly point for staff in or near the job trailer, before the start of work each day that complies with the recommended social distancing parameters.
2. Provide a daily tailgate session reviewing site protocols to mitigate potential spread of the virus. As information is changing continuously regarding COVID-19, these tailgates should occur daily and contractors should document attendance and require worker signatures.
3. Designate a Site Safety Rep (SSR) to monitor and implement all recommended safety practices regarding the COVID-19 virus with all contractor staff members. Labor supervisors must have the authority to halt all activities that do not adhere to the COVID-19 safety practices. The SSR should have training commensurate with this hazard and all required industrial hygiene practices that may be required on the job site. This person will be responsible to maintain supplies of disinfectants and make sure that workers follow decontamination, hand washing, and distancing.

5. Regularly clean and sanitize trailers, toilets, and other enclosed spaces.
6. Social distancing must be maintained in elevators and lifts. Establish a regular cleaning and disinfection schedule for elevators and lifts.
7. Establish adequate time in the workday to allow for proper cleaning and decontamination including prior to leaving the job site for the day.
8. Also, as part of the Site-Specific Health and Safety Plan contractors should draft and implement a Code of Safe Practices that will at a minimum require staff/labor to follow the following guidelines during the course of their work:
    a. If you feel sick or have been exposed to anyone who is sick with COVID-19, stay at home. You may be required to provide COVID-19 test result showing a negative result (not infected with COVID-19) before being allowed to return to work. This is critical to preventing spread of the virus.
    b. Wash hands frequently for at least 20 seconds with soap and water. Avoid touching your face with un-sanitized hands. Avoid touching common surfaces with bare hands.
    c. Constantly observe your work distances in relation to other staff. Maintain the recommended minimum 6 feet separation from one another at all times feasible. Do not shake hands or make other unnecessary direct contact with other staff. Do not carpool with other staff unless they are family members living within your household.
    d. Do not share phones. Use of microwaves, water coolers, and other similar group equipment for breaks is suspended until further notice.
    e. Clean personal tools prior to use, as well as group tools.
    f. Disposable paper towels and similar waste must be deposited in non-touch waste bins.
    g. Do not cough or sneeze into your hand; rather, direct coughs and sneezes into a cloth or tissue or, if not available, the crook of your arm at your elbow; follow established CDC guidelines.
    h. Workers should change work clothes and shoes prior to arriving at home. All clothing should not be shaken out. Launder work clothes separate from other laundry.

Potential Job Hazards	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8
	GW Monitoring /Sampling	Pad Demolition	Decommission Wells	Excavation and Site Prep	CAMP	Foundation Excavation	Replace Monitoring Wells	Install SSDS
Confined space entry*								
Underground utilities		✓		✓		✓	✓	✓
Overhead utilities								
Electrical hazards								
Excavations greater than 4' depth						✓		
Open excavation fall hazards						✓		
Heavy equipment		✓		✓		✓		
Drilling hazards			✓				✓	
Noise (above 85 dBA)		✓	✓	✓		✓	✓	
Traffic concerns								
Extreme weather conditions								
Rough terrain for drilling equipment								
Buried drums								
Heavy lifting (more than 50 lbs.)								
High risk fire hazard								
Poisonous insects or plants								
Water hazards								
Use of a boat								
Lockout/Tagout requirements								
Other: Specify								

*CONFINED SPACE ENTRY REQUIRES SPECIAL PROCEDURES, PERMITS AND TRAINING AND MUST BE APPROVED BY THE CORPORATE HEALTH & SAFETY MANAGER.

Potential Activity Hazards and Hazard Controls:

Copy and paste a checkmark "□" adjacent to potential activity hazards and relevant hazard controls.

POTENTIAL ACTIVITY HAZARDS

Abrasions and Cuts Access
Asphyxiation
Bacteria
Biological Hazards Bloodborne Pathogens
Cave Ins
Chemical Thermal Burns
Chemicals
Cold Stress
Compressed Gases
Confined Spaces
Congestion
Defective Equipment
Dermatitis
Dropping Materials/Tools to Lower Levels
Drowning or Flowing Water
Electrical Shock
Energized Equipment
Equipment Misuse
Ergonomics
Excavations
Explosions
Fatigue
Fire
Flammability
Flying debris
Foreign Body in Eye
Frostbite/Cold
Fueling and Fuel Storage
Fugitive Dust
Fumes
Generated Wastes
Guards removed
Hazardous Materials
Heat Stress (cramps, exhaustion, stroke)
Heavy Equipment Operation
Heavy Equipment/ Stability
Heavy Lifting
High crime area (violence) High Winds
Hoists, Rigging, Slings, Cables Housekeeping – Improper Illumination - Poor
Impact
Inability to Maintain Communication
Inclement Weather
Inclines
Insects/Reptiles
Mold
Moving Equipment, Conveyors or Vehicles
Muddy Site Conditions
New Personnel
Noise
Odor
Overhead Utilities
Overhead Work
Overloaded Equipment
Pinch Points
Pressurized Lines
Radiation
Repetitive Motion
Rigging - Improper
Sharp Objects
Silicosis
Slips, Trips, and Falls
Sprains and Strains
Sunburn
Toxicity
Traffic
Underground Utilities
Unsafe Atmosphere
Vibration
Visibility - Poor
Visitors Known/Unknown
VOC Emissions
Weight
Work at Depth

HAZARD CONTROLS

Air Monitoring
Appropriate Clothing/Monitoring of Weather
Appropriate Labels/Signage
Barricades/Fencing/Silt Fencing
Buddy System - Attendant Chock Blocks
Confined Space Procedures
Decontamination Procedures Derived Waste Management Plan
Drinking Water/Fluids
Dust Abatement Measures
Emergency Action Plan Procedures
Equipment Inspection
Equipment Manuals/Training
Exclusion/Work Zones
Exhaust Ventilation
Eye Protection
Fall Protection
Fire Extinguisher
Flotation Devices/Lifelines
Gloves
Ground Fault Interrupter
Grounded Hydraulic Attachments
Grounded Equipment/Tanks
Hand Signal Communication
Hard Hat
Hazardous/Flammable Material Storage
Hearing Protection
High Visibility Safety Vest
Hoses, Access to Water Hot work Procedures Isolation of Energy Sources(Lockout/Tagout)
Machine/Equipment Guards
Manual Lifting Equipment
Police Detail
Proper Lifting Techniques
Proper Tool for Job
Proper Work Position/Tools
Protective Equipment Radio Communication
Respirator, (Half Mask)
Safety Harness /Lanyard/Scaffold
Security Escort
Sloping, Shoring, Trench Box
Spill Prevention Measures
Spill Kits
Stormwater Control
Traffic Controls Procedures/Methods
Vehicle Inspection
Visitor Orientation Escort
Window Cleaning/Defrost

Daily Safe Work Practices:

- Personnel under the obvious influence of alcohol or controlled substances are not allowed onsite; those taking medications must notify the SHSO.
- Personnel will avoid skin contact with contaminated or potentially contaminated media. If such contact occurs, the affected areas should be washed thoroughly with soap and water.
- Personnel will discard and replace any damaged or heavily soiled protective clothing.

  Discarded PPE will be drummed at the end of each day.
- Personnel should notify the SHSO of any defective monitoring, emergency, or other protective/safety equipment.
- A supply of potable water, electrolyte replacement solutions, shaded break area, and sufficient lighting will be maintained onsite; sanitary facilities will be accessible to personnel.
- All unsafe conditions shall be made safe immediately. All unsafe conditions not in the scope of the project shall be reported to the PM and the condition corrected.
- All site personnel will familiarize themselves with these and the emergency procedures during daily tailgate and pre-work safety meetings.
- Following safe work practices reduces the likelihood of an accident, illness, or injury during field activities.
- Workers who are passengers or drivers of vehicles (both offsite and onsite) will wear their seat belts any time the vehicle is in motion.
- Store tools in clean, secure areas so they will not be damaged, lost, or stolen.

Decontamination (Equipment)

The equipment decontamination procedures for this project:

- Sample collection equipment (bailers, collection utensils, etc.) will be decontaminated before initial use, between samples, and before leaving the site with a non-phosphate detergent wash and/or high-pressure steam, tap water rinse, and final triplicate de-ionized water rinse.
- After decontamination, sample collection equipment will not be transported to the sampling location on unclean surfaces (e.g., transport in or on new plastic).
- Monitor well development/purge pumps will be decontaminated before and after use in each well with a non-phosphate detergent water wash, tap water rinse, and final de-ionized water rinse. This wash and rinse sequence will be circulated through the pump system and applied to exterior surfaces that will be or have been in contact with groundwater.

Utility Locators and Underground Hazards

Prior to drilling or excavating, Leader staff members will ensure that permission has been gained from the property owner to access the property. Contact site facilities personnel to assist with location of underground utilities. Before marking any proposed exploration location, it is critical that all readily available information on underground utilities and structures be obtained. The estimated location of utility installations, such as gas, electric, fuel, steam, sewer, telephone, fiber optic, water, drainage or any other underground installation that may be expected to be encountered during drilling work, will be identified with the appropriate authority. Appropriate authorities include client representatives, utility companies, nonprofit organizations (e.g., "Dig-Safe), and others.

Heavy Equipment

Staff Members must be especially careful and alert when working with contractors who use heavy equipment, since equipment failure or breakage can lead to accidents and worker injury. Cranes and equipment for drilling, pile driving, test pitting and excavation is of special concern. Should these devices fail during operation the likelihood of worker injury is high. Equipment of this nature should be visually inspected and checked for proper working order prior to the commencement of field work. Those that operate heavy equipment must meet all of the requirements to operate heavy equipment. Leader staff members that supervise projects or are associated with such high-risk projects that involve digging should use due diligence when working with a construction firm. Maintain visual contact with operators at all times and keep out of the strike zone whenever possible. Always approach heavy equipment with an awareness of the swing radius and traffic routes of each piece of equipment and never go beneath a hoisted load. High-visibility safety vests must be worn onsite at all times. Avoid fumes created by heavy equipment exhaust.

Noise Reduction

Site activities in proximity to heavy equipment often expose workers to excessive noise. It is anticipated that situations may arise when noise levels may exceed the OSHA Action Level of 85 dBA in an 8-hour time-weighted average (TWA). An example of this possibility is working in close proximity to the subcontractor during drilling activities onsite. If excessive noise levels occur, efforts will be made to control this by issuance of earplugs to all personnel and by implementing a system of hand signals understood by all.

Work Site Access & Controls (Standard Precautions) Excavations

Staff Members must be especially careful and alert when working with contractors who use heavy equipment, since equipment failure or breakage can lead to accidents and serious worker injury. Equipment with a fast or wide swing radius should be of special concern. Should these devices fail during operation the likelihood of worker injury is high. Those that operate heavy equipment must meet all of the requirements to operate heavy equipment. Leader staff members that supervise projects or are associated with such high-risk projects that involve digging should use due diligence when working with a construction firm.

- Excavations greater than 5' in depth are not to be entered unless properly sloped, shored, or benched. Heavy equipment operators are responsible for the safety of the excavation.

  Operators must be deemed a competent person per OSHA regulations and shall ensure that the excavation is safe to enter if any Leader staff member is to enter the hole. Leader staff members are to consult with the competent person prior to entering any excavation. This means that the hole must be sloped, shored or benched in accordance to OSHA's Construction Standard for excavations.
- No Leader staff member is to enter the excavation unless they have determined that there is no potential for injury such as cave ins.
- It is the contractor's responsibility to safeguard all effected workers from falling into any excavation by the use of barrier's and warning signs.
- No excavation is to be left open, unattended when there is a possibility for workers to fall into the excavation. Barricades must be placed around the hole at night when the depth is greater than 4'. This is responsibility of the contractor.
- Keep all equipment at a minimum of 10' away from energized electrical lines.
- Leader staff members will be required to wear an orange safety vest while in the immediate area where heavy equipment is being used.

Excavation and Trenching Safety

The following is a list of minimum requirements for trenching and excavating. Each excavation/trench/shoring project is different; therefore, the Contractor/Consultant Project Manager is responsible for evaluating site specific conditions and making appropriate provisions in the task-specific health and safety requirements in conformance with 29 CFR 1926 Subpart P - Excavations.

- Contractor will contact the proper utilities to obtain clearance. Prior to work, review the utilities in the area and be sure they have been staked properly.

- Be aware that trenches and excavations deeper than five feet require additional
- walls safety precautions, such as shoring.

- The and faces of all excavations and trenches more than five feet deep, in which a staff member is exposed to danger from moving ground, will be guarded by a shoring system, sloping of the ground, or some other equivalent means.

- For excavations or trenches in which a staff member may be required to enter, excavated or other material will be effectively stored and retained at least two feet or more from the edge of the excavation or trench.

- The Contractor/Consultant Site Coordinator will make daily inspections of excavations. If evidence of possible cave-ins or slides is apparent, all work in the excavation will cease until the necessary precautions have been taken to safeguard staff members.

- Trenches more than four feet deep will have ladders or steps located so as to require no more than 25 feet of lateral travel to exit.

- Hard hats and other personal protective equipment will be worn at all times during any type of excavating or trenching operation.

- Determine soil composition (e.g., through soil sampling, soil maps, etc.) and other relevant site conditions, with special emphasis on conditions conducive to cave-ins.

- Monitor the atmosphere in and around trenches on a regular basis to check for explosive, toxic or otherwise dangerous gases and vapors.

- The Contractor/Consultant Project Manager will ensure that all staff members involved in the excavation activity have appropriate training in safe trenching practices, with emphasis on factors such as:

    - utility line identification
    - cave-in prevention measures
    - recognition of conditions which may cause cave-ins
    - means of egress from trench

- Water will not be allowed to accumulate in any excavation. Utilize ditches, dikes, pumps, or other means to keep surface water out of trenches.

- All open excavations must be well marked and barricaded.

Excavation Cave-In Hazards

- The following conditions increase the likelihood of cave-in: Soil materials composed of unconsolidated, uncompacted, and/or rounded particles (See 29 CFR 1926 Subpart P - Excavation Standard). Special care must be used when trenching in areas that have previously been excavated and backfilled.

- Soils, which have a high water, content, or have been subjected to freeze-thaw or frost-heaving.

- Loading of trench walls by adjacent equipment, supplies, structures, "back-dirt" piles, etc.

- Vibration due to equipment operating near excavations.

- Trench walls that are steeper than the angle of repose of the material composing the walls.

- Deep trenches (i.e., high trench walls).

    - The following precautions should be used to prevent cave-ins in all trenches in excess of 4 ft. deep. These precautions should also be used in trenches less than 4 ft. deep whenever those site conditions just listed indicate the likelihood of a cave-in:

- Sloping: Trench walls should be sloped to the correct angle of repose.

    - Shoring: Vertical trench walls (unless composed of solid rock) must be shored and braced, or restrained with movable trench boxes, to prevent cave-in. A registered professional engineer must design shoring systems and meet accepted engineering requirements.

The work area is restricted to authorized personnel. Clearly define the work area before beginning activities for the day. Caution tape and safety cones must be provided as necessary for vehicular traffic concerns and to protect passers-by. Proper housekeeping is essential to avoid creating hazards to pedestrian and vehicular traffic. Excavations in progress will not be left unattended at any time. Running equipment will not be left unattended at any time. Test borings and test pits will be backfilled upon completion and the area restored. Drilling equipment and heavy construction equipment will be secured above test borings or excavations during work stoppages and at the end of the workday.

Site Security

Site activities will be conducted with the permission of the property owner. Site access by vehicle restricted by locking gates.

Weather Related Hazards

Heat Stress

Heat stress on hazardous waste sites or construction sites usually is a result of protective clothing decreasing natural body ventilation, although it may occur at any time work is being performed at elevated ambient temperatures. Because heat stress is one of the most common and potentially serious illnesses associated with hazardous waste site work, regular monitoring and other preventative measures are vital.

Site workers must learn to recognize and treat the various forms of heat stress. The best approach is preventative heat stress management. In general:

- Workers should drink 16 ounces of water before beginning work, such as in the morning or after lunch. The water should be maintained at 50 to 60^{O}F. Workers should drink 1 to 2-4 ounce cups of water every 30-60 minutes. A cool area for rest breaks should be designated, preferably air-conditioned. The use of alcohol during non-working hours and the intake of caffeine during working hours can lead to an increase in susceptibility to heat stress. Monitor for signs of heat stress.

- Workers should acclimate to site work conditions by slowly increasing workloads, i.e., do not begin site work activities with extremely demanding activities. This acclimation process may require up to two weeks for completion.

- Cooling devices should be used to aid natural body ventilation. These devices, however, add weight, and their use should be balanced against worker efficiency. An example of a cooling aid is long cotton underwear, which acts as a wick to help absorb moisture and protect the skin from direct contact with heat-absorbing protective clothing.

- Installed mobile showers and/or hose-down facilities should be used to reduce body temperature and cool protective clothing in serious heat stress situations.

- In hot weather, field activities should be conducted in the early morning or evening.

- Adequate shelter should be available to protect personnel from heat, as well as cold, rain, snow, etc., which can decrease physical efficiency and increase the probability of both heat and cold stress. Set up a command post in the shade or erect temporary shade at the workstation if practical.

- In hot weather, rotate shifts of workers with potential heat stress exposure.

- Good hygienic standards must be maintained by frequent changes of clothing and showering. Clothing should be permitted to dry during rest periods. Persons who develop skin problems should immediately consult medical personnel.

Effects of Heat Stress

If the body's physiological process fails to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur ranging from mild (such as fatigue, irritability, anxiety, and decreased concentration, dexterity, or movement) to fatal.

Heat-related problems are:

HEAT STROKE: An acute and dangerous reaction to heat exposure caused by failure of heat regulating mechanisms of the body; the individual's temperature control system that causes sweating stops working correctly. Body temperature rises so high that brain damage and death will result if the person is not cooled quickly.

Symptoms: Red, hot, dry skin, although person may have been sweating earlier; nausea; dizziness; confusion; extremely high body temperature; rapid respiratory and pulse rate; unconsciousness or coma.

Treatment: Cool the victim quickly and obtain immediate medical assistance. If the body temperature is not brought down fast, permanent brain damage or death may result. Soak the victim in cool but not cold water, sponge the body with rubbing alcohol or cool water, or pour water on the body to reduce the temperature to a safe level (102oF). Observe the victim and obtain medical help. Do not give coffee, tea or alcoholic beverages.

HEAT EXHAUSTION: A state of definite weakness or exhaustion caused by the loss of fluids from the body. This condition is much less dangerous than heat stroke, but it nonetheless must be treated.

Symptoms: Pale, clammy, moist skin, profuse perspiration and extreme weakness. Body temperature is normal, pulse is weak and rapid, and breathing is shallow. The person may have a headache, may vomit, and may be dizzy.

Treatment: Remove the person to a cool place, loosen clothing, and place in a head-low position. Provide bed rest. Consult physician, especially in severe cases. The normal thirst mechanism is not sensitive enough to ensure body fluid replacement. Have patient drink 1 to 2 cups water immediately and every 20 minutes thereafter until symptoms subside. Total water consumption should be 1 to 2 gallons per day.

HEAT CRAMPS: Caused by perspiration that is not balanced by adequate fluid intake. Heat cramps are often the first sign of a condition that can lead to heat stroke.

Symptoms: Acute painful spasms of voluntary muscles (e.g., abdomen and extremities).

Treatment: Remove the victim to a cool area and loosen clothing. Have the patient drink 1 to 2 cups water immediately, and every 20 minutes thereafter until symptoms subside. Total water consumption should be 1 to 2 gallons per day.

HEAT RASH: Caused by continuous exposure to heat and humid air and aggravated by chaffing clothes. Decreases ability to tolerate heat.

Symptoms: Mild red rash, especially in areas of the body on contract with protective gear.

Treatment: Decrease amount of time in protective gear and provide powder to help absorb moisture and decrease chaffing.

Cold Stress

Persons working outdoors in low temperatures, especially at or below freezing are subject to cold stress. Exposure to extreme cold for a short time may cause severe injury to the surface of the body, or result in profound generalized cooling, causing death. Areas of the body that have high surface area-to- volume ratio, such as fingers, toes, and ears, are the most susceptible.

Two factors influence the development of a cold injury: ambient temperature and the speed of the wind. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. For instance, 10o F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at -18oF.

As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 mph increases to 10 mph. In addition, water conducts heat 240 times faster than air. Thus, when chemical- protective equipment is removed the body cools suddenly if the clothing underneath is perspiration soaked. Warm, dry clothing must be available and donned as soon as possible when these conditions are present.

Frostbite

Local injury resulting from cold is included in the generic term frostbite. There are several degrees of damage. Frostbite of the extremities can be categorized into:

Frost nip or incipient frostbite: sudden blanching or whitening of the skin.

Superficial frostbite: skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.

Deep frostbite: tissues are cold, pale, and solid; extremely serious injury.

To administer first aid for frostbite, bring the victim indoors and heat the areas quickly in water between 102 and 105-degrees F. (39 and 41 degrees C). Never place frostbitten tissue in hot water as the area will have a reduced heat awareness and such treatment could result in burns.

Give a warm drink - not coffee, tea or alcohol. The victim should not smoke. Keep the frozen parts in warm water or covered with warm clothes for 30 minutes, even though the tissue will be very painful as it thaws. Then elevate the injured area and protect it from injury. Do not allow blisters to be broken. Use sterile, soft, dry material to cover the injured areas. Keep victim warm and get immediate medical care.

After thawing, the victim should try to move the injured areas slightly, but no more than can be done alone, without help.

Do not rub the frostbitten area, use ice, snow, gasoline or anything cold on frostbite, use heat lamps or hot water bottles to rewarm the frostbitten area, place the frostbitten area near a hot stove.

Hypothermia

Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperature. Its symptoms are usually exhibited in five stages:

- shivering;
- apathy, listlessness, sleepiness, and sometimes rapid cooling of the body to less than 95^{O}F.
- unconsciousness, glassy stare, slow pulse, and slow respiratory rate;
- freezing of the extremities;
- death.

The ultimate responsibility for postponing or delaying work at a site due to inclement weather rests with the Project Manager.

Leader employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. Refer to OP1003-Cold Stress and OP1015-Heat Stress for discussion on weather hazards.

Poison Ivy

Grows everywhere in United States. In the East, Midwest, and the South, it grows as a vine. In the Northern and Western United States, it grows as a shrub. Each leaf has three leaflets. Leaves are green in the summer and red in the fall. In the late summer and fall, white berries may grow from the stems. The signs and symptoms of exposure include the following:

- Itching
- Redness
- Burning sensation
- Swelling
- Blisters
- Rash (may take up to 10 days to heal).

Potential mitigation for control includes the following:

- Wear long-sleeved shirts and long pants, tucked into boots. Wear cloth or leather gloves.
- Apply barrier creams to exposed skin.
- Educate workers on the identification of poison ivy, oak, and sumac plants.
- Educate workers on signs and symptoms of contact with poisonous ivy, oak, and sumac.
- Keep rubbing alcohol accessible. It removes the oily resin up to 30 minutes after exposure.

5. PROTECTIVE MEASURES

Personal Protective Equipment Requirements:

Required PPE	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8
	GW Monitoring /Sampling	Pad Demolition	Decommission Wells	Excavation and Site Prep	CAMP	Foundation Excavation	Replace Monitoring Wells	Install SSDS
Hard hat	✓	✓	✓	✓	✓	✓	✓	✓
Safety glasses w/side shields	✓	✓	✓	✓	✓	✓	✓	✓
Steel-toe footwear	✓	✓	✓	✓	✓	✓	✓	✓
Hearing protection (plugs, muffs)		✓	✓	✓		✓	✓	✓
Tyvek ™ coveralls								
PE-coated Tyvek™ coveralls								
Boots, chemical resistant								
Boot covers, disposable								
Leather work gloves		✓	✓	✓		✓	✓	✓
Inner gloves – Non-Latex	✓	✓						
Outer gloves – Butyl rubber								
Tape all wrist/ankle interfaces								
Half-face respirator*								
Full-face respirator*								
Organic vapor cartridges								
Acid gas cartridges								
Other cartridges: Enter type here								
P-100 (HEPA) filters								
Face shield								
Personal Flotation Device (PFD)								

Required PPE	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8
	GW Monitoring /Sampling	Pad Demolition	Decommission Wells	Excavation and Site Prep	CAMP	Foundation Excavation	Replace Monitoring Wells	Install SSDS
High-Visibility Safety Vest	✓	✓	✓	✓	✓	✓	✓	✓
Other:								
Level of protection required [C or D]:	D	D	D	D	D	D	D	D

The required PPE checked in any box above must be on site during the task being performed. Work shall not commence unless the required PPE is present.

Site Safety Equipment Requirements:

Items that are required to be on site.

- Fire Extinguisher
- Two-way radio
- First Aid Kit
- Cellular Phone
- Barricade Tape
- Safety Cones
- Flashlight
- Duct Tape

Site Safety Equipment

The required equipment above must be on site during the task being performed. Work shall not commence unless the equipment is present.

6. MONITORING PLAN AND EQUIPMENT

Air/exposure monitoring is not required at this work site for personal protection.

Perimeter monitoring is required for community protection when work is conducted in potentially contaminated areas of the Site

Required Monitoring/Screening Equipment

- Photo-Ionization Detector (PID) 10.2eV
- Dust Monitors (RAMS required during excavation, soils transport activity
- Colorimetric Tubes – Vinyl chloride

The required equipment checked in any box above must be on site. Work shall not commence unless the equipment is present.

Standard Action Levels and Required Responses:

Exposure Guidelines for common contaminants are listed in Table 1 - Occupational Exposure Limits in the Chemical Hazards section above.

Requirements for PPE upgrades based on monitoring are in Table 2 - Monitoring Methods, Action Levels and Protective Measures following the Specific Monitoring Requirements section below.

Action levels for readings obtained with a multiple gas detector are listed below.

Instrument	Normal	Operating levels	Action levels – required responses
Oxygen Meter	20.9%	Between 19.5-23.5%	Below 19.5 %: leave area, requires supplied air Above 23.5%: leave area, fire hazard
CGI	0%	Less than 10%	Greater than 10%: fire/explosion hazard; cease work
Hydrogen Sulfide	0%	Less than 10 ppm.	Greater than 15 ppm (or 10 ppm for 8 hrs) requires supplied air respirator
Carbon Monoxide	0%	Less than 25 ppm	Greater than 200 ppm for 1 hour (or 25 ppm for 8 hrs) requires supplied air respirator

Standard Air Monitoring Plan (Volatiles)

- Prior to the beginning of work obtain background readings with the PID away from the site.
- Monitor the breathing zone when site soil is exposed (e.g. while drilling or excavating is occurring, etc.) with the PID.
- Monitoring should be conducted most frequently (e.g., every 15-30 minutes) when drilling or excavation first begins in a particular area and when soil is removed from the hole. After this, and if no exceedances of exposure limits are noted (see below), monitoring may be conducted less frequently (e.g., every 60 minutes).
- Leader general exposure limits will be used when a mixture of potentially volatile chemicals is suspected to be present in soil at the site.

In summary, if a reading of 5 ppm above background is detected with the PID for 5 minutes or longer, back away for a few minutes. Screen the air with dragger tubes to determine level of vinyl chloride. If VC is greater than 1 ppm sustained don respiratory protection. Screen the air again after any vapors/gases have been given a chance to dissipate. If 5 ppm above background is still noted, upgrade PPE and contact the LHSC and PM for further guidance.

- Record monitoring data and PPE upgrades in field book or on Record of Field Monitoring form and maintain with project files.

- Air monitoring for exposure should be based on the frequency established under the Standard Air Monitoring Plan or under the Specific Monitoring Requirements. Record time, location and results of monitoring and actions taken based upon the readings.

Specific Monitoring Requirements:

Monitoring requirements and frequency is indicated by task and location below.

Task Number:	1, 2,3	Frequency	Continuous in the worker breathing zone	If total organic vapors exceed 10 ppm or are sustained at 5 ppm for 5 minutes in the breathing zone, conduct measurements with Vinyl chloride dragger tubes. If VC is greater than 1 ppm and/or VOCs continue to be sustained at 5 ppm upgrade protection to respirators.
Task Number	2, 4	Frequency	Continuous CAMP monitoring (Dust, PID) upwind and downwind	CAMP monitoring to be conducted continuously during any excavation or materials (soils) transport activity and dust control should be implemented when Measured level exceeds action level.

TABLE 2
Revised January 2020

MONITORING METHOD, ACTION LEVELS AND PROTECTIVE MEASURES

INSTRUMENT	HAZARD	ACTION LEVEL	ACTION RESPONSE
Respirable Dust Monitor	Total Particulates	> 5 mg/m^3	Upgrade to Level C Protection
OVA, HNU[2], Photovac Microtip	Total Organic Vapors	Background	Level D Protection
		10 ppm > background or lowest OSHA permissible exposure limit, whichever is lower, or as modified for this task. Sustained for >5 minutes in the breathing zone.	Upgrade to Level C - site evacuation may be necessary for specific compounds
		50 ppm over background, unless lower values required due to respirator protection factors	Cease work; upgrade to Level B[3] may be required
Explosimeter[4] (LEL)	Flammable/Explosive Atmosphere	<10% Scale Reading	Proceed with work
		10-15% Scale Reading	Monitor with extreme caution
		>15% Scale Reading	Evacuate site
0xygen Meter[5]	Oxygen-Deficient Atmosphere	19.5% - 23.5% 0_2	Normal - Continue work
		< 19.5% 0_2	Evacuate site; oxygen deficient
		> 23.5% 0_2	Evacuate site; fire hazard
Radiation Meter[6]	Ionizing Radiation	0.1 Millirem/Hour	If > 0.1, radiation sources may be present[7]
		> 1 Millirem/Hour	Evacuate site; radiation hazard
Drager Tubes	Vapors/Gases	Species Dependent > 1 ppm vinyl chloride > 1 ppm benzene > 1 ppm 1,1-DCE	Consult Table 1 or other resources for concentration toxicity/detection data. Upgrade to Level C if concentration of compounds exceed thresholds shown at left. May need to cease work if other levels exceeded - site Specific
Gas Chromatograph (GC)	Organic Vapors	3 ppm total OV > background or > lowest specific OSHA permissible exposure limit, whichever is lower.	On-site monitoring or tedlar bag sample collection for off-site/laboratory analysis

Notes:

1. Monitor breathing zone.
2. Can also be used to monitor some inorganic species.
3. Positive pressure demand self-contained breathing apparatus
4. Lower explosive limit (LEL) scale is 0-100%. LEL for most gasses is 15%.
5. Normal atmospheric oxygen concentration at sea level is 20%
6. Background gamma radiation is ~0.01-0.02 millirems/hour.
7. Contact Leader Health and Safety staff immediately.

Calibration and Use of Equipment

Calibrate all monitoring equipment in accordance with manufacturers requirements, Leader calibration (OP) standards and site-specific requirements (e.g., at the beginning and end of each workday).

Calibration of equipment shall be documented in the field notes or Daily Field Report (DFR). Documentation should include:

- Date/time
- Zero reading before calibration
- Concentration of calibration gas
- Reading obtained with calibration gas before adjusting span
- Final reading obtained with calibration gas after adjusting span

Respirable Aerosol Monitors for Particulate

A respirable aerosol monitor (RAM) allows field staff to assess whether airborne particulates have reached elevated levels. This portable real-time aerosol monitor measures mass concentrations of airborne dust, smoke, mists, haze and fumes, and also provides continuous real-time readouts. Auto- ranging digital display provides both real-time and time-averaged concentrations and large-capacity onboard data logging capability saves concentration data for future analysis.

Many instruments provide respirable, “PM-10” and “PM-1” correlated measurements with special nozzle attachments. For example, respirable particles or particulate matter smaller than 10 microns equivalent aerodynamic diameter (PM-10), a size-selective inlet is used to capture only those particles with a size of 10 microns or less. Most attachments like these will have to be rented or purchased separately.

Two smaller versions of the RAM are the MiniRAM and the DataRAM (MIE, Inc.) that are also direct reading monitor for dust, aerosols, fumes and mists. For example, the PDM-3 (MIE, Inc.) is a real-time monitoring instrument capable of sensing and measuring aerosol concentrations over the range of 0.01 to 100 mg/m3. Used with the optional Cyclone, the MiniRAM will monitor respirable particulate.

The MiniRAM aerosol monitor’s analog output is then connected to a data-logger designed specifically for this type of equipment. When the data collection is complete, the data logger will be downloaded into a personal computer for analysis and results. A database of exposure

measurements will be constructed with a 1-sec interval between the concentration measurements. The DataRAM, provides the same type of function with a built-in data-logger.

The database will be imported into a spreadsheet program, which will be used to plot the real-time information and to provide a graphic display of the relative dust concentrations during the worker's activities.

Respirator Use and Maintenance Overview

Staff member exposures to airborne contaminants should always be reduced as much as possible through engineering controls, substitution and/or work practices. If exposure cannot be controlled through the above methods, respiratory protection will be used to ensure Staff Members exposures are maintained below regulatory levels.

Medical Evaluations:

Before a Staff member is issued a respirator, they will be enrolled in and approved through the medical monitoring program.

Fit-Testing Procedures:

All Staff members that are issued a respirator will be fit tested annually. Staff members with beards, long sideburns or other forms of facial hair which contact the sealing surface of the respirator are not fit tested and cannot wear respirators. Staff members who have significant weight change, major dental surgery or facial surgery are required to notify the appropriate health and safety personnel in their organization so they can be re –fitted.

Respirator Procedures:

Respirator inspection, maintenance, storage and use are the responsibility of the individual to whom the respirator was issued. Respirators should be inspected for cracks, tears or loss of integrity, shape and general condition, condition of exhalation and inhalation valves, and head adjustment straps, and cartridge installation.

Respirator Maintenance and Repair:

Respirators should be maintained according to manufacturer specifications and any worn or damaged parts should be replaced with appropriate replacement parts. Damaged respirators that cannot be repaired should be discarded.

Storage:

Respirators should be stored in their original shipping container or other container that protects the article from damage or contamination. The storage container should be labeled with the appropriate Staff Members name. Respirators should be cleaned with a mild soap and water solution, disinfectant and thoroughly inspected prior to storage.

Cartridge Selection and Change-out:

Only NIOSH approved cartridges will be used. The cartridges will be selected based upon the types of contaminants and expected exposure levels.

Because of variability in the field and environmental exposures including temperature, humidity and contaminant level, and the lack of useful indicators of effective coverage, the following change-out schedule will be used:

Organic Vapors	8 hours, project completion or odor
Acid Gas	8 hours, project completion or odor
Particulate Only	24 hours of use, increased breathing resistance or project completion

At the completion of all projects requiring respiratory protection, the cartridges will be discarded, the respirator will be disinfected and stored properly.

Training

OSHA-required training as it relates to respiratory protection is provided during the 40-hour HAZWOPER and 8-hour HAZWOPER refresher courses. Additional training may be necessary for specific project demands to ensure Staff Members are aware of a specific site condition.

7. DECONTAMINATION AND DISPOSAL METHODS

Personal Hygiene Safeguards

The following minimum personal hygiene safeguards shall be adhered to:

- No eating or drinking in the exclusion zone.
- It is required that personnel present on site wash hands before eating, smoking, taking medication, chewing gum/tobacco, using the restroom, or applying cosmetics and before leaving the site for the day.
- It is recommended that personnel present on site shower or bathe at home at the end of each day of working on the site.

Standard Personal Decontamination Procedures

Outer gloves and boots should be decontaminated periodically as necessary and at the end of the day. Brush off solids with a hard brush and clean with soap and water or other appropriate cleaner whenever possible. Remove inner gloves carefully by turning them inside out during removal. Wash hands and forearms frequently. It is good practice to wear work-designated clothing while on-site which can be removed as soon as possible. Non-disposable overalls and outer work clothing should be bagged onsite prior to laundering. If gross contamination is encountered on-site contact the Project Manager and LHSC to discuss proper decontamination procedures. The steps required for decontamination will depend upon the degree and type of contamination but will generally follow the sequence below.

1. Remove and wipe clean hard hat
2. Rinse boots and gloves of gross contamination
3. Scrub boots and gloves clean
4. Rinse boots and gloves
5. Remove outer boots
6. Remove outer gloves
7. Remove Tyvek coverall
8. Remove respirator, wipe clean and store
9. Remove inner gloves

Location of Decontamination Station

TBD

Disposal of PPE

PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles. PPE that is grossly contaminated must be bagged (sealed) and field personnel should communicate with the Project Manager to determine proper disposal.

Tools & Equipment Decontamination

All decontamination should be conducted at the site and not at the office or lab.

Check all equipment and materials needed for decontamination of tools and other equipment.

- Alconox soap
- Brushes
- Disposable bags
- Five gallon pails
- Distilled water
- Drums for water
- Poly sheeting
- Steam cleaner
- Tap water
- Paper towels

Standard Equipment Decontamination Procedures

Air monitoring instrumentation and delicate instruments that are difficult to decontaminate or sensitive to water should be protected from contamination during use through the use of plastic sheeting. To the extent possible, efforts should be taken to limit the degree of contamination to hand tools and sampling equipment during use. Proper PPE must be worn while performing decontamination, including the wearing of chemical safety goggles and gloves. Storage or transport of decontamination solvents in squirt bottles is not permitted as they may discharge their contents upon ambient temperature change or leak if overturned. Standard equipment decontamination procedures are as follows. Any additional requirements are listed under Specific Equipment Decontamination Procedures below.

Pretreatment of heavily contaminated equipment may be conducted as necessary:

1. Remove gross contamination using a brush or wiping with a paper towel
2. Soak in a solution of Alconox and water (if possible)
3. Wipe off excess contamination with a paper towel
4. Clean with hexane or acetone and allow to dry

Standard decontamination procedure:

1. Wash using a solution of Alconox and water
2. Rinse with potable water
3. Rinse with methanol
4. Rinse with distilled water

Standard Disposal Methods for Contaminated Materials

Excess sample solids, decontamination materials, rags, brushes, poly sheeting, etc. that are determined to be free of contamination through field screening can usually be disposed into client-approved, on-site trash receptacles. Uncontaminated wash water may be discarded onto the ground surface away from surface water bodies in areas where infiltration can occur. Contaminated materials must be segregated into liquids or solids and drummed separately for offsite disposal. Any additional requirements are listed under Specific Disposal Methods for Contaminated Materials below.

8. CONTINGENCY PLANNING

How Leader responds to an emergency depends on whether we are at an active facility or another other location. Many active facilities have very stringent requirements for the mitigation of emergencies. Therefore, the PM is responsible for identifying any specific requirements from the client contact.

As a rule of thumb, the following are Leader's basic responses to handling Emergencies. Typically, Leader does not mitigate emergencies. When Clients request or require specific functions such as First Aid/CPR trained personnel on site, we typically conform. Before any Project Manager or LHSC agrees to something more stringent, many issues should be considered such as training, safety, feasibility of an adequate response, insurance requirements, and much more.

Fire

- Major Fires - Major fires will be mitigated by the local fire departments or by client's on-site fire/emergency response departments.
- Incipient Stage Fires -Incipient stage fires will be extinguished by on-site personnel using fire extinguishers. Only those who have received annual training may use an extinguisher.

Medical

All Leader employee injuries and illnesses will be documented using the Supervisor's Accident/Injury/ Near Miss Report (SAIR). This form is available on the Internet.

- First Aid - First aid will be addressed using the on-site first aid kit. Leader employees are not required or expected to administer first aid/CPR to any Leader, Contractor, or Civilian personnel at any time and it is Leader's position that those who do are doing it on their behalf and not as a function of their job.

- Trauma - Based upon the nature of the injury, the injured party may be transported to the nearest hospital or emergency clinic by on-site personnel or by ambulance. First response to a trauma incident is to call 911 or facility security. LEADER staff members are expected to assist in ancillary roles only such as directing ambulances to the scene. It is the discretion of the staff member on site whether an ambulance should be procured in remote locations where ambulance services will not be effective.

Hazardous Materials Spill

- Small incidental spills (e.g. pint of motor oil) caused by Leader employees and/or by the contractor will be mitigated by the Leader staff member and/or the contractor.
-
- Large spills (e.g. large leak from heavy equipment fuel tank). The contractor is responsible for cleanup. In the event that it possesses a serious human or environmental threat, the local Fire Department and/or client emergency response department will be contacted. Once emergency has been mitigated typically clean-up will be provided by a vendor.

Rescue

Leader employees will not enter any confined spaces for rescue purposes.

Weather Related Emergencies

Leader employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. If applicable, safeguards against the effects and hazards of heat stress, cold stress, frostbite, thunderstorms, and lightning, etc. should be included with the section pertaining to physical hazards in this HASP.

Evacuation Alarms

Evacuation alarms and/or emergency information will be communicated among personnel on site through verbal communication.

Emergency Services

Emergency services will be summoned via on-site or cellular phone.

Emergency Evacuation Plan

The site evacuation plan is as follows:

1. Establish a designated meeting area to conduct a head count in the event of an emergency evacuation.
2. If the work area is not near an emergency exit, exit via the closest route and meet at the designated meeting area.
3. Notify emergency response personnel (fire, police and ambulance) of the number of missing or unaccounted-for employees and their suspected location.
4. Administer first aid will in the meeting area as necessary.

Under no circumstances should any personnel re-enter the site area without the approval of the corporate H&S manager, the H&S coordinator, and the fire department official in charge.

Reporting Incidents

Detailed reporting procedures for work-related accidents and incidents involving LEADER staff members consist of the following sequential steps:

1. **Initial notification** - The staff member who is injured or otherwise directly involved in a work-related incident is responsible for immediately notifying his/her supervisor (staff manager) of the event. Obviously, any other staff member present at the site may make the notification if the injury is serious and/or debilitating.

2. **Secondary notifications** - The staff manager shall notify his/her Local H&S Coordinator (LHSC) of the accident/incident as soon as possible after the initial response is completed. If a serious work-related injury occurs, the staff manager shall also directly notify the Corporate H&S Manager. The LHSC shall notify the Corporate H&S Manager in all minor cases. The Corporate H&S Manager will, in turn, be responsible for notifying senior Leader management, via email and/or phone, as necessary.

All work-related injuries, illnesses, and near misses shall be reported to the LHSC, regardless of severity. Thus, at a minimum, all first aid cases must be reported. It is not the responsibility of the staff manager or project manager to determine what shall be reported to the LHSC. The LHSC will work closely with the CHSM to determine reportability and recordability of an injury/illness on each case.

3. **Accident report -** After the initial response (medical attention, etc.) is completed, the accountable staff manager is responsible for initiating an investigation into the cause of the accident/incident and for completing the Leader online accident/incident report form.

4. The staff manager is responsible for completing the online submission by the close of business on the day following the event (24 hours).

5. **Report distribution –** Copies of the report shall immediately be forwarded through the Online Incident Reporting system on HANK to the Corporate HR Representative This is the responsibility of the LHSC. In the event that the LHSC is not available, the staff manager will be delegated the responsibility.

6. **Corrective actions -** The staff manager and LHSC (with input from the injured staff member and other staff members involved in the incident) are responsible for determining a course of action to ensure that the accident/incident does not occur again. Responses to serious work-related accidents or incidents may require the approval of the Corporate H&S Manager and senior management.

It is important that all Leader staff members understand these reporting procedures and the significance of the role of the staff member's staff manager in the process of responding to and reporting on-the-job injuries, illnesses and near misses.

Seeking Medical Attention

The staff member should seek emergency medical services from an institution that is convenient for the services needed, such as a clinic, hospital, etc. If the injury is not an emergency, but medical treatment is required, refer the staff member to the listed Liberty Mutual Health Care Provider closest to the office – see emergency contact list at the beginning of this HASP.

9. HEALTH & SAFETY PLAN ACKNOWLEDGEMENT FORM

I hereby acknowledge receipt and briefing on this Health & Safety Plan prior to the start of on-site work and declare that I understand and agree to follow the provisions and procedures set forth herein while working on this site.

PRINTED NAME	SIGNATURE	DATE

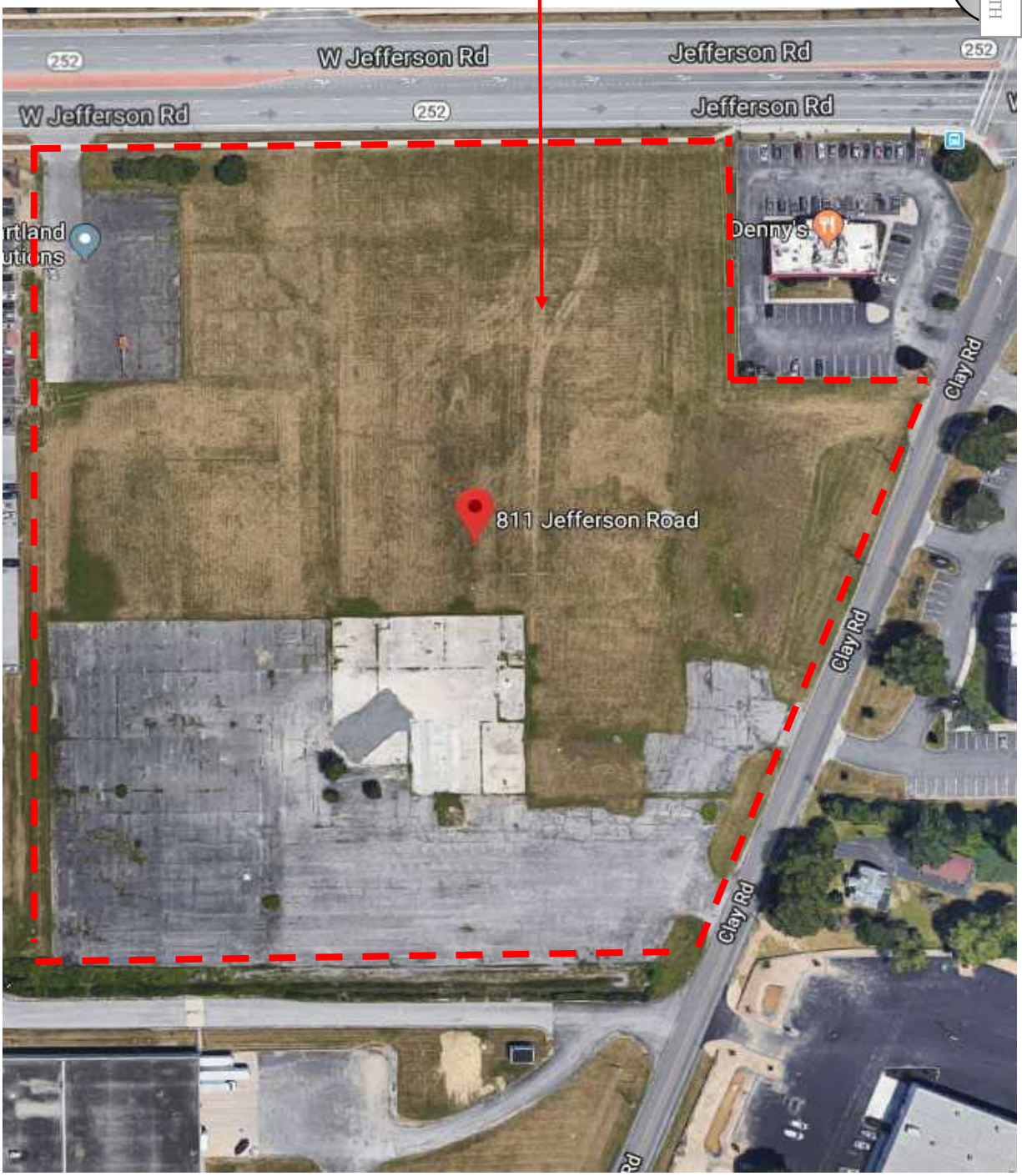
10. PRE-JOB SAFETY CHECKLIST

The following checklist is designed to help Project Managers verify that all Health & Safety requirements are satisfied for projects involving site work and to aid in the preparation of the site-specific HASP.

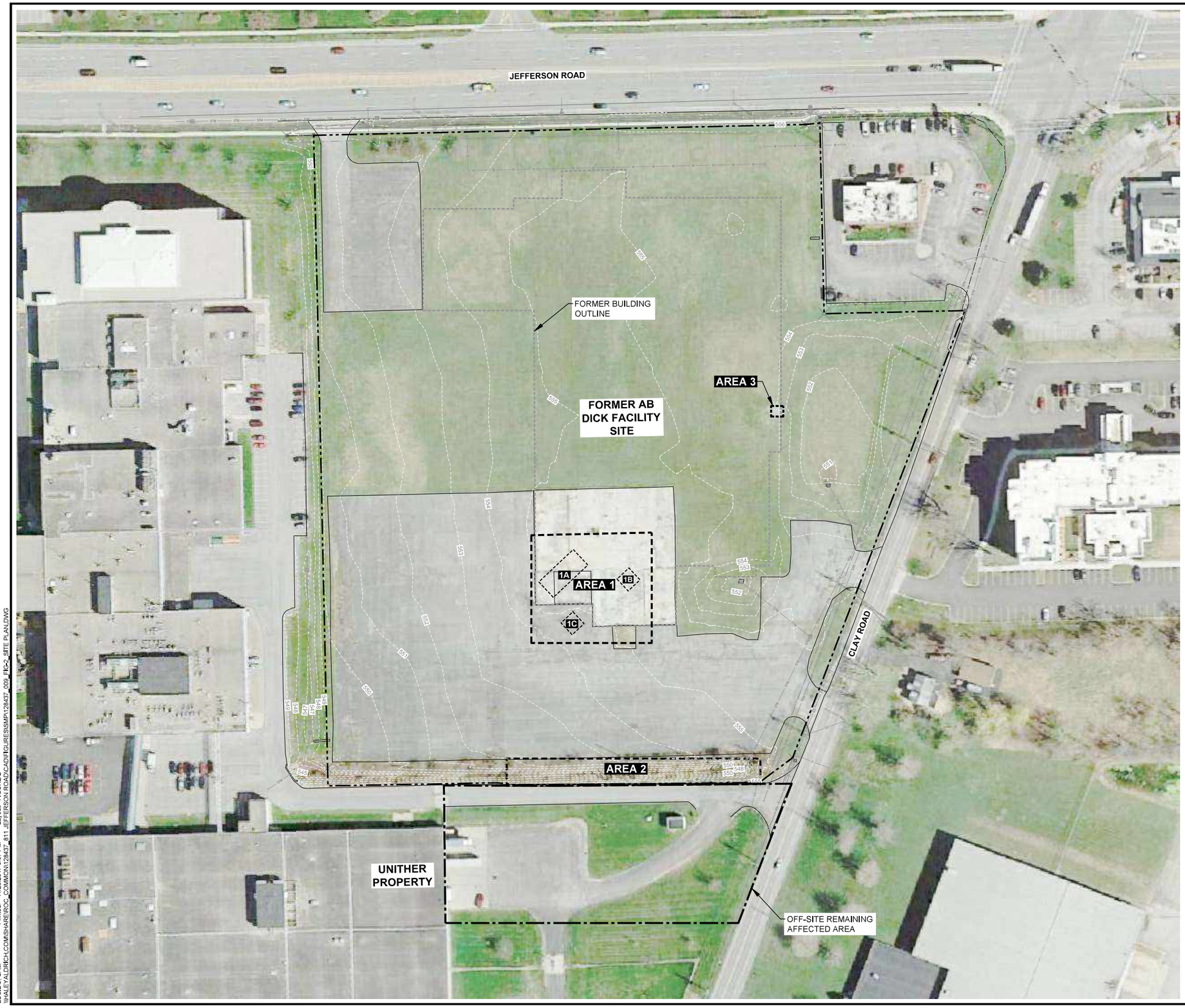
Please initial and date the appropriate box once each requirement has been satisfied prior to commencement of site work.

No.	Project H&S Requirements	Approval by PM or LHSC (initial each box or place NA)	Date Approved
1	Project site history has been researched and summarized, current site conditions have been determined and documentation of previous investigations, risk analyses and chemical data has been assembled and summarized.		
2	Project work scope has been outlined and potential chemical and physical hazards associated with work tasks have been identified.		
3	Personnel to be involved with the project have been identified and are current with medical surveillance, OSHA 40 hour and 8-hour refresher training if required. Hazwoper site supervisor requirements are satisfied if required.		
4	Client's additional H&S requirements have been met: e.g. facility safety orientations, safety documentation, meetings, special PPE requirements		
5	MSDSs are on site and available for chemicals on site.		
6	Safety equipment is available: e.g. flashlight, telephone, ladders, traffic cones, barricade tape, fire extinguisher, first aid kit, PPE, respiratory protection, air and dust monitoring instrumentation (calibrated), personal flotation device (PFD), 90' lifeline with ring, decontamination equipment, etc.		
7	HASP and supporting documentation is complete and signed by all members.		

Approximate Site Location



Title: Site 2018 Satellite Image 811 Jefferson Road Henrietta, New York	Leader Professional Services, Inc 271 Marsh Road-Suite 2 Pittsford, New York 14534 (585) 248-2413 Fax (585) 248-2834	Project 713.032A Date 1/23/2020 Scale NTS	Drawn MGD Checked MPR File Name 2018 Aerial	Figure 1
Prepared For: 811 Jefferson Partners, LLC 90 Goodway Drive Rochester, New York				



LEGEND

- PROPERTY LINE / SITE BOUNDARY
- OFFSITE REMAINING AFFECTED AREA
- AREA OF CONCERN
- FORMER FACILITY BUILDING FOOTPRINT
- EDGE OF CONCRETE/PAVEMENT
- EXISTING IRON ROD
- EXISTING IRON PIPE
- UTILITY POLE
- DECIDUOUS TREE
- MANHOLE
- CATCH BASIN
- WATER OR GAS VALVE
- LIGHT POLE
- RIGHT-OF-WAY LINE
- WATER PIPELINE
- BURIED TELEPHONE CABLE
- UNDERGROUND ELECTRIC LINES
- OVERHEAD ELECTRIC LINES
- SANITARY SEWER
- STORM SEWER
- GAS LINE

NOTES:

1. BASE MAP PROVIDED BY HUNT ENGINEERS ARCHITECTS SURVEYORS, TAX PARCEL NO. 162.08-1-3, JOB NO. 5384-002, DRAWING NAME 5384-002.DWG, DATED AUGUST 23, 2012.
2. SOUTHERN PROPERTY BOUNDARY LINE PROVIDED BY McFARLAND JOHNSON, MARCH 2016.

N

0 60 120 180 240

SCALE IN FEET

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

Project No.:	128437-010
Scale:	AS SHOWN
Date:	NOVEMBER 2017
Drawn By:	KV
Designed By:	KV
Checked By:	SM
Approved By:	SM
Stamp:	

Rev.	Description	By	Date

FORMER AB DICK
FACILITY SITE
811 JEFFERSON ROAD

ROCHESTER, NEW YORK

SITE PLAN

FIGURE 2

Sheet: 02 of 10

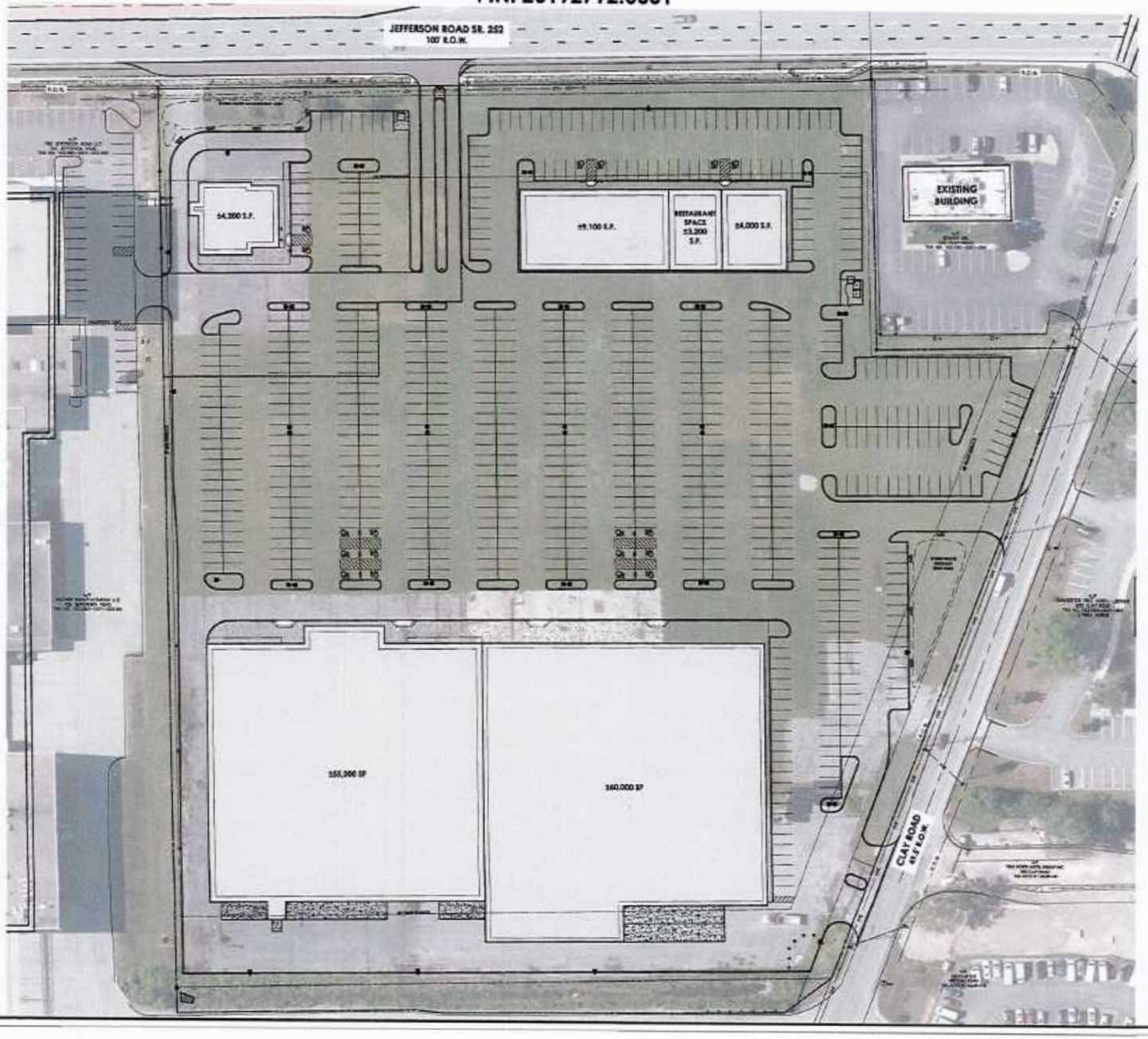
Printed: 11/20/2017 6:07 PM Layout: FIGURE 2
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W:\HALEY\ALDRICH_COM\SHARE\ROC_COMMON\128437_811 JEFFERSON ROAD\CAD\FIGURES\SMP\128437_009_FIG-2_SITE PLAN.DWG

SITE DEVELOPMENT PLANS FOR

811 JEFFERSON ROAD

TOWN OF HENRIETTA, MONROE COUNTY, NEW YORK

P.N. 20192792.0001



PASSERO ASSOCIATES
engineering architecture

DRAWING INDEX

C 101	COVER
C 102	SITE PLAN
C 103	EXISTING CONDITIONS/ DEMO PLAN
C 104	UTILITY PLAN
C 105	GRADING & EROSION CONTROL PLAN
C 106-107	PROFILES
C 108	LANDSCAPING/ LIGHTING PLAN
C 201-205	DETAILS
C 301-303	HYDRANT PLANS

Location Map

FSI
90 GOODWAY DRIVE
ROCHESTER, NY 14623

PASSERO ASSOCIATES

COVER

811 JEFFERSON ROAD

20192792.0001

C 101 | 3

1" = 30'

OCTOBER 2019

APPENDIX A
HASP Amendment Form

This Appendix is to be used whenever there is an immediate change in the project scope that would require an amendment to the HASP. For project scope changes associated with "add-on" tasks, the changes must be made in the body of the HASP. Before changes can be made, a review of the potential hazards must be initiated by the Leader Project Manager.

Amendment No.	
Site Name:	
Work Assignment No.:	
Date:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

Project Manager Signature:_____Date: _____

Local Health and Safety Coordinator:_____Date:_____

This original form must remain on site with the original HASP. If additional HASPs are in the field, it is the Project Manager's responsibility to forward a signed copy of this amendment to those who have copies.

APPENDIX B
Issuance and Compliance
Site Safety Officer Role
and Responsibilities
Training Requirements

This Health & Safety Plan (HASP) has been prepared in accordance with the requirements of Title 29 the Code of Federal Regulations (CFR) Section 1910.120/1926.65 to provide guidance for the protection of onsite personnel from physical harm and chemical exposure while working at the subject site.

The specific requirements of this HASP include precautions for hazards that exist during this project and may be revised as new information is received or as site conditions change.

- This HASP must be signed by all Leader staff members who will work on the project, including Leader visitors. By signing the Health and Safety Plan Acknowledgement Form personnel are acknowledging that they are aware of the specific hazards of the site and agree to follow the provisions and procedures required to safeguard themselves and others from those hazards.
- This HASP or a current signed copy must be retained at the site at all times when Leader staff members are present.
- Deviations from this HASP are not permitted without prior approval from the above signed. Unauthorized deviations may constitute a violation of Leader company procedures/policies and may result in disciplinary action.
- Revisions to this HASP must be outlined within the contents of the HASP. If immediate or minor changes are necessary, the LHSC and Leader Project Manager may use Appendix A (HASP Amendment Form), located in the back of this HASP. Any revision to the HASP requires personnel to be informed of the changes and that they understand the requirements of the change.
- This HASP is not for Leader Subcontractor use. Each subcontractor engaged is responsible for all matters relating to the health and safety of their personnel and the safe operation of their equipment. This HASP will be made available as a reference so that subcontractors are informed of the potential hazards associated with the site to the extent we are aware. Subcontractors must develop their own HASP which must be, at a minimum, at least as protective as this HASP.

- This Site-Specific HASP provides only site-specific descriptions and work procedures. General safety and health compliance programs in support of this HASP (e.g., injury reporting, medical surveillance, personal protective equipment (PPE) selection, etc. are described in detail in the Leader Corporate Health and Safety Program Manual and within Standard Operating Procedures (OPs). Both the manual and OPs can be located on the Company Intranet. When appropriate, users of this HASP should always refer to these resources and incorporate to the extent possible. The manual and OPs are available to clients and regulators per request.

Site Safety Officer

The site safety officer (SSO) is defined as the individual responsible to the employer with the authority and knowledge necessary to implement the HASP and verify compliance with applicable health and safety requirements.

The Leader Project Manager may designate any person as the site safety officer (SSO) and determines the order of authority on site. Usually the highest-ranking person on site is the SSO. A site safety officer must be on site at all times. When none of the designated SSOs are present on site, the senior person for Leader on site will default to the SSO. This project has identified the following hierarchy for SSO.

Site Safety Officer Roles and Responsibilities

The SSO is responsible for field implementation of this HASP and enforcement of safety rules and regulations. SSO functions include:

- Act as Leader's liaison for health and safety issues with client, staff, subcontractors, and agencies.
- Verify that utility clearance has been performed by Leader subcontractors.
- Oversee day-to-day implementation of the HASP by Leader employees on site.
- Interact with subcontractor project personnel on health and safety matters.
- Verify use of required PPE as outlined in the HASP.
- Inspect and maintain Leader safety equipment, including calibration of air monitoring instrumentation used by Leader.
- Perform changes to HASP and document in Appendix A of the HASP as needed and notify appropriate persons of changes.

- Investigate and report on-site accidents and incidents involving Leader and its subcontractors.
- Verify that site personnel are familiar with site safety requirements (e.g. the hospital route and emergency contact numbers).
- Report accidents, injuries, and near misses to the Leader PM and Local Health and Safety Coordinator (LHSC) as needed.

The SSO will conduct initial site safety orientations with site personnel (including subcontractors) and conduct toolbox and safety meetings thereafter with Leader employees and Leader subcontractors at regular intervals and in accordance with Leader policy and contractual obligations. The SSO will track the attendance of site personnel at Leader orientations, toolbox talks, and safety meetings. Subcontractors will document training and provide training rosters to the Leader SSO.

The SSO will report accidents such as injury, overexposure, or property damage to the Local Health and Safety Coordinator, to the Project Manager, and to the safety managers of other on-site consultants and contractors. The SSO will consult with the safety managers of other on-site consultants and subcontractors on specific health and safety issues arising over the course of the project, as needed.

Health and Safety Training Requirements:

Personnel will not be permitted to supervise or participate in field activities until they have been trained to a level required by their job function and responsibility. Leader staff members, contractors, subcontractors, and consultants who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.

The Leader Project Manager/LHSC will be responsible for maintaining and providing to the client/site manager documentation of Leader staff members' compliance with required training as requested. Records shall be maintained per OSHA requirements.

40-Hour Health and Safety Training

The 40-Hour Health and Safety Training course provides instruction on the nature of hazardous waste work, protective measures, proper use of personal protective equipment, recognition of signs and symptoms which might indicate exposure to hazardous substances, and decontamination procedures. It is required for all personnel working on-site, such as

equipment operators, general laborers, and supervisors, who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120.

8-hour Annual Refresher Training

Personnel who complete the 40-hour health and safety training are subsequently required to attend an annual 8-hour refresher course to remain current in their training. When required, site personnel must be able to show proof of completion (i.e., certification) at an 8-hour refresher training course within the past 12 months.

8-hour Supervisor Training

On-site managers and supervisors directly responsible for, or who supervise staff members engaged in hazardous waste operations, should have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120. Supervisor Training includes, but is not limited to, accident reporting/investigation, regulatory compliance, work practice observations, auditing, and emergency response procedures.

Additional Training for Specific Projects

Leader personnel will ensure their personnel have received additional training on specific instrumentation, equipment, confined space entry, construction hazards, etc., as necessary to perform their duties. This specialized training will be provided to personnel before engaging in the specific work activities including:

- Client specific training or orientation
- Competent person excavations
- Confined space entry (entrant, supervisor, and attendant)
- Heavy equipment including aerial lifts and forklifts
- First aid/ CPR
- Diving certification
- Use of fall protection
- Commercial driver's license
- Use of nuclear density gauges
- Asbestos awareness

Appendix N
Responsibilities of Owner and Remedial Party

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the Former AB Dick Facility Site (the "Site"), number #C828148, are divided between the Site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:
811 Jefferson Road, LLC

Solely for the purposes of this document and based upon the facts related to a particular Site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or Site management, the NYSDEC and/or an agent acting on its behalf. The RP is:
811 Jefferson Road, LLC

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the Site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the Site.

2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in a(n) Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the Site's Periodic Review Report (PRR) certification to the NYSDEC.

3) In the event the Site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.

4) The owner shall grant access to the Site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the Site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.

6) In the event some action or inaction by the owner adversely impacts the Site, the owner must notify the Site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3- Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.

7) The owner must notify the RP and the NYSDEC of any change in ownership of the Site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the Site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.4 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the Site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the Site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the Site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the Site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3- Notifications of the SMP.

7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in Site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the Site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or Site ownership does not affect the RP's obligations with respect to the Site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future Site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

Appendix O
Remedial System Optimization Report Outline

REMEDIAL SYSTEM OPTIMIZATION FOR

Former AB Dick Facility Site

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 SITE OVERVIEW

1.2 PROJECT OBJECTIVES AND SCOPE OF WORK

1.3 REPORT OVERVIEW

2.0 REMEDIAL ACTION DESCRIPTION

2.1 SITE LOCATION AND HISTORY

2.2 REGULATORY HISTORY AND REQUIREMENTS

2.3 CLEAN-UP GOALS AND SITE CLOSURE CRITERIA

2.4 PREVIOUS REMEDIAL ACTIONS

2.5 DESCRIPTION OF EXISTING REMEDY

2.5.1 System Goals and Objectives

2.5.2 System Description

2.5.3 Operation and Maintenance Program

3.0 FINDINGS AND OBSERVATIONS

3.1 SUBSURFACE PERFORMANCE

3.2 TREATMENT SYSTEM PERFORMANCE

3.3 REGULATORY COMPLIANCE 3-3

3.4 MAJOR COST COMPONENTS OR PROCESSES

3.5 SAFETY RECORD

4.0 RECOMMENDATIONS

4.1 RECOMMENDATIONS TO ACHIEVE OR ACCELERATE SITE CLOSURE

4.1.1 Source Reduction/Treatment

4.1.2 Sampling

4.1.3 Conceptual Site Model (Risk Assessment)

4.2 RECOMMENDATIONS TO IMPROVE PERFORMANCE

4.2.1 Maintenance Improvements

4.2.2 Monitoring Improvements

4.2.3 Process Modifications
4.3 RECOMMENDATIONS TO REDUCE COSTS
4.3.1 Supply Management
4.3.2 Process Improvements or Changes
4.3.3 Optimize Monitoring Program
4.3.4 Maintenance and Repairs
4.4 RECOMMENDATIONS FOR IMPLEMENTATION

Appendix P
Corrective Measures Report

Leader Professional Services, Inc.
271 Marsh Road, Suite 2
Pittsford, New York 14534
(585) 248-2413
(585) 248-2834 (Fax)
www.leaderlink.com

713.032A

April 22, 2021

Danielle Miles, E.I.T.
Assistant Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

Re: Corrective Measures Report
Former A.B. Dick Manufacturing Site
NYSDEC BCP Site # C828148
Henrietta, Monroe County

Dear Ms. Miles:

At your request, Leader Professional Services, Inc. ("Leader") has prepared this Corrective Measures Report ("CMR") summarizing the corrective steps taken for the semi-annual performance monitoring of the groundwater monitoring wells at the former AB Dick Manufacturing site ("Site"). The CMR was completed in accordance with Leader's Corrective Measures Work Plan ("CMWP") dated March 17, 2021 and approved by the New York State Department of Environmental Conservation ("NYSDEC"). The following conditions were outlined by the NYSDEC in the CMWP approval letter dated April 6, 2021:

- A groundwater sample will be collected 10 feet above and 10 feet below the center of the well screen in MW-1IRR and MW-33R.
- Since only one round of groundwater samples was collected in 2020, three rounds of groundwater samples will be collected in 2021: January, July and October. The January 2021 data will apply to the previous certifying period while the July and October 2021 data will apply to the next certifying period.
- Submittal of this CMR will include the October 2019, September 2020 and the January 2021 results along with the IC/EC certification.

This CMR summarizes the semi-annual groundwater sampling events conducted at the Site by Haley and Aldrich of New York ("H&A") in October 2019 ("2019"), with subsequent sampling events conducted by Leader Professional services, Inc. ("Leader") in September 2020 ("2020") and January/February 2021 ("2021"). The sampling was conducted in accordance with Section 4.0, Monitoring and Sampling Plan of the Site Management Plan ("SMP").

SITE CONDITIONS

As you know, during the 2020 and 2021 sampling events conducted by Leader, monitoring well MW-62 was found to contain a liquid inoculum believed to be a suspension of Emulsified Zerovalent Iron ("EZVI) that was injected into the groundwater by H&A for enhanced in-situ chemical reduction ("ISCR") and a groundwater sample was not collected during either sampling session.

During the 2021 sampling event, MW-38 also contained the same EZVI inoculum. You were notified of these conditions at the time of sampling and it was agreed the two wells should not be sampled.

Due to significant plowed snow piles at the adjacent Unither property loading dock driveway, MW-54 located at the northeast corner and MW-58 located near the northwest corner of the loading dock driveway could not be accessed during the January/February 2021 sampling event.

Groundwater Sample Analytical Results

The following monitoring wells were sampled within the certifying period as required by the SMP:

On-Site Wells	Off-Site Wells
MW-1IR	MW-54
MW-33R	MW-55
MW-69R	MW-58
MW-70R	MW-76
MW-63 (Area 2)	MW-77
MW-5DR (Area 2)	MW-78
MW-38 (Area 2)	UCB-MW3

All samples were analyzed for the USEPA's Target Compound List Volatile Organic Compounds. Monitoring Wells MW-IRR, MW-33R, MW-69R, MW-38 and MW-63 were also analyzed for natural attenuation parameters including total and dissolved iron, sulfate, chloride, ethene and total organic carbon. Figure 1 provides a drawing of the monitoring well locations and direction of groundwater flow based upon elevated data from the three sampling sessions.

Table 1 provides a complete analytical comparison of the 2019, 2020 and 2021 sampling events. Table 2 provides the results of the measurement of groundwater depths, elevations and field measured parameters from the 2020 and 2021 events. The 2020 and 2021 laboratory analytical reports are provided as Appendix A and Appendix B, respectively. Cumulative analytical summary sheets from the sampling conducted by H&A in 2019 are provided in Appendix C.

In accordance with the CMWP and your direction, the January 2021 sampling event included two samples collected from each of the angled wells: MW-1IRR and MW-33R. One sample was collected from a point 10-feet above in the upper water column and 10-feet below in the lower water column from the mid-point of the monitoring well screen in each well.

The analytical results were compared to NYSDEC Technical and Operational Guidance Series, 1.1.1 Ambient Water Quality Standards ("TOGS"). A summary of the concentrations found above the laboratory method detection limits is presented in the tables below. The complete laboratory results of the analysis of the groundwater samples for VOCs is presented in Table 1, attached.

On-Site Well Sample Analytical Results

MW-1IRR

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results (Lower)	Jan./Feb. 2021 Results (Upper)	TOGS Value (µg/L)
Trichloroethene	µg/L	**4700**	ND	ND	ND	5
Cis-1,2-Dichloroethene	µg/L	**53 J**	ND	ND	ND	5
Vinyl Chloride	µg/L	**5.6 J**	ND	ND	ND	2
o-Xylene	µg/L	ND	0.21 J	ND	ND	5
Carbon Disulfide	µg/L	ND	0.49 J	ND	ND	N/A
4-Methyl-2-pentanone	µg/L	ND	ND	0.28 J	ND	N/A
Acetone	µg/L	ND	**110**	44	43	50
2-Butanone	µg/L	ND	33	1.4 J	0.82 J	50
Bromomethane	µg/L	ND	ND	ND	0.80 J	5
Chloromethane	µg/L	ND	0.31 J	ND	0.52 J	5

MW-33R

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results (Lower)	Jan./Feb. 2021 Results (Upper)	TOGS Value (µg/L)
Trichloroethene	µg/L	**3800 / 4100 Dup.**	ND	ND	ND	5
1,1-Dichloroethene	µg/L	**11 J / 10 J Dup.**	ND	ND	ND	5
Cis-1,2-Dichloroethene	µg/L	**1900 / 1900 Dup.**	ND	0.39 J	ND	5
Trans-1,2-Dichloroethene	µg/L	**85 / 87 J**	ND	ND	ND	5
Vinyl Chloride	µg/L	**440 / 440 Dup.**	ND	ND	ND	2
Acetone	µg/L	ND	ND	ND	**2800**	50
2-Butanone	µg/L	ND	2.5 J	**340 D**	**3900**	50

MW-69R

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Vinyl Chloride	µg/L	ND	0.29 J	1.6	2
Cis-1,2-Dichloroethene	µg/L	ND	1.9	**14**	5
Trans-1,2-Dichloroethene	µg/L	ND	0.52 J	4.2	5
Methyl tert-Butyl Ether	µg/L	ND	0.29 J	0.35 J	N/A

MW-70R

No VOC concentrations above laboratory method detection limits were reported in any of the samples collected from MW-70R.

MW-63

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Acetone	µg/L	ND	12.0 / 11.0 Dup.	ND	50
Vinyl Chloride	µg/L	1.4	1.2 / 0.99 J Dup.	0.46 J	2
Toluene	µg/L	ND	0.32 J / 0.29 J Dup.	0.24 J	5
Trichloroethene	µg/L	ND	0.23 J Dup.	0.34 J	5
2-Butanone	µg/L	ND	3.5 J Dup	ND	50
2-Hexanone	µg/L	ND	0.73 J Dup.	ND	50

MW-5DR

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	**10**	**9.2**	**7.1**	5
Cis-1,2-Dichloroethene	µg/L	ND	3.4 J	**5.7**	5
Trans-1,2-Dichloroethene	µg/L	ND	0.21 J	ND	5

MW-38

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	Did	**170000**	Did	5
1,1-Dichloroethene	µg/L	Not	**310 J**	Not	5
Cis-1,2-Dichloroethene	µg/L	Sample	**260000 D**	Sample	5
Trans-1,2-Dichloroethene	µg/L		**1700**		5
Vinyl Chloride	µg/L		**1000 J**		2

Off-Site Well Sample Analytical Results

MW-54

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	**12000**	**19000 D**	Did	5
Cis-1,2-Dichloroethene	µg/L	**480**	**690**	Not	5
Vinyl Chloride	µg/L	**38 J**	**43 J**	Sample	2

MW-55

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	**30**	2.6 J	ND	5
Cis-1,2-Dichloroethene	µg/L	0.73 J	2.0 J	ND	5

MW-58

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	**7.4**	ND	Did Not Sample	5

MW-76

No VOC concentrations above laboratory method detection limits were reported in the sample collected from MW-76.

MW-78

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	2.3	2.2 J	2.1 J	5
1,1-Dichloroethene	µg/L	ND	1.0 J	ND	5
Trans-1,2-Dichloroethene	µg/L	ND	0.49 J	ND	5
Cis-1,2-Dichloroethene	µg/L	1.3 J	**120**	3.2 J	5
Vinyl Chloride	µg/L	ND	**15**	ND	2

UCB-MW3

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results	TOGS Value (µg/L)
Trichloroethene	µg/L	2.5	ND	ND	5

The 2021 analytical results of the groundwater samples revealed that Trichloroethene ("TCE") and/or its degradation products detected above TOGS values were limited to monitoring wells MW-69R and MW-5DR. However, Leader suspects that given the southerly direction of groundwater flow from contaminant source Area 2 of the Site (See Figure 1), and the analytical results from 2019 and 2020, VOCs are likely to be present in groundwater in downgradient wells MW-54 and possibly MW-58. These wells could not be accessed in January 2021 due to snow piles. Further, MW-38 and MW-62, located within Area 2 were not sampled in 2019 and 2021 due to the presence of the EZVI inoculum.

Substantial decreases in chlorinated VOC detections were reported from the 2020 and 2021 samples in MW-1IRR and MW-33R when compared to the 2019 results. For example, in 2019 TCE was detected in MW-1IR at a concentration of 4700 µg/L, and at concentrations of 3,800 µg/L and 4,700 µg/L in the primary and duplicate sample from MW-33. TCE was not detected in MW-33R and MW-1IRR in the 2020 and 2021 sampling events. However, non-halogenated VOCs that included Acetone and 2-Butanone were detected in the upper water column sample of MW-33R at 2800 µg/L and 3900 µg/L, respectively, in January 2021. These contaminants were not present in the MW-33 sample collected in October 2019 by H&A. 2-Butanone was detected in the lower water column sample of MW-33R, but Acetone was non-detect. It is possible that the sample in October 2019 was collected by H&A nearer to the bottom of the well, and because Acetone and 2-Butanone are lighter in density than water, the contaminants may not have been detected in the sample at that time.

Natural Attenuation Parameters

Natural Attenuation parameters including Total Inorganic Carbon ("TOC"), Ethene, Chloride, Sulfate and Total and Dissolved Ferrous Iron concentrations were found in samples collected in monitoring wells MW-1IRR, MW-33R, MW-63, MW-69R, and MW-70R. The results of the natural attenuation parameter monitoring are included in Table 1, attached. The following summary tables provide the results of the natural attenuation monitoring for each well sampled in October 2019, September 2020 and January/February 2021:

MW-1IRR

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results
TOC	mg/L	3.17	4.0	2.2 Lower / 1.9 Upper
Ethene	µg/L	3.39	1.6	0.74 J Lower / 0.82 J Upper
Chloride	mg/L	4.9	54.7	5130 Lower / 3780 Upper
Sulfate	mg/L	28	57.3	117 Lower / 116 Upper
Total Iron	µg/L	0.423	460	160 Lower / ND Upper
Dissolved Iron	µg/L	ND	ND	ND Lower / ND Upper

MW-33R

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results
TOC	mg/L	4.95 J / 5.07 J Dup.	4.4	7.3 Lower / 10.4 Upper
Ethene	µg/L	9.67 / 10.8 Dup.	0.73 J	0.40 J Lower / 0.79 J Upper
Chloride	mg/L	42 / 44 Dup.	55.6	93 Lower / 176 Upper
Sulfate	mg/L	48 / 37 Dup.	33.2	50.4 Lower / 43.9 Upper
Total Iron	µg/L	0.317 / 0.275 J	140	510 Lower / 613 Upper
Dissolved Iron	µg/L	0.219 J/ 0.251 J	140	ND Lower & 278 Upper

MW-63

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results
TOC	mg/L	14.0 J	17.3	8.8 & 17 (Dup.)
Ethene	µg/L	1.13	0.67 J	1.2 & 0.56 J (Dup.)
Chloride	mg/L	540	720	1590 & 739 (Dup.)
Sulfate	mg/L	ND	0.7 J	4.6 & 3.5 (Dup.)
Total Iron	µg/L	18.7	11900	6980 & 11700 (Dup.)
Dissolved Iron	µg/L	12.3	2600	649 & 2700 (Dup.)

MW-69

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results
TOC	mg/L	5.78 J	9.3	8.2
Ethene	µg/L	ND	ND	ND
Chloride	mg/L	ND	66.5	97.4
Sulfate	mg/L	ND	25.4	23
Total Iron	µg/L	0.226 J	ND	1020
Dissolved Iron	µg/L	ND	ND	ND

MW-70R

Analyte	Unit	Oct. 2019 Results	Sept. 2020 Results	Jan./Feb. 2021 Results
TOC	mg/L	3.71 J	5	3.6
Ethene	µg/L	ND	ND	ND
Chloride	mg/L	7.9	82	68.8
Sulfate	mg/L	71	274	214
Total Iron	µg/L	ND	70 J	204
Dissolved Iron	µg/L	ND	ND	ND

Based on the comparison of the natural attenuation parameters, the following conclusions can be made:

- TOC is an indicator of natural organic carbon present. TOC concentrations greater than 20.0 mg/l are desired for anerobic dichlorination to occur. The highest concentration of TOC was reported in MW-63, which is in proximity to the area of the in-situ chemical reduction injections of EZVI. The levels reported from MW-63 are likely influenced by the organic hydrogen donors and emulsified vegetable oil added to the EZVI at the time of injections.
- Ethene is a daughter product of Vinyl Chloride ("VC") and was analyzed to determine whether anerobic reductive chlorination of VC is occurring. Ethene was detected in the wells that contained or currently contain various levels of vinyl chloride.
- The elevated Chloride concentrations in the January 2021 samples from MW-1IRR and MW-63 could be attributed to an intrusion of roadway salt used on the parking lot. Although the well plugs appeared to be properly sealed, the annular space within the well curb boxes were filled with water during the January 2021 sampling session.
- Sulfate levels less than 20 mg/l are desirable for anerobic de-chlorination to occur. Apart from MW-63, Sulfate concentrations above 20 mg/l were reported in the well samples. It is possible that the levels reported are naturally occurring concentrations in the groundwater, and Sulfate is not being used as an electron acceptor because these wells are either non-detect for chlorinated VOCs or were only slightly above laboratory background limits. However, low Sulfate concentrations in MW-63 of 0.7 mg/l in September 2020 and 3.5 mg/l in January 2021 suggests that Sulfate is being used as an electron acceptor within the injection grid area.
- Total ferrous iron and dissolved ferrous iron were monitored to determine the bioavailability of total ferrous iron as an electron donor during anaerobic biodegradation. An increase in dissolved ferrous iron is usually associated with reductive chlorination. The levels of total and dissolved iron were significantly higher in MW-63 when compared to the other well samples. The elevated concentrations are likely attributed to the presence of EZVI in proximity to MW-63.

CONCLUSION

Two groundwater samples were obtained from each of MW-1IR and MW-33R in accordance with the SMP and your direction. The groundwater results demonstrate continued improvement in most of the monitoring wells, but in general some contaminants continue to exceed NYSDEC's groundwater quality criteria. The sampling of monitoring wells MW-38 and MW-62 was hampered by the continued presence of EZVI and further discussion is needed to effectively monitor the status of groundwater within Area 2. MW-54 and MW-58 could not be accessed during the January 2021 sampling session due to the presence of large snow piles. Increased concentrations of chlorinated compounds were reported in the 2020 analysis from MW-54. The scheduled July 2021 and October 2021 sampling results will be used to better quantify the environmental status of groundwater from these wells.

DATA USABILITY SUMMARY REPORT

ME Holvey Consulting, LLC prepared the Data Usability Summary Reports ("DUSR") for the sample data. The DUSRs are provided in Appendix D. The DUSRs concluded that the results are usable and without any exceptions.

If you have any questions regarding our report, please contact us 585-248-2413 or by email: fthomas@leaderlink.com.

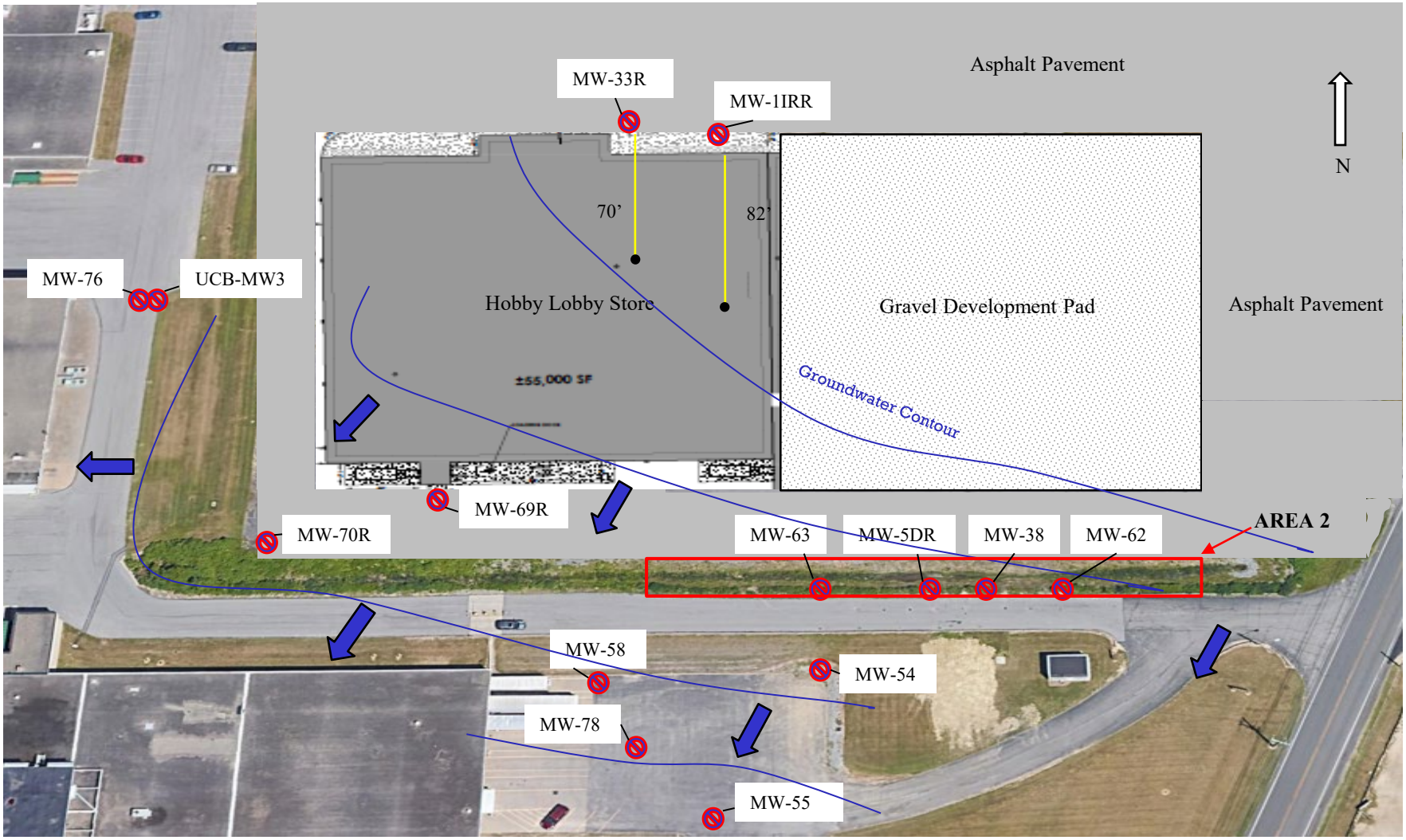
Very truly yours,
LEADER PROFESSIONAL SERVICES, INC.

Frank R. Thomas
Senior Project Manager

Michael P. Rumrill
President

Attachments

cc: Joseph Akel – FSI
Frank Imburgia – FSI
Dixon Rollins – P.E.



Title: Monitoring Well Location Map with Groundwater Flow Direction
811 Jefferson Road
Tonawanda, New York

Prepared For: 811 Jefferson Partners, LLC
90 Goodway Drive
Rochester, New York 14623

Leader Professional Services, Inc
271 Marsh Road-Suite 2
Pittsford, New York 14534
(585) 248-2413
FAX (585) 248-2834

Project: 713.032A
Date: 4/19/2021
Scale: NTS

Drawn: FRT
Checked: MPR
File Name: Site drawing

Figure: 1

TABLE 1

Groundwater Analytical Comparison Table

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 1IR 10/30/2019 - L1952006-14	MW 1IRR 9/28/2020 - R2008984 001	MW 1IRR Lower 1/28/2021 - R2100856 006	MW 1IR Upper 2/2/2021 - R2100896 010	MW 70 10/31/2019 - L1952006-09	MW 70R 9/28/2020 - R2008984 003	MW 70R 1/28/2021 - R2100856 008
Method: 6010C/Fe D										
Iron, Dissolved	6010C/Fe D	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
Method: 6010C/Fe T										
Iron, Total	6010C/Fe T	ug/L	N/A	0.423	460	160	ND	ND	ND	200
Method: 8260C/VOC FP										
1,1,1 Trichloroethane (TCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,1,2,2 Tetrachloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,1,2 Trichloro 1,2,2 trifluoroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,1,2 Trichloroethane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND
1,1 Dichloroethane (1,1 DCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,1 Dichloroethene (1,1 DCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,2,3 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,2,4 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,2 Dibromo 3 chloropropane	8260C/VOC FP	ug/L	0.04	ND	ND	ND	ND	ND	ND	ND
1,2 Dibromoethane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
1,2 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND
1,2 Dichloroethane	8260C/VOC FP	ug/L	0.6	ND	ND	ND	ND	ND	ND	ND
1,2 Dichloropropane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND
1,3 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND
1,4 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND
1,4 Dioxane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
2 Butanone (MEK)	8260C/VOC FP	ug/L	50	ND	**33**	**1.4 J**	**0.82 J**	ND	ND	ND
2 Hexanone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND
4 Methyl 2 pentanone	8260C/VOC FP	ug/L	N/A	ND	ND	**0.28 J**	ND	ND	ND	ND
Acetone	8260C/VOC FP	ug/L	50	ND	**110**	**44**	**43**	ND	ND	ND
Benzene	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND
Bromoform	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 1IR	MW 1IRR	MW 1IRR Lower	MW 1IR Upper	MW 70	ND	MW 70R
Bromomethane	8260C/VOC FP	ug/L	5	ND	ND	ND	**0.80 J**	ND	ND	ND
Carbon Disulfide	8260C/VOC FP	ug/L	N/A	ND	**0.49 J**	ND	ND	ND	ND	ND
Carbon Tetrachloride	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Chloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Chloroform	8260C/VOC FP	ug/L	7	ND	ND	ND	ND	ND	ND	ND
Chloromethane	8260C/VOC FP	ug/L	5	ND	**0.31 BJ**	ND	**0.52 J**	ND	ND	ND
Cyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane (CFC 12)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene (Cumene)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
Methyl tert Butyl Ether	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND
Styrene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Toluene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	8260C/VOC FP	ug/L	5	**4700**	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (CFC 11)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	8260C/VOC FP	ug/L	2	**5.6 J**	ND	ND	ND	ND	ND	ND
cis 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	**53 J**	ND	ND	ND	ND	ND	ND
cis 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND
m,p Xylenes	8260C/VOC FP	ug/L	10	ND	ND	ND	ND	ND	ND	ND
o Xylene	8260C/VOC FP	ug/L	5	ND	**0.21 J**	ND	ND	ND	ND	ND
trans 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND
trans 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND
Method: 9056A/Chloride										
Chloride	9056A/Chloride	mg/L	N/A	4.9	54.7	5130	3780		82.0	68.8
Method: 9056A/SO4										
Sulfate	9056A/SO4	mg/L	N/A	28	57.3	117	116		274	214
Method: RSK 175/Gases										
Ethene	RSK 175/Gases	ug/L	N/A	3.39	1.6	0.74 J	0.82 J		ND	ND
Method: SM 5310 /TOC T										
Carbon, Total Organic (TOC)	C 2000(2011)/T	mg/L	N/A	3.17 J	4.0	2.2	1.9		5.0	3.6

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	UCB MW 3 10/31/2019 LC1952006-19	UCB MW 3 9/28/2020 - R2008984 005	UCB MW 3 1/28/2021 - R2100856 010	MW 77 10/30/2019 1952006-17	MW 77 1/28/2021 - R2100856 005	MW 33 10/30/2019 L1952006-07	MW-33 DUP 10/30/2019 L1952006-21	MW 33R 9/28/2020 - R2008984 007	MW 33R Lower 1/28/2021 - R2100856 011	MW 33R Upper' 02.02.2021 - R2100896 008
Method: 6010C/Fe D													
Iron, Dissolved	6010C/Fe D	ug/L	N/A						0.219 J	0.251 J	140	ND	ND
Method: 6010C/Fe T													
Iron, Total	6010C/Fe T	ug/L	N/A						0.317	0.275 J	140	510	610
Method: 8260C/VOC FP													
1,1,1 Trichloroethane (TCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2 Tetrachloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2 Trichloro 1,2,2 trifluoroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2 Trichloroethane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1 Dichloroethane (1,1 DCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1 Dichloroethene (1,1 DCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	**11 J**	**10 J**	ND	ND	ND
1,2,3 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2 Dibromo 3 chloropropane	8260C/VOC FP	ug/L	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2 Dibromoethane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2 Dichloroethane	8260C/VOC FP	ug/L	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2 Dichloropropane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4 Dioxane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 Butanone (MEK)	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	**2.5 J**	**340 D**	**3900**
2 Hexanone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4 Methyl 2 pentanone	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2800**
Benzene	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	UCB MW 3	UCB MW 3	UCB MW 3	MW 77	MW 77	MW 33	MW-33 DUP	MW 33R	MW 33R Lower	MW 33R Upper'
Bromomethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	8260C/VOC FP	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane (CFC 12)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene (Cumene)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert Butyl Ether	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	8260C/VOC FP	ug/L	5	2.5	ND	ND	**2.1**	ND	**3800**	**4100**	ND	ND	ND
Trichlorofluoromethane (CFC 11)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	8260C/VOC FP	ug/L	2	ND	ND	ND	ND	ND	**440**	**440**	ND	ND	ND
cis 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	**0.33 J**	**1900**	**1900**	ND	**0.39 J**	ND
cis 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p Xylenes	8260C/VOC FP	ug/L	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o Xylene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	**85**	**87 J**	ND	ND	ND
trans 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Method: 9056A/Chloride													
Chloride	9056A/Chloride	mg/L	N/A						42	44	55.6	93.0	176
Method: 9056A/SO4													
Sulfate	9056A/SO4	mg/L	N/A						48	37	33.2	50.4	43.9
Method: RSK 175/Gases													
Ethene	RSK 175/Gases	ug/L	N/A						9.67	10.8	0.73 J	0.40 J	0.79 J
Method: SM 5310 /TOC T													
Carbon, Total Organic (TOC)	C 2000(2011)/T	mg/L	N/A						4.95 J	5.07 J	4.4	7.3	10.4

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 69 10/31/2019 L1952006-08	MW 69R 9/28/2021 - R2008984 009	MW 69R 1/28/2021 - R2100856 003	MW 76 10/31/2019 L1952006-16	MW 76 9/28/2020 - R2008984 011	MW 76 1/28/2021 - R2100856 002	MW 58 10/30/2019 L1952006-15	MW 58 9/28/2020 - R2008984 012	MW 58 1/28/2021
Method: 6010C/Fe D												
Iron, Dissolved	6010C/Fe D	ug/L	N/A	ND	ND	ND						
Method: 6010C/Fe T												
Iron, Total	6010C/Fe T	ug/L	N/A	0.226	ND	1020						
Method: 8260C/VOC FP												
1,1,1 Trichloroethane (TCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2,2 Tetrachloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	C
1,1,2 Trichloro 1,2,2 trifluoroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	O
1,1,2 Trichloroethane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	U
1,1 Dichloroethane (1,1 DCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	L
1,1 Dichloroethene (1,1 DCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	D
1,2,3 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	N
1,2 Dibromo 3 chloropropane	8260C/VOC FP	ug/L	0.04	ND	ND	ND	ND	ND	ND	ND	ND	O
1,2 Dibromoethane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	T
1,2 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	
1,2 Dichloroethane	8260C/VOC FP	ug/L	0.6	ND	ND	ND	ND	ND	ND	ND	ND	A
1,2 Dichloropropane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	C
1,3 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	C
1,4 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	E
1,4 Dioxane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	S
2 Butanone (MEK)	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	S
2 Hexanone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	
4 Methyl 2 pentanone	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	
Acetone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 69	MW 69R	MW 69R	MW 76	MW 76	MW 76	MW 58	MW 58	MW 58
Bromomethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon Disulfide	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	C
Carbon Tetrachloride	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	O
Chlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	U
Chloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	L
Chloroform	8260C/VOC FP	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	D
Chloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Cyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	N
Dibromochloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	O
Dichlorodifluoromethane (CFC 12)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	T
Dichloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	A
Isopropylbenzene (Cumene)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	C
Methyl Acetate	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	C
Methyl tert Butyl Ether	8260C/VOC FP	ug/L	N/A	ND	**0.29 J**	**0.35 J**	ND	ND	ND	ND	ND	E
Methylcyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	S
Styrene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	S
Tetrachloroethene (PCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene (TCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	**7.4**	ND	
Trichlorofluoromethane (CFC 11)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	8260C/VOC FP	ug/L	2	ND	**0.29 J**	**1.6**	ND	ND	ND	ND	ND	
cis 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	**1.9**	**14**	ND	ND	ND	ND	ND	
cis 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND	ND	
m,p Xylenes	8260C/VOC FP	ug/L	10	ND	ND	ND	ND	ND	ND	ND	ND	
o Xylene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	
trans 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	**0.52 J**	**4.2**	ND	ND	ND	ND	ND	
trans 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND	ND	
Method: 9056A/Chloride												
Chloride	9056A/Chloride	mg/L	N/A	540	66.5	97.4						
Method: 9056A/SO4												
Sulfate	9056A/SO4	mg/L	N/A	ND	25.4	23.0						
Method: RSK 175/Gases												
Ethene	RSK 175/Gases	ug/L	N/A	1.13	ND	ND						
Method: SM 5310 /TOC T												
Carbon, Total Organic (TOC)	C 2000(2011)/TO	mg/L	N/A	14.0 J	9.3	8.2						

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 78 10/30/2019 L1952006-18	MW 78 9/28/2020 - R2008984 013	MW 78 1/28/2021 - R2100856 001	MW 5DR 10/31/2019 L1952006-11	MW 5DR 9/29/2020 - R2009031 001	MW 5DR 2/1/2021 - R2100896 006	MW 38 10/2019	MW 38 9/29/2020 - R2009031 003	MW 38 2/1/2021
Method: 6010C/Fe D												
Iron, Dissolved	6010C/Fe D	ug/L	N/A								109000	
Method: 6010C/Fe T												
Iron, Total	6010C/Fe T	ug/L	N/A								110000	
Method: 8260C/VOC FP												
1,1,1 Trichloroethane (TCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	D	ND	N
1,1,2,2 Tetrachloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	I	ND	O
1,1,2 Trichloro 1,2,2 trifluoroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	D	ND	
1,1,2 Trichloroethane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND		ND	S
1,1 Dichloroethane (1,1 DCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	N	ND	A
1,1 Dichloroethene (1,1 DCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	O	ND	M
1,2,3 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	T	ND	P
1,2,4 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	L
1,2 Dibromo 3 chloropropane	8260C/VOC FP	ug/L	0.04	ND	ND	ND	ND	ND	ND	S	ND	E
1,2 Dibromoethane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	A	ND	
1,2 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	M	ND	E
1,2 Dichloroethane	8260C/VOC FP	ug/L	0.6	ND	ND	ND	ND	ND	ND	P	ND	V
1,2 Dichloropropane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	L	ND	I
1,3 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	E	ND	
1,4 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND		ND	P
1,4 Dioxane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND		ND	R
2 Butanone (MEK)	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND		ND	E
2 Hexanone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND		ND	S
4 Methyl 2 pentanone	8260C/VOC FP	ug/L	N/A	ND	ND	**0.32 J**	ND	ND	ND		ND	E
Acetone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND		ND	N
Benzene	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND		ND	T
Bromochloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	
Bromodichloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND		ND	
Bromoform	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND		ND	

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 78	MW 78	MW 78	MW 5DR	MW 5DR	MW 5DR	MW 38	MW 38	MW 38
Bromomethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	
Carbon Disulfide	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	D	ND	
Carbon Tetrachloride	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	I	ND	
Chlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	D	ND	
Chloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	
Chloroform	8260C/VOC FP	ug/L	7	ND	ND	ND	ND	ND	ND	N	ND	N
Chloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	O	ND	O
Cyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	T	ND	
Dibromochloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND		ND	S
Dichlorodifluoromethane (CFC 12)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	S	ND	A
Dichloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	A	ND	M
Ethylbenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	M	ND	P
Isopropylbenzene (Cumene)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	P	ND	L
Methyl Acetate	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	L	ND	E
Methyl tert Butyl Ether	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	E	ND	
Methylcyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND		ND	
Styrene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	E
Tetrachloroethene (PCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	V
Toluene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	I
Trichloroethene (TCE)	8260C/VOC FP	ug/L	5	**2.3**	**2.2 J**	**2.1 J**	**10**	**9.2**	**7.1**		**170000**	
Trichlorofluoromethane (CFC 11)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	P
Vinyl Chloride	8260C/VOC FP	ug/L	2	ND	**15**	ND	ND	ND	ND		**1000 J**	R
cis 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	**1.3 J**	**120**	**3.2 J**	ND	**3.4 J**	**5.7**		**260000 D**	E
cis 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND		ND	S
m,p Xylenes	8260C/VOC FP	ug/L	10	ND	ND	ND	ND	ND	ND		ND	E
o Xylene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND		ND	N
trans 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	**1.0 J**	ND	ND	**0.21 J**	ND		**1700**	T
trans 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND		ND	
Method: 9056A/Chloride												
Chloride	9056A/Chloride	mg/L	N/A								1270	
Method: 9056A/SO4												
Sulfate	9056A/SO4	mg/L	N/A								16.8	
Method: RSK 175/Gases												
Ethene	RSK 175/Gases	ug/L	N/A								5000	
Method: SM 5310 /TOC T												
Carbon, Total Organic (TOC)	C 2000(2011)/TO	mg/L	N/A								515	

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 55 10/30/2019 L1952006-14	MW 55 9/29/2020 - R2009031 005	MW 55 2/1/2021 - R2100896 005	MW 63 10/31/2019 L1952006-12	MW 63 9/29/2020 - R2009031 006	MW 63 2/1/2021 - R2100896 003	MW 63 Dup 9/29/2020 - R2009031 008	MW 54 10/30/2019 L1952006-13	MW 54 9/29/2020 - R2009031 010	MW 54 2/1/2021
Method: 6010C/Fe D													
Iron, Dissolved	6010C/Fe D	ug/L	N/A				12.3	2600	650	2700			
Method: 6010C/Fe T													
Iron, Total	6010C/Fe T	ug/L	N/A				18.7	11900	6980	11700			
Method: 8260C/VOC FP													
1,1,1 Trichloroethane (TCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2,2 Tetrachloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	C
1,1,2 Trichloro 1,2,2 trifluoroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	O
1,1,2 Trichloroethane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	U
1,1 Dichloroethane (1,1 DCA)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	L
1,1 Dichloroethene (1,1 DCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	D
1,2,3 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4 Trichlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	N
1,2 Dibromo 3 chloropropane	8260C/VOC FP	ug/L	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	O
1,2 Dibromoethane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	T
1,2 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2 Dichloroethane	8260C/VOC FP	ug/L	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	A
1,2 Dichloropropane	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	C
1,3 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	C
1,4 Dichlorobenzene	8260C/VOC FP	ug/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	E
1,4 Dioxane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	S
2 Butanone (MEK)	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	**3.5 J**	ND	ND	S
2 Hexanone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	**0.73 J**	ND	ND	
4 Methyl 2 pentanone	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acetone	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	**12**	ND	**11**	ND	ND	
Benzene	8260C/VOC FP	ug/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	

TABLE 1
Analytical Comparison
Former AB Dick Facility
811 Jefferson Road, Rochester, New York

ANALYTE	METHOD	UNITS	TOGS 1.1.1	MW 55	MW 55	MW 55	MW 63	MW 63	MW 63	MW 63 Dup	MW 54	MW 54	MW 54
Bromomethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon Disulfide	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	C
Carbon Tetrachloride	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	O
Chlorobenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	U
Chloroethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	L
Chloroform	8260C/VOC FP	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	D
Chloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	N
Dibromochloromethane	8260C/VOC FP	ug/L	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	O
Dichlorodifluoromethane (CFC 12)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	T
Dichloromethane	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	A
Isopropylbenzene (Cumene)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	C
Methyl Acetate	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	C
Methyl tert Butyl Ether	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	E
Methylcyclohexane	8260C/VOC FP	ug/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	S
Styrene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	S
Tetrachloroethene (PCE)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	**0.32 J**	**0.24 J**	**0.29 J**	ND	ND	
Trichloroethene (TCE)	8260C/VOC FP	ug/L	5	**30**	**2.6 J**	ND	ND	ND	**0.34 J**	**0.23 J**	**12000**	**19000 D**	
Trichlorofluoromethane (CFC 11)	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	8260C/VOC FP	ug/L	2	ND	ND	ND	**1.4**	**1.2**	**0.46 J**	**0.99 J**	**38 J**	**43 J**	
cis 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	**0.73 J**	**2.0 J**	ND	ND	ND	ND	ND	**480**	**690**	
cis 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	
m,p Xylenes	8260C/VOC FP	ug/L	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o Xylene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans 1,2 Dichloroethene	8260C/VOC FP	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans 1,3 Dichloropropene	8260C/VOC FP	ug/L	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Method: 9056A/Chloride													
Chloride	9056A/Chloride	mg/L	N/A				540	720	1590	739			
Method: 9056A/SO4													
Sulfate	9056A/SO4	mg/L	N/A				ND	0.7 J	4.6	3.5			
Method: RSK 175/Gases													
Ethene	RSK 175/Gases	ug/L	N/A				1.13	0.67 J	1.2	0.56 J			
Method: SM 5310 /TOC T													
Carbon, Total Organic (TOC)	C 2000(2011)/TO	mg/L	N/A				14 J	17.3	8.8	17.0			

TABLE 2

Groundwater Parameters

TABLE 2
GROUNDWATER PARAMETERS
Former AB Dick Facility
NYSDEC BCP Site # C828148
811 Jefferson Road, Rochester, New York

January / February 2021

	MW-1IRR	UCB-MW-3	MW-5DR	MW-33R	MW-38	MW-54	MW-55	MW-58	MW-62	MW-63	MW-69R	MW-70R	MW-76	MW-77	MW-78
Elevation	555.00	548.53	553.40	555.00	553.98	545.46	544.58	544.24	554.52	553.33	555.00	555.20	549.20	544.10	544.10
Depth (ft.)	NA	2.75	33.10	NA	5.80	NA	0.80	544.24	NA	5.00	6.50	6.82	5.31	1.40	2.70
Groundwater Elevation	555.00	545.78	520.30	555.00	548.18	545.46	543.78	544.24	554.52	548.33	548.50	548.38	543.89	542.70	541.40
Temperature	8.60	6.70	12.10	9.00	*	*	6.10	*	*	9.70	8.60	8.60	8.80	10.90	10.40
pH	11.50	7.39	8.17	8.61	*	*	7.32	*	*	6.77	7.24	7.31	7.65	7.05	7.46
Conductivity (ms/cm)	14.90	1.90	0.55	0.96	*	*	2.50	*	*	6.70	1.52	0.97	1.10	15.73	8.40
Dissolved Oxygen (mg/L)	1.02	4.76	3.74	3.10	*	*	1.23	*	*	0.95	1.60	0.23	7.29	0.87	1.38
Turbidity (NTU)	4.00	12.14	11.96	10.23	*	*	8.19	*	*	55.00	18.70	3.91	0.20	14.75	5.00
ORP (mv)	80.00	31.30	-106.40	-155.20	*	*	195.80	*	*	-195.00	176.00	11.80	170.00	109.60	257.00

*Notes:
MW-38 & MW-62 not monitored due to presence of EVI inoculum
MW-54 & MW-58 could not access due to plowed snow piles

September 28 & 29, 2020

	MW-1IRR	UCB-MW-3	MW-5DR	MW-33R	MW-38	MW-54	MW-55	MW-58	MW-62	MW-63	MW-69R	MW-70R	MW-76	MW-77	MW-78
Elevation	555.00	548.53	553.40	555.00	553.98	545.46	544.58	544.24	554.52	553.33	555.00	555.20	549.20	544.10	544.10
Depth (ft.)	NA	3.65	34.30	NA	8.90	0.00	9.00	0.00	6.10	7.80	6.50	6.50	5.20	2.00	0.40
Groundwater Elevation	555.00	544.88	519.10	555.00	545.08	545.46	535.58	544.24	548.42	545.53	548.50	548.70	544.00	542.10	543.70
Temperature	23.08	25.20	13.40	20.69	16.64	18.60	19.45	22.47	12.82	17.84	20.36	20.90	24.14	25.20	24.52
pH	7.57	8.04	7.81	7.84	8.09	7.41	7.35	7.57	7.94	7.49	7.99	7.90	7.52	8.16	7.46
Conductivity (ms/cm)	0.36	2.89	0.54	0.97	4.95	5.11	0.38	2.39	5.21	3.77	1.57	1.16	0.94	9.27	2.40
Dissolved Oxygen (mg/L)	6.47	8.14	0.64	9.15	10.15	7.72	8.99	7.32	12.26	7.87	9.09	8.44	6.89	6.67	6.21
Turbidity (NTU)	47.90	0.90	3.12	0.60	11.80	12.10	13.70	52.80	11.00	9.20	5.40	0.10	5.60	0.00	1.50
ORP (mv)	-26.00	-97.00	186.00	-49.00	-76.00	63.00	-94.00	-55.00	-31.00	-87.00	67.00	-11.00	78.00	-118.00	-69.00

APPENDIX A

September 2020 Laboratory Results

November 10, 2020 Service Request No:R2008984

Mike Rumrill
Leader Professional Services, Inc.
271 Marsh Road
Suite 2
Pittsford, NY 14534

Laboratory Results for: 811 Jefferson Road

Dear Mike,

Enclosed are the results of the sample(s) submitted to our laboratory September 29, 2020
For your reference, these analyses have been assigned our service request number **R2008984.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Peter von Schondorf

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003436

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name: 811 Jefferson Road	Project Number: 713.032A
Project Manager: Mike Rumrill	Report CC:
Company/Address: Leader professional Services, 271 mesh Road pittsford, NY, Suite 2,	
Phone #: 585-248-2413	Email: mrumrill@leaderlink.com
Sampler's Signature:	Sampler's Printed Name: Alec Minavio

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP TCL VOC	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Fe	Sol Fe	504, Cl	TOC	RSK - Ethane			
MW-11RR		9/28/20	12:00	Water	12	X							X	X	X	X	X			
MW-70R		9/28/20	13:45	Water	12	X							X	X	X	X	X			
UCB-MW3		9/28/20	15:10	water	3	X														
MW-41		9/28/20	16:30	water	3	X														
MW-33R		9/28/20	10:10	Water	12	X							X	X	X	X	X			
MW-69R		9/28/20	12:05	water	12	X							X	X	X	X	X			
MW-76		9/28/20	14:40	Water	3	X														
MW-58		9/28/20	15:50	Water	3	X														
MW-78		9/28/20	16:55	Water	3	X														

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals
Note: Change "MW-41" to MW-77 it was marked incorrectly.

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED NY

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data

Edata X Yes _____ No

INVOICE INFORMATION
PO #
BILL TO: Team FSI, 90 Goodway Drive, Rochester NY 14623

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	
Printed Name: Alec Minavio	Printed Name: Daniel Ward	Printed Name	Printed Name	Printed Name	
Firm: Leader	Firm: ALS	Firm	Firm	Firm	
Date/Time: 9/29/20 18:00	Date/Time: 9/30/2020 1800	Date/Time	Date/Time	Date/Time	

R2008984 5
Leader Professional Services, Inc.
611 Jefferson Road

Distribution: White - Lab Copy; Yellow - Return to Originator

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Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-1IRR	**Units:**	ug/L
Lab Code:	R2008984-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 04:37	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 04:37	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 04:37	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:37	
1,4-Dioxane	40 U	40	13	1	10/07/20 04:37	
2-Butanone (MEK)	**33**	5.0	0.78	1	10/07/20 04:37	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 04:37	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 04:37	
Acetone	**110**	5.0	5.0	1	10/07/20 04:37	
Benzene	1.0 U	1.0	0.20	1	10/07/20 04:37	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 04:37	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 04:37	
Carbon Disulfide	**0.49 J**	1.0	0.42	1	10/07/20 04:37	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 04:37	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:37	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 04:37	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 04:37	
Chloromethane	**0.31 BJ**	1.0	0.28	1	10/07/20 04:37	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 04:37	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 04:37	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 04:37	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 04:37	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 04:37	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 04:37	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 04:37	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 04:37	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 04:37	
Styrene	1.0 U	1.0	0.20	1	10/07/20 04:37	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 04:37	
Toluene	1.0 U	1.0	0.20	1	10/07/20 04:37	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-1IRR	**Units:**	ug/L
Lab Code:	R2008984-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 04:37	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 04:37	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/07/20 04:37	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/07/20 04:37	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 04:37	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 04:37	
o-Xylene	**0.21 J**	1.0	0.20	1	10/07/20 04:37	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/07/20 04:37	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 04:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	85 - 122	10/07/20 04:37	
Dibromofluoromethane	95	80 - 116	10/07/20 04:37	
Toluene-d8	99	87 - 121	10/07/20 04:37	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
000109-99-9	Furan, tetrahydro-	4.94	180	JN

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 13:45
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-70R	**Units:**	ug/L
Lab Code:	R2008984-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 04:58	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 04:58	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 04:58	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:58	
1,4-Dioxane	40 U	40	13	1	10/07/20 04:58	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 04:58	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 04:58	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 04:58	
Acetone	5.0 U	5.0	5.0	1	10/07/20 04:58	
Benzene	1.0 U	1.0	0.20	1	10/07/20 04:58	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 04:58	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 04:58	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 04:58	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 04:58	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 04:58	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 04:58	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 04:58	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 04:58	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 04:58	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 04:58	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 04:58	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 04:58	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 04:58	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 04:58	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 04:58	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 04:58	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 04:58	
Styrene	1.0 U	1.0	0.20	1	10/07/20 04:58	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 04:58	
Toluene	1.0 U	1.0	0.20	1	10/07/20 04:58	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 13:45
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-70R	**Units:**	ug/L
Lab Code:	R2008984-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 04:58	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 04:58	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/07/20 04:58	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/07/20 04:58	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 04:58	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 04:58	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 04:58	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/07/20 04:58	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 04:58	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	10/07/20 04:58	
Dibromofluoromethane	93	80 - 116	10/07/20 04:58	
Toluene-d8	98	87 - 121	10/07/20 04:58	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 15:10
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	UCB-MW-3	**Units:**	ug/L
Lab Code:	R2008984-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 05:20	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 05:20	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 05:20	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:20	
1,4-Dioxane	40 U	40	13	1	10/07/20 05:20	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 05:20	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 05:20	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 05:20	
Acetone	5.0 U	5.0	5.0	1	10/07/20 05:20	
Benzene	1.0 U	1.0	0.20	1	10/07/20 05:20	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 05:20	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 05:20	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 05:20	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 05:20	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:20	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 05:20	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 05:20	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 05:20	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 05:20	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 05:20	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 05:20	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 05:20	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 05:20	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 05:20	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 05:20	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 05:20	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 05:20	
Styrene	1.0 U	1.0	0.20	1	10/07/20 05:20	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 05:20	
Toluene	1.0 U	1.0	0.20	1	10/07/20 05:20	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 15:10
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	UCB-MW-3	**Units:**	ug/L
Lab Code:	R2008984-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 05:20	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 05:20	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/07/20 05:20	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/07/20 05:20	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 05:20	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 05:20	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 05:20	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/07/20 05:20	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 05:20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	10/07/20 05:20	
Dibromofluoromethane	92	80 - 116	10/07/20 05:20	
Toluene-d8	100	87 - 121	10/07/20 05:20	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 16:30
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-77	**Units:**	ug/L
Lab Code:	R2008984-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 05:43	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 05:43	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 05:43	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:43	
1,4-Dioxane	40 U	40	13	1	10/07/20 05:43	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 05:43	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 05:43	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 05:43	
Acetone	5.0 U	5.0	5.0	1	10/07/20 05:43	
Benzene	1.0 U	1.0	0.20	1	10/07/20 05:43	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 05:43	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 05:43	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 05:43	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 05:43	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 05:43	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 05:43	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 05:43	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 05:43	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 05:43	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 05:43	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 05:43	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 05:43	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 05:43	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 05:43	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 05:43	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 05:43	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 05:43	
Styrene	1.0 U	1.0	0.20	1	10/07/20 05:43	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 05:43	
Toluene	1.0 U	1.0	0.20	1	10/07/20 05:43	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 16:30
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-77	**Units:**	ug/L
Lab Code:	R2008984-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**0.37**	**J**	1.0	0.20	1	10/07/20 05:43	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.24	1	10/07/20 05:43	
Vinyl Chloride	1.0	U	1.0	0.20	1	10/07/20 05:43	
cis-1,2-Dichloroethene	1.0	U	1.0	0.23	1	10/07/20 05:43	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	10/07/20 05:43	
m,p-Xylenes	2.0	U	2.0	0.20	1	10/07/20 05:43	
o-Xylene	1.0	U	1.0	0.20	1	10/07/20 05:43	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	10/07/20 05:43	
trans-1,3-Dichloropropene	1.0	U	1.0	0.23	1	10/07/20 05:43	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	85 - 122	10/07/20 05:43	
Dibromofluoromethane	92	80 - 116	10/07/20 05:43	
Toluene-d8	96	87 - 121	10/07/20 05:43	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 10:10
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-33R	**Units:**	ug/L
Lab Code:	R2008984-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 06:04	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 06:04	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 06:04	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:04	
1,4-Dioxane	40 U	40	13	1	10/07/20 06:04	
2-Butanone (MEK)	**2.5 J**	5.0	0.78	1	10/07/20 06:04	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 06:04	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 06:04	
Acetone	5.0 U	5.0	5.0	1	10/07/20 06:04	
Benzene	1.0 U	1.0	0.20	1	10/07/20 06:04	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 06:04	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 06:04	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 06:04	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 06:04	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:04	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 06:04	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 06:04	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 06:04	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 06:04	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 06:04	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 06:04	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 06:04	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 06:04	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 06:04	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 06:04	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 06:04	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 06:04	
Styrene	1.0 U	1.0	0.20	1	10/07/20 06:04	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 06:04	
Toluene	1.0 U	1.0	0.20	1	10/07/20 06:04	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 10:10
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-33R	**Units:**	ug/L
Lab Code:	R2008984-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 06:04	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 06:04	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/07/20 06:04	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/07/20 06:04	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 06:04	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 06:04	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 06:04	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/07/20 06:04	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 06:04	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	85 - 122	10/07/20 06:04	
Dibromofluoromethane	96	80 - 116	10/07/20 06:04	
Toluene-d8	99	87 - 121	10/07/20 06:04	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
000109-99-9	Furan, tetrahydro-	4.94	100	JN
	unknown	5.05	11	J

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:05
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-69R	**Units:**	ug/L
Lab Code:	R2008984-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 06:26	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 06:26	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 06:26	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:26	
1,4-Dioxane	40 U	40	13	1	10/07/20 06:26	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 06:26	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 06:26	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 06:26	
Acetone	5.0 U	5.0	5.0	1	10/07/20 06:26	
Benzene	1.0 U	1.0	0.20	1	10/07/20 06:26	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 06:26	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 06:26	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 06:26	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 06:26	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:26	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 06:26	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 06:26	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 06:26	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 06:26	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 06:26	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 06:26	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 06:26	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 06:26	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 06:26	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 06:26	
Methyl tert-Butyl Ether	**0.29 J**	1.0	0.20	1	10/07/20 06:26	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 06:26	
Styrene	1.0 U	1.0	0.20	1	10/07/20 06:26	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 06:26	
Toluene	1.0 U	1.0	0.20	1	10/07/20 06:26	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:05
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-69R	**Units:**	ug/L
Lab Code:	R2008984-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 06:26	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 06:26	
Vinyl Chloride	**0.29 J**	1.0	0.20	1	10/07/20 06:26	
cis-1,2-Dichloroethene	**1.9**	1.0	0.23	1	10/07/20 06:26	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 06:26	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 06:26	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 06:26	
trans-1,2-Dichloroethene	**0.52 J**	1.0	0.20	1	10/07/20 06:26	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 06:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	10/07/20 06:26	
Dibromofluoromethane	94	80 - 116	10/07/20 06:26	
Toluene-d8	99	87 - 121	10/07/20 06:26	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 14:40
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-76	**Units:**	ug/L
Lab Code:	R2008984-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 06:48	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 06:48	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 06:48	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:48	
1,4-Dioxane	40 U	40	13	1	10/07/20 06:48	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 06:48	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 06:48	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 06:48	
Acetone	5.0 U	5.0	5.0	1	10/07/20 06:48	
Benzene	1.0 U	1.0	0.20	1	10/07/20 06:48	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 06:48	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 06:48	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 06:48	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 06:48	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 06:48	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 06:48	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 06:48	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 06:48	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 06:48	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 06:48	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 06:48	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 06:48	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 06:48	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 06:48	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 06:48	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 06:48	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 06:48	
Styrene	1.0 U	1.0	0.20	1	10/07/20 06:48	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 06:48	
Toluene	1.0 U	1.0	0.20	1	10/07/20 06:48	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 14:40
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-76	**Units:**	ug/L
Lab Code:	R2008984-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 06:48	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 06:48	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/07/20 06:48	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/07/20 06:48	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 06:48	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 06:48	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 06:48	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/07/20 06:48	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 06:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	85 - 122	10/07/20 06:48	
Dibromofluoromethane	94	80 - 116	10/07/20 06:48	
Toluene-d8	99	87 - 121	10/07/20 06:48	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 15:50
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-58	**Units:**	ug/L
Lab Code:	R2008984-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 07:10	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 07:10	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 07:10	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:10	
1,4-Dioxane	40 U	40	13	1	10/07/20 07:10	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 07:10	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 07:10	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 07:10	
Acetone	5.0 U	5.0	5.0	1	10/07/20 07:10	
Benzene	1.0 U	1.0	0.20	1	10/07/20 07:10	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 07:10	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 07:10	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 07:10	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 07:10	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:10	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 07:10	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 07:10	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 07:10	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 07:10	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 07:10	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 07:10	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 07:10	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 07:10	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 07:10	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 07:10	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 07:10	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 07:10	
Styrene	1.0 U	1.0	0.20	1	10/07/20 07:10	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 07:10	
Toluene	1.0 U	1.0	0.20	1	10/07/20 07:10	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 15:50
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-58	**Units:**	ug/L
Lab Code:	R2008984-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/07/20 07:10	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 07:10	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/07/20 07:10	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/07/20 07:10	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 07:10	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 07:10	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 07:10	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/07/20 07:10	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 07:10	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	10/07/20 07:10	
Dibromofluoromethane	92	80 - 116	10/07/20 07:10	
Toluene-d8	97	87 - 121	10/07/20 07:10	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 16:55
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-78	**Units:**	ug/L
Lab Code:	R2008984-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,1-Dichloroethene (1,1-DCE)	**0.49 J**	1.0	0.20	1	10/07/20 07:32	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/07/20 07:32	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/07/20 07:32	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/07/20 07:32	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:32	
1,4-Dioxane	40 U	40	13	1	10/07/20 07:32	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/07/20 07:32	
2-Hexanone	5.0 U	5.0	0.20	1	10/07/20 07:32	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/07/20 07:32	
Acetone	5.0 U	5.0	5.0	1	10/07/20 07:32	
Benzene	1.0 U	1.0	0.20	1	10/07/20 07:32	
Bromochloromethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
Bromoform	1.0 U	1.0	0.25	1	10/07/20 07:32	
Bromomethane	1.0 U	1.0	0.70	1	10/07/20 07:32	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/07/20 07:32	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/07/20 07:32	
Chlorobenzene	1.0 U	1.0	0.20	1	10/07/20 07:32	
Chloroethane	1.0 U	1.0	0.23	1	10/07/20 07:32	
Chloroform	1.0 U	1.0	0.24	1	10/07/20 07:32	
Chloromethane	1.0 U	1.0	0.28	1	10/07/20 07:32	
Cyclohexane	1.0 U	1.0	0.26	1	10/07/20 07:32	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/07/20 07:32	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/07/20 07:32	
Dichloromethane	1.0 U	1.0	0.65	1	10/07/20 07:32	
Ethylbenzene	1.0 U	1.0	0.20	1	10/07/20 07:32	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/07/20 07:32	
Methyl Acetate	2.0 U	2.0	0.33	1	10/07/20 07:32	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/07/20 07:32	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/07/20 07:32	
Styrene	1.0 U	1.0	0.20	1	10/07/20 07:32	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/07/20 07:32	
Toluene	1.0 U	1.0	0.20	1	10/07/20 07:32	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 16:55
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-78	**Units:**	ug/L
Lab Code:	R2008984-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**2.2**	1.0	0.20	1	10/07/20 07:32	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/07/20 07:32	
Vinyl Chloride	**15**	1.0	0.20	1	10/07/20 07:32	
cis-1,2-Dichloroethene	**120**	1.0	0.23	1	10/07/20 07:32	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/07/20 07:32	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/07/20 07:32	
o-Xylene	1.0 U	1.0	0.20	1	10/07/20 07:32	
trans-1,2-Dichloroethene	**1.0**	1.0	0.20	1	10/07/20 07:32	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/07/20 07:32	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	85 - 122	10/07/20 07:32	
Dibromofluoromethane	94	80 - 116	10/07/20 07:32	
Toluene-d8	96	87 - 121	10/07/20 07:32	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Volatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-1IRR	**Units:**	ug/L
Lab Code:	R2008984-001	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	**1.6**	1.0	0.35	1	10/05/20 10:38	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 13:45
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-70R	**Units:**	ug/L
Lab Code:	R2008984-003	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	1.0 U	1.0	0.35	1	10/05/20 10:47	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 10:10
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-33R	**Units:**	ug/L
Lab Code:	R2008984-007	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	**0.73 J**	1.0	0.35	1	10/05/20 10:56	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:05
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-69R	**Units:**	ug/L
Lab Code:	R2008984-009	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	1.0 U	1.0	0.35	1	10/05/20 11:16	

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Leader Professional Services, In
Project No.: R2008984
Project Name:
Matrix: WATER

Service Request: MW-11RR
Date Collected: 9/28/2020
Date Received: 9/29/2020
Units: ug/L
Basis:

Sample Name: **MW-1IRR** **Lab Code:** **R2008984-001**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	463		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-11RR
Project No.:	R2008984	**Date Collected:**	9/28/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-1IRR Diss** **Lab Code:** **R2008984-002**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	100	U	

% Solids: **0.0**

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Leader Professional Services, In
Project No.: R2008984
Project Name:
Matrix: WATER

Service Request: MW-11RR
Date Collected: 9/28/2020
Date Received: 9/29/2020
Units: ug/L
Basis:

Sample Name: **MW-70R** **Lab Code:** **R2008984-003**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	74.2	J	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-11RR
Project No.:	R2008984	**Date Collected:**	9/28/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-70R Diss** **Lab Code:** **R2008984-004**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	100	U	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Leader Professional Services, In
Project No.: R2008984
Project Name:
Matrix: WATER

Service Request: MW-11RR
Date Collected: 9/28/2020
Date Received: 9/29/2020
Units: ug/L
Basis:

Sample Name: **MW-33R** **Lab Code:** **R2008984-007**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	138		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Leader Professional Services, In
Project No.: R2008984
Project Name:
Matrix: WATER

Service Request: MW-11RR
Date Collected: 9/28/2020
Date Received: 9/29/2020
Units: ug/L
Basis:

Sample Name: **MW-33R Diss** **Lab Code:** **R2008984-008**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	144		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Leader Professional Services, In
Project No.: R2008984
Project Name:
Matrix: WATER

Service Request: MW-11RR
Date Collected: 9/28/2020
Date Received: 9/29/2020
Units: ug/L
Basis:

Sample Name: **MW-69R** **Lab Code:** **R2008984-009**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	100	U	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-11RR
Project No.:	R2008984	**Date Collected:**	9/28/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-69R Diss** **Lab Code:** **R2008984-010**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	100	U	

% Solids: **0.0**

Comments:

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-1IRR	**Basis:**	NA
Lab Code:	R2008984-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**4.0**	mg/L	1.0	0.5	1	10/06/20 20:47	
Chloride	9056A	**54.7**	mg/L	2.0	0.5	10	10/11/20 10:38	
Sulfate	9056A	**57.3**	mg/L	2.0	0.4	10	10/11/20 10:38	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 13:45
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-70R	**Basis:**	NA
Lab Code:	R2008984-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**5.0**	mg/L	1.0	0.5	1	10/06/20 21:08	
Chloride	9056A	**82.0**	mg/L	2.0	0.5	10	10/11/20 10:45	
Sulfate	9056A	**274**	mg/L	10	2	50	10/13/20 16:24	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 10:10
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-33R	**Basis:**	NA
Lab Code:	R2008984-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**4.4**	mg/L	1.0	0.5	1	10/06/20 22:51	
Chloride	9056A	**55.6**	mg/L	2.0	0.5	10	10/11/20 10:52	
Sulfate	9056A	**33.2**	mg/L	2.0	0.4	10	10/11/20 10:52	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2008984
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/28/20 12:05
Sample Matrix:	Water	**Date Received:**	09/29/20 18:00
Sample Name:	MW-69R	**Basis:**	NA
Lab Code:	R2008984-009		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**9.3**	mg/L	1.0	0.5	1	10/06/20 23:12	
Chloride	9056A	**66.5**	mg/L	2.0	0.5	10	10/11/20 11:20	
Sulfate	9056A	**25.4**	mg/L	2.0	0.4	10	10/11/20 11:20	

November 10, 2020 Service Request No:R2009031

Mike Rumrill
Leader Professional Services, Inc.
271 Marsh Road
Suite 2
Pittsford, NY 14534

Laboratory Results for: 811 Jefferson Road

Dear Mike,

Enclosed are the results of the sample(s) submitted to our laboratory September 29, 2020
For your reference, these analyses have been assigned our service request number **R2009031.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Janice Jaeger
Project Manager

CC: Peter von
Schondorf

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003935

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name: 811 Jefferson Road	Project Number: 713.032A
Project Manager: Mike Runnill	Report CC:
Company/Address: Leader professional Services 271 Mash Road pittsford, NY Suite 2	
Phone #: 585-248-2913	Email: mrunnill@leaderlink.com
Sampler's Signature:	Sampler's Printed Name: Alec Minnow

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs TCL VOC 8260 • 624 • CLP	GC/MS SVOAs • 8270 • 625	GC VOAs • 8021 • 601/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Fe	SO4, Cl	TOC	RSK-Ethene				
MW 50A		9/29/20	14:30	W	3	X														
Sub-pump-Blank		9/29/20	15:00	W	3	X														
MW-38		9/29/20	10:00	W	13	X							X	X	X	X	X			
MW-55		9/29/20	11:53	W	3	X														
MW-63		9/29/20	16:00	W	13	X							X	X	X	X	X			
MW-63 MS		9/29/20	1600	W	13	X							X	X	X	X	X			
MW-63 MSD		9/29/20	16:00	W	13	X							X	X	X	X	X			
MW-63 Dup		9/29/20	16:00	W	13	X							X	X	X	X	X			
MW-54		9/29/20	16:55	W	3	X														
Peristalt-Blank		9/29/20	17:00	W	13	X							X	X	X	X	X			

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals
MS: Matrix Spike
MSD: Matrix Spike Duplicate
Dup: Duplicate

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data

Edata X Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: Team FSI
90 Goodway Drive, Rochester, NY

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	
Printed Name: Alec Minnow	Printed Name: Daniel Ward	Printed Name	Printed Name	Printed Name	
Firm: Leader prof	Firm: ALS	Firm	Firm	Firm	
Date/Time: 9/29/20 18:35	Date/Time: 9/29/2020 1835	Date/Time	Date/Time	Date/Time	

R2009031 5
Leader Professional Services, Inc.
811 Jefferson Road

Distribution: White - Lab Copy; Yellow - Return to Originator

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Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 14:30
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-5DR	**Units:**	ug/L
Lab Code:	R2009031-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/08/20 14:48	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/08/20 14:48	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/08/20 14:48	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:48	
1,4-Dioxane	40 U	40	13	1	10/08/20 14:48	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/08/20 14:48	
2-Hexanone	5.0 U	5.0	0.20	1	10/08/20 14:48	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/08/20 14:48	
Acetone	5.0 U	5.0	5.0	1	10/08/20 14:48	
Benzene	1.0 U	1.0	0.20	1	10/08/20 14:48	
Bromochloromethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
Bromoform	1.0 U	1.0	0.25	1	10/08/20 14:48	
Bromomethane	1.0 U	1.0	0.70	1	10/08/20 14:48	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/08/20 14:48	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/08/20 14:48	
Chlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:48	
Chloroethane	1.0 U	1.0	0.23	1	10/08/20 14:48	
Chloroform	1.0 U	1.0	0.24	1	10/08/20 14:48	
Chloromethane	1.0 U	1.0	0.28	1	10/08/20 14:48	
Cyclohexane	1.0 U	1.0	0.26	1	10/08/20 14:48	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/08/20 14:48	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/08/20 14:48	
Dichloromethane	1.0 U	1.0	0.65	1	10/08/20 14:48	
Ethylbenzene	1.0 U	1.0	0.20	1	10/08/20 14:48	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/08/20 14:48	
Methyl Acetate	2.0 U	2.0	0.33	1	10/08/20 14:48	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/08/20 14:48	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/08/20 14:48	
Styrene	1.0 U	1.0	0.20	1	10/08/20 14:48	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/08/20 14:48	
Toluene	1.0 U	1.0	0.20	1	10/08/20 14:48	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 14:30
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-5DR	**Units:**	ug/L
Lab Code:	R2009031-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**9.2**	1.0	0.20	1	10/08/20 14:48	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/08/20 14:48	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/08/20 14:48	
cis-1,2-Dichloroethene	**3.4**	1.0	0.23	1	10/08/20 14:48	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/08/20 14:48	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/08/20 14:48	
o-Xylene	1.0 U	1.0	0.20	1	10/08/20 14:48	
trans-1,2-Dichloroethene	**0.21 J**	1.0	0.20	1	10/08/20 14:48	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/08/20 14:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	85 - 122	10/08/20 14:48	
Dibromofluoromethane	108	80 - 116	10/08/20 14:48	
Toluene-d8	112	87 - 121	10/08/20 14:48	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 15:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	Sub-Pump-Blank	**Units:**	ug/L
Lab Code:	R2009031-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/08/20 14:04	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/08/20 14:04	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/08/20 14:04	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:04	
1,4-Dioxane	40 U	40	13	1	10/08/20 14:04	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/08/20 14:04	
2-Hexanone	5.0 U	5.0	0.20	1	10/08/20 14:04	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/08/20 14:04	
Acetone	5.0 U	5.0	5.0	1	10/08/20 14:04	
Benzene	1.0 U	1.0	0.20	1	10/08/20 14:04	
Bromochloromethane	1.0 U	1.0	0.20	1	10/08/20 14:04	
Bromodichloromethane	**3.7**	1.0	0.20	1	10/08/20 14:04	
Bromoform	1.0 U	1.0	0.25	1	10/08/20 14:04	
Bromomethane	1.0 U	1.0	0.70	1	10/08/20 14:04	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/08/20 14:04	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/08/20 14:04	
Chlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:04	
Chloroethane	1.0 U	1.0	0.23	1	10/08/20 14:04	
Chloroform	**8.6**	1.0	0.24	1	10/08/20 14:04	
Chloromethane	1.0 U	1.0	0.28	1	10/08/20 14:04	
Cyclohexane	1.0 U	1.0	0.26	1	10/08/20 14:04	
Dibromochloromethane	**1.2**	1.0	0.20	1	10/08/20 14:04	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/08/20 14:04	
Dichloromethane	1.0 U	1.0	0.65	1	10/08/20 14:04	
Ethylbenzene	1.0 U	1.0	0.20	1	10/08/20 14:04	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/08/20 14:04	
Methyl Acetate	2.0 U	2.0	0.33	1	10/08/20 14:04	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/08/20 14:04	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/08/20 14:04	
Styrene	1.0 U	1.0	0.20	1	10/08/20 14:04	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/08/20 14:04	
Toluene	**0.38 J**	1.0	0.20	1	10/08/20 14:04	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 15:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	Sub-Pump-Blank	**Units:**	ug/L
Lab Code:	R2009031-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/08/20 14:04	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/08/20 14:04	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/08/20 14:04	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/08/20 14:04	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/08/20 14:04	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/08/20 14:04	
o-Xylene	1.0 U	1.0	0.20	1	10/08/20 14:04	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/08/20 14:04	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/08/20 14:04	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	10/08/20 14:04	
Dibromofluoromethane	113	80 - 116	10/08/20 14:04	
Toluene-d8	112	87 - 121	10/08/20 14:04	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 10:20
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-38	**Units:**	ug/L
Lab Code:	R2009031-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1000 U	1000	200	1000	10/08/20 16:37	
1,1,2,2-Tetrachloroethane	1000 U	1000	200	1000	10/08/20 16:37	
1,1,2-Trichloroethane	1000 U	1000	200	1000	10/08/20 16:37	
1,1,2-Trichloro-1,2,2-trifluoroethane	1000 U	1000	200	1000	10/08/20 16:37	
1,1-Dichloroethane (1,1-DCA)	1000 U	1000	200	1000	10/08/20 16:37	
1,1-Dichloroethene (1,1-DCE)	**310 J**	1000	200	1000	10/08/20 16:37	
1,2,3-Trichlorobenzene	1000 U	1000	250	1000	10/08/20 16:37	
1,2,4-Trichlorobenzene	1000 U	1000	340	1000	10/08/20 16:37	
1,2-Dibromo-3-chloropropane (DBCP)	2000 U	2000	450	1000	10/08/20 16:37	
1,2-Dibromoethane	1000 U	1000	200	1000	10/08/20 16:37	
1,2-Dichlorobenzene	1000 U	1000	200	1000	10/08/20 16:37	
1,2-Dichloroethane	1000 U	1000	200	1000	10/08/20 16:37	
1,2-Dichloropropane	1000 U	1000	200	1000	10/08/20 16:37	
1,3-Dichlorobenzene	1000 U	1000	200	1000	10/08/20 16:37	
1,4-Dichlorobenzene	1000 U	1000	200	1000	10/08/20 16:37	
1,4-Dioxane	40000 U	40000	13000	1000	10/08/20 16:37	
2-Butanone (MEK)	5000 U	5000	780	1000	10/08/20 16:37	
2-Hexanone	5000 U	5000	200	1000	10/08/20 16:37	
4-Methyl-2-pentanone	5000 U	5000	200	1000	10/08/20 16:37	
Acetone	5000 U	5000	5000	1000	10/08/20 16:37	
Benzene	1000 U	1000	200	1000	10/08/20 16:37	
Bromochloromethane	1000 U	1000	200	1000	10/08/20 16:37	
Bromodichloromethane	1000 U	1000	200	1000	10/08/20 16:37	
Bromoform	1000 U	1000	250	1000	10/08/20 16:37	
Bromomethane	1000 U	1000	700	1000	10/08/20 16:37	
Carbon Disulfide	1000 U	1000	420	1000	10/08/20 16:37	
Carbon Tetrachloride	1000 U	1000	340	1000	10/08/20 16:37	
Chlorobenzene	1000 U	1000	200	1000	10/08/20 16:37	
Chloroethane	1000 U	1000	230	1000	10/08/20 16:37	
Chloroform	1000 U	1000	240	1000	10/08/20 16:37	
Chloromethane	1000 U	1000	280	1000	10/08/20 16:37	
Cyclohexane	1000 U	1000	260	1000	10/08/20 16:37	
Dibromochloromethane	1000 U	1000	200	1000	10/08/20 16:37	
Dichlorodifluoromethane (CFC 12)	1000 U	1000	210	1000	10/08/20 16:37	
Dichloromethane	1000 U	1000	650	1000	10/08/20 16:37	
Ethylbenzene	1000 U	1000	200	1000	10/08/20 16:37	
Isopropylbenzene (Cumene)	1000 U	1000	200	1000	10/08/20 16:37	
Methyl Acetate	2000 U	2000	330	1000	10/08/20 16:37	
Methyl tert-Butyl Ether	1000 U	1000	200	1000	10/08/20 16:37	
Methylcyclohexane	1000 U	1000	200	1000	10/08/20 16:37	
Styrene	1000 U	1000	200	1000	10/08/20 16:37	
Tetrachloroethene (PCE)	1000 U	1000	210	1000	10/08/20 16:37	
Toluene	1000 U	1000	200	1000	10/08/20 16:37	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 10:20
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-38	**Units:**	ug/L
Lab Code:	R2009031-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**170000**		1000	200	1000	10/08/20 16:37	
Trichlorofluoromethane (CFC 11)	1000	U	1000	240	1000	10/08/20 16:37	
Vinyl Chloride	**1000**	**J**	1000	200	1000	10/08/20 16:37	
cis-1,2-Dichloroethene	**250000**	**E**	1000	230	1000	10/08/20 16:37	
cis-1,3-Dichloropropene	1000	U	1000	200	1000	10/08/20 16:37	
m,p-Xylenes	2000	U	2000	200	1000	10/08/20 16:37	
o-Xylene	1000	U	1000	200	1000	10/08/20 16:37	
trans-1,2-Dichloroethene	**1700**		1000	200	1000	10/08/20 16:37	
trans-1,3-Dichloropropene	1000	U	1000	230	1000	10/08/20 16:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	85 - 122	10/08/20 16:37	
Dibromofluoromethane	107	80 - 116	10/08/20 16:37	
Toluene-d8	108	87 - 121	10/08/20 16:37	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	unknown	1.23	5900	J

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 10:20
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-38	**Units:**	ug/L
Lab Code:	R2009031-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	2500 U	2500	500	2500	10/08/20 18:27	
1,1,2,2-Tetrachloroethane	2500 U	2500	500	2500	10/08/20 18:27	
1,1,2-Trichloroethane	2500 U	2500	500	2500	10/08/20 18:27	
1,1,2-Trichloro-1,2,2-trifluoroethane	2500 U	2500	500	2500	10/08/20 18:27	
1,1-Dichloroethane (1,1-DCA)	2500 U	2500	500	2500	10/08/20 18:27	
1,1-Dichloroethene (1,1-DCE)	**930 DJ**	2500	500	2500	10/08/20 18:27	
1,2,3-Trichlorobenzene	2500 U	2500	630	2500	10/08/20 18:27	
1,2,4-Trichlorobenzene	2500 U	2500	850	2500	10/08/20 18:27	
1,2-Dibromo-3-chloropropane (DBCP)	5000 U	5000	1200	2500	10/08/20 18:27	
1,2-Dibromoethane	2500 U	2500	500	2500	10/08/20 18:27	
1,2-Dichlorobenzene	2500 U	2500	500	2500	10/08/20 18:27	
1,2-Dichloroethane	2500 U	2500	500	2500	10/08/20 18:27	
1,2-Dichloropropane	2500 U	2500	500	2500	10/08/20 18:27	
1,3-Dichlorobenzene	2500 U	2500	500	2500	10/08/20 18:27	
1,4-Dichlorobenzene	2500 U	2500	500	2500	10/08/20 18:27	
1,4-Dioxane	100000 U	100000	33000	2500	10/08/20 18:27	
2-Butanone (MEK)	13000 U	13000	2000	2500	10/08/20 18:27	
2-Hexanone	13000 U	13000	500	2500	10/08/20 18:27	
4-Methyl-2-pentanone	13000 U	13000	500	2500	10/08/20 18:27	
Acetone	13000 U	13000	13000	2500	10/08/20 18:27	
Benzene	2500 U	2500	500	2500	10/08/20 18:27	
Bromochloromethane	2500 U	2500	500	2500	10/08/20 18:27	
Bromodichloromethane	2500 U	2500	500	2500	10/08/20 18:27	
Bromoform	2500 U	2500	630	2500	10/08/20 18:27	
Bromomethane	2500 U	2500	1800	2500	10/08/20 18:27	
Carbon Disulfide	2500 U	2500	1100	2500	10/08/20 18:27	
Carbon Tetrachloride	2500 U	2500	850	2500	10/08/20 18:27	
Chlorobenzene	2500 U	2500	500	2500	10/08/20 18:27	
Chloroethane	2500 U	2500	580	2500	10/08/20 18:27	
Chloroform	2500 U	2500	600	2500	10/08/20 18:27	
Chloromethane	2500 U	2500	700	2500	10/08/20 18:27	
Cyclohexane	2500 U	2500	650	2500	10/08/20 18:27	
Dibromochloromethane	2500 U	2500	500	2500	10/08/20 18:27	
Dichlorodifluoromethane (CFC 12)	2500 U	2500	530	2500	10/08/20 18:27	
Dichloromethane	2500 U	2500	1700	2500	10/08/20 18:27	
Ethylbenzene	2500 U	2500	500	2500	10/08/20 18:27	
Isopropylbenzene (Cumene)	2500 U	2500	500	2500	10/08/20 18:27	
Methyl Acetate	5000 U	5000	830	2500	10/08/20 18:27	
Methyl tert-Butyl Ether	2500 U	2500	500	2500	10/08/20 18:27	
Methylcyclohexane	2500 U	2500	500	2500	10/08/20 18:27	
Styrene	2500 U	2500	500	2500	10/08/20 18:27	
Tetrachloroethene (PCE)	**2900 D**	2500	530	2500	10/08/20 18:27	
Toluene	2500 U	2500	500	2500	10/08/20 18:27	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 10:20
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-38	**Units:**	ug/L
Lab Code:	R2009031-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**170000**	**D**	2500	500	2500	10/08/20 18:27	
Trichlorofluoromethane (CFC 11)	2500	U	2500	600	2500	10/08/20 18:27	
Vinyl Chloride	2500	U	2500	500	2500	10/08/20 18:27	
cis-1,2-Dichloroethene	**260000**	**D**	2500	580	2500	10/08/20 18:27	
cis-1,3-Dichloropropene	2500	U	2500	500	2500	10/08/20 18:27	
m,p-Xylenes	5000	U	5000	500	2500	10/08/20 18:27	
o-Xylene	2500	U	2500	500	2500	10/08/20 18:27	
trans-1,2-Dichloroethene	**1800**	**DJ**	2500	500	2500	10/08/20 18:27	
trans-1,3-Dichloropropene	2500	U	2500	580	2500	10/08/20 18:27	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	10/08/20 18:27	
Dibromofluoromethane	108	80 - 116	10/08/20 18:27	
Toluene-d8	111	87 - 121	10/08/20 18:27	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 11:53
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-55	**Units:**	ug/L
Lab Code:	R2009031-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/08/20 15:10	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/08/20 15:10	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/08/20 15:10	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:10	
1,4-Dioxane	40 U	40	13	1	10/08/20 15:10	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/08/20 15:10	
2-Hexanone	5.0 U	5.0	0.20	1	10/08/20 15:10	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/08/20 15:10	
Acetone	5.0 U	5.0	5.0	1	10/08/20 15:10	
Benzene	1.0 U	1.0	0.20	1	10/08/20 15:10	
Bromochloromethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
Bromoform	1.0 U	1.0	0.25	1	10/08/20 15:10	
Bromomethane	1.0 U	1.0	0.70	1	10/08/20 15:10	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/08/20 15:10	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/08/20 15:10	
Chlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:10	
Chloroethane	1.0 U	1.0	0.23	1	10/08/20 15:10	
Chloroform	1.0 U	1.0	0.24	1	10/08/20 15:10	
Chloromethane	1.0 U	1.0	0.28	1	10/08/20 15:10	
Cyclohexane	1.0 U	1.0	0.26	1	10/08/20 15:10	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/08/20 15:10	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/08/20 15:10	
Dichloromethane	1.0 U	1.0	0.65	1	10/08/20 15:10	
Ethylbenzene	1.0 U	1.0	0.20	1	10/08/20 15:10	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/08/20 15:10	
Methyl Acetate	2.0 U	2.0	0.33	1	10/08/20 15:10	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/08/20 15:10	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/08/20 15:10	
Styrene	1.0 U	1.0	0.20	1	10/08/20 15:10	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/08/20 15:10	
Toluene	1.0 U	1.0	0.20	1	10/08/20 15:10	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 11:53
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-55	**Units:**	ug/L
Lab Code:	R2009031-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**2.6**	1.0	0.20	1	10/08/20 15:10	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/08/20 15:10	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/08/20 15:10	
cis-1,2-Dichloroethene	**2.0**	1.0	0.23	1	10/08/20 15:10	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/08/20 15:10	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/08/20 15:10	
o-Xylene	1.0 U	1.0	0.20	1	10/08/20 15:10	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/08/20 15:10	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/08/20 15:10	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	10/08/20 15:10	
Dibromofluoromethane	111	80 - 116	10/08/20 15:10	
Toluene-d8	112	87 - 121	10/08/20 15:10	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	unknown	1.56	5.7	J

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63	**Units:**	ug/L
Lab Code:	R2009031-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/08/20 15:32	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/08/20 15:32	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/08/20 15:32	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:32	
1,4-Dioxane	40 U	40	13	1	10/08/20 15:32	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/08/20 15:32	
2-Hexanone	5.0 U	5.0	0.20	1	10/08/20 15:32	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/08/20 15:32	
Acetone	**12**	5.0	5.0	1	10/08/20 15:32	
Benzene	1.0 U	1.0	0.20	1	10/08/20 15:32	
Bromochloromethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
Bromoform	1.0 U	1.0	0.25	1	10/08/20 15:32	
Bromomethane	1.0 U	1.0	0.70	1	10/08/20 15:32	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/08/20 15:32	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/08/20 15:32	
Chlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:32	
Chloroethane	1.0 U	1.0	0.23	1	10/08/20 15:32	
Chloroform	1.0 U	1.0	0.24	1	10/08/20 15:32	
Chloromethane	1.0 U	1.0	0.28	1	10/08/20 15:32	
Cyclohexane	1.0 U	1.0	0.26	1	10/08/20 15:32	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/08/20 15:32	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/08/20 15:32	
Dichloromethane	1.0 U	1.0	0.65	1	10/08/20 15:32	
Ethylbenzene	1.0 U	1.0	0.20	1	10/08/20 15:32	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/08/20 15:32	
Methyl Acetate	2.0 U	2.0	0.33	1	10/08/20 15:32	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/08/20 15:32	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/08/20 15:32	
Styrene	1.0 U	1.0	0.20	1	10/08/20 15:32	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/08/20 15:32	
Toluene	**0.32 J**	1.0	0.20	1	10/08/20 15:32	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63	**Units:**	ug/L
Lab Code:	R2009031-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/08/20 15:32	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/08/20 15:32	
Vinyl Chloride	**1.2**	1.0	0.20	1	10/08/20 15:32	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/08/20 15:32	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/08/20 15:32	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/08/20 15:32	
o-Xylene	1.0 U	1.0	0.20	1	10/08/20 15:32	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/08/20 15:32	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/08/20 15:32	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	85 - 122	10/08/20 15:32	
Dibromofluoromethane	106	80 - 116	10/08/20 15:32	
Toluene-d8	106	87 - 121	10/08/20 15:32	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	unknown	1.24	7.6	J

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63 Dup	**Units:**	ug/L
Lab Code:	R2009031-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/08/20 15:54	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/08/20 15:54	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/08/20 15:54	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:54	
1,4-Dioxane	40 U	40	13	1	10/08/20 15:54	
2-Butanone (MEK)	**3.5 J**	5.0	0.78	1	10/08/20 15:54	
2-Hexanone	**0.73 J**	5.0	0.20	1	10/08/20 15:54	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/08/20 15:54	
Acetone	**11**	5.0	5.0	1	10/08/20 15:54	
Benzene	1.0 U	1.0	0.20	1	10/08/20 15:54	
Bromochloromethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
Bromodichloromethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
Bromoform	1.0 U	1.0	0.25	1	10/08/20 15:54	
Bromomethane	1.0 U	1.0	0.70	1	10/08/20 15:54	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/08/20 15:54	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/08/20 15:54	
Chlorobenzene	1.0 U	1.0	0.20	1	10/08/20 15:54	
Chloroethane	1.0 U	1.0	0.23	1	10/08/20 15:54	
Chloroform	1.0 U	1.0	0.24	1	10/08/20 15:54	
Chloromethane	1.0 U	1.0	0.28	1	10/08/20 15:54	
Cyclohexane	1.0 U	1.0	0.26	1	10/08/20 15:54	
Dibromochloromethane	1.0 U	1.0	0.20	1	10/08/20 15:54	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/08/20 15:54	
Dichloromethane	1.0 U	1.0	0.65	1	10/08/20 15:54	
Ethylbenzene	1.0 U	1.0	0.20	1	10/08/20 15:54	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/08/20 15:54	
Methyl Acetate	2.0 U	2.0	0.33	1	10/08/20 15:54	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/08/20 15:54	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/08/20 15:54	
Styrene	1.0 U	1.0	0.20	1	10/08/20 15:54	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/08/20 15:54	
Toluene	**0.29 J**	1.0	0.20	1	10/08/20 15:54	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63 Dup	**Units:**	ug/L
Lab Code:	R2009031-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**0.23 J**	1.0	0.20	1	10/08/20 15:54	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/08/20 15:54	
Vinyl Chloride	**0.99 J**	1.0	0.20	1	10/08/20 15:54	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/08/20 15:54	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/08/20 15:54	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/08/20 15:54	
o-Xylene	1.0 U	1.0	0.20	1	10/08/20 15:54	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/08/20 15:54	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/08/20 15:54	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	10/08/20 15:54	
Dibromofluoromethane	105	80 - 116	10/08/20 15:54	
Toluene-d8	109	87 - 121	10/08/20 15:54	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
007446-09-5	Sulfur dioxide	1.24	9.2	JN

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:55
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-54	**Units:**	ug/L
Lab Code:	R2009031-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	50 U	50	10	50	10/08/20 16:15	
1,1,2,2-Tetrachloroethane	50 U	50	10	50	10/08/20 16:15	
1,1,2-Trichloroethane	50 U	50	10	50	10/08/20 16:15	
1,1,2-Trichloro-1,2,2-trifluoroethane	50 U	50	10	50	10/08/20 16:15	
1,1-Dichloroethane (1,1-DCA)	50 U	50	10	50	10/08/20 16:15	
1,1-Dichloroethene (1,1-DCE)	50 U	50	10	50	10/08/20 16:15	
1,2,3-Trichlorobenzene	50 U	50	13	50	10/08/20 16:15	
1,2,4-Trichlorobenzene	50 U	50	17	50	10/08/20 16:15	
1,2-Dibromo-3-chloropropane (DBCP)	100 U	100	23	50	10/08/20 16:15	
1,2-Dibromoethane	50 U	50	10	50	10/08/20 16:15	
1,2-Dichlorobenzene	50 U	50	10	50	10/08/20 16:15	
1,2-Dichloroethane	50 U	50	10	50	10/08/20 16:15	
1,2-Dichloropropane	50 U	50	10	50	10/08/20 16:15	
1,3-Dichlorobenzene	50 U	50	10	50	10/08/20 16:15	
1,4-Dichlorobenzene	50 U	50	10	50	10/08/20 16:15	
1,4-Dioxane	2000 U	2000	650	50	10/08/20 16:15	
2-Butanone (MEK)	250 U	250	39	50	10/08/20 16:15	
2-Hexanone	250 U	250	10	50	10/08/20 16:15	
4-Methyl-2-pentanone	250 U	250	10	50	10/08/20 16:15	
Acetone	250 U	250	250	50	10/08/20 16:15	
Benzene	50 U	50	10	50	10/08/20 16:15	
Bromochloromethane	50 U	50	10	50	10/08/20 16:15	
Bromodichloromethane	50 U	50	10	50	10/08/20 16:15	
Bromoform	50 U	50	13	50	10/08/20 16:15	
Bromomethane	50 U	50	35	50	10/08/20 16:15	
Carbon Disulfide	50 U	50	21	50	10/08/20 16:15	
Carbon Tetrachloride	50 U	50	17	50	10/08/20 16:15	
Chlorobenzene	50 U	50	10	50	10/08/20 16:15	
Chloroethane	50 U	50	12	50	10/08/20 16:15	
Chloroform	50 U	50	12	50	10/08/20 16:15	
Chloromethane	50 U	50	14	50	10/08/20 16:15	
Cyclohexane	50 U	50	13	50	10/08/20 16:15	
Dibromochloromethane	50 U	50	10	50	10/08/20 16:15	
Dichlorodifluoromethane (CFC 12)	50 U	50	11	50	10/08/20 16:15	
Dichloromethane	50 U	50	33	50	10/08/20 16:15	
Ethylbenzene	50 U	50	10	50	10/08/20 16:15	
Isopropylbenzene (Cumene)	50 U	50	10	50	10/08/20 16:15	
Methyl Acetate	100 U	100	17	50	10/08/20 16:15	
Methyl tert-Butyl Ether	50 U	50	10	50	10/08/20 16:15	
Methylcyclohexane	50 U	50	10	50	10/08/20 16:15	
Styrene	50 U	50	10	50	10/08/20 16:15	
Tetrachloroethene (PCE)	50 U	50	11	50	10/08/20 16:15	
Toluene	50 U	50	10	50	10/08/20 16:15	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:55
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-54	**Units:**	ug/L
Lab Code:	R2009031-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**14000**	**E**	50	10	50	10/08/20 16:15	
Trichlorofluoromethane (CFC 11)	50	U	50	12	50	10/08/20 16:15	
Vinyl Chloride	**43**	**J**	50	10	50	10/08/20 16:15	
cis-1,2-Dichloroethene	**690**		50	12	50	10/08/20 16:15	
cis-1,3-Dichloropropene	50	U	50	10	50	10/08/20 16:15	
m,p-Xylenes	100	U	100	10	50	10/08/20 16:15	
o-Xylene	50	U	50	10	50	10/08/20 16:15	
trans-1,2-Dichloroethene	50	U	50	10	50	10/08/20 16:15	
trans-1,3-Dichloropropene	50	U	50	12	50	10/08/20 16:15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	10/08/20 16:15	
Dibromofluoromethane	104	80 - 116	10/08/20 16:15	
Toluene-d8	111	87 - 121	10/08/20 16:15	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
007446-09-5	Sulfur dioxide	1.23	380	JN

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:55
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-54	**Units:**	ug/L
Lab Code:	R2009031-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	200 U	200	40	200	10/08/20 18:49	
1,1,2,2-Tetrachloroethane	200 U	200	40	200	10/08/20 18:49	
1,1,2-Trichloroethane	200 U	200	40	200	10/08/20 18:49	
1,1,2-Trichloro-1,2,2-trifluoroethane	200 U	200	40	200	10/08/20 18:49	
1,1-Dichloroethane (1,1-DCA)	200 U	200	40	200	10/08/20 18:49	
1,1-Dichloroethene (1,1-DCE)	200 U	200	40	200	10/08/20 18:49	
1,2,3-Trichlorobenzene	200 U	200	50	200	10/08/20 18:49	
1,2,4-Trichlorobenzene	200 U	200	68	200	10/08/20 18:49	
1,2-Dibromo-3-chloropropane (DBCP)	400 U	400	90	200	10/08/20 18:49	
1,2-Dibromoethane	200 U	200	40	200	10/08/20 18:49	
1,2-Dichlorobenzene	200 U	200	40	200	10/08/20 18:49	
1,2-Dichloroethane	200 U	200	40	200	10/08/20 18:49	
1,2-Dichloropropane	200 U	200	40	200	10/08/20 18:49	
1,3-Dichlorobenzene	200 U	200	40	200	10/08/20 18:49	
1,4-Dichlorobenzene	200 U	200	40	200	10/08/20 18:49	
1,4-Dioxane	8000 U	8000	2600	200	10/08/20 18:49	
2-Butanone (MEK)	1000 U	1000	160	200	10/08/20 18:49	
2-Hexanone	1000 U	1000	40	200	10/08/20 18:49	
4-Methyl-2-pentanone	1000 U	1000	40	200	10/08/20 18:49	
Acetone	1000 U	1000	1000	200	10/08/20 18:49	
Benzene	200 U	200	40	200	10/08/20 18:49	
Bromochloromethane	200 U	200	40	200	10/08/20 18:49	
Bromodichloromethane	200 U	200	40	200	10/08/20 18:49	
Bromoform	200 U	200	50	200	10/08/20 18:49	
Bromomethane	200 U	200	140	200	10/08/20 18:49	
Carbon Disulfide	200 U	200	84	200	10/08/20 18:49	
Carbon Tetrachloride	200 U	200	68	200	10/08/20 18:49	
Chlorobenzene	200 U	200	40	200	10/08/20 18:49	
Chloroethane	200 U	200	46	200	10/08/20 18:49	
Chloroform	200 U	200	48	200	10/08/20 18:49	
Chloromethane	200 U	200	56	200	10/08/20 18:49	
Cyclohexane	200 U	200	52	200	10/08/20 18:49	
Dibromochloromethane	200 U	200	40	200	10/08/20 18:49	
Dichlorodifluoromethane (CFC 12)	200 U	200	42	200	10/08/20 18:49	
Dichloromethane	200 U	200	130	200	10/08/20 18:49	
Ethylbenzene	200 U	200	40	200	10/08/20 18:49	
Isopropylbenzene (Cumene)	200 U	200	40	200	10/08/20 18:49	
Methyl Acetate	400 U	400	66	200	10/08/20 18:49	
Methyl tert-Butyl Ether	200 U	200	40	200	10/08/20 18:49	
Methylcyclohexane	200 U	200	40	200	10/08/20 18:49	
Styrene	200 U	200	40	200	10/08/20 18:49	
Tetrachloroethene (PCE)	**81 DJ**	200	42	200	10/08/20 18:49	
Toluene	200 U	200	40	200	10/08/20 18:49	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:55
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-54	**Units:**	ug/L
Lab Code:	R2009031-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**19000**	**D**	200	40	200	10/08/20 18:49	
Trichlorofluoromethane (CFC 11)	200	U	200	48	200	10/08/20 18:49	
Vinyl Chloride	**120**	**DJ**	200	40	200	10/08/20 18:49	
cis-1,2-Dichloroethene	**870**	**D**	200	46	200	10/08/20 18:49	
cis-1,3-Dichloropropene	200	U	200	40	200	10/08/20 18:49	
m,p-Xylenes	400	U	400	40	200	10/08/20 18:49	
o-Xylene	200	U	200	40	200	10/08/20 18:49	
trans-1,2-Dichloroethene	**43**	**DJ**	200	40	200	10/08/20 18:49	
trans-1,3-Dichloropropene	200	U	200	46	200	10/08/20 18:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	10/08/20 18:49	
Dibromofluoromethane	106	80 - 116	10/08/20 18:49	
Toluene-d8	109	87 - 121	10/08/20 18:49	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	unknown	1.55	1100	J

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 17:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	Perisaltic-Blank	**Units:**	ug/L
Lab Code:	R2009031-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	10/08/20 14:26	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	10/08/20 14:26	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	10/08/20 14:26	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:26	
1,4-Dioxane	40 U	40	13	1	10/08/20 14:26	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	10/08/20 14:26	
2-Hexanone	5.0 U	5.0	0.20	1	10/08/20 14:26	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	10/08/20 14:26	
Acetone	5.0 U	5.0	5.0	1	10/08/20 14:26	
Benzene	1.0 U	1.0	0.20	1	10/08/20 14:26	
Bromochloromethane	1.0 U	1.0	0.20	1	10/08/20 14:26	
Bromodichloromethane	**3.3**	1.0	0.20	1	10/08/20 14:26	
Bromoform	1.0 U	1.0	0.25	1	10/08/20 14:26	
Bromomethane	1.0 U	1.0	0.70	1	10/08/20 14:26	
Carbon Disulfide	1.0 U	1.0	0.42	1	10/08/20 14:26	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	10/08/20 14:26	
Chlorobenzene	1.0 U	1.0	0.20	1	10/08/20 14:26	
Chloroethane	1.0 U	1.0	0.23	1	10/08/20 14:26	
Chloroform	**8.5**	1.0	0.24	1	10/08/20 14:26	
Chloromethane	1.0 U	1.0	0.28	1	10/08/20 14:26	
Cyclohexane	1.0 U	1.0	0.26	1	10/08/20 14:26	
Dibromochloromethane	**0.90 J**	1.0	0.20	1	10/08/20 14:26	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	10/08/20 14:26	
Dichloromethane	1.0 U	1.0	0.65	1	10/08/20 14:26	
Ethylbenzene	1.0 U	1.0	0.20	1	10/08/20 14:26	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	10/08/20 14:26	
Methyl Acetate	2.0 U	2.0	0.33	1	10/08/20 14:26	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	10/08/20 14:26	
Methylcyclohexane	1.0 U	1.0	0.20	1	10/08/20 14:26	
Styrene	1.0 U	1.0	0.20	1	10/08/20 14:26	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	10/08/20 14:26	
Toluene	**0.32 J**	1.0	0.20	1	10/08/20 14:26	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 17:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	Perisaltic-Blank	**Units:**	ug/L
Lab Code:	R2009031-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	10/08/20 14:26	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	10/08/20 14:26	
Vinyl Chloride	1.0 U	1.0	0.20	1	10/08/20 14:26	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	10/08/20 14:26	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	10/08/20 14:26	
m,p-Xylenes	2.0 U	2.0	0.20	1	10/08/20 14:26	
o-Xylene	1.0 U	1.0	0.20	1	10/08/20 14:26	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	10/08/20 14:26	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	10/08/20 14:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	10/08/20 14:26	
Dibromofluoromethane	111	80 - 116	10/08/20 14:26	
Toluene-d8	109	87 - 121	10/08/20 14:26	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Volatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 10:20
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-38	**Units:**	ug/L
Lab Code:	R2009031-003	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	**5000**	1000	350	1000	10/05/20 12:23	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63	**Units:**	ug/L
Lab Code:	R2009031-006	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	**0.67 J**	1.0	0.35	1	10/05/20 12:38	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63 Dup	**Units:**	ug/L
Lab Code:	R2009031-008	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	**0.56 J**	1.0	0.35	1	10/05/20 12:48	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 17:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	Perisaltic-Blank	**Units:**	ug/L
Lab Code:	R2009031-011	**Basis:**	NA

Dissolved Gases by GC/FID

Analysis Method: RSK 175

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Ethene	1.0 U	1.0	0.35	1	10/05/20 13:00	

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Leader Professional Services, In
Project No.: R2009031
Project Name:
Matrix: WATER

Service Request: MW-38
Date Collected: 9/29/2020
Date Received: 9/29/2020
Units: ug/L
Basis:

Sample Name: MW-38 **Lab Code:** R2009031-003

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	1000	610	10.0	110000		N

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-38 Diss** **Lab Code:** **R2009031-004**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	1000	610	10.0	109000		N

% Solids: **0.0**

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-63** **Lab Code:** **R2009031-006**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	11900		N

% Solids: **0.0**

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-63 Diss** **Lab Code:** **R2009031-007**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	2600		N

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-63 Dup** **Lab Code:** **R2009031-008**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	11700		N

% Solids: **0.0**

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **MW-63 Dup Diss** **Lab Code:** **R2009031-009**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	2700		N

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **Perisaltic-Blank** **Lab Code:** **R2009031-011**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	**6010C**	**100**	**61.0**	**1.0**	**100**	**U**	**N**

% Solids: **0.0**

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	Leader Professional Services, In	**Service Request:**	MW-38
Project No.:	R2009031	**Date Collected:**	9/29/2020
Project Name:		**Date Received:**	9/29/2020
Matrix:	WATER	**Units:**	ug/L
		Basis:	

Sample Name: **Perisaltic-Blank Diss** **Lab Code:** **R2009031-012**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Iron	6010C	100	61.0	1.0	100	U	N

% Solids: **0.0**

Comments:

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 10:20
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-38	**Basis:**	NA
Lab Code:	R2009031-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**515**	mg/L	40	18	40	10/07/20 22:54	
Chloride	9056A	**1270**	mg/L	40	9	200	10/21/20 17:56	
Sulfate	9056A	**16.8**	mg/L	2.0	0.4	10	10/20/20 17:19	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63	**Basis:**	NA
Lab Code:	R2009031-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**17.3**	mg/L	4.0	1.8	4	10/08/20 17:35	
Chloride	9056A	**720**	mg/L	40	9	200	10/21/20 18:02	
Sulfate	9056A	**0.7 J**	mg/L	2.0	0.4	10	10/20/20 17:26	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 16:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	MW-63 Dup	**Basis:**	NA
Lab Code:	R2009031-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**17.0**	mg/L	1.0	0.5	1	10/07/20 03:23	
Chloride	9056A	**739**	mg/L	40	9	200	10/21/20 18:33	
Sulfate	9056A	**3.5**	mg/L	2.0	0.4	10	10/20/20 17:45	

Analytical Report

Client:	Leader Professional Services, Inc.	**Service Request:**	R2009031
Project:	811 Jefferson Road/713.032A	**Date Collected:**	09/29/20 17:00
Sample Matrix:	Water	**Date Received:**	09/29/20 18:35
Sample Name:	Perisaltic-Blank	**Basis:**	NA
Lab Code:	R2009031-011		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	**0.5 J**	mg/L	1.0	0.5	1	10/07/20 03:43	
Chloride	9056A	**1.4 J**	mg/L	2.0	0.5	10	10/20/20 17:52	
Sulfate	9056A	2.0 U	mg/L	2.0	0.4	10	10/20/20 17:52	

APPENDIX C

H&A October 2019 Summary

Rochester, New York	Location	Action Level	MW-01IR	MW-02R
	Lab ID	NYDEC	L1952006-01	L1952006-02
	Sample ID		4527-103019-1455	4527-103019-1245
	Sample Date	TOGS	10/30/2019	10/30/2019
	Sample Type		Primary	Primary
Inorganic Compounds (mg/L)				
Iron, Dissolved		0.3	ND (0.0500)	**1.55**
Iron, Total		0.3	**0.423**	**1.69**
Other (ug/L)				
Ethene		--	**3.39**	**0.534**
Other (mg/L)				
Chloride, Total		250	**4.9**	**8.0**
Sulfate, Total		250	**28**	**20**
Total Organic Carbon (TOC)		--	**3.17 J+**	**5.82 J+**
Volatile Organic Compounds (ug/L)				
1,1,1-Trichloroethane		5	ND (35)	ND (0.70)
1,1,2,2-Tetrachloroethane		5	ND (8.4)	ND (0.17)
1,1,2-Trichloroethane		1	ND (25)	ND (0.50)
1,1-Dichloroethane		5	ND (35)	ND (0.70)
1,1-Dichloroethene		5	ND (8.4)	ND (0.17)
1,2,3-Trichlorobenzene		--	ND (35)	ND (0.70)
1,2,4-Trichlorobenzene		5	ND (35)	ND (0.70)
1,2-Dibromo-3-chloropropane (DBCP)		0.04	ND (35)	ND (0.70)
1,2-Dibromoethane (Ethylene Dibromide)		0.0006	ND (32)	ND (0.65)
1,2-Dichlorobenzene		3	ND (35)	ND (0.70)
1,2-Dichloroethane		0.6	ND (6.6) J	ND (0.13)
1,2-Dichloropropane		1	ND (6.8)	ND (0.14)
1,3-Dichlorobenzene		3	ND (35)	ND (0.70)
1,4-Dichlorobenzene		3	ND (35)	ND (0.70)
1,4-Dioxane		--	ND (3,000) R	ND (61) R
2-Butanone (Methyl Ethyl Ketone)		50	ND (97)	ND (1.9)
2-Hexanone		50	ND (50)	ND (1.0)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)		--	ND (50)	ND (1.0)
Acetone		50	ND (73)	ND (5.0)
Benzene		1	ND (8.0) J	ND (0.16)
Bromodichloromethane		50	ND (9.6) J	ND (0.19) R
Bromoform		50	ND (32)	ND (0.65)
Bromomethane (Methyl Bromide)		5	ND (35) J	ND (0.70)
Carbon disulfide		60	ND (50)	ND (1.0)
Carbon tetrachloride		5	ND (6.7)	ND (0.13)
Chlorobenzene		5	ND (35)	ND (0.70)
Chlorobromomethane		--	ND (35)	ND (0.70)
Chloroethane		5	ND (35)	ND (0.70)
Chloroform (Trichloromethane)		7	ND (35)	ND (0.70)
Chloromethane (Methyl Chloride)		5	ND (35)	ND (0.70) J
cis-1,2-Dichloroethene		5	**53 J**	ND (0.70)
cis-1,3-Dichloropropene		0.4	ND (7.2) J	ND (0.14)
Cyclohexane		--	ND (14)	ND (0.27)
Dibromochloromethane		50	ND (7.4)	ND (0.15)
Dichlorodifluoromethane (CFC-12)		5	ND (50)	ND (1.0) J
Ethylbenzene		5	ND (35)	ND (0.70)
Isopropylbenzene (Cumene)		5	ND (35)	ND (0.70)
m,p-Xylenes		5	ND (35)	ND (0.70)

Methyl acetate	--	ND (12)	ND (0.23)
Methyl cyclohexane	--	ND (20)	ND (0.40)
Methyl Tert Butyl Ether	10	ND (35)	ND (0.70) J
Methylene chloride	5	ND (35)	ND (0.70)
o-Xylene	5	ND (35)	ND (0.70)
Styrene	5	ND (35)	ND (0.70)
Tetrachloroethene	5	ND (9.0)	ND (0.18)
Toluene	5	ND (35)	ND (0.70)
trans-1,2-Dichloroethene	5	ND (35)	ND (0.70)
trans-1,3-Dichloropropene	0.4	ND (8.2)	ND (0.16)
Trichloroethene	5	**4700**	**0.42 J**
Trichlorofluoromethane (CFC-11)	5	ND (35)	ND (0.70)
Trifluorotrichloroethane (Freon 113)	5	ND (35)	ND (0.70)
Vinyl chloride	2	**5.6 J**	ND (0.070)

Notes:

1. -- = Not applicable/not analyzed
2. ND = Not detected above the laboratory detection limit. Laboratory method
3. Bold = Analyte was detected above the laboratory's method detection limit.
4. NYSDEC = New York Department of Environmental Conservation
5. TOGS = Technical & Operational Guidance Series, Table 1, Class GA
6. mg/L = milligrams per liter
7. ug/L = micrograms per liter

8. Exceeds the NYSDEC TOGS Criteria

J = result is an estimated value, refer to Data Usability Summary Report (DUSR) J- = results is an estimated value w
J+ = result is an estimated value, with a potential high bias, refer to DUSR.

Rochester, New York	Location	Action Level	MW-06I	MW-
	Lab ID	NYDEC	L1952006-04	L1952006-05
	Sample ID		4527-103019-1050	4527-103019-0850
	Sample Date	TOGS	10/30/2019	10/30/2019
	Sample Type		Primary	Primary
Inorganic Compounds (mg/L)				
Iron, Dissolved		0.3	**0.0981 J+**	**3.15**
Iron, Total		0.3	**0.159 J+**	**3.21**
Other (ug/L)				
Ethene		--	ND (0.500)	ND (0.500)
Other (mg/L)				
Chloride, Total		250	**2.3 J+**	**15**
Sulfate, Total		250	**13 J+**	ND (1.4)
Total Organic Carbon (TOC)		--	**6.11 J+**	**5.07 J+**
Volatile Organic Compounds (ug/L)				
1,1,1-Trichloroethane		5	ND (0.70)	ND (0.70)
1,1,2,2-Tetrachloroethane		5	ND (0.17)	ND (0.17)
1,1,2-Trichloroethane		1	ND (0.50)	ND (0.50)
1,1-Dichloroethane		5	ND (0.70)	ND (0.70)
1,1-Dichloroethene		5	ND (0.17)	ND (0.17)
1,2,3-Trichlorobenzene		--	ND (0.70)	ND (0.70)
1,2,4-Trichlorobenzene		5	ND (0.70)	ND (0.70)
1,2-Dibromo-3-chloropropane (DBCP)		0.04	ND (0.70)	ND (0.70)
1,2-Dibromoethane (Ethylene Dibromide)		0.0006	ND (0.65)	ND (0.65)
1,2-Dichlorobenzene		3	ND (0.70)	ND (0.70)
1,2-Dichloroethane		0.6	ND (0.13)	ND (0.13) J
1,2-Dichloropropane		1	ND (0.14)	ND (0.14)

1,3-Dichlorobenzene	3	ND (0.70)	ND (0.70)
1,4-Dichlorobenzene	3	ND (0.70)	ND (0.70)
1,4-Dioxane	--	ND (61) R	ND (61) R
2-Butanone (Methyl Ethyl Ketone)	50	ND (1.9)	ND (1.9)
2-Hexanone	50	ND (1.0)	ND (1.0)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	--	ND (1.0)	ND (1.0)
Acetone	50	ND (5.0)	ND (5.0)
Benzene	1	ND (0.16)	ND (0.16) J
Bromodichloromethane	50	ND (0.19) R	ND (0.19) J
Bromoform	50	ND (0.65)	ND (0.65)
Bromomethane (Methyl Bromide)	5	ND (0.70)	ND (0.70) J
Carbon disulfide	60	ND (1.0)	ND (1.0)
Carbon tetrachloride	5	ND (0.13)	ND (0.13)
Chlorobenzene	5	ND (0.70)	ND (0.70)
Chlorobromomethane	--	ND (0.70)	ND (0.70)
Chloroethane	5	ND (0.70)	ND (0.70)
Chloroform (Trichloromethane)	7	ND (0.70)	ND (0.70)
Chloromethane (Methyl Chloride)	5	ND (0.70) J	ND (0.70)
cis-1,2-Dichloroethene	5	ND (0.70)	ND (0.70)
cis-1,3-Dichloropropene	0.4	ND (0.14)	ND (0.14) J
Cyclohexane	--	ND (0.27)	ND (0.27)
Dibromochloromethane	50	ND (0.15)	ND (0.15)
Dichlorodifluoromethane (CFC-12)	5	ND (1.0) J	ND (1.0)
Ethylbenzene	5	ND (0.70)	ND (0.70)
Isopropylbenzene (Cumene)	5	ND (0.70)	ND (0.70)
m,p-Xylenes	5	ND (0.70)	ND (0.70)
Methyl acetate	--	ND (0.23)	ND (0.23)
Methyl cyclohexane	--	ND (0.40)	ND (0.40)
Methyl Tert Butyl Ether	10	ND (0.70) J	ND (0.70)
Methylene chloride	5	ND (0.70)	ND (0.70)
o-Xylene	5	ND (0.70)	ND (0.70)
Styrene	5	ND (0.70)	ND (0.70)
Tetrachloroethene	5	ND (0.18)	ND (0.18)
Toluene	5	ND (0.70)	ND (0.70)
trans-1,2-Dichloroethene	5	ND (0.70)	ND (0.70)
trans-1,3-Dichloropropene	0.4	ND (0.16)	ND (0.16)
Trichloroethene	5	ND (0.18)	**0.20 J**
Trichlorofluoromethane (CFC-11)	5	ND (0.70)	ND (0.70)
Trifluorotrichloroethane (Freon 113)	5	ND (0.70)	ND (0.70)
Vinyl chloride	2	ND (0.070)	**0.13 J**

Notes:

Rochester, New York	Location	Action Level	MW-54	MW-55
	Lab ID	NYDEC	L1952006-13	L1952006-14
	Sample ID		9150-103019-1800	9150-103019-1855
	Sample Date	TOGS	10/30/2019	10/30/2019
	Sample Type		Primary	Primary
Inorganic Compounds (mg/L)				
Iron, Dissolved		0.3	--	--
Iron, Total		0.3	--	--
Other (ug/L)				
Ethene		--	--	--
Other (mg/L)				
Chloride, Total		250	--	--

Sulfate, Total	250	--	--
Total Organic Carbon (TOC)	--	--	--
Volatile Organic Compounds (ug/L)			
1,1,1-Trichloroethane	5	ND (70)	ND (0.70)
1,1,2,2-Tetrachloroethane	5	ND (17)	ND (0.17)
1,1,2-Trichloroethane	1	ND (50) J	ND (0.50)
1,1-Dichloroethane	5	ND (70)	ND (0.70)
1,1-Dichloroethene	5	ND (17)	ND (0.17)
1,2,3-Trichlorobenzene	--	ND (70)	ND (0.70)
1,2,4-Trichlorobenzene	5	ND (70)	ND (0.70)
1,2-Dibromo-3-chloropropane (DBCP)	0.04	ND (70)	ND (0.70)
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	ND (65)	ND (0.65)
1,2-Dichlorobenzene	3	ND (70)	ND (0.70)
1,2-Dichloroethane	0.6	ND (13) J	ND (0.13) J
1,2-Dichloropropane	1	ND (14)	ND (0.14)
1,3-Dichlorobenzene	3	ND (70)	ND (0.70)
1,4-Dichlorobenzene	3	ND (70)	ND (0.70)
1,4-Dioxane	--	ND (6,100) R	ND (61) R
2-Butanone (Methyl Ethyl Ketone)	50	ND (190)	ND (1.9)
2-Hexanone	50	ND (100)	ND (1.0)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	--	ND (100)	ND (1.0)
Acetone	50	ND (150)	ND (1.5)
Benzene	1	ND (16) J	ND (0.16) J
Bromodichloromethane	50	ND (19) J	ND (0.19) J
Bromoform	50	ND (65)	ND (0.65)
Bromomethane (Methyl Bromide)	5	ND (70) J	ND (0.70) J
Carbon disulfide	60	ND (100)	ND (1.0)
Carbon tetrachloride	5	ND (13)	ND (0.13)
Chlorobenzene	5	ND (70)	ND (0.70)
Chlorobromomethane	--	ND (70)	ND (0.70)
Chloroethane	5	ND (70)	ND (0.70)
Chloroform (Trichloromethane)	7	ND (70)	ND (0.70)
Chloromethane (Methyl Chloride)	5	ND (70)	ND (0.70)
cis-1,2-Dichloroethene	5	**480**	**0.73 J**
cis-1,3-Dichloropropene	0.4	ND (14) J	ND (0.14) J
Cyclohexane	--	ND (27)	ND (0.27)
Dibromochloromethane	50	ND (15)	ND (0.15)
Dichlorodifluoromethane (CFC-12)	5	ND (100)	ND (1.0)
Ethylbenzene	5	ND (70)	ND (0.70)
Isopropylbenzene (Cumene)	5	ND (70)	ND (0.70)
m,p-Xylenes	5	ND (70)	ND (0.70)
Methyl acetate	--	ND (23)	ND (0.23)
Methyl cyclohexane	--	ND (40)	ND (0.40)
Methyl Tert Butyl Ether	10	ND (70)	ND (0.70)
Methylene chloride	5	ND (70)	ND (0.70)
o-Xylene	5	ND (70)	ND (0.70)
Styrene	5	ND (70)	ND (0.70)
Tetrachloroethene	5	ND (18)	ND (0.18)
Toluene	5	ND (70)	ND (0.70)
trans-1,2-Dichloroethene	5	ND (70)	ND (0.70)
trans-1,3-Dichloropropene	0.4	ND (16)	ND (0.16)
Trichloroethene	5	**12000**	**30**
Trichlorofluoromethane (CFC-11)	5	ND (70)	ND (0.70)
Trifluorotrichloroethane (Freon 113)	5	ND (70)	ND (0.70)
Vinyl chloride	2	**38 J**	**0.070 J**

Notes:

Rochester, New York	Location	Action Level	MW-74	MW-76
	Lab ID	NYDEC	L1952006-10	L1952006-16
	Sample ID	NYDEC	9150-103019-1250	9150-103119-1045
	Sample Date	TOGS	10/30/2019	10/31/2019
	Sample Type	TOGS	Primary	Primary
Inorganic Compounds (mg/L)				
Iron, Dissolved		0.3	**1.02**	--
Iron, Total		0.3	**0.992**	--
Other (ug/L)				
Ethene		--	**6.24**	--
Other (mg/L)				
Chloride, Total		250	**62**	--
Sulfate, Total		250	**26**	--
Total Organic Carbon (TOC)		--	**7.67 J+**	--
Volatile Organic Compounds (ug/L)				
1,1,1-Trichloroethane		5	ND (3.5)	ND (0.70)
1,1,2,2-Tetrachloroethane		5	ND (0.84)	ND (0.17)
1,1,2-Trichloroethane		1	ND (2.5) J	ND (0.50)
1,1-Dichloroethane		5	ND (3.5)	ND (0.70)
1,1-Dichloroethene		5	**3.7**	ND (0.17)
1,2,3-Trichlorobenzene		--	ND (3.5)	ND (0.70)
1,2,4-Trichlorobenzene		5	ND (3.5)	ND (0.70)
1,2-Dibromo-3-chloropropane (DBCP)		0.04	ND (3.5)	ND (0.70)
1,2-Dibromoethane (Ethylene Dibromide)		0.0006	ND (3.2)	ND (0.65)
1,2-Dichlorobenzene		3	ND (3.5)	ND (0.70)
1,2-Dichloroethane		0.6	ND (0.66) J	ND (0.13) J
1,2-Dichloropropane		1	ND (0.68)	ND (0.14)
1,3-Dichlorobenzene		3	ND (3.5)	ND (0.70)
1,4-Dichlorobenzene		3	ND (3.5)	ND (0.70)
1,4-Dioxane		--	ND (300) R	ND (61) R
2-Butanone (Methyl Ethyl Ketone)		50	ND (9.7)	ND (1.9)
2-Hexanone		50	ND (5.0)	ND (1.0)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)		--	ND (5.0)	ND (1.0)
Acetone		50	ND (7.3)	ND (1.5)
Benzene		1	ND (0.80) J	ND (0.16) J
Bromodichloromethane		50	ND (0.96) J	ND (0.19) J
Bromoform		50	ND (3.2)	ND (0.65)
Bromomethane (Methyl Bromide)		5	ND (3.5) J	ND (0.70) J
Carbon disulfide		60	ND (5.0)	ND (1.0)
Carbon tetrachloride		5	ND (0.67)	ND (0.13)
Chlorobenzene		5	ND (3.5)	ND (0.70)
Chlorobromomethane		--	ND (3.5)	ND (0.70)
Chloroethane		5	ND (3.5)	ND (0.70)
Chloroform (Trichloromethane)		7	ND (3.5)	ND (0.70)
Chloromethane (Methyl Chloride)		5	ND (3.5)	ND (0.70)
cis-1,2-Dichloroethene		5	**570**	ND (0.70)
cis-1,3-Dichloropropene		0.4	ND (0.72) J	ND (0.14) J
Cyclohexane		--	ND (1.4)	ND (0.27)
Dibromochloromethane		50	ND (0.74)	ND (0.15)
Dichlorodifluoromethane (CFC-12)		5	ND (5.0)	ND (1.0)
Ethylbenzene		5	ND (3.5)	ND (0.70)

Isopropylbenzene (Cumene)	5	ND (3.5)	ND (0.70)
m,p-Xylenes	5	ND (3.5)	ND (0.70)
Methyl acetate	--	ND (1.2)	ND (0.23)
Methyl cyclohexane	--	ND (2.0)	ND (0.40)
Methyl Tert Butyl Ether	10	ND (3.5)	ND (0.70)
Methylene chloride	5	ND (3.5)	ND (0.70)
o-Xylene	5	ND (3.5)	ND (0.70)
Styrene	5	ND (3.5)	ND (0.70)
Tetrachloroethene	5	ND (0.90)	ND (0.18)
Toluene	5	ND (3.5)	ND (0.70)
trans-1,2-Dichloroethene	5	**26**	ND (0.70)
trans-1,3-Dichloropropene	0.4	ND (0.82)	ND (0.16)
Trichloroethene	5	**56**	**0.42 J**
Trichlorofluoromethane (CFC-11)	5	ND (3.5)	ND (0.70)
Trifluorotrichloroethane (Freon 113)	5	ND (3.5)	ND (0.70)
Vinyl chloride	2	**260**	ND (0.070)

Notes:

MW-03I	MW-04I	MW-05DR
L1952006-27	L1952006-03	L1952006-11
9150-110119-1430	9150-103019-1040	4527-103119-0935
11/01/2019	10/30/2019	10/31/2019
Primary	Primary	Primary
ND (0.0500)	ND (0.0500)	--
1.65	**0.49**	--
ND (0.500)	ND (0.500)	--
180	**2.1 J+**	--
57	**38**	--
2.46 J+	**4.33 J+**	--
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.17)	ND (0.17)	ND (0.17)
ND (0.50) J	ND (0.50)	ND (0.50)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.17)	ND (0.17)	ND (0.17)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.65)	ND (0.65)	ND (0.65)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.13) J	ND (0.13)	ND (0.13) J
ND (0.14)	ND (0.14)	ND (0.14)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (61) R	ND (61) R	ND (61) R
ND (1.9)	ND (1.9)	ND (1.9)
ND (1.0)	ND (1.0)	ND (1.0)
ND (1.0)	ND (1.0)	ND (1.0)
ND (5.0)	ND (1.5)	ND (5.0)
ND (0.16) J	ND (0.16)	ND (0.16) J
ND (0.19) J	ND (0.19) R	ND (0.19) J
ND (0.65)	ND (0.65)	ND (0.65)
ND (0.70) J	ND (0.70)	ND (0.70) J
ND (1.0)	ND (1.0)	ND (1.0)
ND (0.13)	ND (0.13)	ND (0.13)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70) J	ND (0.70)
ND (0.70)	**2.2 J**	ND (0.70)
ND (0.14) J	ND (0.14)	ND (0.14) J
ND (0.27)	ND (0.27)	ND (0.27)
ND (0.15)	ND (0.15)	ND (0.15)
ND (1.0)	ND (1.0) J	ND (1.0)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)

ND (0.23)	ND (0.23)	ND (0.23)	
ND (0.40)	ND (0.40)	ND (0.40)	
ND (0.70)	ND (0.70) J	ND (0.70)	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.18)	ND (0.18)	ND (0.18)	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.16)	ND (0.16)	ND (0.16)	
ND (0.18)	**9.3**	**10**	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.70)	ND (0.70)	ND (0.70)	
ND (0.070)	ND (0.070)	ND (0.070)	

ith a potential low bias, refer to DUSR.

·08R	MW-28	MW-33	
L1952006-20	L1952006-06	L1952006-07	L1952006-21
4527-103019-0001	4527-103119-1400	9150-103019-0920	9150-103019-0001
10/30/2019	10/31/2019	10/30/2019	10/30/2019
Duplicate	Primary	Primary	Duplicate
3.18	ND (0.0500)	**0.219 J+**	**0.251 J+**
3.22	**0.408**	**0.317**	**0.275 J+**
ND (0.500)	ND (0.500)	**9.67**	**10.8**
14	ND (1.0)	**42**	**44**
ND (10)	ND (10)	**48**	**37**
5.28 J+	**2.06 J+**	**4.95 J+**	**5.07 J+**
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.17)	ND (0.17)	ND (4.2)	ND (6.7)
ND (0.50)	ND (0.50)	ND (12)	ND (20)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.17)	ND (0.17)	**11 J**	**10 J**
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.65)	ND (0.65)	ND (16)	ND (26)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.13)	ND (0.13) J	ND (3.3)	ND (5.3)
ND (0.14)	ND (0.14)	ND (3.4)	ND (5.5)

ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (61) R	ND (61) R	ND (1,500) R	ND (2,400) R
ND (1.9)	ND (1.9)	ND (48)	ND (78)
ND (1.0)	ND (1.0)	ND (25)	ND (40)
ND (1.0)	ND (1.0)	ND (25)	ND (40)
ND (5.0)	ND (6.2)	ND (36)	ND (58)
ND (0.16)	ND (0.16) J	ND (4.0)	ND (6.4)
ND (0.19) R	ND (0.19) J	ND (4.8) R	ND (7.7) R
ND (0.65)	ND (0.65)	ND (16)	ND (26)
ND (0.70)	ND (0.70) J	ND (18)	ND (28)
ND (1.0)	ND (1.0)	ND (25)	ND (40)
ND (0.13)	ND (0.13)	ND (3.4)	ND (5.4)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18) J	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70) J	ND (0.70)	ND (18)	ND (28) J
ND (0.70)	ND (0.70)	**1900**	**1900**
ND (0.14)	ND (0.14) J	ND (3.6)	ND (5.8)
ND (0.27)	ND (0.27)	ND (6.8)	ND (11)
ND (0.15)	ND (0.15)	ND (3.7)	ND (6.0)
ND (1.0) J	ND (1.0)	ND (25)	ND (40) J
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.23)	ND (0.23)	ND (5.8)	ND (9.4)
ND (0.40)	ND (0.40)	ND (9.9)	ND (16)
ND (0.70) J	ND (0.70)	ND (18) J	ND (28) J
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.18)	ND (0.18)	ND (4.5)	ND (7.2)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	**85**	**87 J**
ND (0.16)	ND (0.16)	ND (4.1)	ND (6.6)
0.22 J	**0.34 J**	**3800**	**4100**
ND (0.70)	ND (0.70)	ND (18)	ND (28)
ND (0.70)	ND (0.70)	ND (18)	ND (28)
0.14 J	ND (0.070)	**440**	**440**

MW-58	MW-63	MW-69	MW-70
L1952006-15	L1952006-12	L1952006-08	L1952006-09
4527-103019-1615	4527-103119-1055	9150-103119-1350	9150-103119-1200
10/30/2019	10/31/2019	10/31/2019	10/31/2019
Primary	Primary	Primary	Primary
--	**12.3**	ND (0.0500)	ND (0.0500)
--	**18.7**	**0.226 J+**	ND (0.0500)
--	**1.13**	ND (0.500)	ND (0.500)
--	**540**	ND (1.2)	**7.9**

--	ND (10)	ND (10)	**71**
--	**14.0 J+**	**5.78 J+**	**3.71 J+**
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)
ND (0.50)	ND (0.50)	ND (0.50) J	ND (0.50)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.65)	ND (0.65)	ND (0.65)	ND (0.65)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.13) J	ND (0.13) J	ND (0.13) J	ND (0.13) J
ND (0.14)	ND (0.14)	ND (0.14)	ND (0.14)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (61) R	ND (61) R	ND (61) R	ND (61) R
ND (1.9)	ND (1.9)	ND (1.9)	ND (1.9)
ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ND (5.0)	ND (5.0)	ND (5.0)	ND (1.5)
ND (0.16) J	ND (0.16) J	ND (0.16) J	ND (0.16) J
ND (0.19) J	ND (0.19) J	ND (0.19) J	ND (0.19) J
ND (0.65)	ND (0.65)	ND (0.65)	ND (0.65)
ND (0.70) J	ND (0.70) J	ND (0.70) J	ND (0.70) J
ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.14) J	ND (0.14) J	ND (0.14) J	ND (0.14) J
ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)
ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)
ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.23)	ND (0.23)	ND (0.23)	ND (0.23)
ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.18)	ND (0.18)	ND (0.18)	ND (0.18)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.16)	ND (0.16)	ND (0.16)	ND (0.16)
7.4	ND (0.18)	ND (0.18)	ND (0.18)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
ND (0.070)	**1.4**	ND (0.070)	ND (0.070)

MW-77	MW-78	UCB-MW-03
L1952006-17	L1952006-18	L1952006-19
4527-103019-1750	4527-103019-1855	9150-103119-0950
10/30/2019	10/30/2019	10/31/2019
Primary	Primary	Primary
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--	--	--
--	--	--
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.17)	ND (0.17)	ND (0.17)
ND (0.50)	ND (0.50)	ND (0.50)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.17)	ND (0.17)	ND (0.17)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.65)	ND (0.65)	ND (0.65)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.13) J	ND (0.13)	ND (0.13)
ND (0.14)	ND (0.14)	ND (0.14)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (61) R	ND (61) R	ND (61) R
ND (1.9)	ND (1.9)	ND (1.9)
ND (1.0)	ND (1.0)	ND (1.0)
ND (1.0)	ND (1.0)	ND (1.0)
ND (5.0)	ND (5.0)	ND (5.0)
ND (0.16) J	ND (0.16)	ND (0.16)
ND (0.19) J	ND (0.19) R	ND (0.19) R
ND (0.65)	ND (0.65)	ND (0.65)
ND (0.70) J	ND (0.70)	ND (0.70)
ND (1.0)	ND (1.0)	ND (1.0)
ND (0.13)	ND (0.13)	ND (0.13)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70) J	ND (0.70) J
ND (0.70)	**1.3 J**	ND (0.70)
ND (0.14) J	ND (0.14)	ND (0.14)
ND (0.27)	ND (0.27)	ND (0.27)
ND (0.15)	ND (0.15)	ND (0.15)
ND (1.0)	ND (1.0) J	ND (1.0) J
ND (0.70)	ND (0.70)	ND (0.70)

ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.23)	ND (0.23)	ND (0.23)
ND (0.40)	ND (0.40)	ND (0.40)
ND (0.70)	ND (0.70) J	ND (0.70) J
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.18)	ND (0.18)	ND (0.18)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.16)	ND (0.16)	ND (0.16)
2.1	**2.3**	**2.5**
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.70)	ND (0.70)	ND (0.70)
ND (0.070)	ND (0.070)	ND (0.070)

APPENDIX D

Data Usability Summary Report

Data Usability Summary Report
September 2020 Sampling Event
811 Jefferson Road (LPSI 713-032A)
Site Code C828148
Rochester, New York
MEHC Project No. 14-223

DATA USABILITY

Leader Professional Services, Inc. ("LPSI") conducted sampling as part of the re-development of the 811 Jefferson Road property (former AB Dick Brownfield Cleanup Program and also known as the "Site") in Rochester, New York.

The Site (Site Code C828148) procedures for sample preparation and handling, sample chain-of-custody, laboratory analyses, and reporting that were implemented during this investigation to ensure the accuracy and integrity of the data generated during the investigation.

DATA SUMMARY

The Data Usability Review and Data Validation Compliance Chart has been completed for the laboratory deliverable packages generated by ALS Laboratories ("ALS"), pertaining to samples collected on the Site on September 28 and 29, 2020. A total of 25 samples were collected, including Quality Control samples. The following USEPA Methodologies were used to analyze these samples for the following analytes:

Volatile Organic Compounds ("VOCs")	USEPA Method 8260C
Chlorine/Sulfate	USEPA Method 9056A
Total Organic Carbon ("TOC")	USEPA Method SM5310C-2000 (2011)
Dissolved Gases (Ethene)	USEPA Method RSK 175
Metals (Total and Dissolved Iron)	USEPA Method 6010C

Field duplicate, surrogates, internal standards, reference samples, matrix spikes, and matrix spike duplicates were included in the sample set and processed.

Samples were collected and received on the following schedule:

Sample Data Group ("SDG")	Date Collected	Date Received by ALS	Sample Matrix	Requested Analyses	Sample Temperature (°C)
R2008984	09/28/2020	09/28/2020 ALS Rochester	Water (12 Samples)	VOCs 8260 Chlorine Sulfate TOC Ethene Iron (T. and D.)	Cooler: 19.0°C Same Day Rule
R2009031	09/29/2020	09/29/2020 ALS Rochester	Water (13 Samples)	VOCs 8260 Chlorine Sulfate TOC Ethene Iron (T. and D.)	Cooler: 18.4°C Same Day Rule

Data usability and validation was performed with guidance from the most current editions of the USEPA CLP National Functional Guidelines for Inorganic and Organic Data Review. The following items were reviewed:

- Data Completeness;
- Custody Documentation;
- Holding Times;
- Sample Blanks Review;
- Field Duplicate Samples;
- Matrix Spike Samples and Duplicates; and
- Control Spike/Laboratory Control Samples.

Those items showing deficiencies, if any, are discussed in the attached Data Validation Compliance Chart. All others were found to be acceptable as outlined in the above-mentioned usability procedures, and as applicable for the methodology. Unless noted specifically in the following text, reported results are substantiated by the reported data, and generated in compliance with protocol requirements.

In summary, sample preservation, handling, and processing was conducted with compliance to protocol requirements and with adherence to quality criteria and the reported results are considered "usable".

The Data Validation Compliance Chart is included with this report.

CUSTODY DOCUMENTATION

Chain of Custody forms are used to document the history of sample possession from the time the sample containers leave their point of origin (usually the laboratory performing the analyses) to the time the samples are received by the laboratory. COCs are considered legal documents.

The laboratory report, R2008984 and R2009031, associated with the 25 water samples collected on September 28 and 29, 2020 is detailed below:

1. MW-1IRR
2. MW-1IRR Diss
3. MW-70R
4. MW-70R Diss
5. UCB-MW-3
6. MW-77
7. MW-33R
8. MW-33R Diss
9. MW-69
10. MW-69 Diss
11. MW-76
12. MW-58
13. MW-78
14. MW-5DR
15. Sub-Pump-Blank
16. MW-38
17. MW-38 Diss
18. MW-55
19. MW-63
20. MW-63 Diss
21. MW-63 Dup
22. MW-63 MS
23. MW-63 MSD
24. MW-54
25. Peristaltic Blank

Sample MW-63 was collected in duplicate as well as the Matrix Spike (MS) and Matrix Spike Duplicate (MSD).

The COC documents the sample collection efforts. There were no discrepancies on the COC.

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PRESERVATION AND TECHNICAL HOLDING TIMES

The cooler temperatures were 18.4°C and 19.0°C, above the 6.0°C limit; however, the samples were delivered the same day as the sample collection. This is considered the "Same Day Rule" and does not adversely impact the sampling results.

The laboratory noted that several of the VOA vials contained air bubbles. The remaining VOA vial samples that did not contain air bubbles were used for the analytical testing. The sample results were not impacted.

All sample holding times were met.

ACCURACY, PRECISION, AND SENSITIVITY OF ANALYSES

The fundamental QA objective with respect to the accuracy, precision, and sensitivity of analytical data is to achieve the QC acceptance of each analytical protocol. Accuracy and precision are determined using MS and MSD samples.

Accuracy is a measure of the difference of a set of analytical results to the accepted or expected values. Accuracy was assessed by using the MS/MSD and surrogate spike recovery data.

Recovery values were reported within the QC limits for each analytical parameter group.

Precision is a measure of the mutual agreement between measurements of the same parameter.

The sample results for the Site are considered "usable".

COMPLETENESS, REPRESENTATIVENESS, AND COMPARABILITY OF DATA

Completeness is the measure of the amount of valid data obtained from a measurement system compared with the amount expected to be obtained under normal conditions. Review of the analytical data packages provided by ALS indicates that the requested parameters were analyzed for and reported by the laboratory for each sample submitted under proper chain-of-custody procedures. Based upon MEHC's review of the laboratory data, a usable data level was achieved.

Representativeness of the data is obtained through the design of the sampling program and the adherence to established sample collection procedures, sample-handling SOPs, and analytical procedures. The sampling program outlined in the Work Plan was designed to provide for data representative of site conditions taking into consideration past disposal practices, existing data from past studies, and the physical site setting. Collection of the water samples were conducted in accordance with established industry and regulatory protocols.
The laboratory maintained all holding times for the specific analytical protocols.

Comparability of the data is derived from the evaluation of field duplicate samples and the adherence to established sampling and analytical procedures. A field duplicate is an independent sample collected as close as possible to the original location from the same sampling point. All the water samples were analyzed utilizing standardized USEPA methodologies performed in accordance with the latest version of the NYSDEC ASP protocols.

QUALITY CONTROL CHECKS

Trip Blanks

A trip blank is provided with each shipping container of samples to be analyzed for volatile organic compounds (VOCs). Analysis of trip blanks determines whether a sample bottle was

contaminated during shipment from the manufacturer, while in bottle storage, in shipment to the laboratory, or during analysis at a laboratory. Trip blanks consist of an aliquot of distilled water sealed in a sample bottle, prepared by the analytical laboratory prior to shipping the sample bottles.

A Trip blank was NOT included as part of this project.

Field (Equipment) Blanks

Field (equipment) blanks were collected as part of this project.

Method Blanks

A method blank is a sample of reagent water, which is carried through the analytical procedure alongside the project samples to determine the level of laboratory background and reagent contamination.

For this investigation, a method blank was analyzed alongside the water samples collected on September 28 and 29, 2020. There were no detectable target analytes in the Method Blanks above the MRL.

Matrix Spike/Matrix Spike Duplicate Samples

For the Site, one (1) MS/MSD (MW-63) was collected and analyzed for the water samples. The sample results are considered acceptable and were within the control limits.

These results are detailed in the Data Validation Compliance Chart.

Surrogate Analyses

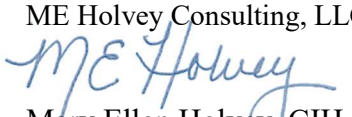
Surrogates are compounds added directly to every standard, blank, MS/MSD, and sample at a known concentration, prior to extraction or analysis; and used to evaluate the analytical efficiency by measuring percent recovery of those compounds upon analysis. The laboratory reported surrogate recoveries were within established QC limits for the surrogates.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control samples (LCS), and MS/MSD, % Recovery values, with the exceptions noted in the above narrative, if any.

The sample results for the Site are considered acceptable for use.

PREPARED BY: ME Holvey Consulting, LLC



Mary Ellen Holvey, CIH
Senior Industrial Hygienist

November 18, 2020

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Data Validation Compliance Chart
811 Jefferson Road
Rochester, New York

September 28 and 29, 2020 Sampling Event

Sample Data Group (SDG)	**R2008984**				
Matrix	**Water**				
Analysis	**VOCs 8260**	**Chlorine/Sulfate**	**TOC**	**Ethene (Dissolved Gasses)**	**Iron (Total and Dissolved)**
Holding Times	Samples were extracted and analyzed within USEPA holding times				
Sample Preservation	The samples were collected and preserved in accordance with laboratory protocols.				
Calibration	In the calibrations, all criteria were within method requirements.				
Method Blanks	All data quality objectives were satisfied.				
Detection Limits	No issues identified.				
Matrix Spike/Matrix Spike Duplicate	All data quality objectives were satisfied.				
Surrogates	All data quality objectives were satisfied.				
Internal Standards	All data quality objectives were satisfied.				
Laboratory Control Sample	The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The sample data is not significantly affected. No further corrective action was appropriate.	All laboratory internal quality control samples were within acceptable ranges.			
Data Usability	Data is acceptable for use.				

Data Validation Compliance Chart
811 Jefferson Road
Rochester, New York

September 28 and 29, 2020 Sampling Event

Sample Data Group (SDG)	**R2009031**				
Matrix	**Water**				
Analysis	**VOCs 8260**	**Chlorine/Sulfate**	**TOC**	**Ethene (Dissolved Gasses)**	**Iron (Total and Dissolved)**
Holding Times	Samples were extracted and analyzed within USEPA holding times				
Sample Preservation	The samples were collected and preserved in accordance with laboratory protocols.				
Calibration	In the calibrations, all criteria were within method requirements.				
Method Blanks	All data quality objectives were satisfied.				
Detection Limits	No issues identified.				
Matrix Spike/Matrix Spike Duplicate	All data quality objectives were satisfied.				
Surrogates	All data quality objectives were satisfied.				
Internal Standards	All data quality objectives were satisfied.				
Laboratory Control Sample	All laboratory internal quality control samples were within acceptable ranges.				
Data Usability	Data is acceptable for use.				

Data Usability Summary Report
January and February 2021 Sampling Event
811 Jefferson Road (LPSI 713-032A)
Site Code C828148
Rochester, New York
MEHC Project No. 14-223

DATA USABILITY

Leader Professional Services, Inc. ("LPSI") conducted sampling as part of the re-development of the 811 Jefferson Road property (former AB Dick Brownfield Cleanup Program and also known as the "Site") in Rochester, New York.

The Site (Site Code C828148) procedures for sample preparation and handling, sample chain-of-custody, laboratory analyses, and reporting that were implemented during this project to ensure the accuracy and integrity of the data generated during the investigation.

DATA SUMMARY

The Data Usability Review and Data Validation Compliance Chart has been completed for the laboratory deliverable packages generated by ALS Laboratories ("ALS"), pertaining to samples collected on the Site on January 28, February 1, and February 2, 2021. A total of 25 samples were collected, including Quality Control samples. The following USEPA Methodologies were used to analyze these samples for the following analytes:

Volatile Organic Compounds ("VOCs")	USEPA Method 8260C
Chlorine/Sulfate	USEPA Method 9056A
Total Organic Carbon ("TOC")	USEPA Method SM5310C-2000 (2011)
Dissolved Gases (Ethene)	USEPA Method RSK 175
Metals (Total and Dissolved Iron)	USEPA Method 6010C

Field duplicate, surrogates, internal standards, reference samples, matrix spikes, and matrix spike duplicates were included in the sample set and processed.

Samples were collected and received on the following schedule:

Sample Data Group ("SDG")	Date Collected	Date Received by ALS	Sample Matrix	Requested Analyses	Sample Temperature (°C)
R2100856	01/28/2021	01/29/2021 ALS Rochester	Water (14 Samples)	VOCs 8260 Chlorine Sulfate TOC Ethene Iron (T. and D.)	Cooler: 5.9°C
R2100896	02/01/2021 02/02/2021	02/02/2021 ALS Rochester	Water (11 Samples)	VOCs 8260 Chlorine Sulfate TOC Ethene Iron (T. and D.)	Cooler: 6.9°C Same Day Rule

Data usability and validation was performed with guidance from the most current editions of the USEPA CLP National Functional Guidelines for Inorganic and Organic Data Review. The following items were reviewed:

- Data Completeness;
- Custody Documentation;
- Holding Times;
- Sample Blanks Review;
- Field Duplicate Samples;
- Matrix Spike Samples and Duplicates; and
- Control Spike/Laboratory Control Samples.

Those items showing deficiencies, if any, are discussed in the attached Data Validation Compliance Chart. All others were found to be acceptable as outlined in the above-mentioned usability procedures, and as applicable for the methodology. Unless noted specifically in the following text, reported results are substantiated by the reported data, and generated in compliance with protocol requirements.

In summary, sample preservation, handling, and processing was conducted with compliance to protocol requirements and with adherence to quality criteria and the reported results are considered "usable".

The Data Validation Compliance Chart is included with this report.

CUSTODY DOCUMENTATION

Chain of Custody forms are used to document the history of sample possession from the time the sample containers leave their point of origin (usually the laboratory performing the analyses) to the time the samples are received by the laboratory. COCs are considered legal documents.

The laboratory reports, R2100856 and R2100896, associated with the 25 water samples collected on January 28, February 1, and February 2, 2021 is detailed below:

1. MW-78
2. MW-76
3. MW-69R
4. MW-69R Dissolved
5. MW-77
6. MW-1IR
7. MW-1IR Dissolved
8. MW-70R
9. MW-70R Dissolved
10. UCB-MW-3
11. MW-33R
12. MW-70R Dup
13. MW-70R Dup Dissolved
14. MW-33R
15. Pump Blank
16. Pump-Blank Dissolved
17. MW-63
18. MW-63 Dissolved
19. MW-55
20. MW-5DR
21. Sub Blank
22. MW-33R
23. MW-33R Dissolved
24. MW-1IR
25. MW-1IR Dissolved

Sample MW-70R was collected in duplicate as well as the Matrix Spike (MS) and Matrix Spike Duplicate (MSD).

The COC documents the sample collection efforts. There were no discrepancies on the COC.

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PRESERVATION AND TECHNICAL HOLDING TIMES

The cooler temperature was 5.9°C for samples collected on January 28, 2021.

The cooler temperature was 6.9°C for samples collected on February 1 and February 2, 2021; above the 6.0°C limit; however, the samples collected on February 1 were adequately cooled and the samples collected on February 2 were delivered the same day as the sample collection. This is considered the "Same Day Rule" and does not adversely impact the sampling results.

The laboratory noted that several of the VOA vials contained air bubbles. The remaining VOA vial samples that did not contain air bubbles were used for the analytical testing. The sample results were not impacted.

All sample holding times were met.

ACCURACY, PRECISION, AND SENSITIVITY OF ANALYSES

The fundamental QA objective with respect to the accuracy, precision, and sensitivity of analytical data is to achieve the QC acceptance of each analytical protocol. Accuracy and precision are determined using MS and MSD samples.

Accuracy is a measure of the difference of a set of analytical results to the accepted or expected values. Accuracy was assessed by using the MS/MSD and surrogate spike recovery data.

Recovery values were reported within the QC limits for each analytical parameter group.

Precision is a measure of the mutual agreement between measurements of the same parameter.

The sample results for the Site are considered "usable".

COMPLETENESS, REPRESENTATIVENESS, AND COMPARABILITY OF DATA

Completeness is the measure of the amount of valid data obtained from a measurement system compared with the amount expected to be obtained under normal conditions. Review of the analytical data packages provided by ALS indicates that the requested parameters were analyzed for and reported by the laboratory for each sample submitted under proper chain-of-custody procedures. Based upon MEHC's review of the laboratory data, a usable data level was achieved.

Representativeness of the data is obtained through the design of the sampling program and the adherence to established sample collection procedures, sample-handling SOPs, and analytical procedures. The sampling program outlined in the Work Plan was designed to provide for data representative of site conditions taking into consideration past disposal practices, existing data from past studies, and the physical site setting. Collection of the water samples were conducted in accordance with established industry and regulatory protocols.

The laboratory maintained all holding times for the specific analytical protocols.

Comparability of the data is derived from the evaluation of field duplicate samples and the adherence to established sampling and analytical procedures. A field duplicate is an independent sample collected as close as possible to the original location from the same sampling point. All the water samples were analyzed utilizing standardized USEPA methodologies performed in accordance with the latest version of the NYSDEC ASP protocols.

QUALITY CONTROL CHECKS

Trip Blanks

A trip blank is provided with each shipping container of samples to be analyzed for volatile organic compounds (VOCs). Analysis of trip blanks determines whether a sample bottle was contaminated during shipment from the manufacturer, while in bottle storage, in shipment to the laboratory, or during analysis at a laboratory. Trip blanks are prepared by the analytical laboratory prior to shipping the sample bottles.

A Trip blank was NOT included as part of this project.

Field (Equipment) Blanks

Field (equipment) blanks were collected as part of this project.

Method Blanks

A method blank is a sample of reagent water, which is carried through the analytical procedure alongside the project samples to determine the level of laboratory background and reagent contamination.

For this investigation, a method blank was analyzed alongside the water samples collected on January 28, February 1, and February 2, 2021. There were no detectable target analytes in the Method Blanks above the MRL.

Matrix Spike/Matrix Spike Duplicate Samples

For the Site, one (1) MS/MSD (MW-70R) was collected and analyzed for the water samples. The sample results are considered acceptable and were within the control limits.

These results are detailed in the Data Validation Compliance Chart.

Surrogate Analyses

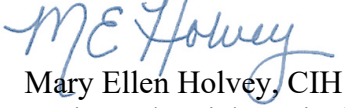
Surrogates are compounds added directly to every standard, blank, MS/MSD, and sample at a known concentration, prior to extraction or analysis; and used to evaluate the analytical efficiency by measuring percent recovery of those compounds upon analysis. The laboratory reported surrogate recoveries were within established QC limits for the surrogates.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control samples (LCS), and MS/MSD, % Recovery values, with the exceptions noted in the above narrative, if any.

The sample results for the Site are considered acceptable for use.

PREPARED BY: ME Holvey Consulting, LLC



Mary Ellen Holvey, CIH
Senior Industrial Hygienist

March 21, 2021

Data Validation Compliance Chart
811 Jefferson Road
Rochester, New York

January 28, February 1, and February 2, 2021 Sampling Event

Sample Data Group (SDG)	**R2100856**				
Matrix	**Water**				
Analysis	**VOCs 8260**	**Chlorine/Sulfate**	**TOC**	**Ethene (Dissolved Gasses)**	**Iron (Total and Dissolved)**
Holding Times	Samples were extracted and analyzed within USEPA holding times				
Sample Preservation	The samples were collected and preserved in accordance with laboratory protocols.				
Calibration	The upper and lower control criterion was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). There were no detections of the analyte(s) above the MRL in the associated field samples. The sample data is not significantly affected. No further corrective action was appropriate.	In the calibrations, all criteria were within method requirements.			
Method Blanks	All data quality objectives were satisfied.				
Detection Limits	No issues identified.				
Matrix Spike/Matrix Spike Duplicate	All data quality objectives were satisfied.				
Surrogates	All data quality objectives were satisfied.				
Internal Standards	All data quality objectives were satisfied.				
Laboratory Control Sample	The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The sample data is not significantly affected. No further corrective action was appropriate.	All laboratory internal quality control samples were within acceptable ranges.			
Data Usability	Data is acceptable for use.				

Data Validation Compliance Chart
811 Jefferson Road
Rochester, New York

January 28, February 1, and February 2, 2021 Sampling Event

Sample Data Group (SDG)	**R2100896**				
Matrix	**Water**				
Analysis	**VOCs 8260**	**Chlorine/Sulfate**	**TOC**	**Ethene (Dissolved Gasses)**	**Iron (Total and Dissolved)**
Holding Times	Samples were extracted and analyzed within USEPA holding times				
Sample Preservation	The samples were collected and preserved in accordance with laboratory protocols.				
Calibration	The upper and lower control criterion was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). There were no detections of the analyte(s) above the MRL in the associated field samples. The sample data is not significantly affected. No further corrective action was appropriate.	In the calibrations, all criteria were within method requirements.			
Method Blanks	All data quality objectives were satisfied.				
Detection Limits	No issues identified.				
Matrix Spike/Matrix Spike Duplicate	All data quality objectives were satisfied.				
Surrogates	All data quality objectives were satisfied.				
Internal Standards	All data quality objectives were satisfied.				
Laboratory Control Sample	The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The sample data is not significantly affected. No further corrective action was appropriate.	All laboratory internal quality control samples were within acceptable ranges.			
Data Usability	Data is acceptable for use.				