PROPOSED REMEDIAL ACTION PLAN

Ace Cleaners
State Superfund Project
Brockport, Monroe County
Site No. 828133
January 2023

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy set forth in by this Proposed Remedial Action Plan (PRAP). The disposal of hazardous wastes at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=828133

New York State Department of Environmental Conservation
Region 8 Office
6274 East Avon-Lima Road
Avon, NY 14414
Phone: 585-226-2466

A public comment period has been set from:

02/08/2023 to 03/10/2023

A public meeting is scheduled for the following date:

02/22/2023 at 6:00 pm

Public meeting location:

Seymour Library, 161 East Avenue, Brockport, NY 14420, (585) 637-1050

Written comments may be sent through 03/10/2023 to:

Evelyn Hussey
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
Evelyn.Hussey@dec.ny.gov

The Department may modify the proposed remedy or select another of the alternatives presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD will be the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information by Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Ace Cleaners Site consists of a 1.1-acre parcel located at 4626 South Lake Road in the Village of Brockport, Monroe County. The parcel is located along the southeast corner of the South Lake Road intersection with Sweden Lane.

Site Features: A 2,755 square foot, single story building, is the only structure located on the 4626 South Lake Road property. In addition to the site building, the western half of the property consists of a paved parking area and a dirt and gravel driveway. The eastern half of the site property is undeveloped and consists mostly of trees and brush. An unnamed tributary to the Brockport Creek borders the Ace Cleaners property line to the east and is located approximately 300 feet east of the site building.

Current Zoning and Land Use: The site is zoned for restricted-residential use and currently inactive and vacant.

Past Use(s) of the Site: Property ownership records indicate that it was used for dry cleaning purposes since at least 1967. The dry-cleaning operations were abandoned in 2009 and no operations are occurring at the site.

Site Geology and Hydrogeology: Site geology consists predominantly of silt and sand with minor amounts of sand and gravel. The overburden is approximately 8 to 17 feet thick and is underlain by sandstone of the Queenstown Formation. Groundwater occurs at a depth of approximately 5 feet beneath the ground surface. Groundwater flow is to the north-northeast toward the Brockport Creek and Lake Ontario.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted residential (which allows for commercial and industrial use) as described in Part 375-1.8(g) are/is being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables in Exhibit A for the media being evaluated.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

Bruce Ribble d/b/a Ace Cleaners and Launderers

The PRPs for the site declined to implement a remedial program when requested by the Department. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

tetrachloroethene (PCE)	vinyl chloride
trichloroethene (TCE)	cis-1,2-dichloroethene

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM - Soil Removal

Under the Division of Environmental Enforcement and the Spill Response Program a soil excavation was completed in April 2005 by DEC. The 10 foot by 10 foot by 3 foot excavation was located adjacent to the backdoor of the facility and was part of an investigation of suspected dumping of used dry-cleaning solvents. Post-excavation samples collected indicated TCE concentrations up to 33 ppm; therefore, the site was referred to the NYS Inactive Hazardous Waste Disposal Remedial Program.

IRM - Sub Slab Depressurization System (SSD) Installation

To determine whether actions are needed to address exposure related to soil vapor intrusion, sub-slab vapor, indoor air, and outdoor air samples were collected at 16 off-site buildings from 2011-

2021. Based on the sampling results, no further action was recommended for 15 structures and the installation of a sub-slab depressurization system (SSDS) system was recommended at one structure. The system was installed in January 2022. Details of the IRM, are presented in a Construction Completion Report (CCR), dated July 2022.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for the site.

Soil, sediment, surface water, and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Groundwater samples were also analyzed for the emerging contaminants per and polyfluorinated alkyl substances (PFAS) and 1,4-dioxane. Based upon investigations conducted to date, the primary contaminants of concern are tetrachloroethene (PCE) and its associated degradation products.

Soil - Tetrachloroethene (PCE) is found in shallow (0 feet to approximately 5 feet below ground surface) and deeper soil (5 feet to top of bedrock, approximately 15 feet below ground surface), predominantly under and to the east of the on-site building. Concentrations of tetrachloroethene found on-site at levels, up to 1,200 parts per million (ppm) at 13 feet below ground surface, significantly exceed the soil cleanup objectives for the protection of groundwater (1.3 ppm) and for restricted residential use (19 ppm). Concentrations of trichloroethene (20 ppm) exceed the soil cleanup objectives for the protection of groundwater (1.3 ppm) but not for restricted residential use (21 ppm). Other PCE daughter products cis-1,2-dichloroethene and vinyl chloride (VC) contamination was distributed similarly to PCE contamination, and VC exceeded protection of groundwater SCOs at five on-site sample locations. Soil contamination has not been observed off-site above unrestricted use Soil Cleanup Objectives (SCOs) or protection of groundwater SCOs.

Sediment – Four sediment samples were collected withing the unnamed stream to the east of the site and in Brockport Creek, both up and downstream from the mouth of the unnamed stream. These samples were analyzed for VOCs, and total organic carbon (TOC). Tetrachloroethene (PCE) was detected in two samples, however neither was greater than the Class A Sediment guidance values. The highest concentration was detected in the sample collected at the mouth of the catch basin and its degradation compounds were not detected. PCE was detected at 47 ppb in that sample, well below the Class A sediment screening value of 16,000 ppb.

Groundwater - PCE and its associated degradation products are found in overburden groundwater on-site, exceeding groundwater standards (typically 5 ppb), with a maximum

concentration of 88,000 ppb (PCE). PCE was detected in on-site bedrock groundwater as high as 4,700 ppb, exceeding groundwater standards (5 ppb). PCE was detected in off-site bedrock groundwater as high as 16 ppb, slightly above groundwater standards (5 ppb).

Concentrations of PCE and its breakdown products in groundwater extend approximately 430 ft northeast of the source area at concentrations greater than groundwater criteria. PCE (2.2 ppb) was detected just above the Class C guidance value of 1 ppb in a surface water sample near the mouth of the culvert. Site contaminants were detected at levels below guidance values in surface water in the unnamed stream just prior to its discharge to Brockport Creek, Site contaminants were not detected in groundwater in the residential area east of the unnamed stream, nor were they detected in media in Brockport Creek.

PFAS - Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported in groundwater at concentrations of up to 64 and 57 parts per trillion (ppt), respectively. These levels exceed their respective drinking water standards of 10 ppt. The total concentration of PFAS, including PFOA and PFOS, were reported at concentrations of up to 252 ppt. The highest concentrations are found on-site at the back of the on-site building.

Sub-slab Vapor and Indoor Air - To determine whether actions are needed to address exposure related to soil vapor intrusion, sub-slab vapor, indoor air, and outdoor air samples were collected at 16 off-site buildings from 2011-2021. Soil vapor intrusion sampling was offered to two additional properties, but access was not granted. The maximum concentrations of PCE and TCE in sub-slab vapor samples off-site were as follows: 1100 micrograms per cubic meter (ug/m3) and 120 ug/m3, respectively. Similarly, PCE and TCE were found in indoor air samples at maximum levels of 0.53 ug/m3 and 0.12 ug/m3, respectively. The concentrations of these VOCs in outdoor air samples were found to be consistent with background ranges.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement, however there are areas of exposed soil on site and persons who enter the site could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil. People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Furthermore, a sub-slab depressurization system (system that ventilates/removes the air beneath the building) has been installed in one off-site building to prevent the indoor air quality from being affected by the contamination in soil vapor

beneath the building. Environmental sampling indicates soil vapor intrusion is not a concern for remaining off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

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.

RAOs for Environmental Protection

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

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: SUMMARY OF THE PROPOSED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in

Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the Feasibility Study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's proposed remedy is set forth at Exhibit D.

The estimated present worth cost to implement the remedy is $2,696,000. The cost to construct the remedy is estimated to be $2,018,000 and the estimated average annual cost is $22,600.

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- reducing direct and indirect greenhouse gas and other emissions;
- increasing energy efficiency and minimizing use of non-renewable energy;
- conserving and efficiently managing resources and materials;
- reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- maximizing habitat value and creating habitat when possible;
- fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. The existing on-site building will be demolished and materials which can’t be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy. Dust and storm water run-off control measures will be employed to minimize any short-term impacts.

3. Excavation and off-site disposal of contaminant source areas, including grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u) and soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in on-site groundwater above standards. Approximately 1500 cubic yards of contaminated soil will be removed from the site. Clean fill meeting the requirements of

6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. Dust and storm water run-off control measures will be employed to minimize any short-term impacts associated with the excavation.

4. In-situ enhanced biodegradation injections will be employed to treat chlorinated VOCs in groundwater in an area to be determined during the remedial design. The biological breakdown of contaminants through anaerobic reductive dichlorination will be enhanced by injecting nutrients, in water-based solutions, into the subsurface to enhance existing microbe growth. The nutrients, method and depth of injection will be determined during the remedial design.

5. Any new on-site building(s) will be required to have a sub-slab depressurization, or other acceptable measures, to mitigate the migration of vapors into the building from soil and/or groundwater.

6. Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

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

7. A Site Management Plan is required, which includes the following:

a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater;
- provisions for the management and inspection of the identified engineering controls;
- a provision for evaluation of the potential for soil vapor intrusion for any new buildings in off-site areas of contamination, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department
- monitoring for vapor intrusion for any new buildings, as may be required by the Institutional and Engineering Control Plan discussed above.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting groundwater, soil and soil vapor.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium.

As a result of the historic use of the site, dry cleaning chemicals were dumped to the ground surface and floor drains, where they flowed/leaked into the soil at the site. The source area is located beneath the vacant, on-site building and to the rear of the site building.

Certain waste/source areas identified at the site were addressed by the IRM(s) described in Section 6.2. The remaining waste/source area(s) identified during the RI will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from overburden and bedrock monitoring wells. The samples were collected to assess groundwater conditions on and off-site.

PCE and its associated degradation products are found in overburden groundwater on-site, exceeding groundwater standards (typically 5 ppb), with a maximum concentration of 88,000 ppb (PCE). PCE was detected in on-site bedrock groundwater as high as 4,700 ppb, exceeding groundwater standards (5 ppb). PCE was detected in off-site bedrock groundwater as high as 16 ppb, slightly above groundwater standards (5 ppb).

Concentrations of PCE and its breakdown products in groundwater extend approximately 430 ft northeast of the source area at concentrations greater than groundwater criteria.

Table #1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Tetrachloroethene (PCE)	ND – 88,000	5	34/59
Trichloroethene (TCE)	ND - 9,400	5	27/59
cis-1,2-Dichloroethene	ND – 16,000	5	31/59
Vinyl Chloride	ND – 1,800	2	15/59

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Based on the findings of the RI, the past disposal of hazardous waste has resulted in the contamination of groundwater. The site contaminants identified in groundwater which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, tetrachloroethene (PCE) and its associated degradation products.

Soil

Soil samples were collected at the site during the RI, from on-site and off-site locations to further delineate the source area. Soil samples were collected in the vicinity of the source area, beneath the former on-site building for analysis primarily for VOCs.

The RI soil sampling results were compared to the applicable Soil Cleanup Objectives (SCOs) for unrestricted use and restricted use/protection of groundwater, as discussed in Section 3, and indicate that the primary contaminants of concern on-site are VOCs that contribute to the potential for, soil vapor intrusion into buildings at the site. Based on the comparison of the soil sampling results to the restricted use SCOs, the protection of groundwater SCOs were selected for the evaluation of the data.

The soil VOC results indicate that a VOC contaminant source still exists on the site. The VOC contamination exceeding the unrestricted and protection of groundwater SCOs was determined to emanate from the source area beneath the vacant, on-site building and to the rear of the building.

Table #2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Tetrachloroethene (PCE)	ND – 1200	1.3	75/160	1.3	75/160
Trichloroethene (TCE)	ND – 20	0.47	20/160	0.47	20/160
cis-1,2-Dichloroethene	ND – 7.5	0.25	13/160	0.25	13/160
Vinyl Chloride	ND – 0.25	0.47	13/160	0.47	13/160

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of on and off-site soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, tetrachloroethene (PCE) and its associated degradation products.

Soil Vapor

To determine whether actions are needed to address exposure related to soil vapor intrusion, sub-slab vapor, indoor air, and outdoor air samples were collected at 16 off-site buildings from 2011-2021. Soil vapor intrusion sampling was offered to two additional properties, but access was not granted. The maximum concentrations of PCE and TCE in sub-slab vapor samples were as follows: 1100 micrograms per cubic meter (ug/m3) and 120 ug/m3, respectively. Similarly, PCE and TCE were found in indoor air samples at maximum levels of 0.53 ug/m3 and 0.12 ug/m3, respectively. The concentrations of these VOCs in outdoor air samples were found to be consistent with background ranges.

Based on the concentration detected, and in comparison, with the NYSDOH Soil Vapor Intrusion Guidance, the potential for exposure to soil vapor contamination identified during the RI was addressed during the IRM described in Section 6.2.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative maintains engineering controls which were part of the IRM and includes institutional controls, in the form of an environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

Present Worth: *$173,000.00*
Capital Cost: *$33,000.00*
Annual Costs: *$4,700.00*

Alternative #3: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include the demolition and off-site disposal of the on-site building, on-site thermal remediation, and on- and off-site bio-augmentation. Dual heater/soil vapor extraction wells will be spaced as needed over an approximately 10,500 square foot area and will heat soil to depths between 5 and 15 feet below ground surface to treat soil to unrestricted use criteria. Injection of bio-amendments will be implemented to address on- and off-site groundwater contamination. Injection wells and supporting monitoring points will be installed for use during amendment injection. Final decisions regarding well layout, use of permanent or temporary wells, and injection frequency will be made during remedy design.

Capital Cost: *$7,350,000.00*

Alternative #4: Monitored Natural Attenuation

Groundwater contamination will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time. Reports of the attenuation will be provided at 5 and 10 years and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that In-Situ Enhanced Biodegradation would be the expected contingency remedial action.

Present Worth: *$832,000.00*
Capital Cost: *$116,000.00*
Annual Costs: *$23,900.00*

Alternative #5: Excavation and In-Situ Enhanced Biodegradation

The existing on-site building will be demolished and materials which can't be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy. Excavation and off-site disposal of contaminant source areas, including grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u). Approximately 1500 cubic yards of contaminated soil will be removed from the site. Confirmation sampling for VOCs would be conducted during excavation activities, with analytical results verifying attainment of remediation goals. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. Any new on-site building(s) will be required to have a sub-slab depressurization, or other acceptable measures, to mitigate the migration of vapors into the building from soil and/or groundwater.

In-situ enhanced biodegradation will be employed to treat chlorinated VOCs in groundwater in the area depicted on Figure 8. The biological breakdown of contaminants through anaerobic reductive dichlorination will be enhanced by injecting nutrients, in water-based solutions, into the subsurface to enhance existing microbe growth. The nutrients, method and depth of injection will be determined during the remedial design.

Present Worth: *$2,696,000.00*
Capital Cost: *$2,018,000.00*
Annual Costs: *$22,600.00*

Alternative #6: Excavation and Monitored Natural Attenuation

The existing on-site building will be demolished and materials which can't be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy. Excavation and off-site disposal of contaminant source areas, including grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u). Approximately 1500 cubic yards of contaminated soil will be removed from the site. Confirmation sampling for VOCs would be conducted during excavation activities, with analytical results verifying attainment of remediation goals. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. Any new on-site building(s) will be required to have a sub-slab depressurization, or other acceptable measures, to mitigate the migration of vapors into the building from soil and/or groundwater.

Groundwater contamination will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time. Reports of the attenuation will be provided at 5 and 10 years and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that In-Situ Enhanced Biodegradation would be the expected contingency remedial action.

Present Worth: *$2,268,000.00*
Capital Cost: *$1,552,000.00*
Annual Costs: *$23,900.00*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action	$0	$0	$0
No Further Action w/Site Management	$33,000	$4,700	$173,000
Restoration to Pre-Disposal or Unrestricted Conditions	$7,350,000	$0	$7,350,000
MNA	$ 116,000	$23,900	$ 832,000
Excavation, In-Situ Enhanced Biodegradation	$2,018,000	$22,600	$2,696,000
Excavation, MNA	$ 1,552,000	$23,900	$ 2,268,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative #5, Excavation and In-Situ Enhanced Biodegradation as the remedy for this site. Alternative #5 would achieve the remediation goals for the site by excavation of soil and the treatment of groundwater using in-situ enhanced biodegradation. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure #8.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy (Alternative 5) would satisfy this criterion by removing the source of groundwater contamination, treating the groundwater, and addressing the potential for exposures related to soil vapor intrusion. Alternative 5 addresses the source of the groundwater contamination, which is the most significant threat to public health and the environment. Alternative 1 (No Action) does not provide any protection to public health and the environment and will not be evaluated further. Alternative 3, by treating all soil contaminated above the Unrestricted soil cleanup objective, meets the threshold criteria. Alternatives 4, 5, and 6 also comply with this criterion but to a lesser degree or with lower certainty. Alternatives 4, 5, and 6 rely on a restriction of groundwater use at the site to protect human health. The potential for soil vapor intrusion will be significantly reduced by Alternatives 3, 5 and 6. The potential for soil vapor intrusion will remain high under Alternatives 2 and 4.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 5 complies with SCGs to the extent practicable. It addresses source areas of contamination and complies with the restricted use soil cleanup objectives at the surface through soil removal. It also creates the conditions necessary to restore groundwater quality to the extent practicable. Alternatives 2, 3, 4, and 6 also comply with this criterion but to a lesser degree or with lower certainty. Because Alternatives 2, 3, 4, 5, and 6 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site. It is expected Alternatives 3 and 5 will achieve groundwater SCGs sooner, while groundwater contamination above SCGs will remain on-site under Alternatives 2, 4, and 6 for many years.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial

alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils (Alternatives 5 and 6). Alternative 3 results in removal of almost all the chemical contamination at the site and removes the need for property use restrictions and long-term monitoring. Alternatives 5 and 6 would result in the removal of most of the contaminated soil at the site, but it also requires an environmental easement and long-term monitoring. For Alternative 2, site management remains effective, but it will not be desirable in the long term.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 would control potential exposures with institutional controls only and will not reduce the toxicity, mobility or volume of contaminants remaining. Alternative 3 reduces the toxicity, mobility and volume of on-site waste by building and operating a treatment system for an unspecified period of time. Alternative 4 reduces the toxicity, mobility, and volume of on-site waste through monitored natural attenuation; however the time frame will be much longer than Alternatives 3, 5 and 6. Alternatives 5 and 6, reduce the mobility and volume of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material would not be reduced. Alternatives 3 and 5 would permanently reduce the toxicity, mobility and volume of contaminants by use of chemical treatment.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2 through 6 all have short-term impacts which could easily be controlled, however, Alternative 2 and 4 would have the smallest impacts. Alternative 3 activities that could impact the local community would be noise from drilling activities to install the heating/vacuum extraction wells and constructing the treatment system. Heating would need to be evaluated for short term impacts to sub-surface utilities or structures and the adjacent wetlands because the temperatures will reach 100 degrees C. Alternatives 5 and 6 could impact the local community with noise from the excavation and increased truck traffic with the transportation and disposal of soil, and the delivery of backfill. There is the potential for airborne exposure, however, mitigation measures can be taken to address this potential.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternatives 5 and 6 are favorable in that they are readily implementable. Alternative 3 is also implementable, but the power requirement for the dual heater/soil vapor extraction wells may not be available and are inconstant with green remediation goals.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for

each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternative 2 has a low cost, but the contaminated soil would not be addressed other than by institutional controls. With its large volume of soil to be treated, Alternative 3 (dual heater/soil vapor extraction) would have the highest present work cost. Alternative 4 has a low cost, but the time to some contaminated soil would remain on the property. Alternative 5 would be much less expensive than Alternative 3, yet it would provide equal protection of the groundwater resource, and so is more cost-effective. Alternative 5 is slightly more expensive than Alternative 6, but the time to achieve the remediation goals is greater under Alternative 6.

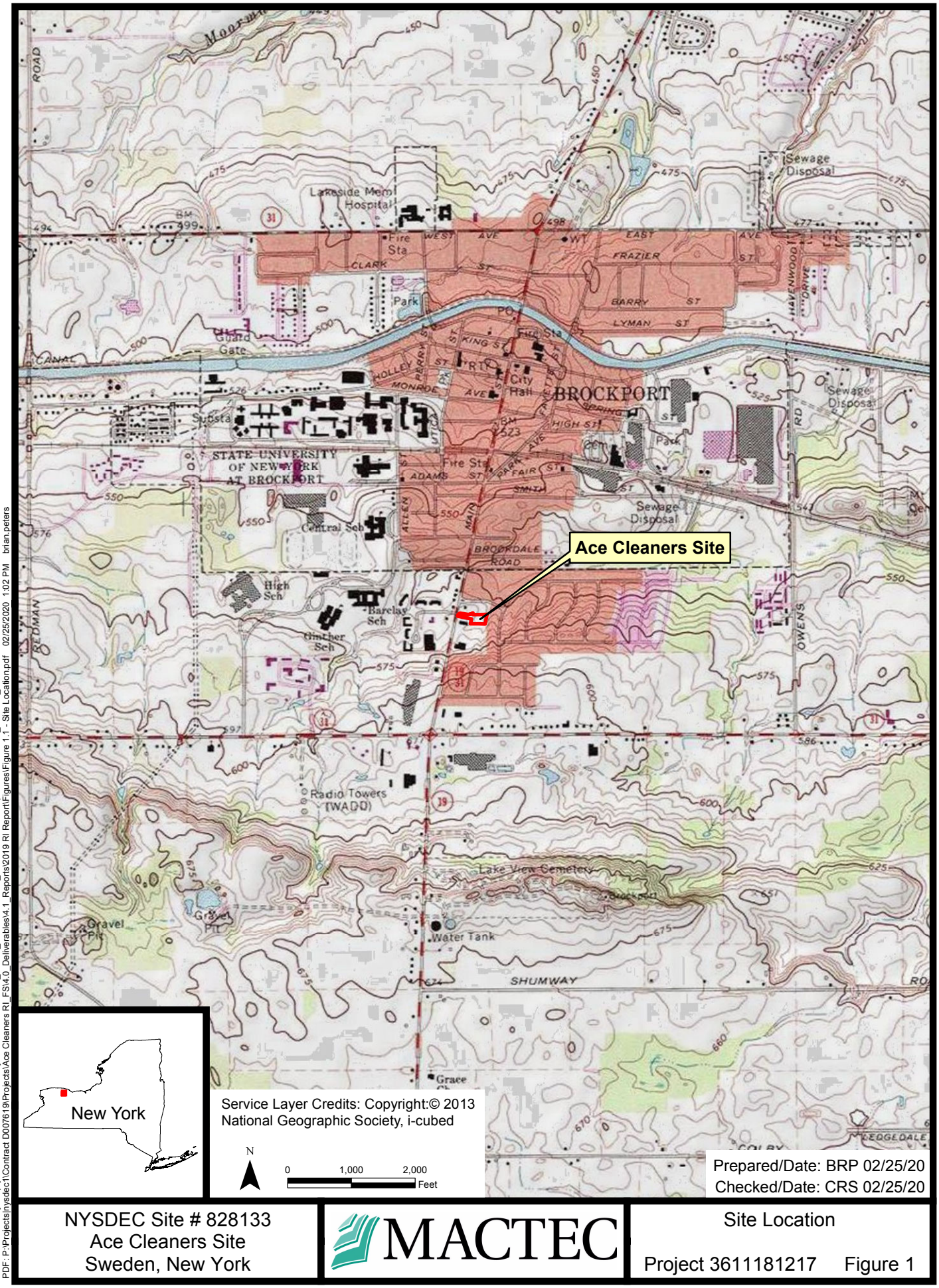
8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Since the anticipated use of the site is commercial, Alternatives 2 and 4 would be less desirable because at least some contaminated soil would remain on the property whereas Alternatives 3, 5 and 6 would remove or treat the contaminated soil permanently. However, the residual contamination with Alternative 4 would be controllable with implementation of a Site Management Plan.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative #5 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



Prepared/Date: BRP 02/25/20
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NYSDEC Site # 828133
Ace Cleaners Site
Sweden, New York

MACTEC

Site Location

Project 3611181217 Figure 1

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PDF: P:\Projects\nysdec1\Contract D007619\Projects\Ace Cleaners RI_FS\4.0_Deliverables\4.1_Reports\2019 RI Report\Figures\Figure 1.1 - Site Location.pdf 02/25/2020 1:02 PM brian.peters

Legend

- Approximate Property Lines
- Approximate Historic Excavation
- Stream Section in Culvert
- Stream Flow Direction

N

0 25 50 Feet

Monroe County color digital orthoimagery (2015) obtained from New York State GIS Clearinghouse at: gis.ny.gov

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Site Features

Project 3611181217 Figure 2

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Brockport Creek

Hollybrook Road

Sweden Lane

Lake Road

Lancet Way

Unnamed Stream (30-inch culvert)

Ace Cleaners Site

Former Sunoco Station

MW-108 535.95

MW-104 540.87

MW-107

MW-102 550.21

MW-103 549.32

GW-12 546.99

GW-2 552.81

MW-110 553.00

GW-14 553.56

MW-110 552.91

MW-111 552.97

MW-112 553.54

MW-101 550.19

GW-8 552.93

MW-106 545.95

MW-105 547.79

MW-109 549.13

536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553

Legend

- Overburden Monitoring Well
- **552.93** groundwater elevation
- **553.56** green indicates water level inconsistent with changes in water table & elevation not used
- Overburden Groundwater Contour (dashed where inferred)
- Interpreted Groundwater Flow Direction
- Approximate Property Line
- Open Stream
- Stream Section in Culvert
- Stream Flow Direction

N

0 60 120 Feet

Notes:
1. Water levels measured by MACTEC on 8/19/19.
2. Monroe County color digital orthoimagery (2015) obtained from New York State GIS Clearinghouse at: gis.ny.gov

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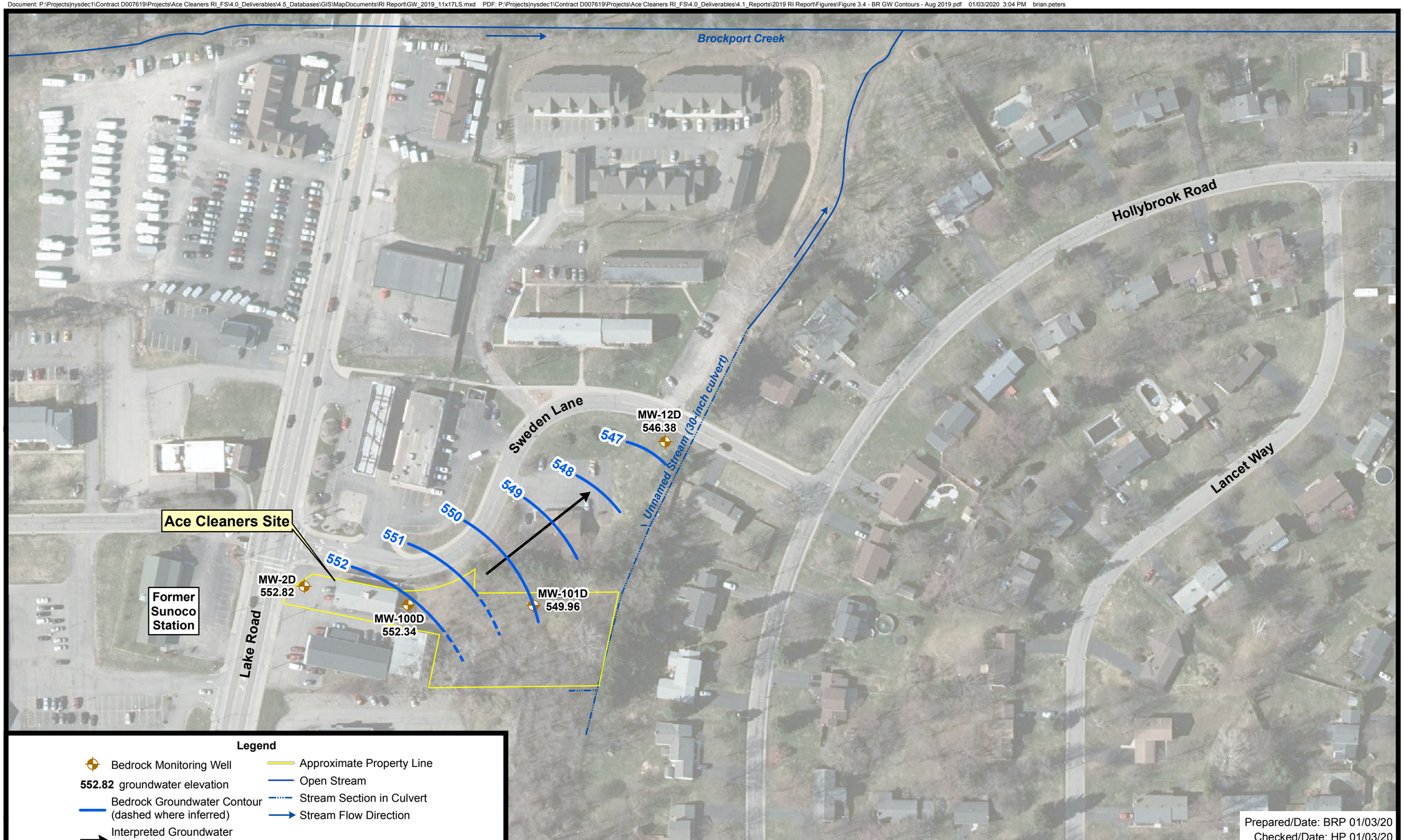
Overburden Groundwater Contours
August 2019
Project 3611181217 Figure 3



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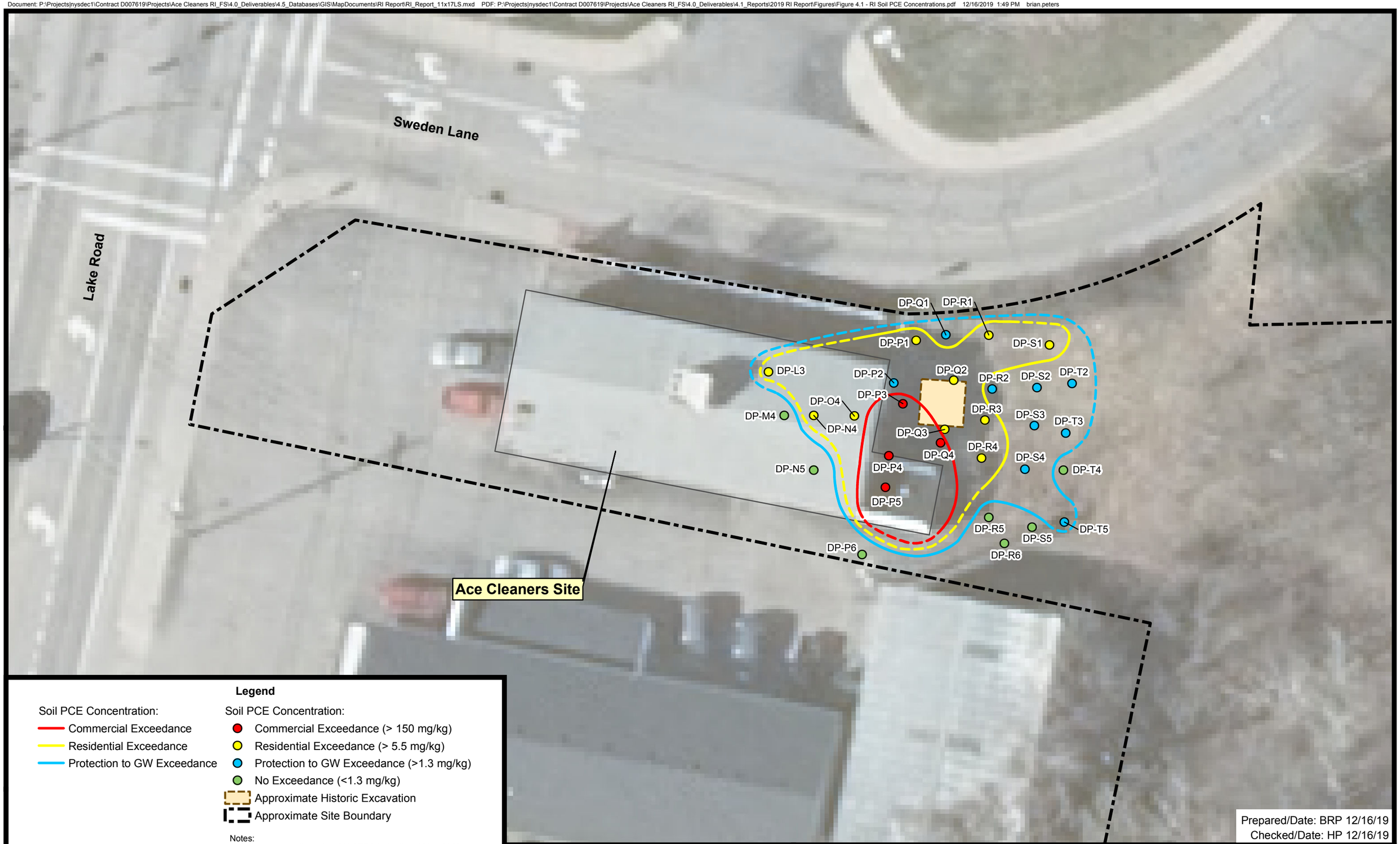
Bedrock Groundwater Contours
August 2019
Project 3611181217 Figure 4



Legend

Soil PCE Concentration:
- Commercial Exceedance
- Residential Exceedance
- Protection to GW Exceedance

Soil PCE Concentration:
- Commercial Exceedance (> 150 mg/kg)
- Residential Exceedance (> 5.5 mg/kg)
- Protection to GW Exceedance (>1.3 mg/kg)
- No Exceedance (<1.3 mg/kg)
- Approximate Historic Excavation
- Approximate Site Boundary

Notes:
1. Soil samples collected by MACTEC in April and May 2019.
2. PCE = tetrachloroethene
3. mg/kg = milligrams per kilogram
4. Monroe County color digital orthoimagery (2015) obtained from New York State GIS Clearinghouse at: gis.ny.gov

N

0 10 20 Feet

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Remedial Investigation
Soil PCE Concentrations
Project 3611181217 Figure 5

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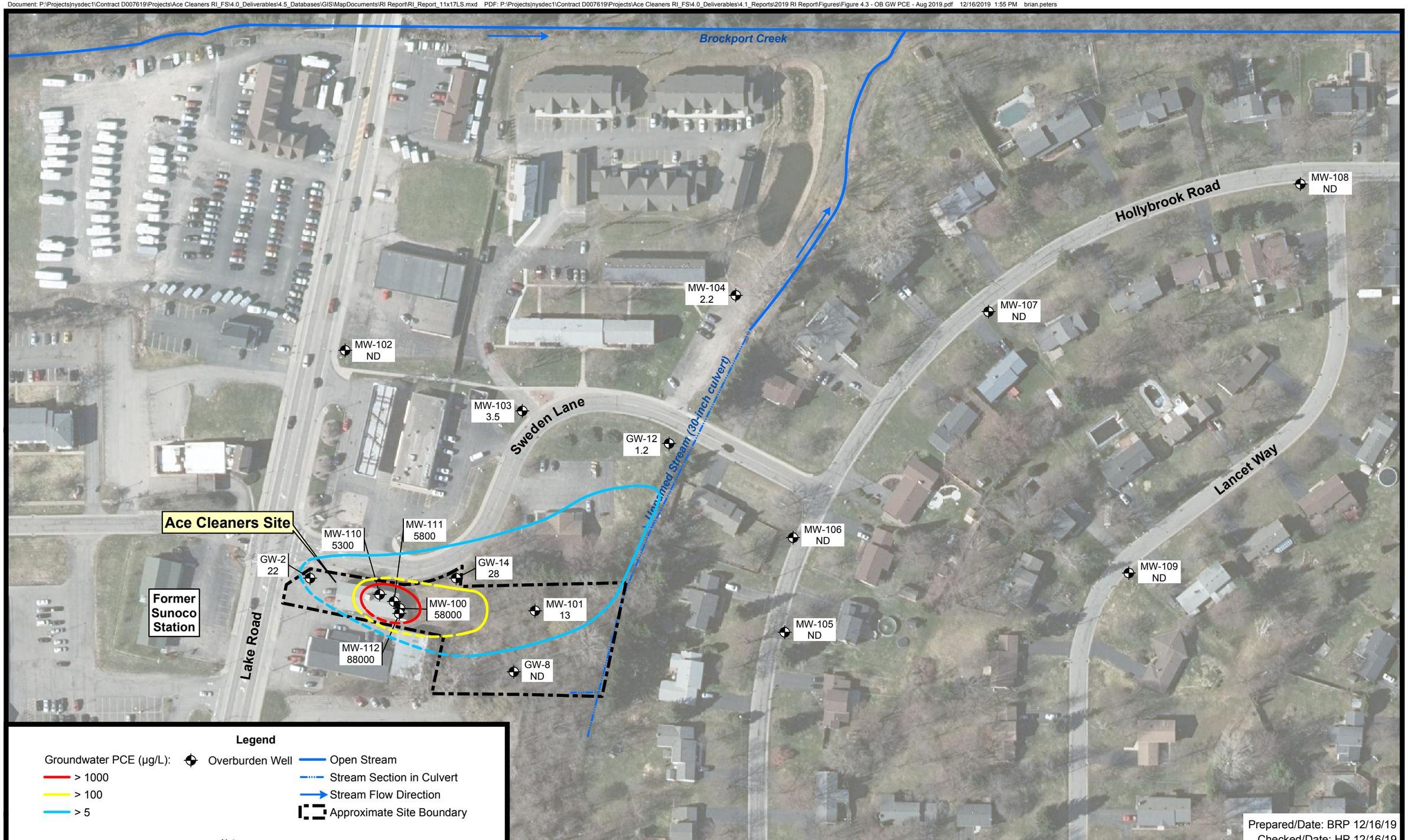

Legend

Groundwater PCE (µg/L):
- > 1000
- > 100
- > 5

Overburden Well

Open Stream
Stream Section in Culvert
Stream Flow Direction
Approximate Site Boundary

N

0 60 120 Feet

Notes:
1. Groundwater samples collected by MACTEC in August 2019.
2. PCE = tetrachloroethene
3. µg/L = micrograms per liter
4. Monroe County color digital orthoimagery (2015) obtained from New York State GIS Clearinghouse at: gis.ny.gov

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Overburden Groundwater
PCE Concentrations August 2019
Project 3611181217 Figure 6

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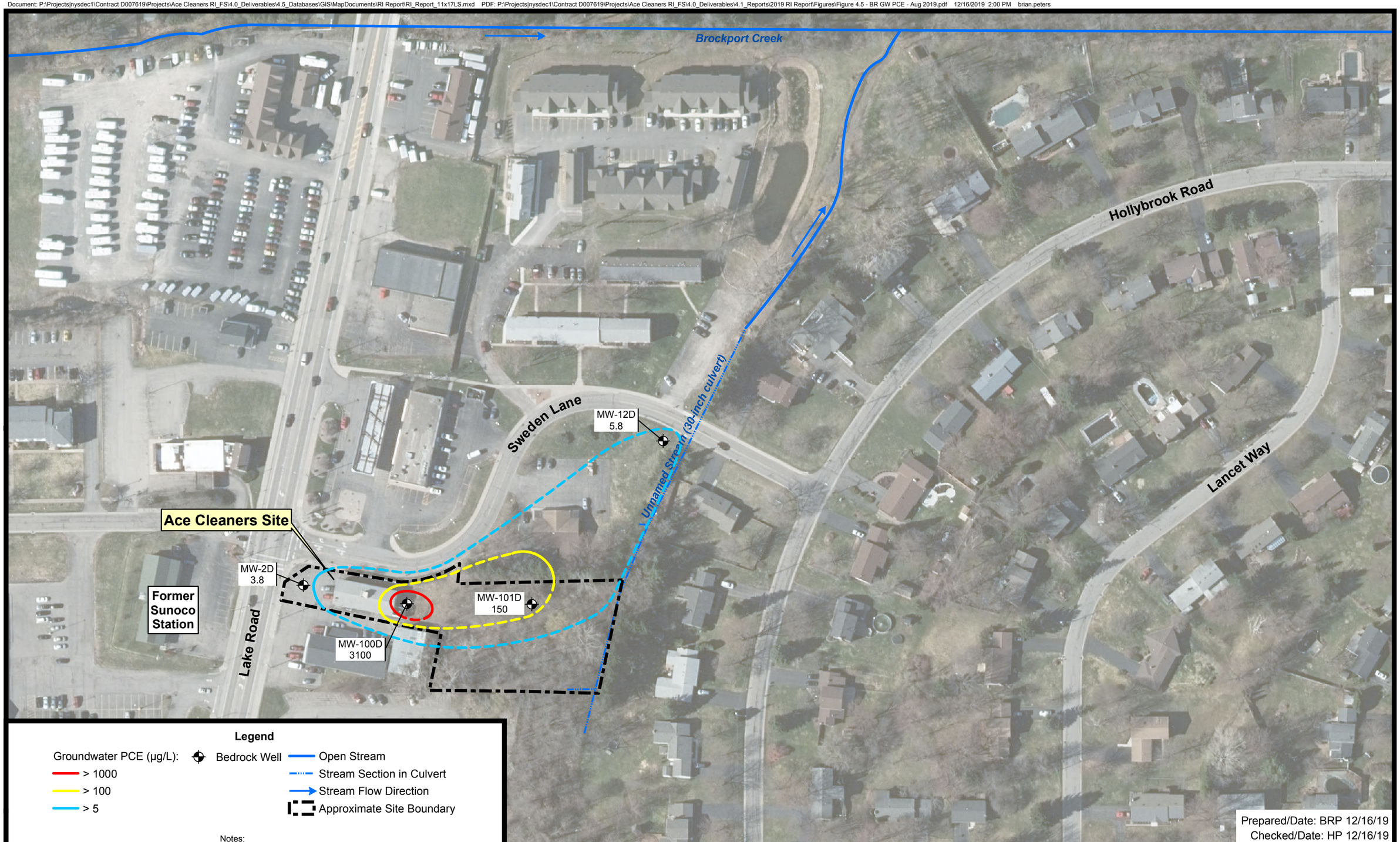

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Bedrock Groundwater
PCE Concentrations August 2019
Project 3611181217 Figure 7

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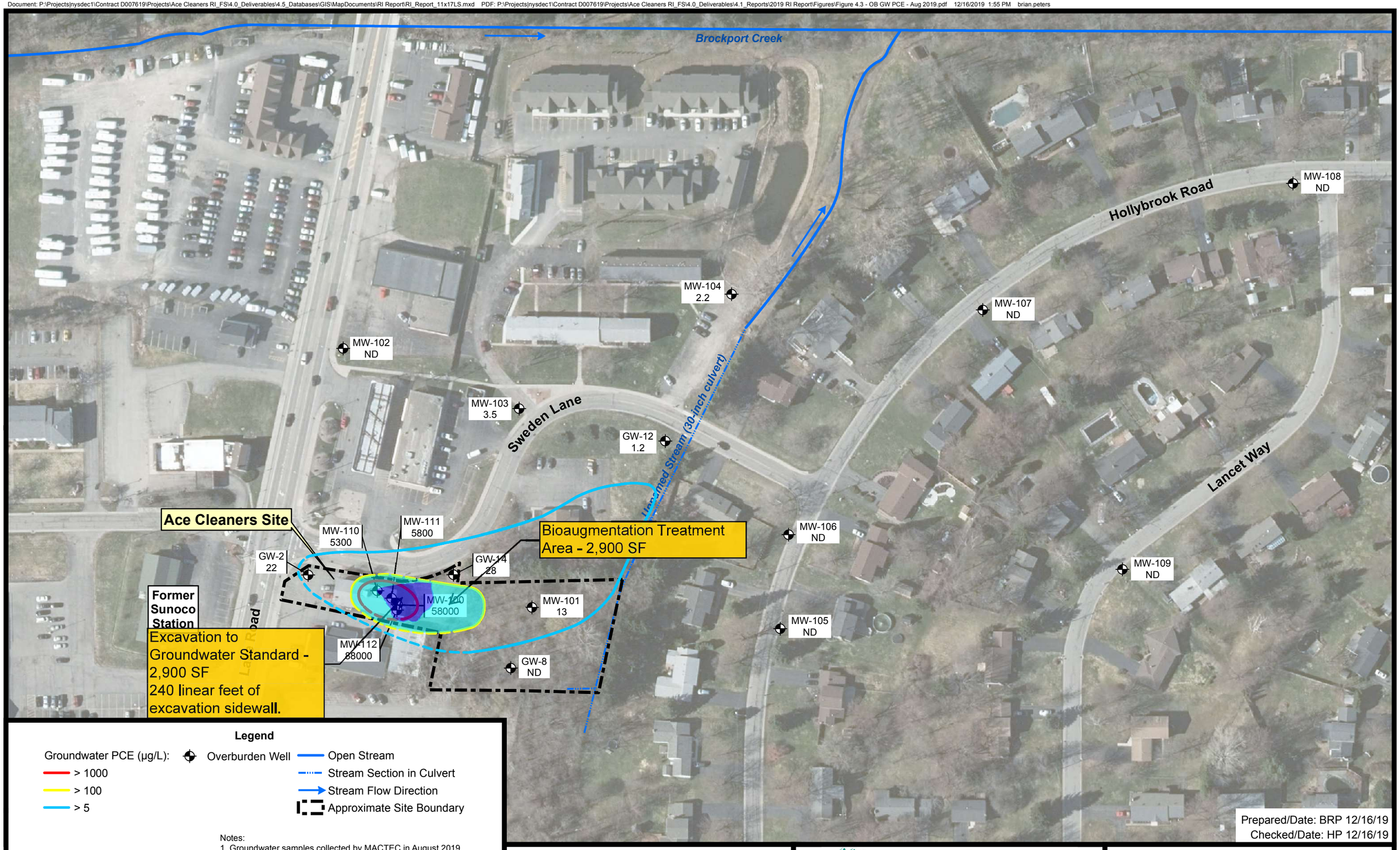

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Proposed Excavation and Bioaugmentation Treatment Areas for Alternative 3b
Project 3616206125 Figure 8