

Amendment Scope of Work (Schedule 1) for:

**NYSDEC ASH ROAD PROPERTIES OFFSITE
SUPPLEMENTAL INVESTIGATION
VESTAL, NEW YORK (DEC SITE # C704032A)**

Prepared For:



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List of Acronyms

Acronym	Definition
ARP	Ash Road Property
bgs	below ground surface
CAMP	Community Air Monitoring Plan
COC	contaminates of concern
DER	Division of Environmental Remediation
DI	deionized
DUSR	Data Usability Summary Report
ESA	Environmental Site Assessment
FOC	fraction organic carbon
ft.	foot/feet
IDW	investigative-derived waste
IRM	Interim Remedial Measure
mg/kg	milligrams per kilogram
MIP	membrane interphase probe
MW	monitoring well
NAVD	North American Vertical Datum
NTU	neophelometric turbidity unit
NYCRR	New York State Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
PFCs	Perfluorochemicals
PID	photoionization detector
PNOD	Permanganate Natural Oxidant Demand
PVC	polyvinyl chloride
SOD	soil oxidant demand
SOP	Standard Operating Procedure
SVMP	soil vapor monitoring point
QAPP	Quality Assurance Project Plan
TCL	target compound list
TOC	total organic carbon
TOGS	Technical and Operational Guidance Series
ug/l	micrograms per liter
VOCs	volatile organic compounds

SCHEDULE 1 SCOPE OF WORK

SITE CHARACTERIZATION WORK PLAN FOR THE ASH ROAD PROPERTIES OFFSITE SUPPLEMENTAL INVESTIGATION VESTAL, NEW YORK (SITE # C704032A)

This Amendment 1 is being provided following an assessment of the 2015 Site Characterization of the Ash Road Properties located in Vestal, New York results and discussions with the New York State Department of Environmental Conservation (NYSDEC). The amendment is warranted due to the presence of volatile organic compounds (VOCs) present in the groundwater not fully delineated to the west and south of the Ash Road Property (ARP) off-site area (now referred to as the Subject Site), potential of soil vapors migrating into a building structure located to the south of the Subject Site, and deep buried underground utilities potentially intersecting groundwater and causing migration of groundwater contamination from the ARP site to the Subject Site. Additional work included in this amendment consists of the following activities:

- Abandonment of four (4) soil vapor monitoring points (PSVMP-2, PSVMP-5, PSVMP-6, and PSVMP-7), in which integrity has been compromised.
- Installation of four (4) soil borings to be converted to permanent soil vapor monitoring points along the north and south boundaries of the Subject Site. Two (2) of the soil vapor monitoring points will be installed to replace two (2) soil vapor monitoring points abandoned (PSVMP-5 and PSVMP-7) and the remaining two (2) vapor points will be installed to access soil vapor quality along the southern boundary of the Subject Site.
- Installation of nine (9) soil borings to be converted to groundwater monitoring wells to determine the extent of groundwater contamination to the west and south of the Subject Site.
- Sample twenty-five (25) groundwater monitoring wells. Twenty-one (21) on the Subject Site and four (4) on the ARP site.
- Sample eight (8) soil vapor monitoring points located on the Subject Site.
- Sample five (5) storm drains located on the Subject Site to determine if groundwater is in contact with the subsurface utilities and acting as a conduit for migration of groundwater contamination from the ARP site.

1.0 BACKGROUND AND SITE DESCRIPTION

The investigation property (herein forth known as the “Subject Site”) is located west-northwest of the Ash Road Properties and west-northwest of the Ash Road and Sycamore Road intersection. The address for the offsite investigation property is 221 Sycamore Road, Town of Vestal, New York, 13850 (See Figure 1). The investigation property is an asphalt parking lot with intermittent grass areas along perimeter). See Figure 2 showing approximate boundaries of Subject Site.

The Ash Road Properties (hereafter known as the “Site”) occupies a portion of the Lowe’s Home Center 14.47-acre property, tax map number 158.10-2-13. The Site has been identified by four tax map parcel designations prior to the incorporation of these four parcels, as well as other parcels into the one current 14.47-acre parcel. The Site encompasses perimeter parking for an existing Lowe’s Home Center store.

The Site is roughly rectangular in shape and encompasses about 1.54 acres with Ash Road forming the southern property boundary and Sycamore Road forming the western property boundary. Further south is a restaurant, an automotive supply business, and an automotive rental and repair business. A parking area for the Lowe’s Home Center borders the Site on the north with the Lowe’s Home Center building located approximately three-hundred (300) feet (ft.) north. Residential properties border the Site on the east. Commercial buildings were formerly present on the Site from at least 1965 until 1996.

The Site was formerly occupied by two businesses: Town Square Body Shop and Hall Plumbing. Town Square Body Shop performed auto-body repairs as well as automotive painting, washing, and waxing (see Figure 2). The Hall Plumbing building was occupied by a contractor’s office and warehouse.

1.1 PRELIMINARY ACTIVITIES (TASK 1)

Preliminary activities include preparing the original scope of work completed in 2015, as well as, participating in the initial site visit and reviewing available site file information (Ash Road Properties Maps) provided by NYSDEC to date. Additional activities included preparing the amendment scope of work and associated NYSDEC contract-related forms, and attending conference calls with the NYSDEC project manager to discuss amended scope of work.

2.0 SUMMARY OF COMPLETED REMEDIAL INVESTIGATIONS AND ACTIONS TO DATE (TASK 2)

2.1 PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

Previous investigations that have been completed at the Site have identified elevated concentrations of chlorinated solvents that have exceeded New York State Department of Environmental Conservation (NYSDEC) Technical Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (NYSDEC water quality standards), and 6 New York State Codes, Rules, and Regulations (NYCRR) Part 375, subpart 375-6.8 Soil Cleanup Objectives. Two (2) studies discussed below identified the highest levels of contamination near the southwest corner of the former Town Square Body Shop. The contaminants of concern (COCs) were chlorinated solvents, specifically Tetrachloroethene, and its transformation products, Trichloroethene, cis and trans-1,2-Dichloroethene, 1,1-Dichloroethene, Vinyl Chloride, 1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane, and Chloroethane.

Petroleum fuel-related compounds were also been detected in groundwater at the Site at concentrations generally less than 10 ug/L (micrograms per liter).

2.1.1 PHASE I/LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT, TOWN SQUARE BODY SHOP AND HALL PLUMBING, VESTAL, NEW YORK

Gaynor Associates, Inc. completed a Phase I and Limited II Environmental Site Assessment (ESA) in January 1996 of the Ash Road Properties Site. The Phase I ESA included a visual inspection of the Site, a review of historical database listings, and review of local and regional geologic/hydrogeologic conditions. In 1996 there were two buildings on the Site, one occupied by Town Square Body Shop and the other by Hall Plumbing. Monarch Chemical was identified as a prior occupant of the Town Square Body Shop property; Dean Fowler Oil Company formerly occupied Hall Plumbing. The report identified floor drains in both buildings that were not connected to the municipal sewer system, poor housekeeping practices of various automotive products inside the body shop, and the dumping of sediments on the Site from an adjacent business. Contamination by petroleum and chlorinated compounds were detected in the sediments placed on the Site and in groundwater that exceeded NYSDEC water quality standards. No petroleum bulk storage tanks were identified on the property.

A total of nine (9) borings and three (3) monitoring wells were completed at the Site in 1996. The groundwater evaluation identified an area southwest of the then existing Town Square Body Shop building with the highest concentrations of chlorinated solvents, which ranged from 4 to 27 ug/L for the individual COCs.

2.1.2 SITE CHARACTERIZATION REPORT, ASH ROAD SITE (7-04-032), VESTAL, NEW YORK

In September 2009, field investigation activities were completed by EA Engineering, P.C. for the NYSDEC. The site characterization indicated that there was a limited shallow source area of primarily chlorinated compounds located in the west portion of the Site with the highest contaminant concentration observed near the southwest corner of the former Town Square Body Shop building. The source area appeared to have impacted groundwater quality migrating northwesterly in the direction of groundwater flow. The results of the evaluation suggested that contamination from the Site had migrated offsite and might be following a former creek that once existed in the Ash Road Properties site and flowed from an east to west direction. The creek was filled in when the area was developed. The Site Characterization completed by EA Engineering included the advancement of twenty-three (23) soil borings in the area of the former Hall Plumbing and Town Square Body Shop. Acetone was noted as the only compound detected in soil samples analyzed from these borings at concentrations that exceeded 6 NYCRR 375 Unrestricted Use Soil Cleanup Objective (Unrestricted SCOs) of 0.05 milligrams per kilogram (mg/kg). Acetone concentrations ranged from 0.05 to 0.27 mg/kg in soils. During a membrane interphase probe (MIP) evaluation, the COCs were detected in soils at levels that exceed the Unrestricted SCOs with the highest concentrations observed at the southwest corner of the former Town Square Body Shop building. A MIPs investigation was also performed on the adjacent property located to the west of the Site and elevated measurements within the vadose and saturated zones were detected indicating possible migration of the groundwater plume located under the Ash Road Properties site.

EA recommended interim remedial measures including the excavation of soil in the identified source area, and additional remedial investigation of the Site.

The conclusions reached from this characterization initiated a NYSDEC notification letter to West Covina Royale, LP of the Department's intent to consider 221 Sycamore Road for inclusion on the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

2.1.3 REMEDIAL INVESTIGATION AND INTERIM REMEDIAL MEASURE

In 2010, 2011, and 2012 Geologic NY performed Remedial Investigation and Interim Remedial Measure (IRM) activities at the Ash Road Properties site under the direction of the NYSDEC. Investigation and remedial measure activities are summarized below.

- In 2010, existing groundwater monitoring wells were sampled to evaluate current groundwater quality and to assess the direction of groundwater flow at the Ash Road Properties site. Two (2) wells (MW-01 and MW-02(S)) exhibited elevated COCs and a northwestern groundwater flow was concluded.
- An IRM was implemented to remove the source area at the Ash Road Properties site in order to reduce continuing receptor exposure to the COCs within the subsurface. Source removal (soil) was achieved via excavation. The IRM activities were completed between September 26 and November 7, 2011. An area of approximately thirty-five (35) ft. by forty (40) ft. was excavated to a depth ranging between nine (9) to eleven (11) ft. All excavated soils were staged onsite and then properly disposed of at an NYSDEC approved disposal facility. The excavation was then backfilled and paved over with asphalt. Excavation samples collected from the bottom and sidewalls indicated that some impacted soils remained within the subsurface but could not be removed due to subsurface constraints (e.g. underground utilities).
- During the spring of 2012, five (5) groundwater monitoring wells were installed following IRM activities to evaluate groundwater quality within the aquifer at both shallow and deep zones. Two soil samples were collected from one of the 5 wells installed, while groundwater samples were collected from all wells installed. No elevated COCs were observed from the soil samples, while groundwater samples exhibited concentrations of COCs in 2 of the 5 wells installed (MW-09(S) and MW-10(S)). No deep impacts to the aquifer were observed.
- In 2013, four (4) soil vapor samples were collected from the west, east, north, and south boundaries of the Ash Road Properties site to evaluate potential subsurface sources of vapor contamination and to determine if vapor contamination from the Site's groundwater plume was migrating off-site. Each soil vapor monitoring point was installed to a depth of 4.5 ft. below ground surface (bgs). Soil vapor concentrations were detected in all 4 samples with tetrachloroethene and cis-1,2-dichloroethene being present in all samples collected.

2.1.4 ASH ROAD PROPERTIES OFF-SITE CHARACTERIZATION

In the summer of 2015, Parsons completed an Off-Site Characterization of the Ash Road Properties (ARP) Site. The investigation concentrated at an off-site property (Subject Site) located west of the ARP location and was performed to determine if the groundwater plume located on the ARP site was

migrating off-site, determine whether groundwater flow and contaminant migration was being effected by underground utilities and building construction, and determine general soil vapor conditions within the subsurface and if soil vapor intrusion into structures located on the Subject Site is a potential.

Twenty-two (22) soil borings were drilled during field activities. Thirteen (13) of them were converted to groundwater well points, while eight (8) were converted to soil vapor monitoring points (SVMPs). All locations were sampled, and the following general conclusions were derived from sampling and research activities:

- Numerous utilities exist on the ARP site and the ARP off-site area that could affect the groundwater flow direction and migration of groundwater contamination from the ARP site to the ARP off-site area. This conclusion was determined by observing utility depths intersecting the groundwater table and groundwater flow contours observed from two separate sampling events (September and November 2015).
- Building construction consisted of floor slabs installed over grade beams and did not appear to universally include vapor barriers while only one building on the ARP off-site area contained a vapor barrier in its construction (Building "G").
- Groundwater at seven well points (PMW-2, -4, -5, -6, -8, -9, and -10) contained chlorinated volatile organic compounds (VOCs) above the TOGS Class GA Groundwater criteria.
- VOCs were detected at all SVMPs sampled, but only SVMPs PSVMP 4 and 8 contained VOCs that were above the method detection limit and listed as a COCs (1,1,1 – Trichloroethane, Tetrachloroethene, and 1,1-Dichloroethane).

Additional groundwater contaminant and soil vapor delineation was recommended based on off-site characterization analytical results.

3.0 SUPPLEMENTAL SITE CHARACTERIZATION AND REPORT GENERATION (TASK 3)

Following discussions with NYSDEC, Parsons' approach to additional investigation activities will be completed as described in the following sub-sections and will be referred to as the Supplemental Site Characterization. Each portion of the investigation work will follow NYSDEC guidelines outlined in Division of Environmental Remediation (DER) DER-10. Field activities will be conducted in accordance with the Field Sampling Plan, Quality Assurance Project Plan and the Health and Safety Plan prepared and approved for this contract.

Investigation-derived waste (IDW), including excess soils, decontamination rinsates, purged groundwater, and personal protective equipment, will be placed in Department of Transportation-approved 55-gallon 17-H type drums and staged in a cargo container located in the parking lot of an adjacent property (Barnes and Noble) until IDW is problem disposed of. Permission will be obtained from Barnes and Noble store owner prior to field activities. The IDW will be evaluated as hazardous or non-hazardous based on characterization results and will be disposed of in accordance with applicable

NYSDEC regulations. The laboratory work scope for this work is summarized in Table 1. Proposed sample locations are shown on Figure 2.

A Community Air Monitoring Plan (CAMP) will be implemented for real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area during invasive activities on-site as described in the original Scope of Work (Parsons, November 2013).

3.1 GROUNDWATER INVESTIGATION

3.1.1 GEOPHYSICAL SURVEY

A geophysical survey will initially be performed at the site to locate subsurface utility lines. Any underground site utilities or obstructions will also be marked in the field. Geophysical survey activities will be performed utilizing ground penetrating radar equipment (Mala Easy Locator, Model EL-HDR) and electromagnetic equipment (SPXRD7000Plus). All equipment will be operated by an experienced technician.

3.1.2 SOIL BORING DRILLING

Based on the results of the geophysical investigation, nine (9) soil borings will be identified and converted to well points to determine the extent of groundwater contamination on the Subject Site. Tentative soil boring locations are shown in Figure 2. Actual soil boring locations will be agreed upon in advance with the NYSDEC project manager. Soil samples from borings will be screened on site but not analyzed in a laboratory, except for two soil boring locations.

Following hand clearance to five (5) ft below ground surface to confirm no utility interference, seven (7) of the nine (9) soil borings will be installed using direct push drilling/sampling methodology, while two (2) soil borings (one adjacent to existing MIP location (MIP -17) and one adjacent to existing well point (PMW-2)) will be installed using hollow stem auger and continuous split-spoon drilling/sampling techniques. All the soil borings will be installed into the overburden to an approximate depth of twenty (20) ft. bgs, except for two (2) boring locations. The two (2) borings installed by hollow stem auger drilling are anticipated to be drilled to a depth of sixty (60) ft. bgs (depth of confining layer or bedrock). Anticipated depth of soil borings/wells based on previous subsurface investigations performed at the Site and adjacent properties. If a layer of refusal is encountered prior to twenty (20) ft., the drilling will cease and the rig will offset a few feet to attempt a new hole to target depth. Soil samples retrieved from each boring will be visually classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts. Each sample will also be screened for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID). In addition, a sample from each two (2)-ft. interval will be collected in a sealed plastic bag and the sample headspace will be screened for the presence of VOCs with a PID. Each soil boring will then be converted to a monitoring well point.

Soil samples will only be collected for chemical analysis from the soil borings drilled using hollow stem auger techniques (two (2) borings). Starting at ten (10) ft. bgs, soil samples will be collected every four

(4) ft. to completion depth with an Encore™ sampler and analyzed for VOCs. One sample from the shallow, intermediate, deep depth of each boring will also be collected and analyzed for Total Organic Carbon (TOC) in Soil or Fraction Organic Carbon (FOC), Permanganate Natural Oxidant Demand (PNOD), and Soil Oxidant Demand (SOD) for potential INSITU remedial design.

Note:

1. Collection of soil samples from both soil borings will be contingent upon the lithology observed at the soil boring drilled adjacent to MIP-17. For budgetary purposes, it is assumed that both boring locations will require soil sample collection for chemical analysis.

3.1.3 MONITORING WELL POINT INSTALLATIONS AND GROUNDWATER SAMPLING

Nine (9) of the proposed soil boring locations will be selected in advance for installation of monitoring well points to identify the horizontal extent of groundwater contamination west and south at the Subject Site.

Monitoring well points will be constructed of one-inch polyvinyl chloride (PVC) casing with 10-ft. long, #10-slot pre-packed screen. The annulus around the outside of the screen will be backfilled with sand to 2 ft. above the screen, followed by a bentonite seal (minimum 2 ft. thick) above the sand pack. The seal in each new monitoring well point will be allowed to hydrate prior to the placement of grout above it to near the ground surface. Each well will be completed with a four (4)-inch steel protective flush mount cover and locking adjustable cap.

Following installation, the new monitoring well points will be developed to remove material which may have settled in and around the well screen. Development will occur a minimum of twenty-four (24) hours after well point installation to allow bentonite and grout to hydrate and set. Development will consist of the removal of ten well volumes, or achieving a turbidity reading of fifty (50) nephelometric turbidity units (NTUs) or lower. Development water will be temporarily contained using drums, stored on-site at a central waste accumulation area, and characterized for disposal.

Once well installation and development is complete, two rounds of groundwater sampling will be conducted using low flow sampling techniques. Sample events will occur shortly after well installations and again three months after the initial round of sampling. The second round of sampling is to compare against the initial round and previous sampling events performed in 2015.

Dedicated groundwater sampling equipment (e.g., polyurethane and silicon tubing) will be used during groundwater sampling events and changed out between each well sampled. Purge water and decontamination water will be transferred to drums for characterization and disposal.

Groundwater samples will be collected from all twenty-one (21) Subject Site wells and analyzed for VOCs, 1,4-dioxane, perfluorochemicals (PFCs), and natural attenuation parameters as shown on Table 1. Groundwater samples will also be collected from a maximum of four (4) wells located on ARP site and analyzed for VOCs and natural attenuation parameters. Results from the laboratory will be compared to NYSDEC Ambient Water Quality Standards presented in TOGS 1.1.1 (6NYCRR Part 703).

Trip blanks will also be included in VOC sample coolers and analyzed for Target Compound List (TCL) VOCs.

3.2 SOIL VAPOR INVESTIGATION

3.2.1 SOIL VAPOR MONITORING POINT ABANDONMENT

Four (4) soil vapor monitoring points (PSVMP-2, PSVMP-5, PSVMP-6, and PSVMP-7), in which integrity has been compromised, will be abandoned by over drilling each location with hollow-stem augers and each borehole will be backfilled with bentonite up to six (6) inches of the surface (See Figure 2 for locations). An asphalt cap will then be placed over the bentonite to match existing surface. Abandonment activities will be performed in accordance with the NYSDEC document entitled: "Groundwater Monitoring Well Decommissioning Procedures, dated August 2009".

3.2.2 SOIL VAPOR POINT INSTALLATIONS AND SAMPLING

Four (4) soil borings will be installed using direct-push drilling and sampling methods and converted to permanent soil vapor monitoring points along the north and south boundaries of the Subject Site. Two (2) of the soil vapor monitoring points will be installed to replace two (2) soil vapor monitoring points abandoned (PSVMP-5 and PSVMP-7) and the remaining two (2) vapor points will be installed to access soil vapor quality along the southern boundary of the Subject Site. Boring depths will be based on depth to groundwater and soil vapor points will be installed no greater than six (6) to eight (8) ft. bgs. Borings will be drilled using direct push methods. Six (6) -inch steel mesh implants will be installed and fitted with 0.25-inch outer-diameter Teflon tubing. Excess tubing will be left in place within the protective flush mount cover for use during sampling events and will be capped with a plug. The annulus will be backfilled with glass beads or sand, with bentonite backfill to the bottom of the protective flush mount cover. A 4-inch steel protective flush mount cover will be installed at each location to protect the monitoring point.

After installation, soil vapor will be sampled from these points, as well as, existing soil vapor monitoring points that were installed in 2015 for volatile organics TO-15+Naphthalene using USEPA Method TO-15 by a Parson field geologist or scientist. Eight soil vapor samples will be collected from the soil vapor monitoring points shown on Figure 2.

If non-dedicated sampling equipment is used (e.g. hand augers, shovels) the equipment will be decontaminated between samples by washing equipment with an Alconox® solution followed by a deionized (DI) water rinse. Decontamination water will be transferred to drums for characterization and disposal.

3.2.3 SURVEYING OF NEWLY INSTALLED GROUNDWATER MONITORING WELL AND SOIL VAPOR MONITORING POINT LOCATIONS

Site survey tasks will include collecting the as-built sample coordinates and elevation information, as well as the as-built monitoring well point elevations and soil vapor monitoring points. Elevations will be

based on the North American Vertical Datum (NAVD) eighty-eight (88). All survey work will be completed by a New York State licensed surveyor.

3.3 STORM DRAIN SAMPLING

Water from five (5) storm drains located on the Subject Site will be sampled for VOCs to determine if groundwater is in contact with the subsurface utilities and acting as a conduit for migration of groundwater contamination from the ARP. Refer to Figure 3 for locations of proposed sampling storm drains.

3.4 REPORT GENERATION

Data obtained during the field investigations identified in this scope of work will be compiled, evaluated, and summarized. A Supplemental Site Characterization Report will then be prepared following completion of the investigation and receipt of analytical data. This report will document investigation activities specified in this work plan. Groundwater flow direction will be documented from water level measurements. Chemical analytical results for groundwater will be compared to 6 NYCRR Part 375 guidelines for various potential future land uses and State of New York Class GA water quality standards respectively. Parsons will also perform data validation in accordance with the USEPA Region 2 RCRA and CERCLA Data Validation Standard Operating Procedures (SOPs) for organic and inorganic data review. In addition, Parsons will refer to the project Quality Assurance Project Plan (QAPP) to verify that project quality objectives are met and generate a Data Usability Summary Report (DUSR).

4.0 SITE CHARACTERIZATION REPORT GENERATION (TASK 4)

Data obtained during the field investigations identified in the original scope of work was compiled, evaluated, and summarized. A Site Characterization Report was then prepared following completion of the investigation and receipt of analytical data. The report documented investigation activities specified in the original scope of work work plan. Groundwater flow direction was documented from water level measurements. Chemical analytical results for groundwater were compared to 6 NYCRR Part 375 guidelines for various potential future land uses and State of New York Class GA water quality standards respectively. Parsons also perform data validation in accordance with the USEPA Region 2 RCRA and CERCLA Data Validation SOPs for organic and inorganic data review. In addition, Parsons referred to the project QAPP to verify that project quality objectives were met and generated a DUSR.

Preparing the amendment scope of work and associated NYSDEC contract-related forms were also performed under this task.

5.0 SCHEDULE

Following approval of this Scope of Work by NYSDEC, the schedule shown below will be implemented assuming no unexpected constraints are encountered such as lack of access to the investigation area. The work scope described herein is assumed to be completed between the summer of 2018 and first quarter of 2019.

Task Name	Start	Finish
Proposed Soil Boring Mark Outs and Geophysical Investigation	Week 1	Week 1
Drilling Mobilization	Week 2	Week 2
Utility Clearing/Drilling/Monitoring Well and Soil Vapor Point Abandonments and Installations	Week 2	Week 5
Well Development	Week 5	Week 5
Storm Drain Sampling	Week 6	Week 6
Survey	Week 6	Week 6
First Round of Groundwater Sampling (summer event)	Week 10 ⁽¹⁾	Week 10 ⁽¹⁾
Soil Vapor Sampling	Week 10 ⁽¹⁾	Week 10 ⁽¹⁾
Data Management/Preliminary Reporting Tasks	Fall 2018	Late Fall 2018
Second Round of Groundwater Sampling (late fall event)	Early November 2018	Early November 2018
Data Management (including validation)/Final Reporting	Mid-Late December 2018	Early Winter 2019

Note: (1) Will allow three weeks from installation of soil vapor monitoring points and well points for equilibrium of air and groundwater chemistry to be achieved.

6.0 OTHER COST ASSUMPTIONS

- Field efforts will be conducted in Modified Level D personal protection.
- Two people will be on site implementing the buddy system whenever work is being conducted at the site.
- Costs for laboratory services are based on competitive bid of the scope of work.

- Costs for management of materials in drums to be generated as part of this work are based on drum contents being characterized as non-hazardous.
- Data management tasks include providing a contract-required data deliverable for the Supplemental Site Characterization.
- Report preparation tasks include completing a Supplemental Site Characterization report, responding to one round of NYSDEC comments and revising the report based on the single round of comments. The report will include a summary of site investigation efforts prior to the Supplemental Site Characterization and focus in a summary manner on Supplemental Site Characterization efforts itemized in this Scope of Work.
- NYSDEC will prepare and distribute letters notifying owners of the site history and planned field work.
- NYSDEC will prepare access agreements to be signed by owners prior to sampling activities. Access agreements will be between NYSDEC and the owner. Parsons and/or its subcontractors will act as an agent of NYSDEC with written authorization from NYSDEC.
- NYSDEC representative will make initial contact with impacted property owners to address issues raised by the impacted stakeholders.
- A formal work plan is not needed prior to conducting any of the field activity described herein.

TABLE

Table 1
Ash Road Offsite Groundwater Investigation
221 Sycamore Road, Vestel, New York
2018 Chemical Laboratory Work Scope

ATTACHMENT 1										
Laboratory Scope of Work	Turnaround Time (Calendar Days)	Numbers of Samples								
		Sample Quantity	Field Duplicates	Field Blanks	Trip Blanks	MS	MSD	Rounds	Analysis Method	Total Number of Samples
<u>NYSDEC-ASP Category B Reporting</u>										
<u>Groundwater Analyses (PHASE I)</u>										
VOCs	30	29	2	2	5	2	2	1		42
1,4 dioxane & Per- and Polyfluoroalkyl Substances (PFAS)	30	10	1	1	5	1	1	1		19
COD+DO+Nitrate+Sulfate+Methane+Mn(II)+Fe(II)	30	10	1	1	5	1	1	1		19
<u>Groundwater Analyses (PHASE II)</u>										
VOCs	30	24	2	2	3	2	2	1		35
1,4 dioxane & Per- and Polyfluoroalkyl Substances (PFAS)	30	10	1	1	5	1	1	1		19
COD+DO+Nitrate+Sulfate+Methane+Mn(II)+Fe(II)	30	10	1	1	5	1	1	1		19
<u>Soil Analyses</u>										
VOCs	30	28	2	0	g ⁽¹⁾	2	2	1		34
Encore Samplers (Quantity for QA/QC Samples Included in VOC Sample Count)	30	102	0	0	0	0	0	0		102
Total Organic Carbon	30	8	0	0	0	0	0	1		8
Permanganate Natural Oxidant Demand ⁽²⁾	30	8	0	0	0	0	0	1		8
Soil Oxidant Demand ⁽²⁾	30	8	0	0	0	0	0	1		8
<u>Soil Vapor Analyses (Outdoor/Soil)</u>										
Volatile Organics	30	8	1	0	0	0	0	1		9
Individually Certified Canisters	NA	0	0	0	0	0	0	1		0
Batch Certified Canisters	NA	9	0	0	0	0	0	1		9
Duplicate sample T's	NA	1	0	0	0	0	0	1		1
4-hour flow controllers	NA	9	0	0	0	0	0	1		9
Back-up Certified Canister (only analyzed if used)	NA	2	0	0	0	0	0	1		2
Back-up 4-hour flow controllers	NA	2	0	0	0	0	0	1		2
<u>Solids IDW Content Characterization</u>										
RCRA Characterization for Disposal(Corrosivity, Reactive Cn/Sulfide)	14	1	0	0	0	0	0	1		1
TCLP- VOCs, SVOCs, pesticides, herbicides, metals	14	1	0	0	0	0	0	1		1
<u>Liquid Content Characterization</u>										
VOCs	14	1	0	0	0	0	0	1		1
SVOCs	14	1	0	0	0	0	0	1		1
Pesticides and Herbicides	14	1	0	0	0	0	0	1		1
PCBs	14	1	0	0	0	0	0	1		1
TAL Metals	14	1	0	0	0	0	0	1		1
Total Cyanide	14	1	0	0	0	0	0	1		1
pH	14	1	0	0	0	0	0	1		1
Ignitability	14	1	0	0	0	0	0	1		1
Reactive Cyanide/Reactive Sulfide	14	1	0	0	0	0	0	1		1
<u>MISC</u>										
Shipping Costs for Samples and Bottelware to/from the Site	0	0	0	0	0	0	0	8		8
Costs to coordinate site pick-ups of samples after 4:00 daily	0	0	0	0	0	0	0	8		8

Notes:

- (1) Trip blanks will only be analyzed if laboratory requires it for EPA Method 5035A analysis.
(2) This analysis will be performed by an in-house laboratory selected by Parsons.

FIGURES



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User



Figure 1
Ash Road Properties Off-Site
Site Characterization
Town of Vestal, New York
Site Location Map

PARSONS

301 Plainfield Road, Suite 350; Syracuse, NY 13212 315-451-9560

File Name: Q:\GIS\NYSD\DEC\449445 WA #19 - Ash Road Properties\MXDs\NYSD\DEC Ash Road Figure 2 Supplemental Investigation.mxd
 Plotted By: Sisson, Evan
 Plot Date: 6/6/2018



Legend

- Abandon and Reinstall Soil Vapor Monitoring Point Location
- Abandon Soil Vapor Monitoring Point Location
- Membrane Interphase Probe (MIP) (MIP-17) Location. Sampling Point From 2009 Investigation
- ⊕ Proposed Monitoring Well Point Location
- Proposed Soil Vapor Monitoring Point Location
- ⊕ Monitoring Well Point Location^{(1) (2)}
- ⊕ Attempted Monitoring Well Point Location. No Well Point Installed.
- Soil Vapor Monitoring Point Location
- ▭ Boundary of Ash Road
- ▭ Building Outline⁽³⁾
- ▭ Building Vapor Barrier Identified In
- ⋯ Approximate Location of Former Creek Bed.⁽⁴⁾

Notes:

(1) Locations labeled MW-## are wells located to the east of the Ash Road Investigation Site and only used to collect depth to water measurements. No analytical samples were collected from these wells and were installed by a different firm.

(2) Locations labeled PMW-## are well points and were installed by Parsons in 2015. Both depth to water measurements and analytical samples were collected.

(3) Location of buildings responsible for subsurface contamination documented in 2009 and remediated in 2011 and 2015.

(4) Former creek bed location stops at edge of Sycamore Street. However, it is assumed that creek bed extends further to the west into Subject Property.

0 250 500 Feet

N

Figure 2

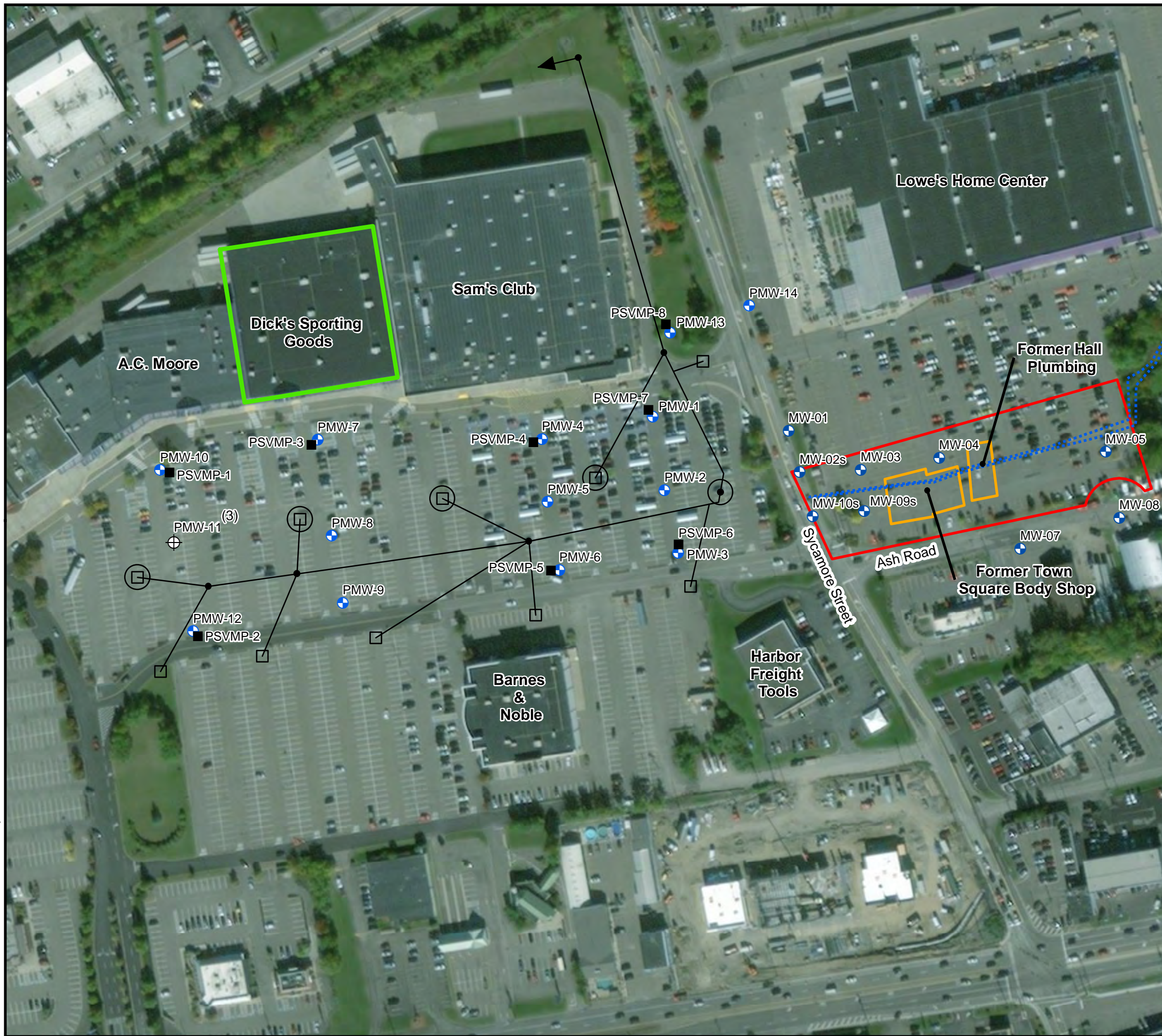
Ash Road Properties Off-Site
 Supplemental Investigation
 Town of Vestal, New York

**Proposed Soil Vapor Monitoring Points &
 Monitoring Well Points Location Map**

PARSONS

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File Name: Q:\GIS\NYSDEC\449445 WA #19 - Ash Road Properties\MXD\NYSDEC Ash Road Figure 3 Supplemental Investigation.mxd
 Plotted By: Sisson, Evan
 Plot Date: 6/6/2018



Legend

- ⊙ ⊙ Proposed Storm Water Drain To Be Sampled
- ⊕ Monitoring Well Point Location
- ⊕ Attempted Monitoring Well Point Location.⁽³⁾
No Well Point Installed.
- Soil Vapor Monitoring Point Location
- Storm Water Drain With Associated Storm Water Pipe
- ▭ Boundary of Ash Road Properties
- ▭ Building Outline⁽¹⁾
- ▭ Building Vapor Barrier Identified In
- ⋯ Approximate Location of Former Creek Bed.⁽²⁾

Notes:

- (1) Location of buildings responsible for subsurface contamination documented in 2009 and remediated in 2011 and 2015.
- (2) Former creek bed location stops at edge of Sycamore Street. However, it is assumed that creek bed extends further to the west into Subject Property.
- (3) No saturated soils encountered at approx 45 feet bgs. NYSDEC instructed not to go deeper at the time of field activities.



Figure 3

Ash Road Properties Off-Site
 Supplemental Investigation
 Town of Vestal, New York
Proposed Storm Drains Sampling Location Map



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