NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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July 25, 2016

Mr. Edward J. Canning
Director Environment, Health & Safety
Saint-Gobain Performance Plastics
14 McCaffrey Street
Hoosick Falls, NY 12090

Re: Final Draft Site Characterization Work Plan - Saint-Gobain Liberty Site – April 6, 2016, Revised July 15, 2016 (Site No. 4-42-046)

Dear Mr. Canning:

The New York State Department of Environmental Conservation (Department) has reviewed the July 15, 2016 revised "Final Draft Site Characterization Work Plan" (Work Plan) for the Saint-Gobain Liberty Street Site. The Department has also reviewed the July 22, 2016 e-mail from Mr. Kirk Moline of CT Male to the Department (enclosed) which supplements the Work Plan.

The revised Work Plan, as modified by the July 22, 2016 e-mail is hereby approved. Copies of the Final Work Plan should include this approval letter and the July 22, 2016 e-mail.

If you have any questions, please feel free to contact me at 518-402-9676.

Sincerely,

Rick Mustico

Richard A. Mustico, P.E.
Project Manager
Remedial Bureau D
Division of Environmental Remediation

Enclosure

ec:
Bill Daigle – NYSDEC
Dolores Tuohy, Esq. – NYSDEC
Rick Leone – NYSDEC, Schenectady
Krista Anders – NYSDOH
Justin Deming – NYSDOH
Albert DeMarco – NYSDOH
Thomas Byrne, Esq. - Honeywell
John McAuliffe – Honeywell, Syracuse
Christopher Gibson, Esq. - Archer & Greiner
Dale Desnoyers, Esq. – Allen & Desnoyers

Mustico, Richard (DEC)

From: Moline, Kirk <k.moline@ctmale.com>
Sent: Friday, July 22, 2016 2:01 PM
To: Mustico, Richard (DEC); Daigle, William (DEC)
Cc: Canning, Edward J.; d.reilly@CTMALE.com; Smith, Brandi L.; Jon Fox; Dippert, Jonathan
Subject: Liberty Street Site Characterization Investigation

Rick,

In consultation with Ed Canning this afternoon, following my telephone conversation with you this morning, we are prepared to include the following investigative work regarding the current Site Characterization Investigation underway at the 1 Liberty Street facility.

1. Collection and laboratory analysis of sediment samples from storm water catch basins (if sediments are present and of sufficient quantity for sampling needs) in addition to the single catch basin location identified in the Work Plan. These samples will be analyzed for the same parameters as the sediment and soil samples currently being collected.

2. Collection and laboratory analysis of soil samples from the soil test borings from major stratigraphic changes within the depth of the soil borings, and immediately above the water table. These potential samples are in addition to the samples already planned to be collected from the 0 -12"' depth interval, at soil mottling zones, at the fill/native soil interface, and of subjectively impacted subsurface materials. These samples will be analyzed for the same parameters as the planned soil samples from the soil test borings.

Please confirm the above represents our discussions this morning and that you are in agreement.

Thank you, Kirk

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April 6, 2016
Revised July 15, 2016

Final Draft
Site Characterization Work Plan

Saint-Gobain Performance Plastics Site
1 Liberty Street
Village of Hoosick Falls
Rensselaer County, New York

Mr. Edward J. Canning
Director of Health, Safety & Environment
SAINT-GOBAIN PERFORMANCE PLASTICS, CORP.
14 McCaffrey Street
Hoosick Falls, New York 12090

I, Kirk Moline, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Draft Final Site Characterization 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).

Prepared by:

C.T. MALE ASSOCIATES
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Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Project No: 16.6132

Unauthorized alteration or addition to this document is a violation of the New York State Education Law.

SITE CHARACTERIZATION WORK PLAN
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, VILLAGE OF HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK

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ACRONYMS AND ABBREVIATIONS

APS	Advanced Profiling System
ASP	Analytical Services Protocol
°C	Degrees Celsius
CAMP	Community Air Monitoring Plan
COPC	Compound of Potential Concern
DER	Division of Environmental Remediation
DO	Dissolved Oxygen
DQO	Data Quality Objective
DUSR	Data Usability Summary Report
EDS	Electronic Data Summary
FSAP	Field Sampling Plan
GPS	Global Positioning Equipment
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
IDW	Investigation-Derived Waste
Ik	Inferred hydraulic conductivity
ng/g	Nanograms per gram (parts per billion)
ng/L	Nanograms per liter (parts per trillion)
NJDEP	New Jersey Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSGS	New York State Geological Survey
ORP	Oxidation-Reduction Potential
OSHA	Occupational Safety and Health Administration
PARCC	Precision, Accuracy, Reproducibility, Completeness, and Comparability
PCBs	Polychlorinated biphenyls
PFCs	Perfluorinated Compounds
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PPE	Personal Protective Equipment
PTFE	Polytetrafluoroethylene
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
SC	Site Characterization
STARS-#1	Spill Technology and Remediation Series Memorandum Number One
SVOCs	Semi-Volatile Organic Compounds
SCO	Soil Cleanup Objectives
TAL	Target Analyte List
TCL	Target Compound List
TOGS	Technical Operations Guidance Series

µg/kg	Micrograms per kilogram (parts per billion)
µg/L	Micrograms per liter (parts per billion)
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION & PURPOSE

This document constitutes the Site Characterization Work Plan (SCWP) for the Saint-Gobain Performance Plastics Corporation (Saint-Gobain) site (the "Site") located at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York (see Figure 1: Site Location Map).

This SCWP was developed in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) and NYSDEC 6 NYCRR 375 Environmental Remediation Programs (December 14, 2006). The SCWP has been revised to address comments to the plan in a June 22, 2016 letter from the NYSDEC Division of Environmental Remediation, and meeting with NYSDEC and NYDOH staff on June 28, 2016. The June 22, 2016 letter is presented as Exhibit 2.

1.1 Purpose

The purpose of this SCWP is to establish an environmental baseline and conceptual model for the Site with the intent of acquiring sufficient data for determining if further Site investigation is necessary.

The investigative tasks that have already been completed and those yet to be completed as part of this SCWP include the following.

- Conduct a site reconnaissance to gain an understanding of the Site layout and manufacturing processes. A Site reconnaissance was conducted on March 1, 2016. A subsequent site visit was conducted on March 10, 2016 with representatives from the New York State Department of Environmental Conservation (NYSDEC).

- Review of a 1996 Phase II Environmental Site Assessment of the Site. Information from this report has been incorporated herein.

- Review of available drawings of the Site and facility. This has been completed and incorporated into the SCWP.

- Review of published geologic, hydrogeologic and soil maps to evaluate the Site's physical setting. This has been completed and incorporated into the SCWP.

- Review of information presented within the Records Search Report prepared by C.T. Male Associates, dated June 2016.
- Develop and implement an environmental sampling plan to evaluate the general environmental quality of the Site.
- Incorporate the information obtained from the above tasks into a conceptual Site model to aid in the development of a Site remedial investigation, if necessary.

1.2 Project Organization

Client

Saint-Gobain Performance Plastics	Edward Canning	(518) 345-2122

Counsel

Archer & Greiner P.C.	Christopher R. Gibson, Esq.	(856) 354-3077

Consultant

C.T. Male	Daniel Reilly, PE.	(518) 786-7625
	Kirk Moline	(518) 786-7502

2.0 SITE DESCRIPTION & HISTORY

2.1 Site Description

The Site is located at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York. The Site is approximately 11.40 acres and is identified on the Rensselaer County Tax Map as parcel number 27.10-9-20.

The eastern portion of the Site contains a single story manufacturing building that is currently occupied by Saint-Gobain. The Site building was originally constructed in a "U" shape; the open portion of the "U" is at the western end of the building. Subsequent building additions have been constructed, the most recent in 2015/16, resulting in the formation of open courtyard areas that are only accessed from the interior of the building. The Site building is generally situated on the highest portion of the Site property. The lands immediately surrounding the building slope gentley to moderately in all directions. The western portion of the Site consists of vegetated wet areas. A pond with associated inlet and outlet drainage ways is located on the southwestern portion of the Site (see Figure 2: Site Survey Map).

The Site is accessed from Liberty Street. A paved parking lot for employees and visitors is located to the east of the manufacturing building. Access ways for company, shipping and delivery vehicles are located along the southern and western portions of the manufacturing building.

2.2 Adjacent Land Use

Land use adjacent to the Site consists of undeveloped land interspersed with residential dwellings to the north; a multi-family dwelling and residential dwellings to the south; residential dwellings and a private pavilion to the east; and Hovey Avenue and residential dwellings to the west.

2.3 Site History

The Site is currently occupied and operated by Saint-Gobain, who acquired the Site in the late 1990's. Saint-Gobain uses the Site for the manufacture of engineered, high-performance polymer products.

Prior to 1948, the site reportedly consisted of undeveloped land. The Site building was reportedly first developed in 1948 by the Committee for Industry, Inc. (local development organization) to entice new manufacturing companies to Hoosick Falls.

2.4 Site Utilities

Electricity and natural gas are supplied to the Site by National Grid. Municipal water and sanitary sewer service are provided by the Village of Hoosick Falls. According to long time facility personnel, there are no known water supply wells or current or historic septic systems within the Site.

2.5 Site Drainage Features

Municipal storm sewer catch basins are located within roadways in the vicinity of the Site. Various storm water catch basins are located on-site at the building perimeter and in outdoor courtyards that are surrounded by various sections of the Site building. According to Site mapping, review of historic environmental reports and a Site walkover, it appears the majority of the on-site catch basins discharge to grassy areas to the west of the Site building, although this has not been substantiated. Catch basins at the southeast exterior of the building discharge to a culvert on the southeastern portion of the Site.

According to the FEMA website mapping, the project Site is not located in a floodplain.

2.6 Topographic Description and Nearby Surface Water Bodies

According to the United States Geological Survey (USGS) Topographic Map in Figure 1, the subject Site lies from approximately 460 to 490 feet above Mean Sea Level. Eastern portions of the Site containing the building with surrounding parking and access-ways lie at approximately 480 to 490 feet above Mean Sea Level. The Site slopes gently to moderately downwards in a northerly, southerly, easterly and westerly direction. The pond within the southwestern portion of the Site lies at approximately 460 feet above Mean Sea Level.

The inlet to the pond in the southwestern portion of the Site originates off-site to the south and enters the southern portion of the pond. The outlet exits the northern portion of the pond and flows in a general northerly direction where it exits the Site along its northwestern boundary. A portion of the manmade berm along the northern end of the pond appears to have been breached as an erosion scour exists in the northeastern section of the berm and the water level in the pond is significantly lower than as reported to exist in the past.

2.7 Site Geology

2.7.1 Regional Geologic Setting

Hoosick Falls lies in the New England Upland (Taconic Range) physiographic province. The bedding planes of the bedrock are often inclined, and other distortions from the horizontal are evident. These are the result of thrust and folding pressures exerted from the east as a landmass moved gradually westward during the middle Ordovician Taconic mountain-building episode. This westward movement stacked and displaced large deposits of clay, sand, gravel and carbonates, which had accumulated on the floor of a deep ancient sea, moving then along faults as slices of rock that became intermixed and stratigraphically disordered.

Glacial sediment deposits overlay the bedrock surface, resulting in deposits of sands, gravel, clay and glacial till. The Site and areas to the west of the Site are locally referred to as “Clay Hill” as clay soils are reportedly present throughout this area. It has also been reported that a brick manufacturing facility was at one time in operation within the Village and the source of clay was from the area referred to as “Clay Hill”.

2.7.2 Site Geologic Conditions

Six (6) soil borings were advanced during a Site investigation conducted by others in 1996 (see Section 2.9). The borings were advanced to total depths ranging from 14.5 to 32 feet below ground surface (bgs). The borings depicted fill material underlain by clay. The fill material ranged in thickness from 3.5 to 6 feet and generally consisted of olive-brown silt and clay, with trace amounts of fine to medium size gravel. The clay unit beneath the fill generally consisted of light brown-gray clay with very thin lenses of silt (laminated), wet, and plastic. Bedrock was not encountered in the borings at the depths explored.

2.7.3 Site Hydrogeologic Setting

Six (6) monitoring wells were installed as part of the Site investigation conducted by others in 1996 (see Section 2.9). Groundwater was encountered at depths that ranged from 5 to 15 feet bgs. The aquifer material was characterized as wet to saturated clay. Groundwater flow direction across the Site, as determined in 1996, was radially towards the southeast, south and west.

2.8 Environmental Site History

2.8.1 Previous Property Use

Since the late 1940's the Site has historically been used for manufacturing purposes, which included, but was not limited to, the manufacture of shoes, and high-performance polymer products. Saint-Gobain has utilized the Site for the manufacture of pressure sensitive adhesive tape (PSAT).

2.8.2 Historical Chemical Use

Historical chemical use affiliated with past Site usage may have included petroleum fuels, lubricants, degreasing agents, solvents, paints and perfluorinated compounds (PFCs).

2.8.3 Environmental Orders, Decrees and Violations Associated with the Site

The Site was identified in the NYSDEC Spills Incidents and Bulk Storage databases. The following table summarizes the spills incidents and the bulk storage for the Site.

SPILLS INCIDENTS DATABASE

Spill No.	Spill Date/Closure	Site Occupant	Database Summary
8600393	04.15.1986/04.16.1986	Oak Materials	25 gallons of #6 fuel oil spilled. Resource affected was air.
8607409	03.06.1987/03.06.1987	Oak Materials	Unknown quantity of formaldehyde and 100 gallons of unknown petroleum spilled.

SPILLS INCIDENTS DATABASE			
Spill No.	**Spill Date/Closure**	**Site Occupant**	**Database Summary**
			Resource affected was soil.
9506553	08.28.1995/03.11.1998	Allied Signal	25 gallons of #4 fuel oil spilled. Resource affected was soil.
9510965	12.01.1995/01.11.1999	Allied Signal	Unknown quantity of unknown petroleum spilled. Resource affected was soil.
9909741	11.11.1999/09.26.2012	Furon Co.	Unknown quantity of perchloroethane and #2 fuel oil spilled. Resource affected was soil. Unknown quantity of perchloroethane spilled. Resource affected was groundwater.
0304229	07.22.2003/10.07.2003	Saint-Gobain	Unknown quantity of an unknown material spilled. Resource affected was air.
0305170	08.15.2003/10.20.2003	Saint-Gobain	10 gallons of tar spilled. Resource affected was soil.

BULK STORAGE DATABASE			
Tank Type	**Tank Capacity**	**Product Stored**	**Date Tank Closed**
Underground	8,000 Gallons	#2 Fuel Oil	08.01.1995 by Removal
Underground	1,000 Gallons	#2 Fuel Oil	08.01.1993 by Removal
Underground	1,000 Gallons	#2 Fuel Oil	10.01.1992 by Removal

2.9 Previous Environmental Investigations

The following environmental report has been completed for the Site.

- Draft Phase II Environmental Site Assessment (ESA) – Furon Company prepared by Parsons Engineering Science, Inc., dated May 1996 (Parsons 1996 Phase II ESA). The report is presented as Exhibit 1.

The Phase II ESA was conducted to identify, to the extent feasible through limited sampling and analysis, whether any contamination existed due to historic site operations. The scope of the Phase II ESA included the following:

- Installation of six (6) soil borings/monitoring wells to determine baseline soil and groundwater quality. Collection of six (6) groundwater samples for laboratory analysis for Target Compound List (TCL) volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), and Target Analyte List (TAL) metals. One (1) of the groundwater samples was also analyzed for Total Petroleum Hydrocarbons (TPH).

- Laboratory analysis of soil samples collected from: vicinity of a gravel driveway; exterior of a sump/dry well located exterior to the PSAT coating process room; area of a suspected copper hydroxide solution release near the southeast corner of the building; the "can" extrusion process condensate release in the vicinity of the catalytic oxidizer; northwest corner of the building in the vicinity of a possible historic process discharge area; the exterior northwest corner of the building in an area of stressed vegetation; adjacent to the sump located in the courtyard, in proximity to the boiler room; and in proximity to the boiler room sump. The soil samples were generally analyzed for VOCs, SVOCs, metals and TPH, with one (1) soil sample also analyzed for PCBs.

- Laboratory analysis of sediment samples collected from drainage channel beds immediately below drainage pipe outfalls. The sediment samples were analyzed for VOCs, SVOCs, metals, TPH and PCBs.

The soil sampling analytical results were compared to the recommended soil cleanup objectives (SCOs) presented in NYSDEC TAGM 4046, Determination of Soil Cleanup Objectives and Cleanup Levels. Four (4) VOCs (solvents), four (4) polynuclear aromatic hydrocarbons (PAHs) and four (4) metals were detected above TAGM recommended SCOs. Figure 5.1 in the 1996 Parsons Phase II ESA in Exhibit 1 depicts the sampling locations where analytical results exceed TAGM recommended SCOs.

The sediment analytical results were compared to NYSDEC TAGM recommended SCOs. Four (4) metals (cadmium, copper, mercury and zinc) were detected at concentrations at least two times above TAGM recommended SCOs. TPH, which has no regulatory standard, was detected at concentrations ranging from 189 mg/kg to 3,980 mg/kg at three (3) of the five (5) sediment sampling locations. Figure 5.1 in the 1996 Parsons Phase II ESA in Exhibit 1 depicts the sampling locations where analytical results exceed TAGM recommended SCOs.

The groundwater analytical results were compared to the NYS Groundwater Class GA standards, Primary Drinking Water Quality Standards, and the Federal Safe Drinking Water Act Maximum Contaminant Levels (MCLs). Five (5) metals (aluminum, antimony, cobalt, iron and magnesium) were detected at concentrations at least two (2) times their respective standards, per the Parson's report. Figure 5.2 in the 1996 Parsons Phase II ESA in Exhibit 1 depicts the sampling locations where analytical results exceed groundwater standards.

C.T. Male compared the soil and sediment analytical results to current SCOs for Restricted Commercial Use promulgated at 6 NYCRR 375-6.8 (Part 375). None of the analytes exceeded their respective Part 375 Restricted Commercial Use SCO.

3.0 OBJECTIVES, SCOPE & RATIONALE

3.1 Objectives

An initial conceptual model of geologic/hydrogeologic conditions and limited environmental baseline has been developed for the Site through review of available publications and the Parsons 1996 Phase II ESA (see Section 2.9). The environmental investigations proposed in this section are being performed to provide additional data to further evaluate the physical setting and environmental quality of the Site, and will be used to further refine the Site's conceptual model. Once refined, the conceptual model of Site conditions will be used to develop an investigative approach, if needed, to characterize the nature and extent of potential Site contaminants.

3.2 Scope & Rationale

The scope of work was developed based on the conceptual model of Site conditions to date. The potential chemical parameters of concern were selected based on current Site conditions and the Site's history.

The primary chemical of concern at the Site is perfluorooctanoic acid (PFOA). PFOA has been detected in the Village of Hoosick Falls public water system and in private wells in and around Hoosick Falls.

PFOA is a member of the class of substances called PFCs. The chemical formula of PFOA is $CF_3(CF_2)_6COOH$. PFOA and other PFCs have been produced and used in commercial products and industrial processes for over 60 years. Known commercial uses of PFOA include: water-, soil-, and stain-resistant coatings for clothing, leather, upholstery, and carpets; oil-resistant coatings for food contact paper; aviation hydraulic fluids; fire-fighting foams; paints, adhesives, waxes, polishes, and other products. Known industrial uses of PFOA include: surfactants, emulsifiers, wetting agents, additives, and coatings. Additionally, PFOA is used as a processing aid (emulsifier) in the production of PTFE and other fluoropolymers and fluoroelastomers, which are used as non-stick coatings on cookware, membranes for waterproof/ breathable clothing, electrical wire casing, fire and chemical resistant tubing, and plumbing thread seal tape.

PFOA is an anthropogenic contaminant that is resistant to environmental degradation processes, and thus is highly persistent. However, unlike other persistent and bioaccumulative organic pollutants, PFOA is highly water-soluble, and may have limited sorption to soil, sediments and organic matter.

Other parameters that will be analyzed to evaluate the Site's overall environmental quality include the TCL and NYSDEC Spill Technology and Remedial Series Memorandum Number One (STARS #1) of VOCs plus 10 tentatively identified compounds (TICs) and SVOCs plus 20 TICs, TCL pesticides and TCL PCBs; TAL inorganics (including mercury); cyanide (CN); and major cations (Ca, Mg, Na and K) and anions (Cl, SO_4, CO_3 and HCO_3).

The sample type, laboratory analysis, sampling method and sampling rationale for the samples to be collected during the SC investigation are summarized in Table 1: Proposed Sampling Schedule, which is presented in the Tables section of this work plan.

The proposed scope of work is summarized below and described in more detail in the following subsections.

- Collection of shallow soil/fill samples for subjective and laboratory analysis.
- Advancement of test borings to aid in the collection of subsurface soil samples and for installation of monitoring wells.
- Collection of subsurface soil samples for subjective and laboratory analysis.
- Monitoring well development and purging and collection of groundwater samples for laboratory analysis.
- Collection of sediment samples for subjective and laboratory analysis.
- Collection of surface water samples for subjective and laboratory analysis.
- Introduction of non-toxic dye into Site catch basins to evaluate their outfall locations.
- Measurement of water levels from existing monitoring wells.
- Collection and laboratory analysis of quality control source and field samples.

3.2.1 Shallow Soil/Fill Sampling

Shallow soil/fill samples will be collected at 17 locations within the Site depicted as SHS-1 to SHS-17 on the Proposed Sampling Location Plan presented as Figure 3. At each sampling location, one (1) grab soil/fill sample will be collected from the 0-2″ and 2″-12″ depth intervals. The sample collected from the 0-2″ depth interval will be collected from the ground surface (or below any sub-base material, if present) to a depth of 2″ and will include any underlying vegetation (roots) or organic debris as requested by NYSDEC. Samples will be collected at the locations shown to evaluate the environmental quality of shallow soils/fill across the Site, in the vicinity of drainage structures and outfalls, and in the vicinity of a former building foundation. The shallow soil/fill samples will be analyzed in the laboratory for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, Total Organic Carbon (TOC), moisture content and grain size analysis.

3.2.2 Subsurface Soil/Fill Sampling and Groundwater Sampling

Subsurface Soil Sampling

Subsurface soil samples will be collected from nine (9) soil borings depicted as MW-1 to MW-9 on Figure 3. The subsurface soil samples will be collected at the fill material/native soil interface to evaluate subsurface conditions and the environmental quality of native soils beneath the fill materials. The subsurface soil samples will be analyzed in the laboratory for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and TOC. Additionally, three (3) samples of clay deposits from three (3) different borings will also be collected in Shelby tubes for triaxal permeability testing.

If subjective impacts (elevated photoionization detector (PID) meter readings, oily liquid, strongly odiferous soils, staining, etc.) are noted in the fill/soil above the water table, an additional sample of the fill/soil will be collected for laboratory analysis for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and TOC.

Soil sampling depths may be adjusted to include soil mottling zones within the test borings. Adjustments would be made in the field with input from NYSDEC field-oversight staff.

Groundwater Sampling

Each of the nine (9) soil borings will be converted to two-inch diameter monitoring wells with protective enclosures to aid in the collection of groundwater samples for laboratory analysis. The locations of the proposed monitoring wells are shown on Figure 3. Groundwater samples will not be collected from existing monitoring wells MW-4L to MW-6L installed as part of the Parsons 1996 Phase II ESA because it is unknown if components of these wells contained PFC-based materials. The wells will be developed and purged, and groundwater samples collected for laboratory analysis for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and major cations (Ca, Mg, Na and K) and anions (Cl, SO_4, CO_3 and HCO_3).

3.2.3 Sediment Sampling

Sediment samples will be collected from 17 locations depicted as SED-1 to SED-17 on Figure 3. Sediment samples will be collected from 0-6" bgs at each sampling location. The samples will be collected to evaluate the environmental quality of sediment from the on-site pond and its inlet and outlet drainage ways, drainage swales, existing or suspected storm water drainage structure outfalls, and within a catch basin located in the northwest courtyard within the building footprint. The sediment samples will be analyzed for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and TOC.

3.2.4 Surface Water Sampling

Surface water samples will be collected from 16 locations depicted as SW-1 to SW-16 on Figure 3. The surface water samples will be collected to evaluate the environmental quality of surface water from an on-site pond and its inlet and outlet drainage ways, drainage swales, existing or suspected storm-water drainage structure outfalls, and within a catch basin. The surface water samples will be analyzed for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and major cations (Ca, Mg, Na and K) and Anions (Cl, SO_4, CO_3 and HCO_3).

3.2.5 Dye Testing of Catch Basins

Non-toxic dye will be introduced into the catch basins located in the inner building courtyards and at the north exterior of the building. The dye test will be conducted to evaluate the flow regime of the catch basins and to evaluate the outlet points of the catch basins, which are expected to be in vegetated areas to the west of the Site building.

3.2.6 Water Levels From Existing Monitoring Wells

Water levels will be obtained from three (3) existing monitoring wells installed by others depicted as MW-4L to MW-6L on Figure 3. The water levels from the existing monitoring wells will be used with water levels obtained from newly installed wells for the development of a groundwater contour map. Samples for laboratory analysis will not be collected from the existing monitoring wells because it is unknown if components of these wells contained PFC-based materials.

3.2.7 Sampling Quality Control

Source Materials Quality Control

As discussed in Section 3.2, PFCs (including PFOA) are found in several everyday items. As a check for cross-contamination, quality control samples will be collected from source materials and equipment that are anticipated to be used for the investigation. These include water used by the drilling contractor for drilling and equipment decontamination; augers, rods, split-spoon sampling barrels, totes and tanks used by the drilling contractor; filter sand used as monitoring well sand pack; monitoring well construction materials (PVC riser and screen); and bottled water used as final decontamination rinse water. The samples will be collected and analyzed for PFCs. Analytical results will be reviewed prior to Site mobilization. Mobilization to the Site will only be permitted if analytical results depict PFCs below detection limits or at concentrations that are not expected to cross-contaminate environmental samples. The types of source materials quality control samples to be collected, and the sampling method and rationale are detailed in Table 1 in the Tables section of this work plan. Source equipment including driller augers, rods, split-spoon sampling barrels, totes and tanks will be segregated and will not be used for any other purpose by the drilling contractor from the time that the quality control samples are collected to the time that the equipment is mobilized to the Site for the investigation.

Field Quality Control

Field Quality Control samples include Equipment Blanks, Duplicates, and Matrix Spike/Matrix Spike Duplicates (MS/MSD). Quality Control samples will be prepared for each media type at a ratio of one (1) set of Quality Control samples per each 20 media samples. Laboratory prepared Trip Blanks will be submitted with aqueous samples requiring analysis for TCL VOCs and PFCs. Field Trip Blanks will be submitted with aqueous samples requiring analysis for PFCs. The types of field quality control samples to be collected and the sampling method and rationale are detailed in Table 1 in the Tables section of this work plan.

3.2.8 Laboratory Reporting and Data Validation

The laboratory will generate NYSDEC ASP Category B data deliverable packages of the investigative analytical data. A Data Usability Summary Report (DUSR) of the analytical data will be prepared to confirm that the data meets the project specific criteria for data quality and data use. The DUSR will be completed by an independent data validator and will be conducted in accordance with Appendix 2B of DER-10 entitled *Guidance for Data Deliverables and the Development of Data Usability Summary Reports.*

3.2.9 Surveying Methods

All exploratory locations (i.e., shallow soil, surface water and sediment samples, test borings, monitoring wells, etc.) and other pertinent surface features will surveyed. The locations and features will be amended to the original Site survey conducted for the Site (Figure 2). The horizontal location of the boreholes will be surveyed utilizing GPS based on the New York State Plane Coordinate System, Eastern Zone, NAD 1983/2011 EPOCH 2010.0, and the vertical elevation of the boreholes at grade will be surveyed utilizing GPS based on NAVD 1988. The GPS coordinates will be converted to decimal degrees based on the WGS84 datum for inputting into the NYSDEC electronic data deliverable (EDD) system

4.0 SUPPLEMENTAL PLANS

4.1 Field Sampling Plan

The field activities for this project will include collection and laboratory analysis of shallow and subsurface soil/fill, sediment and surface water, and collection and laboratory analysis of groundwater samples from monitoring wells. The procedures relative to implementation of these field activities are presented in the Field Sampling Plan (FSP) in Appendix A, which also conforms to the Quality Assurance Project Plan (QAPP) presented in Appendix B. The FSP describes in detail the various methods and techniques to be followed during the completion of the soil, sediment, surface water and groundwater sampling activities, instrument operation and calibration, and chain of custody procedures.

4.2 Quality Assurance/ Quality Control Plan

The QAPP describes the quality assurance and quality control procedures to be followed from the time media samples are collected to the time they are analyzed by the environmental analytical laboratory and evaluated by a third party according to the NYSDEC Data Usability Summary Report (DUSR) guidelines. The QAPP is presented in Appendix B of this SCWP.

The QAPP will be followed by field personnel during the Site characterization activities and media sampling events. It will also be used by the project management team and Quality Assurance Officer to assure the data collected and generated is representative and accurate. The laboratory results will be reported in NYSDEC ASP Category B data deliverable packages, which will be subjected to data validation in accordance with NYSDEC’s DUSR guidelines to determine if the data is valid and usable.

4.3 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) has been prepared for this project to address Site worker health and safety issues. The HASP is presented in Appendix C and will be used by field personnel. The HASP includes the NYS Department of Health Community Air Monitoring Plan (CAMP). Although the plan addresses all of the planned Site activities, subcontractors will be required to develop their own HASP for work they will perform, as well, in compliance with 29 CFR Part 1019.120. C.T. Male's on-site employees and the subcontractor's on-site employees will have completed the OSHA 40-hour HAZWOPER training with all ensuing refresher courses.

5.0 REPORTING AND SCHEDULE

5.1 Reporting

Upon completion of field activities and receipt and independent validation of the analytical laboratory data, a Draft SC Report will be prepared. The SC Report will summarize and discuss the investigations completed as well as the technical rationale for deviations from the approved SCWP, if any. The report will present the investigations at the Site, analytical results of samples collected and analyzed, and interpretations of the data. A groundwater contour map will be prepared, and together with the analytical data and evaluation of subsurface conditions via the test boring program, the Site's conceptual model will be refined.

5.2 Schedule

It is currently planned to initiate field work soon after NYSDEC approval of the Work Plan, which is expected to occur in July 2016. A project schedule is presented in Appendix D.

6.0 SUBMITTALS

Communications will be transmitted by email, United States Postal Service, private courier, or hand delivered to the following individuals. Final documents, as they become available, will also be submitted to the following individuals:

- NYSDEC Project Manager
  William L. Daigle
  NYSDEC Central Office
  Division of Environmental Remediation
  625 Broadway, 11th Floor
  Albany, NY 12233-7013
  Phone: 518.402.9676
  Email: wldaigle@gw.dec.state.ny.us

- NYSDOH Project Manager
  Albert DeMarco
  New York State Department of Health
  Corning Tower
  Empire State Plaza
  Albany, New York 12237
  Phone: 518.402.7860
  Email: albert.demarco@health.ny.gov

- Mr. Edward Canning
  Director of Health, Safety & Environment
  Saint-Gobain Performance Plastics Corporation
  One Sealants Park
  Granville, New York 12832
  Phone: 518.686.7301
  Email: Edward.J.Canning@saint-gobain.com

FIGURES

FIGURE 1

SITE LOCATION MAP

Figure 1: Site Location Map
Saint - Gobain Performance Plastics Corp.

Village of Hoosick Falls
Rensselaer County, NY

Project Number: 16.6132
Data Source: USGS
Projection: State Plane NAD83 NYE (Feet)
Date: March 30, 2016
File: SaintGobain_SiteLocationMap8x11.mxd
GIS: C Secor

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

C.T. MALE ASSOCIATES
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(518) 786-7400 * FAX (518) 786-7299 * WWW.CTMALE.COM
FOUNDED IN 1910

FIGURE 2

SITE SURVEY MAP

XREFS: NONE

PROJECT NUMBER: 14.____

CAD DWG. FILE NAME: Figure 2-Site Survey.dwg

DATE	SYM	REVISION RECORD	AUTH.	DR.	CK.

BAR SCALE

50 0 25 50 100

1 inch = 50 ft.

DRAFT

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PROJ. NO : 16.6132
SCALE : 1"=50'
DATE : MARCH 8, 2016

FIGURE 2
SITE SURVEY
SAINT-GOBAIN PERFORMANCE PLASTICS
1 LIBERTY STREET

HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK

C.T. MALE ASSOCIATES
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50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

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DWG. NO: 14-____

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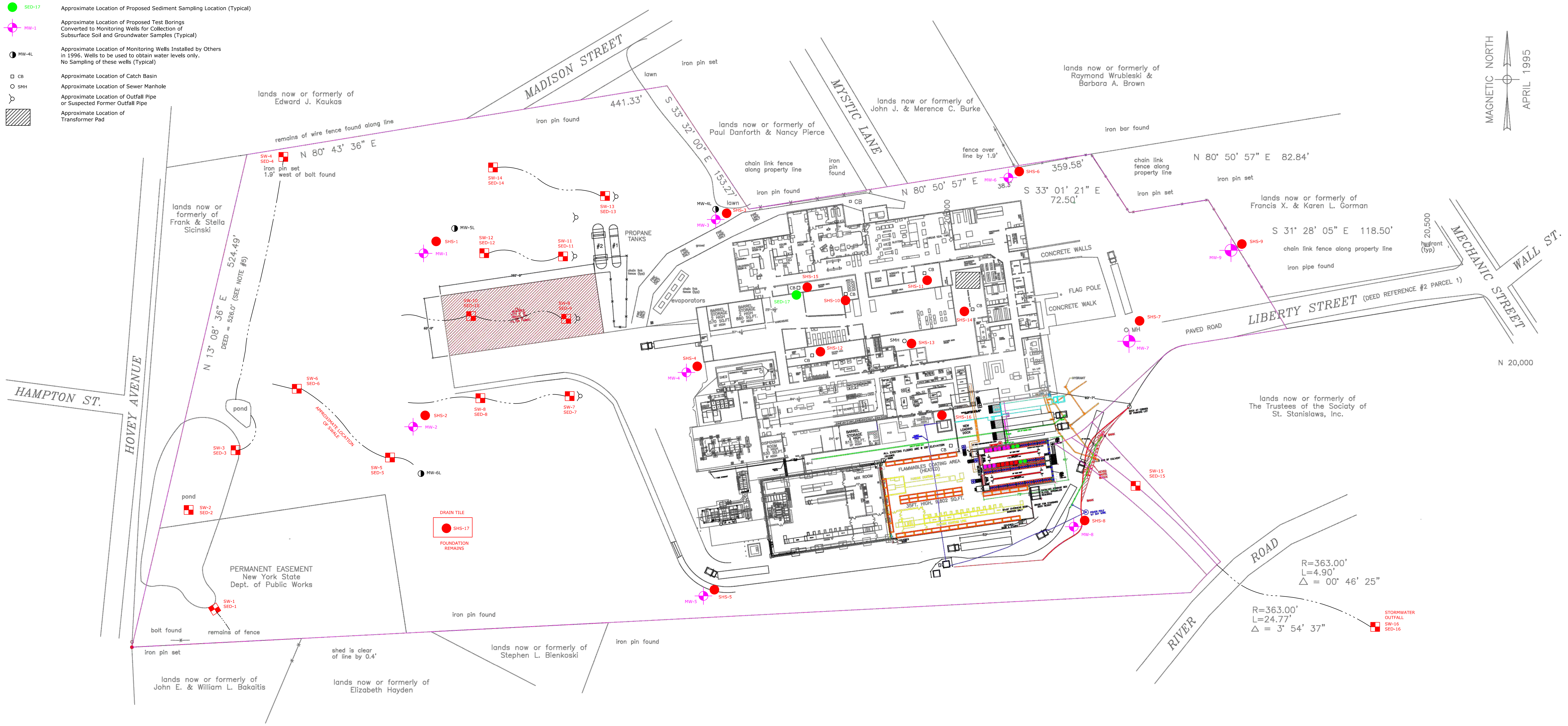
FIGURE 3

PROPOSED SAMPLING LOCATION PLAN

DATE	SYM	REVISION RECORD	AUTH.	DR.	CK.

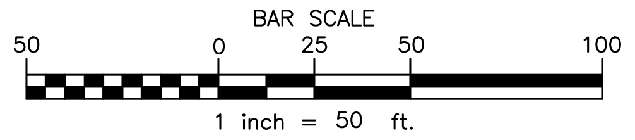
Legend

🟥	SW-1 SED-1	Approximate Location of Proposed Surface Water and Sediment Sampling Location (Typical)
●	SHS-1	Approximate Location of Proposed Shallow Soil Sampling Location (Typical) Those locations co-located with test borings will be completed within ±5 feet from the test boring location.
●	SED-17	Approximate Location of Proposed Sediment Sampling Location (Typical)
⊕	MW-1	Approximate Location of Proposed Test Borings Converted to Monitoring Wells for Collection of Subsurface Soil and Groundwater Samples (Typical)
◑	MW-4L	Approximate Location of Monitoring Wells Installed by Others in 1996. Wells to be used to obtain water levels only. No Sampling of these wells (Typical)
☐	CB	Approximate Location of Catch Basin
○	SMH	Approximate Location of Sewer Manhole
		Approximate Location of Outfall Pipe or Suspected Former Outfall Pipe
▨		Approximate Location of Transformer Pad



Map Reference

1. "MAP OF LANDS OF ALLIEDSIGNAL FLUORGLAS PRODUCTS LIBERTY STREET PLANT" VILLAGE OF HOOSICK FALLS, RENSSELAER COUNTY, NEW YORK. PREPARED BY DAVID F. BARRASS LAND SURVEYOR FOR SAINT-GOBAIN PERFORMANCE PLASTICS. DATED 8/15/2014, DWG.NO. hf14-1014.



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SCALE : 1"=50'
DATE : MARCH 8, 2016

FIGURE 3
PROPOSED SAMPLING LOCATION PLAN
SAINT-GOBAIN PERFORMANCE PLASTICS
1 LIBERTY STREET

VILLAGE OF HOOSICK FALLS
RENSSELEAR COUNTY, NEW YORK

C.T. MALE ASSOCIATES
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SHEET 1 OF 1
DWG. NO: 16-282

CAD DWG. FILE NAME: K:\Projects\166132\Env\SC Work Plan\SCWP Drawings\Figure 3_REV 2.dwg

CAD DWG. FILE NAME: Figure 3_REV 2.dwg

TABLES

TABLE 1: PROPOSED SAMPLING SCHEDULE

TABLE 1: PROPOSED SAMPLING SCHEDULE
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, HOOSICK FALLS, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sampling Location	Sample Depth	Analytical Parameter	Grab/Comp.	Sampling Method	Rationale
SHALLOW SOIL/FILL (SHS-1 to SHS-17)	SHS-1 to SHS-9	0-2", 2"-12"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, TOC, PFCs, moisture content, grain size analysis.	One Grab Sample at Each Depth Interval	Decontaminated hand auger and new nitrile gloves at each sampling location.	To evaluate the presence of PFCs in shallow soils at locations representative of general sitewide conditions. Soils collected from each sampling interval will each be separately placed in a stainless steel bowl and homogenized. An aliquot will then be collected and transferred into laboratory provided sample containers for laboratory analysis. The remaining soils from each sampling interval will be retained for grain size analysis.
	SHS-10 to SHS-15	0-2", 2"-12"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, TOC, PFCs, moisture content, grain size analysis.	One Grab Sample at Each Depth Interval	Decontaminated hand auger and new nitrile gloves at each sampling location.	To evaluate the presence of PFCs in shallow soils at locations representative of general sitewide conditions. Soils collected from each sampling interval will each be separately placed in a stainless steel bowl and homogenized. An aliquot will then be collected and transferred into laboratory provided sample containers for laboratory analysis. The remaining soils from each sampling interval will be retained for grain size analysis.
	SHS-16	0-2", 2"-12"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, TOC, PFCs, moisture content, grain size analysis.	One Grab Sample at Each Depth Interval	Decontaminated hand auger and new nitrile gloves at each sampling location.	To evaluate the presence of PFCs in shallow soils at locations representative of general sitewide conditions. Soils collected from each sampling interval will each be separately placed in a stainless steel bowl and homogenized. An aliquot will then be collected and transferred into laboratory provided sample containers for laboratory analysis. The remaining soils from each sampling interval will be retained for grain size analysis.
	SHS-17	0-2", 2"-12"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, TOC, PFCs, moisture content, grain size analysis.	One Grab Sample at Each Depth Interval	Decontaminated hand auger and new nitrile gloves at each sampling location.	To evaluate the presence of PFCs in shallow soils at locations representative of general sitewide conditions. Soils collected from each sampling interval will each be separately placed in a stainless steel bowl and homogenized. An aliquot will then be collected and transferred into laboratory provided sample containers for laboratory analysis. The remaining soils from each sampling interval will be retained for grain size analysis.
	FIELD QC (REPLICATE)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, moisture content	1 Per 20 Media Samples	Collect by honogenizing the sample and putting equal portions into parent and replicate sample jars.	To evaluate field sampling technique, the homogeneity/heterogeneity of Site soils, and to check for laboratory precision.
	FIELD QC (MS/MSD)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, moisture content	1 Per 20 Media Samples	Collect by homogenizing the sample and putting equal portions into parent, MS and MSD sample jars.	To evaluate if there is sample matrix interference and to evaluate laboratory accuracy (MS) and precision (MSD).
	FIELD QC (EQUIPMENT BLANK)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by pouring distilled water over decontaminated sampling equipment and capturing in lab provided sampl containers.	To evaluate the decontamination effort and sampling equipment cleanliness between sampling locations.

TABLE 1: PROPOSED SAMPLING SCHEDULE
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, HOOSICK FALLS, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sampling Location	Sample Depth	Analytical Parameter	Grab/Comp.	Sampling Method	Rationale
SUBSURFACE SOIL/FILL (MW-1 to MW-9)	MW-1 to MW-9	Fill/Native Soil Interface	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, TOC	Grab	Decontaminated driller split spoon sampling barrel and new nitrile gloves at each sampling location.	To evaluate subsurface conditions and the environmental quality of native soils at the fill/native soils interface and where subjective impacts may be noted, employing PID meter headspace analysis and organoleptic perception. Three (3) samples of clay deposits from three (3) different borings will also be collected in shelby tubes for triaxal permeability testing$^{(1)}$.
	FIELD QC (REPLICATE)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by splitting the sample and putting equal portions into parent and replicate sample jars.	To evaluate field sampling technique, the homogeneity/heterogeneity of Site soils, and to check for laboratory precision.
	FIELD QC (MS/MSD)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by splitting the sample and putting equal portions into parent, MS and MSD sample jars.	To evaluate if there is sample matrix interference and to evaluate laboratory accuracy (MS) and precision (MSD).
	FIELD QC (EQUIPMENT BLANK)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by pouring distilled water over decontaminated sampling equipment and capturing in lab provided sample containers.	To evaluate the decontamination effort and sampling equipment cleanliness between sampling locations.
SEDIMENT (SED) (SED-1 to SED-17)	SED-1 to SED-4	0-6"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, TOC	Grab	Decontaminated hand auger and/or macro-core sampler, and new nitrile gloves at each sampling location.	To evaluate the environmental quality of sediment at the inlet point to the pond, in the pond, and the outlet points of the pond and the Site's property boundary.
	SED-5 to SED-6	0-6"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, TOC	Grab	Decontaminated hand auger and/or macro-core sampler, and new nitrile gloves at each sampling location.	To evaluate the environmental quality of sediment in the drainage swale.
	SED-7 to SED-14	0-6"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, TOC	Grab	Decontaminated hand auger and/or macro-core sampler, and new nitrile gloves at each sampling location.	To evaluate the environmental quality of sediment at existing or suspected storm water drainage structure outfalls.

TABLE 1: PROPOSED SAMPLING SCHEDULE
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, HOOSICK FALLS, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sampling Location	Sample Depth	Analytical Parameter	Grab/Comp.	Sampling Method	Rationale
SEDIMENT (SED) (SED-1 to SED-17)	SED-15 to SED-16	0-6"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, TOC	Grab	Decontaminated hand auger and/or macro-core sampler, and new nitrile gloves at each sampling location.	To evaluate the environmental quality of sediment in the drainage swale and off-site outfall relative to surface water runoff and piped storm water discharges.
	SED-17	0-6"	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, TOC	Grab	Decontaminated hand auger and/or macro-core sampler, and new nitrile gloves at each sampling location.	To evaluate the environmental quality of sediment that has accumulated within the catch basin.
	FIELD QC (REPLICATE)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by homogenizing the sample and putting equal portions into parent and replicate sample jars.	To evaluate field sampling technique, the homogeneity/heterogeneity of Site soils, and to check for laboratory precision.
	FIELD QC (MS/MSD)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by homogenizing the sample and putting equal portions into parent, MS and MSD sample jars.	To evaluate if there is sample matrix interference and to evaluate laboratory accuracy (MS) and precision (MSD).
	FIELD QC (EQUIPMENT BLANK)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs	1 Per 20 Media Samples	Collect by pouring distilled water over decontaminated sampling equipment and capturing in lab provided sample containers.	To evaluate the decontamination effort and sampling equipment cleanliness between sampling locations.
SURFACE WATER (SW-1 to SW-16)	SW-1 to SW-4	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	Grab	New, factory sealed disposable bailer and/or collect directly in sample containers wearing new nitrile gloves at each sampling location.	To evaluate the environmental quality of surface water at the inlet point to the pond, in the pond, and the outlet points of the pond and the Site's property boundary.
	SW-5 to SW-6	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	Grab	New, factory sealed disposable bailer and/or collect directly in sample containers wearing new nitrile gloves at each sampling location.	To evaluate the environmental quality of surface water in the drainage swale.

TABLE 1: PROPOSED SAMPLING SCHEDULE
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, HOOSICK FALLS, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sampling Location	Sample Depth	Analytical Parameter	Grab/Comp.	Sampling Method	Rationale
SURFACE WATER (SW-1 to SW-16)	SW-7 to SW-14	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	Grab	New, factory sealed disposable bailer and/or collect directly in sample containers wearing new nitrile gloves at each sampling location.	To evaluate the environmental quality of surface water at existing or suspected former storm water drainage structure outfalls.
	SW-15 to SW-16	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	Grab	New, factory sealed disposable bailer and/or collect directly in sample containers wearing new nitrile gloves at each sampling location.	To evaluate the environmental quality of surface water in the drainage swale and off-site outfall relative to surface water runoff and piped storm water discharges.
	FIELD QC (REPLICATE)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	1 Per 20 Media Samples	Collect by putting equal portions into parent and replicate sample containers.	To evaluate field sampling technique and laboratory precision.
	FIELD QC (MS/MSD)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	1 Per 20 Media Samples	Collect by putting equal portions into parent, MS and MSD sample containers.	To evaluate if there is sample matrix interference and to evaluate laboratory accuracy (MS) and precision (MSD).
	FIELD QC (EQUIPMENT BLANK)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	1 Per 20 Media Samples	Collect by pouring distilled water over decontaminated/new sampling equipment and capturing in lab provided sample containers.	To evaluate the decontamination effort and sampling equipment cleanliness between sampling locations.
	FIELD QC (LABORATORY TRIP BLANK)	NA	VOCs	1 Per Cooler	Trip Blank to always remain in cooler that contains aqueous samples.	Used to evaluate potential impacts during the entire collection and sample container handling process from shipment to and from the laboratory, temporary storage and transport, and staging in the field.
	FIELD QC (LABORATORY TRIP BLANK)	NA	PFCs	1 Per Cooler	Trip Blank to always remain in cooler that contains aqueous samples.	Used to evaluate potential impacts during the entire collection and sample container handling process from shipment to and from the laboratory, temporary storage and transport, and staging in the field.
	FIELD QC (FIELD TRIP BLANK)	NA	PFCs	1 Per Cooler	Prepared in the field during sampling by transfering a lab provided container of reagent water into a new empty lab provided sample container.	To evaluate if there is PFC cross-contamination at the sampling site.

TABLE 1: PROPOSED SAMPLING SCHEDULE
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, HOOSICK FALLS, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sampling Location	Sample Depth	Analytical Parameter	Grab/Comp.	Sampling Method	Rationale
GROUNDWATER (MW-1 to MW-9)	MW-1 to MW-9	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	Grab	Low-flow sampling techniques with peristaltic pump and new clean tubing and nitrile gloves at each sampling location.	To develop a groundwater contour map and to evaluate the environmental quality of the Site's groundwater.
	FIELD QC (REPLICATE)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	1 Per 20 Media Samples	Collect by putting equal portions into parent and replicate sample containers, filling VOC containers first.	To evaluate field sampling technique and laboratory precision.
	FIELD QC (MS/MSD)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	1 Per 20 Media Samples	Collect by putting equal portions into parent, MS and MSD sample containers, filling VOC containers first.	To evaluate if there is sample matrix interference and to evaluate laboratory accuracy (MS) and precision (MSD).
	FIELD QC (EQUIPMENT BLANK)	NA	TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics, CN, PFCs, Major Cations/Anions	1 Per 20 Media Samples	Collect by pouring distilled water over decontaminated/new sampling equipment and capturing in lab provided sample containers.	To evaluate the decontamination effort and sampling equipment cleanliness between sampling locations.
	FIELD QC (LABORATORY TRIP BLANK)	NA	VOCs	1 Per Cooler	Trip Blank to always remain in cooler that contains aqueous samples.	Used to evaluate potential impacts during the entire sample collection and container handling process from shipment to and from the laboratory, temporary storage and transport, and staging in the field.
	FIELD QC (LABORATORY TRIP BLANK)	NA	PFCs	1 Per Cooler	Trip Blank to always remain in cooler that contains aqueous samples.	Used to evaluate potential impacts during the entire sample collection and container handling process from shipment to and from the laboratory, temporary storage and transport, and staging in the field.
	FIELD QC (FIELD TRIP BLANK)	NA	PFCs	1 Per Cooler	Prepared in the field during sampling by transfering a lab provided container of reagent water into a new empty lab provided sample container.	To evaluate if there is PFC cross-contamination at the sampling site.
DYE TESTING	*STORMWATER CATCH BASINS & OUTFALLS*	NA	NA	NA	Introduce non-toxic dye into stormwater drainage structures in the courtyards between the buiding.	To identify the discharge point(s) of the courtyard storm water drainage structures. Further evaluation will be conducted following sediment and surface water sample collection.
EXISTING MONITORING WELLS	MW-4L to MW-6L	NA	Obtain Water Levels Only. No Sampling	NA	Decontaminated water level meter, and new nitrile gloves at each well location.	To aid in the development of a groundwater contour map.

TABLE 1: PROPOSED SAMPLING SCHEDULE
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET, HOOSICK FALLS, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sampling Location	Sample Depth	Analytical Parameter	Grab/Comp.	Sampling Method	Rationale
QC - IMPORTED SOURCE MATERIALS	Source Sample - Imported Water for Drilling	NA	PFCs	Grab	Obtain one (1) grab sample of water to be used by driller from the drilling contractor's place of business.	To evaluate that water brought onto the Site by the drilling subcontractor does not contain PFCs. Water will be obtained at a municipal water source outside of the boundaries of the Village and Town of Hoosick Falls, NY. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site media sampling.
	Source Sample - Imported Water for Decontamination	NA	PFCs	Grab	Obtain one (1) grab sample of water to be used for decontamination.	To evaluate that water brought onto the Site for decontamination does not contain PFCs. Water will be obtained at a municipal water source outside of the boundaries of the Village and Town of Hoosick Falls, NY. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site media sampling.
	Equipment Rinse Blank - Totes/Tanks used by Driller	NA	PFCs	Grab	Pour distilled water through driller tanks/totes and capture in laboratory provided containers.	To evaluate that totes/tanks brought onto the Site by the drilling contractor do not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization(2).
	Source Sample - Filter Sand Used as Monitoring Well Sand Pack	NA	PFCs	Grab	Collect one (1) grab sample of well construction filter sand per source/grain size/supplier.	To evaluate that filter sand brought onto the Site by the drilling contractor for monitoring well construction does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization.
	Equipment Rinse Blank - PVC Well Riser from Driller	NA	PFCs	Grab	Pour distilled water over/through PVC Well Riser and capture in laboratory provided containers.	To evaluate that PVC Well Riser brought onto the Site by the drilling contractor for monitoring well construction does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization.
	Equipment Rinse Blank - PVC Well Screen from Driller	NA	PFCs	Grab	Pour distilled water over/through PVC Well Screen and capture in laboratory provided containers.	To evaluate that PVC Well Screen brought onto the Site by the drilling contractor for monitoring well construction does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization.
	Equipment Rinse Blank - Auger Casing from Driller	NA	PFCs	Grab	Pour distilled water over/through driller auger casing and capture in laboratory provided containers.	To evaluate that drilling augers brought onto the Site by the drilling contractor for advancement of test borings does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization(2).
	Equipment Rinse Blank - Drill Rods from Driller	NA	PFCs	Grab	Pour distilled water over/through driller drill rods and capture in laboratory provided containers.	To evaluate that drilling rods brought onto the Site by the drilling contractor for advancement of test borings does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization(2).
	Equipment Rinse Blank - Split Spoon Sample Barells from Driller	NA	PFCs	Grab	Pour distilled water over/through driller split spoon sample barrel and capture in laboratory provided containers.	To evaluate that split spoon sample barrels brought onto the Site by the drilling contractor for collection of shallow and subsurface soil samples does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to Site mobilization(2).
	Source Sample - Distilled Water for Field Tool Decontamination	NA	PFCs	Grab	Obtain one (1) sample of distilled water for field tool decontamination.	To evaluate that distilled water brought onto the Site does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to distilled water being imported onto the Site.
	Source Sample - Distilled Water for Rinse Samples	NA	PFCs	Grab	Obtain one (1) sample of distilled water for rinse samples.	To evaluate that distilled water brought onto the Site does not contain PFCs. Laboratory analysis of the sample must indicate PFCs as non-detect prior to distilled water being imported onto the Site.

Notes:

(1) A Shelby tube drive head with Shelby tube attached is threaded on the drill rods. The tube is then pushed a 2 foot length, extracted, and both ends of the tube are capped.
(2) Driller totes, tanks, auger casing, drill rods and split spoon sample barells will be segregated and will not be used for any other purpose from the time that rinsate samples are collected to the time that they are brought onto the Site.
TCL = Target Compound List of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Pesticides and PCBs
TAL = Target Analyte List of Metals, including Mercury
CN = Cyanide
PFC = Perfluorinated Compounds
TOC = Total Organic Carbon
QC = Quality Control
MS = Matrix Spike
MSD = Matrix Spike Duplicate
MW = Monitoring Well
NA = Not Applicable

APPENDIX A

FIELD SAMPLING PLAN

FIELD SAMPLING PLAN
SAINT-GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET
VILLAGE OF HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK

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TABLES

ATTACHMENTS:

1.0 INTRODUCTION

This document is the Field Sampling Plan (FSP) for the Site Characterization (SC) investigation to be conducted at the Saint-Gobain Performance Plastics (SGPP) Site ('the Site") located at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York. It has been developed in accordance with the SCWP as prepared by C.T. Male Associates. A description of the property, background information, objectives, and the proposed scope of work, are presented in the referenced SCWP.

This FSP is a supplement to the SCWP in that it presents the standard field sampling and data gathering procedures to be followed during implementation of the field activity portion of the scope of work. This plan addresses sampling locations and frequencies, drilling methods including advancement of soil borings and installation of monitoring wells, decontamination procedures, sampling procedures, field screening and testing procedures, field instrumentation operating procedures, field measurements, sample handling and chain of custody procedures, and water level measurement procedures. The applicable portions of the SCWP that coincide with the FSP will be provided to, and followed by the field team. This FSP is intended to be applicable to field sampling activities conducted by C.T. Male Associates and its subcontractors.

The FSP forms an integral part of the Quality Assurance Project Plan (QAPP). The field sampling and data gathering procedures presented in the FSP are incorporated into the QAPP by reference. The FSP and the QAPP document the laboratory quality assurance/quality control procedures to be followed during analysis of samples collected in the field so that valid data of a known quality is generated.

The FSP has been prepared, in part, in general accordance with the following NYSDEC and EPA guidance documents:

- DER-10, Technical Guidance for Site Investigation and Remediation, NYSDEC, May 2010.
- 6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 and 375-6, Effective December 14, 2006.

- A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001, USEPA, December 1987.

2.0 MEDIA SAMPLING LOCATIONS AND FREQUENCY

Sampling will be performed for volatile organic vapor screening, subjective media assessment, laboratory analyses, and for geologic and hydrogeologic characterization of the project Site. The environmental media to be sampled includes:

- Shallow Soil/Fill,
- Subsurface Soil,
- Groundwater,
- Surface Water, and
- Sediment.

Shallow soil/fill samples will be collected at locations representative of site-wide conditions, in the vicinity of drainage structures and outfalls, at the soil boring locations, and within the footprint of a former small building foundation within the western portion of the Site. Subsurface soil samples will be collected during the exploratory test boring subsurface investigation. Groundwater samples will be collected from test borings that are converted to monitoring wells. Surface water and sediment samples will be collected from on-site surface water bodies, drainage outfalls, drainage swales and a catch basin. The sampling locations, proposed frequencies, analytical methods, sampling method and sampling rationale are presented in Table 1: Proposed Sampling Schedule, located in the Tables section of the SCWP.

3.0 SITE INVESTIGATION OVERVIEW

3.1 General

The proposed Site investigations include: collection and laboratory analysis of quality control samples of source materials and rinse blanks of equipment that will be imported onto the Site to conduct the investigations; collection and laboratory analysis of shallow soil/fill; advancement of test borings to aid in the collection of subsurface soil samples for field screening and laboratory analysis, for installation of monitoring wells and characterization of the Site's subsurface; collection and laboratory analysis of groundwater samples from the installed monitoring wells; collection and laboratory analysis of surface water and sediment samples, and introduction of dye into the Site's catch basins to evaluate the locations of their outfalls.

3.1.1 Source Materials and Equipment Rinse Blanks

Quality control samples will be collected of source materials and equipment that is anticipated to be imported onto the Site for the investigations. Source materials that will be sampled include water used by the drilling contractor for drilling and decontamination, bottled water used as final decontamination rinse water, and filter sand used for the monitoring well sand pack. Equipment rinsate blank samples will be collected by pouring bottled deionized water over and through driller water totes and tanks, driller augers, driller rods, monitoring well PVC riser and monitoring well PVC screen. The aforementioned samples will be analyzed for PFCs and the analytical results will be reviewed prior to Site mobilization. Mobilization to the Site will only be permitted if analytical results depict PFCs as non-detect.

3.1.2 Shallow Soil/Fill Sampling

Shallow soil/fill samples will be collected within the Site to evaluate the environmental quality of shallow soils/fill representative of site-wide conditions, at each soil boring location, in the vicinity of drainage structures, within the footprint of a former small building foundation, and within the interior courtyard area between the existing building and newly constructed building addition. The shallow soil samples will be analyzed for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, Total

Organic Carbon (TOC), moisture content and grain size analysis (see Figure 3 in the SCWP for these locations).

3.1.3 Subsurface Soil/Fill Sampling and Groundwater Sampling

Subsurface Soil Sampling

Subsurface soil samples will be collected from the soil borings at the fill material/native soil interface to evaluate subsurface conditions and the environmental quality of native soils beneath the fill material. The subsurface soil samples will be analyzed for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and TOC. Additionally, three (3) samples of clay deposits from three (3) different borings will also be collected in Shelby tubes for triaxal permeability testing.

If subjective impacts (elevated PID readings, oily liquid, strongly odiferous soils/fill, staining, etc.) are noted in the fill and/or soil above the water table, a sample of the fill/soil will be collected for laboratory analysis for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and TOC.

Groundwater Sampling

Each of the soil borings will be converted to two-inch diameter monitoring wells with protective enclosures to aid in the collection of groundwater samples for laboratory analysis. The wells will be developed and purged, and groundwater samples collected for analysis for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and major cations (Ca, Mg, Na and K) and anions (Cl, SO_4, CO_3 and HCO_3).

3.1.4 Sediment Sampling

Sediment samples will be collected from the Site pond and its inlet and outlet drainage ways, drainage swales, storm water drainage outfalls, and a catch basin. The sediment samples will be analyzed for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and TOC.

3.1.5 Surface Water Sampling

Surface water samples will be collected from the Site pond and its inlet and outlet drainage channels, storm water drainage outfalls and drainage swales. The surface water samples will be collected for laboratory analysis for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and major cations (Ca, Mg, Na and K) and Anions (Cl, SO_4, CO_3 and HCO_3).

3.2 Observation of Drilling Operations and Monitoring Well Installations

All drilling, monitoring well installation and other associated field work involved in the SC to be performed by C.T. Male Associates subcontractors will be observed by a full-time, on-site, C.T. Male Associates representative. This representative will be responsible for the collection of soil/fill samples, soil classification, field screening of soil/fill samples, recording of drilling and sampling data, recording of groundwater data, deciding on the final drilling depths and monitoring well screened intervals (with input from the project manager), recording the monitoring well construction procedures, and monitoring the decontamination procedures. The C.T. Male Associates representative will also develop and purge the monitoring wells and conduct groundwater sampling.

Field system audits will be conducted and field reports will be prepared that document the daily activities and their conformance to the work plan (described further in the QAPP). A copy of the forms to be utilized by the applicable field team personnel as part of the field quality assurance/quality control (QA/QC) procedures are presented in Attachment A of this FSP.

The project manager will be kept informed of the progress of work and any problems encountered during the SC so appropriate corrective action can be implemented, and Saint-Gobain and NYSDEC can be notified.

3.3 Drilling and Sampling of Overburden for Installation of Monitoring Wells

The test boreholes will be advanced through the overburden using hollow-stem augers having a minimum 4.25-inch inside diameter (ID) for installation of the monitoring wells. Continuous (every two feet) soil samples will be collected in general accordance with the procedures of ASTM D-1586, Standard Method for Penetration Test and Split Barrel Sampling of Soils. A standard split barrel sampler, which is 24-inches long and 2-inches in diameter, will be used for sampling.

All soils will be visually classified in the field using the Unified Soil Classification System in general accordance with ASTM D-2488, Standard Practice for Description and Identification of Soils. The soil description may include matrix and clast descriptions, moisture content, color, appearance, odor, behavior of the material and other pertinent observations. This information will be recorded on a subsurface exploration log form along with the boring identification and elevation, date started and completed, sampling intervals, standard penetration values, length of recovered sample and depth of first groundwater encountered. During the drilling, a photoionization detector (PID) meter will be used to monitor the volatile organic vapors exiting the borehole and soil cuttings, and of all recovered subsurface samples. These visual observations and field measurements will be recorded on the Subsurface Exploration Log. A blank copy of a Subsurface Exploration Log form is enclosed in Attachment A.

In the event a borehole is not converted into a monitoring well, it will be abandoned by grouting it from the bottom depth of the boring to grade with a cement/bentonite grout mixture (approximately 20 to 1 ratio). Soil cuttings will be transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on site. The contents of the drums will be subsequently characterized and profiled for off-site disposal.

3.4 Soil, Sediment and Surface Water Sampling and Soil Field Screening Procedures

3.4.1 Shallow Soil/Fill Sampling

The soil sampling procedures that will be followed for shallow soil/fill samples include the following:

1. Place and secure a new 5′ by 5′ sheet of plastic sheeting over the sampling location and remove a 6″ by 6″ opening in the center of the sheeting.

2. Remove vegetation and/or humus, where present, down to ground surface. If the sampling location is within asphalt pavement, the pavement will be removed using a pre-cleaned thin wall core barrel and electric vertical drill stand. In this instance, the collection of the soil samples will be initiated at the ground surface at the bottom depth of the asphalt and granular sub-base, if present.

3. A cleaned (per Section 3.7) 3-inch diameter stainless steel hand auger will be used by the on-site sampling personnel for collection of the shallow soil/fill samples. New disposable nitrile gloves will be worn when handling the sampling equipment.

4. At each sampling location, soil samples will be collected from ground surface to a depth of one (1) foot. Samples from each sampling location will be collected at the following intervals (0 to 2” and 2” to 12”). Sampling personnel will don new, disposable nitrile gloves at each sampling location and sampling depth interval.

5. Upon recovery of the auger sample, a portion of the soil sample for VOC analysis will be collected with a new Terra Core sampler and put directly into laboratory provided glass 40-ml vials and the vials sealed. The samples for VOC analysis are required to be frozen within 48 hours, which will be identified on the chain of custody record to be performed by the laboratory receiving the samples. The remaining soil sample will be placed in a pre-cleaned stainless steel bowl and homogenized with a pre-cleaned stainless steel spoon or by hand wearing new nitrile gloves. An aliquot of the sample will then be transferred to laboratory provided sample containers. The PFC samples will be collected first, followed by the samples for SVOCs, PCBs, pesticides, TOC, moisture content and metals. The remaining portion of the sample will be placed in a new plastic zip lock bag, not more than one-half full, and sealed. This bag sample will be for head space analysis screening in the field for volatile organic compounds (VOCs) using a PID meter, and subsequent grain size analysis. Sampling personnel will wear a new pair of disposable nitrile gloves for each sample interval.

6. For samples to be collected for laboratory analysis, the sample container label will be completed with the shallow soil sample location, sample interval, sampler’s initials, date, and time. The client, project name, Site location, matrix, sample type (grab/composite) and laboratory analyses to be performed will also be recorded on the sample label.

7. Backfill each sampling location in vegetated areas with surrounding material or topsoil purchased at a national home improvement store and compacted. Backfill each sampling location in paved areas with crusher run and compact,

and restore the surface with sub base and asphalt having the same thickness and placement as surrounding sub base and asphalt.

8. The soil sample will be classified per Section 3.3 and a Subsurface Exploration Log will be completed.

9. The sampling equipment will be decontaminated between each sampling interval per Section 3.7.

3.4.2 Subsurface Soil Samples from Test Borings

The subsurface soil sampling procedures that will be followed during advancement of the test borings to be converted to monitoring wells include the following:

1. A pre-cleaned (per Section 3.7) split-spoon sampler will be given to the driller or driller's assistant who will attach it to the sampling rod. New disposable nitrile gloves will be worn when handling the split-spoon sampler.

2. A soil sample will be collected by advancing the sampler with a 140 pound drive hammer pushing the split-spoon sampler the desired 2-foot sampling interval per procedure ASTM D-1586.

3. For samples to be collected for laboratory analysis, the sample container label will be completed with the sample location (boring nomenclature), sample interval, sampler's initials, date, and time. The client, project name, Site location, matrix, sample type (grab/composite) and laboratory analyses to be performed will also be recorded on the sample label.

4. The recovered split-spoon sampler will be placed on clean polyethylene sheeting. The end cap will be unscrewed and the sampling spoon opened to expose the sample.

5. Immediately upon opening the sampling spoon, a portion of the soil sample for VOC analysis will be collected with a new Terra Core sampler and put directly into laboratory provided glass 40-ml vials and the vials sealed. The samples for VOC analysis are required to be frozen within 48 hours, which will be identified on the chain of custody record to be performed by the laboratory receiving the samples. The remaining soil sample will be placed in a pre-cleaned stainless steel bowl and

homogenized with a pre-cleaned stainless steel spoon or by hand wearing new nitrile gloves. An aliquot of the sample will then be transferred to laboratory provided sample containers. The PFC samples will be collected first, followed by the samples for SVOCs, PCBs, pesticides, TOC, moisture content and metals. The remaining portion of the sample will be placed in a new plastic zip lock bag, not more than one-half full, and sealed. This bag sample will be for head space analysis screening in the field for volatile organic compounds (VOCs) using a PID meter, and subsequent grain size analysis. Sampling personnel will wear a new pair of disposable nitrile gloves for each sample interval.

6. The soil samples will be classified and the Subsurface Exploration Log completed as described in Section 3.3
7. The sampling equipment will be decontaminated per Section 3.7.

All of the split-spoon soil samples, where sufficient sample is recovered to generate a headspace sample, will be screened in the field with a PID meter on a daily basis. The sample will be allowed to equilibrate to ambient temperature; the plastic bag will be shaken and the bag will be pierced with the tip of the PID meter; and the reading taken. The readings will be recorded on an Organic Vapor Headspace Analysis Log form. A blank copy is included in Attachment A. The PID meter calibration procedures are discussed in Section 7.0.

3.4.3 Sediment Sampling

The specific sediment sampling procedures that will be followed include the following:

1. A pre-cleaned stainless steel hand auger and/or a stainless steel macro-core sampler will be used to collect the sample.
2. For samples to be collected for laboratory analysis, the sample container label will be completed with the sample location, sample interval, sampler's initials, date, and time. The client, project name, Site location, matrix, sample type (grab/composite) and laboratory analyses to be performed will also be recorded on the sample label.
3. The recovered hand auger and/or macro-core sampler will be placed on clean polyethylene sheeting. The end cap of the macro-core sampler will be unscrewed

and the macro-core opened to expose the sample. The outside of the hand auger will be tapped with a pre-cleaned hammer or the sediment removed by hand wearing new nitrile gloves and the sediment released onto the clean polyethylene sheeting.

4. Upon recovery of the auger or macro-core sample, a portion of the soil sample for VOC analysis will be collected with a new Terra Core sampler and put directly into laboratory provided glass 40-ml vials and the vials sealed. The samples for VOC analysis are required to be frozen within 48 hours, which will be identified on the chain of custody record to be performed by the laboratory receiving the samples. The remaining soil sample will be placed in a pre-cleaned stainless steel bowl and homogenized with a pre-cleaned stainless steel spoon or by hand wearing new nitrile gloves. An aliquot of the sample will then be transferred to laboratory provided sample containers. The PFC samples will be collected first, followed by the samples for SVOCs, PCBs, pesticides, TOC, moisture content and metals. The remaining portion of the sample will be placed in a new plastic zip lock bag, not more than one-half full, and sealed. This bag sample will be for head space analysis screening in the field for volatile organic compounds (VOCs) using a PID meter. Sampling personnel will wear a new pair of disposable nitrile gloves for each sample interval. The sediment samples will be visually classified per Section 3.3 and recorded on a Subsurface Exploration Log.

5. The sampling equipment will be decontaminated per Section 3.7.

All of the sediment samples, where sufficient sample is recovered to generate a headspace sample, will be screened in the field with a PID meter on a daily basis. The sample will be allowed to equilibrate to ambient temperature; the plastic bag will be shaken and the bag will be pierced with the tip of the PID meter; and the reading taken. The readings will be recorded on an Organic Vapor Headspace Analysis Log form. A blank copy is included in Attachment A. The PID meter calibration procedures are discussed in Section 7.0.

3.4.4 Surface Water Sampling

The specific sampling procedures that will be followed for collection of surface water samples include the following:

1. Each surface water sample will be collected using a new disposable bailer or the samples collected directly in the laboratory provided containers. A new pair of disposable nitrile gloves will be used to handle the sampling equipment and containers at each sampling location.

2. The disposable bailer will be lowered slowly into the water column to minimize the aeration of the samples. If samples are collected directly into the sample containers, care will be employed to prevent fixative from being spilled and/or rinsed from the container.

3. In order to insure the integrity of samples, sample containers must be filled properly. The following sections contain general procedures for sampling and specific procedures for sampling for PFCs. Care shall be taken in sampling to assure that analytical results represent the actual sample composition.

General Sampling

1. Don't remove caps until the actual sampling time and only long enough to fill the container.
2. Identify every container by filling out the label with all the required data.
3. Fill all containers as recommended by the laboratory.
4. Some bottles may contain a fixative which should <u>not</u> be rinsed out of the bottle. Read the sample label treatment and fixative section to determine if a preservative/fixative has been added. Be careful not to contact fixatives with skin or clothing. If this should occur, rinse liberally with water.
5. Complete the Surface Water Sampling Log and Chain of Custody Record forms.

Sampling for PFCs

1. To prevent cross-contamination or sample interference, possible PFOA containing items will be avoided during the sampling. These items include (but are not limited to) Teflon-containing materials, Tyvek clothing, clothes treated with stain or rain-resistant coatings, Teflon sample containers, aluminum foil, blue ice, packaged foods, and post-its.

2. Samples are to be collected in laboratory provided 250 ml HDPE plastic bottles with screw-on HDPE plastic caps. **Do not collect samples in glass containers.** Sample containers will have TRIZMA Preset Crystals (pH 7.0) added to them as a preservative. This preservative must not be rinsed out.

3. New, powder-free nitrile gloves must be donned prior to sample collection.

4. Fill laboratory provided containers slowly to avoid matrix agitation. Fill containers to the bottom of the sample container bottle neck. Immediately close sample container with screw-on cap.

5. Lightly agitate the sample to dissolve the preservative crystals.

6. Place sample containers on ice in cooler to maintain sample temperature of $\leq 6^{o}$C.

3.5 Monitoring Well Installation

Monitoring wells will be installed within the hollow-stem augers flush joint casing. Once the augers are advanced to the desired depth, 2-inch diameter monitoring wells with slotted screens will be installed in accordance with standard practices. Typical monitoring well construction details are shown in Attachment A. All wells will be constructed of flush-threaded joint, Schedule 40 PVC riser pipe, machine slotted screen, bottom plug, and cap. The screens will be 0.010-inch slotted and generally ten feet in length.

Each well will be assembled as it is lowered into the borehole. The annulus around the well screen will be packed with clean #0 silica sand to a maximum of two feet above the screen. Additionally, a one-half foot choke of fine-grained #00 sand will be placed on top of the sand pack to preclude the migration of the seal material into the sand pack. A minimum two-foot bentonite seal will be installed in the annulus. The seal will consist of bentonite pellets/chips or slurry. The remainder of the annulus will be filled with cement/bentonite grout (ratio of 20 to 1). A steel monitoring well guard pipe or curb box will be set over each well head and cemented in place. A positive grade will be constructed of cement around the well to divert surface water away from the well. A permanent mark will be made at the top of the PVC riser to serve as a datum for all subsequent static water level measurements. Upon completion, a locking gripper well cap will be installed and locked. Monitoring well depths, and screen lengths and depths will be calculated by the environmental scientist/geologist by maintaining accurate measurements of screen and casing placed in the borehole. Monitoring Well Construction Log forms (Attachment A) for the monitoring wells will be completed that documents the well materials and depths.

3.6 Monitoring Well Development

Once installed, each monitoring well will be developed by over pumping in order to remove any accumulated fine sediment within the well and to establish a hydraulic connection with the surrounding aquifer. Monitoring wells will be developed by surging and purging until water is clear, when field measured turbidity values are below 5 NTU's and/or the turbidity values have stabilized, or when ten well volumes are removed. During well development, pH, temperature, dissolved oxygen and specific conductance will be measured and recorded. Purge water will be containerized in DOT approved 55-gallon drums, labeled and stored in a secure location at the Site until laboratory analyses results of the soil and groundwater samples indicates the proper method of treatment or disposal.

Well development will be completed using new, clean tubing and nitrile gloves will be changed between wells, to prevent cross-contamination. Sampling equipment, such as the water level probe, will be decontaminated between wells.

3.7 Decontamination of Drilling and Sampling/Gauging Equipment

Drilling equipment including augers, rods, plugs, samplers, tools, drill unit and any piece of equipment that can come in contact with the formation will be cleaned with a high temperature/high pressure steam cleaner prior to the start of work and between each boring to prevent cross-contamination between borings. The equipment will also be cleaned using the same procedure at completion of the work (before leaving the Site) to prevent any contamination from leaving the Site.

The sampling equipment (split-spoon samplers, stainless steel trowels, hand spades, hand augers, macro-core samplers, water level meter, etc.) will be cleaned prior to use, in between each sampling location, in between each sampling interval, and at completion of the work using the following procedure:

1. Remove any excess soil remaining on the sampling/gauging equipment.
2. Rinse sampling/gauging equipment with imported water.
3. Vigorously scrub the sampling/gauging equipment with a brush and laboratory-grade standard detergent (e.g., Alconox® or Liquinox®) and imported water.
4. Rinse the sampling/gauging equipment with bottled deionized water.
5. New disposable nitrile gloves will be worn when cleaning and handling the equipment to avoid contamination.
6. The water in the wash and rinse buckets will be changed between sampling locations to avoid cross contamination.

The decontamination rinse water will be collected and placed in DOT approved 55-gallon drums, labeled and stored at the project Site until laboratory analyses results of the soil and groundwater samples indicates the proper method of treatment or disposal. Disposable protective clothing will be placed in a garbage bag and disposed of as a solid waste. The personnel decontamination procedures are detailed in the Site Specific Health and Safety Plan.

4.0 GROUNDWATER SAMPLING PROCEDURES

4.1 General

During groundwater sampling, it is important to follow strict acceptable protocol during the collection and transportation of groundwater samples. This minimizes the potential for sample variation from well to well due to sampling and transportation techniques. Quality control measures will be instituted as discussed in this document and the QAPP as a check on the procedures being utilized so that the quality of the data can be assessed. The groundwater samples will be analyzed in the laboratory by standard methods following the QA/QC procedures outlined in the QAPP.

Prior to sampling, the water level in the well will be measured, and the well will be purged and allowed to recover to near static conditions. Groundwater samples will be taken employing low flow sampling techniques for field and laboratory analyses. The field parameters to be determined are pH, temperature, turbidity, specific conductance, dissolved oxygen, and oxidation-reduction potential (ORP). All pertinent groundwater sampling information will be recorded on a Groundwater Services Field Log. A separate log will be completed for each monitoring well sampled. Logs will be dated and signed by the person making the entries and will be submitted to the project manager for inclusion in the project files. The following information will be included on the log forms:

1. Project name and location.
2. Date and times.
3. Monitoring well identification number.
4. Sampling method (i.e. low-flow sampling with peristaltic pump).
5. Well development data.
6. Physical characteristics of samples.
7. Field analyses results.
8. Name of sampler(s).
9. Recovery times of wells.

10. Other observations/information.

An Environmental Services Field Log will also be completed for the groundwater sampling event. Blank copies of the referenced forms are included in Attachment A.

4.2 Preparation for Sampling

Prior to groundwater sampling, the equipment and containers needed for sampling will be collected and prepared. A peristaltic pump with new disposable tubing will be utilized to facilitate the groundwater sampling. New disposable nitrile gloves will be worn during equipment cleaning and decontamination and handling of the media being sampled. Only new pre-cleaned laboratory provided sample containers and caps will be used for sample collection/analyses. All sample containers required to be fixed with a preservative, will be prepared by the laboratory before each sampling event. The container type, cap type and preservative requirements for the analytical parameters (water) to be analyzed are summarized in Table 1.

TABLE 1
Analytical Requirements for Containers and Preservatives for Water Samples and Equipment Blank Samples

PARAMETER	CONTAINER	TOP	PRESERVATION	COMMENTS
PFCs per EPA 537 Rev 1.1 (Water)	3-250 ml HDPE Plastic	HDPE Plastic	TRIZMA Preset Crystals (pH 7.0) Cool, ≤6° C	After the sample container is filled and sealed, gently agitate to dissolve the preservative.
TCL & STARS #1 VOCs +TICS per EPA 8260C (Water)	3-40 ml vials (preserved)	Septum	HCl to pH<2 Cool, 4°C	NA
TCL & STARS SVOCs + TICS per EPA 8270D, TCL PCBs per EPA 8082A and TCL Pesticides per EPA 8081B (Water)	3-1L amber Glass	Teflon	0.008% $Na_2S_2O_3$ Cool, 4°C	Store in dark.

PARAMETER	CONTAINER	TOP	PRESERVATION	COMMENTS
TAL Metals (Including Major Cations and Mercury) per EPA 6010C and 7470A (Water)	500 ml Plastic	Poly	HNO_3 to pH <2 Cool, 4°C	NA
Cyanide per EPA 9010B (Water)	250 ml Plastic	Poly	NaOH to pH ≥12 Cool, 4°C	NA
Anions (Chloride, Sulfate) per EPA 9056	120 ml Plastic	Poly	Cool, 2°C- 4°C	NA
Anions (Carbonate, bicarbonate) per EPA 2320B	120 ml Plastic	Poly	Cool, 4°C	No Headspace

Sample labels will be prepared prior to sampling and affixed to the sample containers. The client, project name, Site location, matrix, sample type (grab/composite), preservative and laboratory analyses to be performed will be recorded on the sample labels by the laboratory. The sample location (i.e., monitoring well ID), date, sampler's initials and time will be filled out on the sample label at the time of sampling.

Upon arrival at the sampling location, the well will be observed for any damage, the cover of the guard pipe or curb box will be cleared of any debris and unlocked or unbolted. Clean polyethylene sheeting will be placed adjacent to the well to protect purging and sampling equipment from contamination. The cap and top of the well casing will be wiped with a clean cloth and then the cap removed. A PID meter reading will be collected when the well cap is removed. The water level in the well will then be measured.

4.3 Measuring the Water Level

Prior to purging and sampling, static water heights will be measured using a water level indicator to determine the standing water column height. A full set of water levels will be collected from the existing wells, and the new wells prior to initiating the purging/water sampling. The water column height and depth of the well are used to calculate the well water volume. Non-vented well caps will be removed for a period of ten minutes to allow the water column to reach static conditions prior to taking the water level measurements.

4.4 Well Purging Procedures

Prior to sampling of the groundwater, it is necessary to purge the wells. Purging of the wells allows for a representative sample to be taken from the screened interval of the well by removing stagnant water from the well.

Three to five well volumes of the standing water will be removed from the well. The volume of standing water in the well is calculated by subtracting the water level height from the well depth measurement, and multiplying this value by a conversion factor. The conversion factor is based on the well casing diameter and converts linear feet of water into gallons. In cases where the water recharges at a slow rate, the well will be purged dry when possible.

Low flow peristaltic pump with new, factory sealed tubing will be used to purge each well. Physical observations of the purge water will be noted and recorded on the Groundwater Services Field Log form. The actual quantity of purge water removed from the well will be measured by using a bucket graduated in gallons, and the volume will be recorded. Once purging is complete, the peristaltic pump tubing will be removed from the well and placed on the clean polyethylene sheeting adjacent to the well, until completion of the groundwater sampling.

All of the purge water from the monitoring wells will be placed in DOT approved 55-gallon drums, labeled and stored at the project Site until laboratory analyses results of the soil and groundwater samples indicates the proper method of treatment or disposal.

4.5 Sample Collection

Prior to sample collection, the wells will be allowed to recover to at least 80% of their initial static water level. Slow recharging wells will be allowed to recover for a period of four hours before sampling. Recovery times and water depths will be recorded on the Groundwater Services Field Log form.

The sample will be collected using a peristaltic pump with new tubing at each monitoring well location. A new pair of disposable nitrile gloves will be used to handle the sampling equipment and containers at each sampling location. Only non-powdered nitrile sampling gloves will be used during sampling.

The disposable tubing will be lowered slowly into the well to minimize the aeration of the samples. Volatile samples will be collected first, followed by field parameters and then in decreasing order of the volatility of the parameters being analyzed for; PFCs, SVOCs, PCBs, Pesticides, metals (including cations), anions and cyanide.

In order to insure the integrity of samples, sample containers must be filled properly. The following sections contain general procedures for sampling and specific procedures for sampling volatile organic compounds and PFCs. Care shall be taken in sampling to assure that analytical results represent the actual sample composition.

A. General Sampling

1. Don't remove caps until the actual sampling time and only long enough to fill the container.
2. Identify every container by filling out the label with all the required data.
3. Fill all containers completely.
4. Some bottles may contain a fixative which should not be rinsed out of the bottle. Read the sample label treatment and fixative section to determine if a preservative/fixative has been added. Be careful not to contact fixatives with skin or clothing. If this should occur, rinse liberally with water.
5. After the sample is taken, wipe the container with a paper towel and place the container in a cooler with bagged wet ice, to maintain the cooler at 4°C.
6. Complete the Groundwater Services Field Log and Chain of Custody Record forms.
7. Deliver or ship samples to the laboratory within 24 hours.

B. Sampling for Volatile Organic Compounds

1. Samples are to be collected in glass containers having a total volume in excess of 40 ml with open-top screw caps with Teflon-faced silicone septa. Sample containers will have hydrochloric acid (HCL) added to them as a preservative. This preservative must not be rinsed out.

2. A trip blank should be prepared from reagent grade water and carried through the sampling and handling procedure. It will serve as a check for transport and container contamination.

3. Fill sample container slowly to minimize aeration of the sample, until a curved meniscus is observed over the bottle rim.

4. Float the septa, Teflon™ side down on the liquid meniscus. The Teflon™ side is the thin layer observed when viewing the septum from the side horizontally.

5. Carefully set on septum, expelling excess sample and being careful to exclude air. Then screw open-top cap down.

6. Check for a good seal by inverting bottle and tapping and checking for visible air bubbles.

7. If air bubbles are visible or there is a bad seal, remove cap and add additional sample and repeat steps 4 to 6.

8. Groundwater samples for volatile analysis will be taken in triplicate.

Sampling for PFCs

1. To prevent cross-contamination or sample interference, possible PFOA containing items will be avoided during the sampling. These items include (but are not limited to) Teflon-containing materials, Tyvek clothing, clothes treated with stain or rain-resistant coatings, Teflon sample containers, aluminum foil, blue ice, packaged foods, and post-its.

2. Samples are to be collected in laboratory provided 250 ml HDPE plastic bottles with screw-on HDPE plastic caps. **Do not collect samples in glass containers.** Sample containers will have TRIZMA Preset Crystals (pH 7.0) added to them as a preservative. This preservative must not be rinsed out.

3. New, powder-free nitrile gloves must be donned prior to sample collection.

4. Fill laboratory provided containers slowly to avoid matrix agitation. Fill containers to the bottom of the sampling container bottle neck. Immediately close sampling container with screw-on cap.

5. Lightly agitate the sample to dissolve the preservative crystals.

6. Place sampling container in cooler with bagged wet ice to maintain sample temperature of ≤6°C.

At completion of the sampling the well cap will be replaced; and the cover to the protective guard pipe or curb box will be bolted in place. The tubing, gloves, and sheeting will be properly disposed of as solid waste.

4.6 Field Analyses

The field analyses of surface water and groundwater include pH, temperature, specific conductivity, turbidity, dissolved oxygen, and ORP. The field analyses will be measured in the field since these constituents change during storage. A minimum 40 ml sample will be collected and placed in clean unpreserved polyethylene or glass containers for analysis. The containers will be covered if the measurements are not recorded immediately.

The pH, temperature, dissolved oxygen ORP and conductivity of a sample are measured with a portable unit capable of measuring all four (4) parameters concurrently. The portable unit automatically adjusts to compensate for the temperature of the sample. The turbidity of a sample is measured with a separate portable unit. The pH, temperature, conductivity, turbidity, dissolved oxygen and ORP will be recorded on the Groundwater Services Field Log. These units will be calibrated to known standards prior to the start of field activities. Measurement and operating procedures for these field analyses are presented in Section 7.0 of this FSP.

5.0 SOIL AND SEDIMENT SAMPLING PROCEDURES

5.1 Headspace Analysis

The soil and sediment samples will be screened for the presence of petroleum/chemical related hydrocarbons by headspace analysis utilizing a PID meter to subjectively assess the recovered samples for evidence of petroleum/chemical contamination. The sample is transferred into a zip lock bag, sealed, shaken and then allowed to sit for several minutes. Once the sample has had a chance to sit or "volatilize," the vapor space inside the bag will be analyzed by inserting the tip of the PID meter through the bag, as described in Section 3.4.

5.2 Analytical Soil Sampling

The soil and sediment samples will be subjected to laboratory analysis to assist in characterizing the Site's environmental quality. The samples will be extracted from the sampling equipment in a timely fashion such that the sample has limited exposure to the outside air reducing the chance for volatilization. Only new pre-cleaned laboratory provided sample containers and caps will be used for sample collection/analyses. All sample containers required to be fixed with a preservative, will be prepared by the laboratory before each sampling event. The container type, cap type and preservative requirements for the analytical parameters (soil and sediment) to be analyzed are summarized in Table 2.

TABLE 2
Analytical Requirements for Containers and Preservatives for Soil and Sediment Samples

PARAMETER	CONTAINER	TOP	PRESERVATION	COMMENTS
PFCs	250 ml HDPE Plastic	HDPE Plastic	Cool, ≤6°C	NA
TCL & STARS #1 VOCs + TICS	Terra Core Kit with Three (3), 40 mL Glass Vials	Septum	Two (2) Vials with Water – HCl to pH<2, One (1) Vial with Methanol, Cool 4°C, Freeze Within 48 Hours.	NA

PARAMETER	CONTAINER	TOP	PRESERVATION	COMMENTS
TCL & STARS #1 SVOCs + TICS, TCL PCBs and TCL Pesticides	8 oz Glass	Teflon	Cool 4°C	NA
TAL Metals, Including Mercury	8 oz Glass	Teflon	Cool 4°C	NA
Cyanide	4 oz Glass	Teflon	Cool 4°C	NA
Total Organic Carbon (TOC)	4 oz Glass	Teflon	Cool 4°C	NA

6.0 FIELD QUALITY CONTROL

6.1 Source Materials

Because PFCs (including PFOA) are found in several everyday items, samples will be collected of source materials prior to be imported onto the Site to aid in the investigation and sampling of the Site. These include water used by the drilling contractor for advancement of test borings, construction of monitoring wells and decontamination of drilling and sampling equipment; water used by the sampling technician to decontaminate sampling equipment; totes and tanks used by the drilling contractor for temporary storage of drilling water; drill rig augers and rods used by the drilling contractor for advancement of test borings; monitoring well construction materials (PVC riser and screen) used by the drilling contractor for construction of the monitoring wells; filter sand used by the drilling contractor for the monitoring well sand pack; and rinse (deionized) water used as a final rinse for decontaminating non-disposable sampling equipment. As a note, all water imported onto the Site for investigation/sampling purposes must be from a municipal potable water source located outside the limits of the Town and Village of Hoosick Falls, and the source of water must be identified. Table 3 summarizes the quality control sampling protocols that will be employed for the source materials.

TABLE 3: SOURCE MATERIALS SAMPLING PROTOCOLS

Sample Type	Sample Frequency	Sampling Procedure
Imported Drilling Water	One Time	Obtain one (1) grab sample of driller water at the drilling contractor's place of business prior to Site mobilization and analyze for PFCs. . Analytical results should indicate PFCs at non-detect levels or at concentrations that are not expected to cross-contaminate environmental samples prior to conducting media sampling at the Site.

TABLE 3: SOURCE MATERIALS SAMPLING PROTOCOLS

Sample Type	**Sample Frequency**	**Sampling Procedure**
Imported Sampling Equipment Decontamination Water	One Time	Obtain one (1) grab sample of each sampling equipment decontamination water (bottled water) source(s) to be used during the project prior to Site mobilization and analyze for PFCs. Analytical results should indicate PFCs at non-detect levels or at concentrations that are not expected to cross-contaminate environmental samples prior to conducting media sampling at the Site.
Driller Totes and Tanks	One Time	Obtain one (1) grab rinsate blank sample from each water storage tote to be used at the drilling contractor's place of business prior to Site mobilization and analyze for PFCs Sampling method to include pouring water through each representative totes/tanks and capturing the water in laboratory provided containers. . Analytical results should indicate PFCs at non-detect levels or at concentrations that are not expected to cross-contaminate environmental samples prior to conducting media sampling at the Site.
Drill Rig Augers, Drill Rods, Split Spoons, Plugs	One Time	Obtain one (1) grab rinsate blank sample from each of the drilling tools to be in contact with the subsurface soils. Samples will be collected at the drilling contractor's place of business prior to Site mobilization and analyzed for PFCs. Sampling method to include pouring water over/through representative tools and capturing the water in laboratory provided containers. . Analytical results should indicate PFCs at non-detect levels or at concentrations that are not expected to cross-contaminate environmental samples prior to conducting media sampling at the Site.
Monitoring Well Construction Materials	One Time	Obtain one (1) grab rinsate blank sample of monitoring well construction materials at the drilling contractor's place of business prior to Site mobilization and analyze for PFCs. Sampling method to include pouring bottled water through and over representative riser/screen and capturing the water in laboratory provided containers. Analytical results **must** indicate PFCs as **Non Detect** prior to mobilization of the drilling contractor to the Site.

TABLE 3: SOURCE MATERIALS SAMPLING PROTOCOLS		
Sample Type	**Sample Frequency**	**Sampling Procedure**
Filter Sand, Cement, Bentonite	One Time	Obtain one (1) grab sample of each filter sand, cement and bentonite source material to be used from the drilling contractor's place of business prior to Site mobilization and analyze for PFCs. Analytical results **must** indicate PFCs as **Non Detect** prior to mobilization of the drilling contractor to the Site.
Rinse (Bottled) Water	One Time	Obtain one (1) grab sample of bottled water and analyze for PFCs. Analytical results **must** indicate PFCs as **Non Detect** prior to importation of bottled water onto the Site.

6.2 Field Sampling

Quality control samples will be taken during the field sampling to evaluate sampling technique, sampling equipment cleanliness, sample variability, sample handling and laboratory performance (analytical reproducibility). The quality control samples will include replicate samples, equipment/field blanks, matrix spike/matrix spike duplicate (MS/MSD) samples and trip blanks.

Replicate Samples

Replicate samples are samples taken from the same location with the same sampling device. Replicate samples are used to check on laboratory reproducibility, sampling technique and sample variability. The replicate samples will be coded so that the laboratory is not biased in performing the analyses. The code that is used will be identified in the field notes and on the sampling logs, but not on laboratory correspondence.

One (1) replicate soil and sediment sample each and one replicate groundwater and surface water sample each will be taken for every twenty (20) samples submitted to the laboratory for analysis. Replicate samples are collected simultaneously using identical procedures, but placing the samples in separate containers. The replicate subsurface soil samples that will undergo VOC analysis with the TerraCore sampling kit will be collected by filling the parent sample containers first followed by the replicate sample containers. The replicate shallow soil and sediment samples will be collected by homogenizing the sample and transferring equal amounts into the various sample containers.

The replicate groundwater and surface water samples, except for VOC analysis of the groundwater samples only, will be taken by splitting the sample by alternating the discharge of the sampling equipment between both sets of containers (sample and replicate containers) until the containers are filled. The replicate groundwater samples for VOCs analysis will be taken by filling one container completely and then filling the replicate container completely. Groundwater samples for VOCs analysis are typically taken in triplicate, so this procedure will be repeated three times.

The replicate samples will be analyzed for the same parameters as the original sample, yet the sample designation is "blind" so that the laboratory can't determine which sample it is a duplicate of. No time or a different time will be used for the replicate samples on the chain of custody record so they are a blind sample to the laboratory.

Equipment/Field Blanks

Equipment/field blanks are samples taken to monitor sampling equipment cleanliness and decontamination procedures during field sampling. One equipment/field blank will be taken during soil, sediment, groundwater and surface water sampling for every twenty (20) samples submitted to the laboratory for analysis of all of the parameters of concern. The equipment/field blanks will be taken as follows per the environmental media being sampled:

Soil and Sediment Sampling - After the sampling trowel, hand auger, macro-core sampler and/or split-spoon sampler has been decontaminated and are ready for sampling, pour bottled water through and/or over the sampling equipment and capture in laboratory provided sample container(s).

Groundwater and Surface Water - After the new disposable bailer and/or peristaltic pump tubing is removed from its packaging and ready for sampling, pour bottled water through and/or over the bailer/tubing and capture in laboratory provided sample container(s).

The equipment/field blanks will be identified as such and by the location to be sampled (i.e., equipment blank before SHS-15; or before MW-5) in the Environmental Services Field Log.

Matrix Spike/Matrix Spike Duplicate

MS/MSD samples are used to check on sample matrix effect and laboratory accuracy and precision.

One MS/MSD soil and sediment sample each and one MS/MSD groundwater and surface water sample each will be taken for every twenty (20) samples submitted to the laboratory for analysis. The MS/MSD samples for VOC analysis will be collected by equally splitting the sample into the various analytical containers. MS/MSD samples that will not undergo VOC analysis will be homogenized and transferred into the various sample containers.

Laboratory Trip Blanks

Laboratory Trip Blanks are prepared when VOC and PFC analysis is to be performed on aqueous samples, and they are prepared in the laboratory when the sample containers are prepared.

For VOCs, trip blanks will be prepared in triplicate by filling 40 ml glass containers (with Teflon™ lined septum) with reagent grade water. For PFC analysis, trip blanks will be prepared by filling one (1) 250 ml plastic container with reagent grade water.

Field Trip Blanks

Field Trip Blanks are prepared by the laboratory for analysis of PFCs only. During sampling, a 250-ml laboratory provided plastic container of reagent grade water will be poured into an empty 250-ml laboratory provided sampling container. The Field Trip Blank is collected and analyzed to evaluate if PFCs are being introduced into the sampled matrix during field collection of samples.

The Laboratory and Field Trip Blanks are taken to monitor whether the samples have been contaminated during transport, as a result of handling in the field, during shipment or during storage in the laboratory. One trip blank will accompany each set of aqueous samples that are shipped/delivered to the laboratory for VOC and PFC analysis.

The field replicate samples will be identified as FD01, FD02, etc. The equipment/field blanks will be identified as EB01, EB02, etc. The sampling interval and location where the field replicates are collected will be identified in the Environmental Services Field Log. The MS/MSD samples will be labeled as required for the sample location except that in the comment section of the chain of custody record it shall read "use this sample for the MS/MSD" or equal.

7.0 FIELD INSTRUMENTATION OPERATING PROCEDURES

7.1 General

The field instruments that will be utilized during implementation of the Site investigations are: a PID meter for air monitoring of the total VOCs during drilling, and for headspace analysis of soil and sediment samples for total VOCs; a temperature/pH/ORP/dissolved oxygen, conductivity meter; and a turbidity meter for field analysis of groundwater and surface water samples for these parameters. The field instruments used will be calibrated and operated in accordance with the manufacturer's instructions and the procedures identified in the following sections.

7.2 Photoionization Detector Meter

A MiniRae PID meter and data logger with a 10.6 eV lamp will be utilized to measure total VOCs. The instrument is calibrated at the factory upon purchase and annually thereafter using certified service shops who utilize standards of benzene and isobutylene. Prior to use in the field, the instrument will be calibrated in accordance with the manufacturer's instructions using a disposable cylinder containing isobutylene obtained from a reputable supplier. The calibration value varies by the manufacturer, however, 100 parts per million is commonly utilized by C.T. Male Associates. During use the PID meter will be calibrated at least once every 8 hours. The calibration procedure is contained in the MiniRea PID meter User's Manual.

Care will be taken when handling and using the PID meter to prevent any debris from entering the sample line which will affect the instrument's operation. If this occurs, the field personnel will clean the unit or replace it with a functional PID meter.

7.3 Temperature, PH, ORP, Dissolved Oxygen and Specific Conductivity Meter

7.3.1 General

The YSI Pro Plus or equal unit will be used to measure temperature, pH, ORP, dissolved oxygen and specific conductivity. This instrument is equipped with an automatic temperature control for accurate adjustment to the temperatures of the samples and calibration standards.

7.3.2 pH

Prior to collecting the pH readings, the instrument will be calibrated with standard buffer solutions of pH 4.0, 7.0 and 10.0 with the unit automatically correcting the temperature. The instrument will be calibrated prior to use each day to ensure accurate measurements. Calibration procedures are presented in the manufacturer's operating instructions.

The pH measurement will be taken by setting the meter function to pH mode, immersing the electrode in the sample (after rinsing the probe with deionized water), gently stirring the water with the electrode probe until equilibrium is reached, and recording the pH when the instrument displays "ready." The pH electrode will be rinsed with deionized water after taking a measurement. The manufacturer recommends that the electrode be stored in an electrode storage solution when not in use.

7.3.3 Specific Conductivity

Prior to collecting specific conductance readings, the instrument will be calibrated prior to use each day to ensure accurate measurements. Calibration will be performed using standards of 147.0, 717.8 and 1,413 umhos/centimeter, being sure the instrument is showing automatic temperature correction. Calibration procedures are presented in the manufacturer's operating instructions.

The conductivity cell will be rinsed with deionized water before and after use. The measurement will be taken after rinsing the conductivity probe twice with the sample, immersing the probe in the sample, and recording the measured value when the instrument reads "ready."

7.4 Turbidity Meter

A LaMotte Turbidimeter (Model 2008), or equal unit, will be used to measure turbidity. The Model 2008 is a true nephelometer, measuring the amount of light scattered at right angles from a beam of light passing through the test sample. The instrument range is 0 to 19.99 NTU (20 scale) and 0-199.9 (full scale). The accuracy of this instrument is ±2% of the reading or 0.05 NTU, whichever is greater. The turbidity is pre-calibrated from the manufacturer, but will be calibrated daily to known standards of typically 4 and 40

NTU.

The turbidity measurement is collected by pouring a sample into a dedicated VOA vial or cuvette. The cuvette is wiped clean and them inserted into the instrument's chamber and covered. The reading is noted once stabilized.

8.0 SAMPLE HANDLING AND CHAIN OF CUSTODY PROCEDURES

Prior to sampling and filling the sample containers, the label on the container will be completed with the required information. After filling the sample containers they will be wiped with a paper towel. The container(s) will immediately be placed in a cooler with double bagged wet ice, to maintain a temperature of ≤6°C for the samples to be analyzed for PFCs and 4°C for the samples to be analyzed for PFCs, TCL and NYSDEC STARS #1 VOCs plus 10 TICs and SVOCs plus 20 TICs, TCL PCBs, TCL pesticides, TAL inorganics (including mercury), CN, and major cations (Ca, Mg, Na and K) and Anions (Cl, SO_4, CO_3 and HCO_3). The containers will be delivered to the laboratory within 24 hours of sample collection.

A Chain of Custody Record will be completed by the sampler in the field after securing analytical samples. The sampler will be responsible for retaining possession of the samples until they are delivered to the laboratory or until they are delivered to a courier or common carrier for shipment to the laboratory. When the samples are released from the custody of the sampling personnel, the Chain of Custody Record will be signed by both relinquishing and receiving parties with the date and time indicated. A copy of the form will be retained by the sampler for inclusion in the project files and the original form will accompany the shipment. The Chain of Custody Record will then be signed by the relinquishing party and receiving laboratory personnel when the samples are ultimately received at the laboratory.

If samples are shipped, a bill of lading or an air bill will be used and retained in the project files as documentation of sample transportation. Prior to shipment, the cooler will be affixed with a custody seal as a check for tampering and the cooler will be securely wrapped with clear tape. A separate additional Chain of Custody Record will be completed for each cooler of samples. This form will be placed in a plastic bag. This form will be used by the laboratory personnel as a check to verify that the containers listed on the form are present in the cooler when they are received at the laboratory. A copy of the signed Chain of Custody Record will accompany the laboratory analysis reports.

9.0 WATER LEVEL MEASUREMENT PROCEDURES

Water levels will be measured in the monitoring wells using a water level indicator probe. The water levels will be measured from the surveyed reference point to the nearest 0.01 foot. Water levels will be measured progressively from upgradient monitoring wells to downgradient monitoring wells, attempting to measure water levels from the cleanest well to the dirtiest well.

To avoid possible cross contamination of the wells, the water level indicator will be decontaminated prior to and following the water measurement of individual wells. The water level indicator will be decontaminated by rinsing it with imported water, vigorously scrubbing with a brush and laboratory-grade standard detergent (e.g., Alconox® or Liquinox®) and imported water, then rinsing it with copious amounts of deionized water and drying with a paper towel.

The water depth levels and reference elevations determined from the monitoring well survey will be recorded on a Water Level Record form and the water table elevations calculated. A blank copy of this form is presented in Attachment A.

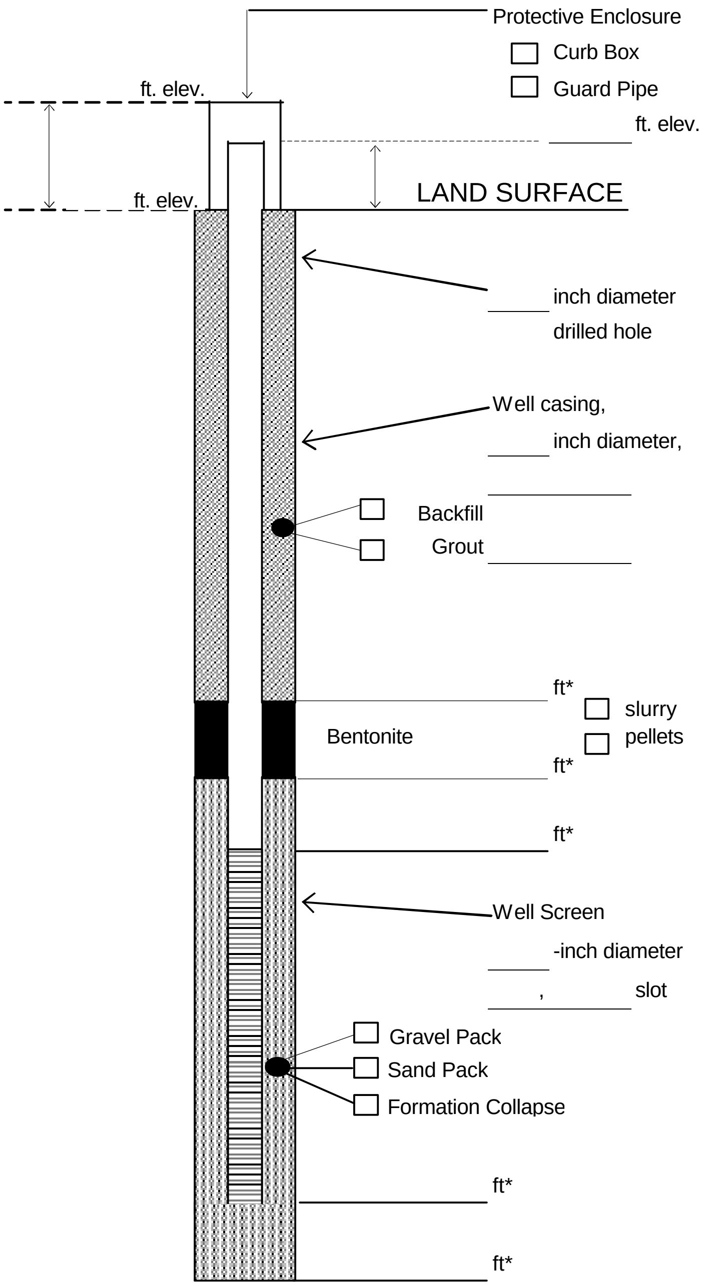
ATTACHMENT A

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) FORMS AND FIELD REPORT FORMS

Well No. ________

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number ______________________________

Project Name ______________________________

Well No. ______________ Boring No. ______________

Town/City ______________________________

County ______________ State ______________

Installation Date(s) ______________________________

Drilling Contractor ______________________________

Drilling Method ______________________________

Water Depth From Top of Riser ________ ft ____________
Date

C.T. Male Observer ______________________________

Notes:

C.T. MALE ASSOCIATES, P.C.

WATER LEVEL RECORD

Project Name ________________________

Project Number ____________________

Location _____________________________

Measurement Taken By ______________

Method or Reading_____________________

Datum______________________________

		Date ____________		Date_____________		Date_____________	
Well No.	Ref. Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.

Measuring Point(s)____

____

Groundwater Services Field Log

DATE: ________________ PROJECT NAME: ________________

PROJECT NO.: ________________ PROJECT LOCATION: ________________

SAMPLING PERSONNEL: ________________

MONITORING WELL ID#: ________________ NOTES TAKEN BY: ________________

DEPTH TO WATER: ________ FROM: ________ BAILER ID: ________________

DEPTH TO BOTTOM: ________ FROM: ________ BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: ________________ BAILER: STAINLESS STEEL ________

OTHER ________

CONVERSION FACTORS LINEAR FEET TO GALLONS

1″ = 0.041 GALLONS	3" = 0.38 GALLONS
1.25" = 0.064 GALLONS	4" = 0.66 GALLONS
2" = 0.16 GALLONS	6" = 1.47 GALLONS

WELL CASING DIAMETER

WELL VOLUME: ________ GALLONS

VOLUMES PURGED: ________ GALLONS PURGE METHOD: ________________

TIME STARTED: ; TIME FINISHED:

OBSERVATIONS: COLOR ________ ; ODOR ________

SHEEN ________ ; TURBIDITY ________

OTHER ________ ________

WATER RECOVERY HEIGHT: ________ ; RECOVERY TIME IN MINUTES: ________

FIELD PARAMETERS: pH ________ , TEMPERATURE ________

CONDUCTIVITY ________ UMHO/CM, OTHER ________

SAMPLE COLLECTION TIME: ________

NOTES: ________________

____

____

Sheet 1 of __

C.T. MALE ASSOCIATES, P.C.

SUBSURFACE EXPLORATION LOG

BORING NO.:
ELEV.: **DATUM:**
START DATE: **FINISH DATE:**
SHEET **OF**

PROJECT: ____________________ CTM PROJECT NO.: ____________
LOCATION: ____________________ CTM INSPECTOR: ____________

DEPTH (FT.)	SAMPLE		BLOWS ON SAMPLER					RECOVERY	SAMPLE CLASSIFICATION	NOTES
	TYPE	NO.	0/6	6/12	12/18	18/24	N			
5										
10										
15										
20										
25										
30										

N = NO. OF BLOWS TO DRIVE 2" SAMPLER 12" WITH A 140 LB. WT. FALLING 30" PER BLOW
DRILLING CONTRACTOR: ____________ DRILL RIG TYPE: ____________
METHOD OF INVESTIGATION: ____________

GROUNDWATER LEVEL READINGS

DATE	LEVEL	CASING	STABILIZATION TIME

SAMPLE CLASSIFICATION BY:

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE DESIGN PURPOSES. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T.MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	**PROJECT #:**	**PAGE 1 OF**
CLIENT:		**DATE COLLECTED:**
LOCATION:		
INSTRUMENT USED:	**LAMP** **eV**	**DATE ANALYZED:**
DATE INSTRUMENT CALIBRATED:	**BY:**	
TEMPERATURE OF SOIL:		**ANALYST:**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.

**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.

Page 1 of ______

Environmental Services Field Log

Date: ____________ Time On-Site: ____________ Time Off-Site: ________________

Project Name: ______________________________ Project No.: ________________

Purpose: ________________________________ Field Report No: ______________

Weather Conditions: ____

Present at Site: ____

Observations: ____

Items to Verify: ____

List of Attachments: ____

Field Log Prepared by: ____

Copies to:

APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN
SAINT GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET
VILLAGE OF HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK

KEY PERSONNEL AND SIGNATURES

Approved: ______________________________ Date: __________

Project Principal
Daniel Reilly, P.E.
Environmental Services Manager
C.T. Male Associates

Approved: ______________________________ Date: __________

Project Manager & Health and Safety Coordinator
Kirk Moline
Managing Geologist
C.T. Male Associates

Approved: ______________________________ Date: __________

Quality Assurance Officer
Elizabeth Rovers, P.E.
Managing Engineer
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QUALITY ASSURANCE PROJECT PLAN
SAINT GOBAIN PERFORMANCE PLASTICS SITE
1 LIBERTY STREET
VILLAGE OF HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK

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1.0 PROJECT DESCRIPTION

1.1 Introduction

This Quality Assurance Project Plan (QAPP) has been prepared for the implementation of a Site Characterization investigation at the Saint-Gobain Performance Plastics Corporation (Saint-Gobain) Site ("the Site") located at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York. It has been developed in conjunction with the Site Characterization (SC) Work Plan as prepared by C.T. Male Associates. A description of the Site, background information, objectives and the Site Characterization scope of work are presented in detail in the referenced SCWP.

This QAPP presents the organizational structure and data quality objectives (DQOs) for the site characterization, and the quality assurance (management system) and quality control methods of checks and audits to be implemented to ensure that the quantity and quality of the data required for its intended use is obtained and documented (i.e., that DQOs are met). The measurement parameters used to determine the quality of the data are precision, accuracy, completeness, representativeness and comparability, and are discussed further in this QAPP.

A Field Sampling Plan (FSP) has been prepared by C.T. Male Associates as a separate exhibit and forms an integral part of this QAPP. The field sampling and data gathering procedures are presented in the FSP and incorporated into the QAPP by reference. The QAPP and FSP document the laboratory quality assurance/quality control (QA/QC) procedures and field sampling and data gathering procedures that will be followed during implementation of the site characterization scope of work so that valid data of a known quality is generated.

The project specific field QA/QC procedures and the project specific laboratory QA/QC procedures are presented in the text of this QAPP. The general internal laboratory QA/QC procedures are presented in the subcontractor laboratory's Quality Manual which is retained at the laboratory's place of business. The NYS Department of Health (NYSDOH) ELAP Certified subcontract laboratories for this project are Eurofins Eaton Analytical, Inc. of South Bend, Indiana for aqueous analyses (NYSDOH ELAP #11398), and Eurofins Lancaster Laboratories, LLC of

Lancaster, Pennsylvania for solids analyses (NYSDOH ELAP #10670). The laboratory certifications and statement of qualifications are included in Attachment A.

The QAPP has been prepared in a manner consistent with the following guidance documents:

- DER-10 Technical Guidance For Site Investigation and Remediation, NYSDEC, May 2010.
- 6 NYCRR Part 375, Environmental Remediation Programs, Subparts 375-1 to 375-4 and 375-6, Effective December 14, 2006.
- Data Quality Objectives for Remedial Response Activities: Development Process, EPA/540/G-87/003, USEPA, March 1987.

1.2 Objectives and Scope of Work

It is the objective of the SC and this QAPP to obtain and present representative data of a known quality and sufficient quantity. The primary goal is to perform soil/fill, groundwater, surface water and sediment sampling, and dye testing, through a variety of investigative tasks to preliminarily evaluate the Site’s environmental quality and to refine the Site’s conceptual model. Depending on the conclusions drawn from the SC, additional investigation of the Site may be required.

To achieve these objectives, the scope of work will include the following items as presented in the SCWP, in this QAPP and in the FSP. The investigative tasks will include the advancement of soil test borings, collection and analysis of soil/fill samples, installation of monitoring wells, collection and analysis of groundwater samples, collection and analysis of surface water and sediment samples. Additionally, a non-toxic dye and potable water will be introduced into the Site’s catch basins to evaluate their outfall locations.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

C.T. Male Associates is responsible for providing professional services associated with the quality control/quality assurance of the Site Characterization. These will include project management, coordination, and scheduling of activities in-house and with qualified subcontractors. The work tasks that will be performed by a subcontractor to C.T. Male Associates include: conventional hollow stem auger (HAS) drilling of borings/monitoring wells, analytical laboratory testing and third party validation of analytical data for preparation of a Data Usability Summary Report (DUSR).

A project organizational chart listing key individuals of the project and their associated title is presented as Figure 1 at the end of this document. Personnel from C.T. Male Associates, the subcontract drilling contractor, laboratory and data validator can be reached at the following addresses:

- C.T. Male Associates
  Contact: Kirk Moline
  50 Century Hill Drive
  Latham, New York 12110
  Phone: (518) 786-7400
  Fax No.: (518) 786-7299
  Email: k.moline@ctmale.com

- Drilling Contractor: Cascade Drilling, L.P.
  430 Hudson River Road
  Waterford, New York 12188
  Phone: (518) 326-1441

- Laboratory: Eurofins Eaton Analytical, Inc.
  110 S. Hill Street
  South Bend, Indiana 46617
  Phone: (800) 332-4345

- Laboratory: Eurofins Lancaster Laboratories, LLC.
  2425 New Holland Pike
  Lancaster, Pennsylvania 17605
  Phone: (717) 656-2300

- Data Validation: To Be Determined

A description of the responsibilities by title of the key individuals is presented as follows:

Project Principal is responsible for the review of the SC activities and reports for their technical adequacy and conformance to the scope of work.

Quality Assurance Officer is responsible for the independent review of the SC documents and reports to check that the appropriate project documentation, of the quality control activities performed, exist and are maintained; and for conducting field and sampling audits.

Project Manager is responsible for the overall coordination and implementation of the project, the management of staff and resources, the implementation of schedules, the conformance by the technical staff and subcontractors to the scope of work, assessing the adequacy of the work being performed, implementing corrective action as necessary, interaction with the client and regulatory agencies, maintaining complete project documentation, and report preparation.

Health and Safety Coordinator is responsible for implementation of the project specific Health and Safety Plan, and resolution of safety issues which arise during the completion of the work. The Health and Safety Coordinator or designee will be present during the completion of the field work.

Laboratory Quality Assurance Officer is responsible for review of the laboratory data quality control procedures and documentation to determine if the QA objectives are being met; and to report non-conforming events to the laboratory technical staff and Project Manager and implement corrective action as necessary.

Laboratory Director is responsible for all activities within the laboratory, and for the performance of the laboratory work tasks in accordance with the project work plans, interactions with the Project Manager, and the adherence to project schedule.

Project Geologist/Engineer/Scientist is responsible for coordinating and conducting the field hydrogeologic activities and subcontractors, the adherence of activities to the QAPP and the FSP, evaluation of the collected data, soil classifications, report preparation and interaction with Project Manager and Project Team.

Project Team is responsible for adequately performing the work tasks in accordance with the project work plans so that the objectives of investigations and the project are achieved, notifying the Project Manager of any non-conformance to the work plan so that corrective actions can be taken as necessary, and notifying the Project Manager of unforeseen conditions so that modifications to the work plan, if necessary, can be approved and implemented.

Data Validator is responsible for review of all analytical data generated for this project. The data validator will review analytical data in accordance with New York State Department of Environmental Conservation (NYSDEC) Guidance for the Development of Data Usability Summary Reports, and prepare a report documenting if the analytical data is valid and usable. The report will also present data rejection and qualification, where necessary, based on laboratory performance.

3.0 QUALITY ASSURANCE OBJECTIVES FOR DATA MEASUREMENT

3.1 General

The Quality Assurance (QA) objective for this project is to produce data which is technically valid and of a known quality that meets the needs of its intended use. In this section the data quality objectives (DQOs) are defined by describing the intended use of the data; defining the type of data needed (i.e., physical or analytical); specifying the analytical levels, as established by EPA, appropriate to the data uses; specifying the quality control checks on field and laboratory procedures and frequency of checks; and presenting the quality control acceptance criteria.

Laboratory quality assurance objectives for data measurement are established for each measurement parameter in terms of precision, accuracy, completeness, representativeness and comparability. These terms form an integral part of the laboratory's quality assurance programs in that DQOs are set for each parameter.

3.2 Data Uses and Types

The data to be generated during the proposed work will be completion of Site Characterization and health and safety during implementation of the field activities. Both physical data including air monitoring and analytical data from soil, groundwater, surface water and sediment will be needed to provide the necessary information to complete the steps in the Site Characterization. The specific physical and analytical data proposed and its purposes are presented in the SC WP.

3.3 Data Quality Needs

To support data collection activities in obtaining quality data, EPA has established a series of analytical levels that are appropriate to Site investigation/remediation data uses. The analytical levels are defined as follows:

Level I	Field screening or analysis using portable instruments. Qualitative data.
Level II	Field analyses using more sophisticated portable analytical instruments. Qualitative and quantitative data can be obtained.
Level III	Laboratory analyses using standard EPA and NYSDOH approved procedures/methods.

Level IV	Laboratory analyses with NYSDEC ASP (Analytical Services Protocol) - Category B Data Deliverable Packages with QA/QC protocols and documentation.
Level V	Analyses by non-standard methods.

The data collection activities, the environmental media, the intended use of the data and the corresponding analytical levels that will be used to produce the project data are summarized in Table 1.

Table 1
Summary of Work Tasks and Corresponding Analytical Levels

Data Collection Activities	Sample Media & Description	Data Use(a)	Analytical Level
PID Meter Monitoring	Soil Vapors	1	I
Air Monitoring	Air/Ambient Air	2	II
Test Borings and Monitoring Wells, and Soil, Groundwater, Surface Water and Sediment Sampling	Soil, Groundwater, Surface Water and Sediment for Laboratory Analyses and Field Instrumentation	1, 3 & 4	I (Field Instrumentation) and IV (Laboratory Analyses)
Quality Control Imported Source Materials and Equipment	Driller Water, Totes and Tanks; Filter Sand Used as Monitoring Well Sand Pack; PVC Well Riser and Screen; Driller Augers, Rods and Barrel Samplers; Bottled Water for Field Tool Decontamination; Deionized Water for Final Tool/Equipment Rinse.	1 & 4	IV (Laboratory Analyses)

Note:
(a) Data Uses Key:
1 - Site Characterization.
2 - Health and Safety and Community Air Monitoring During Implementation of Ground Intrusive Field Activities, if required.
3 - Risk Assessment.
4 - Evaluation of Environmental Quality.

Another consideration besides defining the Data Quality Needs is what level of cleanup will be required for the Site, if needed. The applicable or relevant and appropriate requirements (ARARs) are related to defining satisfactory cleanup efforts. In order to be able to evaluate the data generated with respect to potential ARARs, the samples will need to be analyzed by analytical methods that can achieve detection limits below or at existing ARAR values. The analytical methods selected for this project are designed to achieve ARAR values.

NYSDEC has not promulgated ARAR values for PFCs. The Environmental Protection Agency (EPA) March 2014 Fact Sheet entitled "Emerging Contaminants – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)" indicates that in January 2009, the EPA's Office of Water established a provisional health advisory (PHA) of 0.2 micrograms per liter (ug/l) for PFOS and 0.4 ug/l for PFOA to assess the potential risk from short-term exposure of these chemicals through drinking water (EPA 2009d, 2013a). Also, EPA Region 4 calculated a residential soil screening level of 6 milligrams per kilogram (mg/kg) for PFOS and 16 mg/kg for PFOA (EPA Region 4 2009).

3.4 Quality Control Checks and Acceptance Criteria

To monitor and document the integrity of such factors as the environmental quality of source materials, sample variability, sampling equipment cleanliness, sampling technique, analytical reproducibility and sample handling which can affect data quality, several field quality control checks will be implemented. These will include collecting samples of source materials (i.e., driller water, decontamination water, drilling tools, monitoring well construction material, etc.) prior to importation of these materials to the Site; collecting equipment/field blanks after sampling equipment has been decontaminated to check for cross contamination and equipment cleanliness; taking replicate samples to monitor analytical precision/reproducibility and sampling technique; taking matrix spike/matrix spike duplicate (MS/MSD) samples to monitor sample matrix effect and laboratory accuracy/precision; and preparing laboratory and trip blanks and field trip blanks to be shipped with the sample containers for volatile and PFC analyses to monitor sample handling.

For this project, quality control samples will be collected of the following source materials that will be imported onto the Site to conduct the investigations.

- Water from the drilling contractor for drilling and decontamination.
- Totes and tanks used by the drilling contractor to store water. A rinsate blank will be collected of the totes/tanks by pouring deionized water through the totes/tanks and collecting in laboratory provided containers.
- Filter sand used for the monitoring well sand pack.
- PVC well riser and screen used by the drilling contractor for construction of monitoring wells. A rinsate blank will be collected of the PVC riser and screen by pouring deionized water through and over the riser and screen and collecting in laboratory provided containers.
- Auger casing, rods and split-spoon sampling barrels from the drilling contractor. A rinsate blank will be collected of the auger casing, rods and split-spoon sampling barrels by pouring deionized water through and over the auger casing, rods and split-spoon sampling barrels and collecting in laboratory provided containers.
- Bottled deionized water for decontamination and rinse samples.

The field Quality Control (QC) checks will consist of one (1) equipment/field blank, one (1) replicate sample and one (1) MS/MSD sample during sampling activities for every twenty (20) analytical samples per media type (i.e., soil, groundwater, surface water and sediment), and one (1) sample for each imported source material. A Laboratory Trip Blank will be prepared for each groundwater and surface water sample set to be submitted for volatile organic and PFC analyses. A Field Trip Blank will be prepared in the field for each aqueous sample set to be submitted for PFC analyses.

Internal laboratory quality control checks will be those specified in EPA Methods or in the most recent NYSDEC ASP for the analytical method performed and could consist of some of the following:

- Blanks (method, preparation),
- initial and continuing calibrations,
- surrogate spikes,
- matrix spike/matrix spike duplicates,

- ambient samples,
- duplicate samples, and
- control samples/matrix spike blanks.

The laboratory will be responsible for performing what is necessary for complying with appropriate standards and certifications of the selected EPA method and ASP requirements. The laboratory quality control acceptance criterion is method specific and will be the laboratory's responsibility to meet the most recent ASP criteria.

4.0 SAMPLING PROCEDURES

Procedures for sampling are presented in the Field Sampling Plan (FSP) and include the following:

- Selection of sampling sites and media to be sampled;
- Procedures for the collection of investigation equipment and material rinse blank samples;
- Specific sampling procedures for each environmental media to be sampled, and for QC samples to be taken;
- Field soil screening procedures;
- A description of the containers, procedures and equipment used for sample collection, preservation, transport and storage;
- Procedures for preparing the sample containers and sampling equipment prior to sampling and decontamination of sampling equipment during sampling;
- Chain of custody procedures and forms; and
- Description of the procedures, forms and notebooks to be used to document sampling activities, sample conditions and field conditions.

5.0 SAMPLE CUSTODY

Proper chain of custody will be established and maintained through a series of steps, beginning in the field and ending with final disposition of the analyzed sample(s). At the time of the field sampling, an external chain of custody form will be utilized to track sample collection until delivery to the analytical laboratory. An internal or “intra-laboratory” chain of custody will be used by laboratory personnel to track the sample(s) from the point it is received/logged and passed through the laboratory process. Chain of custody procedures are discussed in detail in the FSP.

6.0 CALIBRATION PROCEDURES

Calibration procedures for field equipment including the photo ionization detector (PID) meter, pH/conductivity/temperature/oxidation-reduction potential (ORP) meter, dissolved oxygen (DO) meter and turbidity meter are presented in the FSP. Calibration procedures for laboratory equipment/instrumentation consist of the production and use of current certifiable standards and the measurement/adjustment of the instrument response. The laboratory is responsible for maintaining records documenting use of current standards and acceptable instrument responses. The laboratory is required to flag analytical data that has had potential contamination or poor instrument calibration that may have occurred during the analytical process.

7.0 SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

The analytical parameters, sample preparation and analysis methods, acceptable holding times and required method detection limits are presented in Table 2. The analytical methods specified reflect the requirements of the most recent NYSDEC ASP with the exception of PFCs, which reflect the requirements of EPA (see footnote 3 at the bottom of table).

Table 2
Analytical Methods and Requirements

Analytical Parameters	EPA Method	Holding Times(1)	Contract Required Quantitative Limits (as noted)(2)
TCL & STARS #1 VOCs + TICS	EPA Analytical Method SW-846 8260C for Water and Soil and EPA Preparation Methods 5030C (Water) and 5035A (Soil)	Water: 7 Days Unpreserved to Analysis, 12 Days Preserved (HCl to pH<2) to Analysis. Soil: 48 hours to freeze, 14 days to analysis once unfrozen.	0.5-5 ug/l (Water) 5 to 20 ug/kg (Soil)
TCL & STARS #1 SVOCs + TICS	EPA Analytical Method SW-846 8270D for Water and Soil and EPA Preparation Methods 3510C (Water) and 3546 (Soil)	5 Days to Extraction, 40 Days to Analyze	0.5-30 ug/l (Water) 17-1,000 ug/kg (Soil)
TCL Pesticides	EPA Analytical Method SW-846 8081B for Soil and Water and EPA Preparation Methods 3510C (Water) and 3546 (Soil)	5 Days to Extraction, 40 Days to Analyze	0.01-1 ug/l (Water) 0.83-33 ug/kg (Soil)
TCL PCBs	EPA Analytical Method SW-846 8082A for Water and Soil and EPA Preparation Methods 3510C (Water) and 3546 (Soil)	5 Days to Extraction, 40 Days to Analyze	0.1-0.2 ug/l (Water) 17 ug/kg (Soil)
TAL Metals (Except Mercury)	EPA Analytical Method SW-846 6010C and 6020A for Water and Soil and EPA Preparation Methods 3005A and 3020A (Water) and 3050B (Soil)	180 Days	0.001-2 mg/l (Water) 0.2-200 mg/kg (Soil)

Analytical Parameters	EPA Method	Holding Times(1)	Contract Required Quantitative Limits (as noted)(2)
Mercury	EPA Analytical and Preparation Methods SW-846 7470A (Water) and SW-846 7471B (Soil)	26 days	0.0002 mg/l (Water) 0.02 mg/kg (Soil)
Cyanide	EPA Analytical and Preparation Method SW-846 9012A for Water and Soil	14 Days	0.01 mg/l (Water) 0.5 mg/kg (Soil)
PFCs(3) (PFBS, PFHpA, PFHxS, PFNA, PFOS, PFOA, PFDA, PFDoA, PFHxA, PFPTA, PFTRDA, PFDOA)	EPA Analytical & Preparation(3) Method 537 Rev. 1.1 Modified for Water and Soil	14 Days to Extraction 28 Days to Analyze	2 to 10 ng/l (Water) 0.40 to 1.6 ng/g (Soil)
Cations (Ca, Mg, Na, K)	EPA Analytical Methods SW-846 6010C and 6020A and EPA Preparation Methods 3005A and 3020A	180 Days	0.004-2 mg/l
Anions (Chloride, Sulfate)	EPA Analytical and Preparation Method SW-846 300.0	28 Days	2-5 mg/l
Anions (Carbonate, Bicarbonate)	EPA Analytical and Preparation Method SW-846 SM2320 B-1997	14 Days	2 mg/l as $CaCO_3$

Note:

1) Holding times are relative to the verifiable receipt at the laboratory.
2) The listed method detection limits are practical quantitation limits (PQLs) derived by the laboratory and updated on an annual basis. The method detection limit (MDL) is the best possible detection. Laboratories report PQLs which are typically 4 times the MDL for liquids and varies for solids depending on the quantity of contamination present. Efforts will be made to obtain the lowest possible detection limit. When the guidance value or standard value is below the detection limit, achieving the detection limit will be considered acceptable for meeting that guidance or standard value.
3) Method 537. Determination Of Selected Perfluorinated Alkyl Acids In Drinking Water By Solid Phase Extraction And Liquid Chromatography/Tandem Mass Spectrometry (Lc/Ms/Ms). EPA Document #: EPA/600/R-08/092, Version 1.1, September 2009. The most recent NYSDEC ASP does not have a method for PFCs. The laboratory uses a modified version of EPA Method 537 for analysis of PFCs in solids. The laboratory utilizes a proprietary sample preparation method as EPA has not developed a sample preparation method.

Where matrix interference is noted, analytical clean-ups will be required to be performed by the laboratory following the procedures specified in SW-846, the most current NYSDEC ASP, or EPA Method 537, as applicable. In general, samples shall not be diluted more than 1 to 5.

8.0 DATA REDUCTION, VALIDATION AND REPORTING

The field measurement data and the laboratory analyses results of detected parameters will be compiled and tabulated to facilitate comparison and evaluation, and will be included in the Final SC Report. The tabulated data will include at a minimum:

- soil/fill analysis results,
- surface water and groundwater analysis results,
- sediment analysis results, and
- quality control results [imported source materials (i.e., drilling water and filter sand, material rinse blanks, etc.) results, equipment/field blanks, replicates/duplicates, matrix spike/matrix spike duplicates and trip blanks].

Field logs will also be compiled and included, in part, in the text and appendices of the Final SC Report, and will consist of:

- monitoring well construction logs,
- subsurface exploration logs,
- organic vapor headspace analysis logs,
- groundwater services field logs,
- environmental services field logs, and
- water level records.

Any observations or problems encountered during field activities which could affect the quality of the data or its validity will be noted on the appropriate field log.

The laboratory will generate ASP Category B Data Deliverable Package(s) that may be submitted as a separate volume to the SC Report or on a CD within the SC Report. It will include analytical results and quality control data deliverables as required by the most recent NYSDEC ASP.

Internal data validation will be performed by the laboratory QA officer to ensure that the data package is complete and meets the criteria of the work plan and this QAPP. Any problems encountered in performing the analyses by the laboratory such as out of limits surrogate recoveries, and comments on the quality and limitations of specific data and the validity of the data will be described in the case narrative of the laboratory report.

External data validation will be performed by an independent data validator who will utilize the USEPA National and Regional Validation Guidelines/Procedures and the NYSDEC Guidance in the Development of Data Usability Summary Reports to determine the applicable qualifications of the data. The validator will then prepare a NYSDEC Data Usability Summary Report (DUSR) in accordance with NYSDEC guidelines. The data validator will not be involved in any other portions of the project. The data validation company for this project is not yet determined. The validator's qualifications and work experience will be presented in Attachment B. The NYSDEC DUSR guidance from DER-10, Technical Guidance For Site Investigation and Remediation, is presented in Attachment C for reference.

9.0 FIELD & INTERNAL QUALITY CONTROL

Field QC will consist of collecting/generating source material samples, equipment/field blanks, replicate samples, preparing matrix spike/matrix spike duplicate samples and having trip blanks with aqueous volatile organic compounds and PFC sample sets. Field instrumentation will also be calibrated prior to use and the calibration maintained as discussed in the FSP.

Internal laboratory QC will generally consist of:

- Method (instrument) blanks,
- initial and continuing calibrations,
- surrogate spikes,
- matrix spike/matrix spike duplicates,
- duplicate samples, and
- laboratory control samples/matrix spike blanks.

The QC samples will be run in accordance with the protocols and frequencies specified in the NYSDEC ASP, SW-846 and EPA Methods as applicable for the analyses being performed, with the exception of the source material and equipment samples. One (1) sample will be collected of each source material and equipment identified in Section 3.4 for analysis for PFCs to ensure that materials and equipment imported to the Site for the investigation are not cross-contaminated with PFCs. The source equipment will be segregated and will be used for no other purpose from the time that the samples are collected to the time that the equipment is mobilized to the Site for the investigation.

10.0 PERFORMANCE AND SYSTEMS AUDITS

10.1 Field Audits

Field performance audits will consist of taking replicate samples, source material samples (i.e., drilling water and monitoring well construction materials, etc.) and equipment/field blanks and analyzing for the same parameters as other samples, as detailed in the FSP.

Field system audits will be conducted during field operation to ensure that the field activities are being conducted correctly and in accordance with the SCWP. The project field supervisor will check that the field instrumentation is calibrated prior to use, that field measurements are taken correctly, that equipment is properly decontaminated, and that the field activities are properly documented. Any deficiencies will be reported to the project manager and discussed with the field staff with corrective action taken. The person conducting the field audits will document the field system audits by use of a field report and submit the report to the project manager for review on a bi-weekly (twice per week) basis at a minimum. The project quality assurance officer, scientist/geologist/engineer or project manager will conduct system audits as appropriate or warranted.

The project manager will review the field system audit reports and the field documentation for completeness and correctness, and check that the work is proceeding on schedule and in accordance with the work plans.

10.2 Laboratory Audits

Laboratory system audits are not required, however, if the laboratory is required to maintain New York State Department of Health (NYSDOH) ELAP certification. A copy of the laboratory NYSDOH ELAP certification documentation is presented in Attachment A. Part of this certification process typically includes periodic performance evaluations and on-site systems audits.

11.0 PREVENTATIVE MAINTENANCE

C.T. Male Associates keeps an inventory of its' field equipment and it is kept locked in a designated area. The field equipment is signed out when in use and its condition checked upon its return. The equipment is kept in good working order and frequently checked and calibrated by qualified employees. Additionally, select equipment (i.e., PID meter) is routinely serviced for cleaning and calibration by an independent repair facility.

The project geologist/engineer/scientist and field sampler are responsible for assuring that the field equipment is tested, cleaned, charged and calibrated in accordance with the manufacturer's instructions prior to taking the equipment out into the field.

12.0 DATA ASSESSMENT PROCEDURES

The field and laboratory generated data will be assessed for precision, accuracy, representativeness, completeness, and comparability (PARCC parameters). Both quantitative and qualitative procedures will be used for these assessments.

The criteria for assessment of field measurements will be that the measurements were taken in accordance with the procedures specified in the FSP using calibrated instruments. Assessment of the sampling data with respect to field performance will be based on the criteria that the samples were properly collected and handled. Field replicate and equipment/field blank sample results will be used in assessing the sampling technique and representativeness of the samples collected.

The laboratory will calculate and report the precision, accuracy, and completeness of the analytical data. Precision will be expressed as the relative percent difference (RPD) between values of duplicate samples. Accuracy will be expressed as percent difference (PD) for surrogate standards and matrix spike compounds. Completeness is a measure of the amount of valid data derived from a set of samples based on the total amount expected to be derived under normal conditions. The precision and accuracy results will be compared to the QC acceptance criteria specified for each test method in the most recent NYSDEC ASP and EPA Methods.

The representativeness of the analysis is dictated primarily by the field sampling technique and sample location, as opposed to laboratory operations. The laboratory will take steps to ensure that the analysis is representative of the sample being submitted. The criteria for ensuring representativeness of the analysis are careful aliquot selection and proper compositing techniques. Laboratory performance will be based on the criteria that the samples were properly handled prior to submission to the laboratory, that the laboratory aliquots taken for analysis are representative (i.e., oversized particles discarded, sample thoroughly mixed except when dealing with volatile organics), that the samples were analyzed within holding times, and that no cross-contamination has occurred based on the method blank results. Data comparability will be assessed based on analyses being performed within required holding times, on consistent units of measure, and that analyses were performed in strict adherence with NYSDEC and EPA analytical methods/protocols.

13.0 CORRECTIVE ACTIONS

The investigation will be performed in accordance with the approved SCWP, the contents of the approved FSP and the approved QAPP. Any persons identifying unacceptable conditions or deficiencies in the work being performed such as deviation from or omission of health and safety procedures, sampling procedures or other field procedures, will immediately notify the project field supervisor, where applicable, and the project manager. The unacceptable conditions or deficiencies will be documented and submitted to the project manager. The project manager, with assistance from the technical quality review staff, if necessary, will be responsible for developing and initiating appropriate corrective action, documenting the corrective action and verifying that the corrective action has been effective.

Depending on the significance and potential impact of the problem or deficiency requiring corrective action, the NYSDEC and Saint-Gobain will be notified, as warranted, as soon as practical after becoming aware of the situation.

14.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

Field system audit/field reports from the project team, where applicable, will be submitted to the project manager on a bi-weekly basis at a minimum. The field report will include the project name, location, time, date, weather, temperature range, work in progress, conformance with schedule, persons present at the Site (arrival and departure times), observations, work start-up and stoppage, items to verify, information or action required, any attachments identified, and the reporting persons signature. The field report notifies the management as to the progress, conformance with the work plan, and any problems that may affect quality control. Field personnel will also keep field notebooks that will discuss day to day procedures followed, any problems encountered, etc. A copy of the field notes will be given to the project manager at least bi-weekly to keep the project manager informed of the project status and as a quality control check. The project manager will review the reports and field notes to assess the quality of the investigate data gathering efforts to make sure the objectives of the work are being met, to make sure the work is progressing on schedule, that the work is being conducted in accordance with the work plan, and that any problems encountered are addressed. These reports will be utilized in assessing the data quality with respect to field activities and the findings will be discussed in the SC Report where applicable.

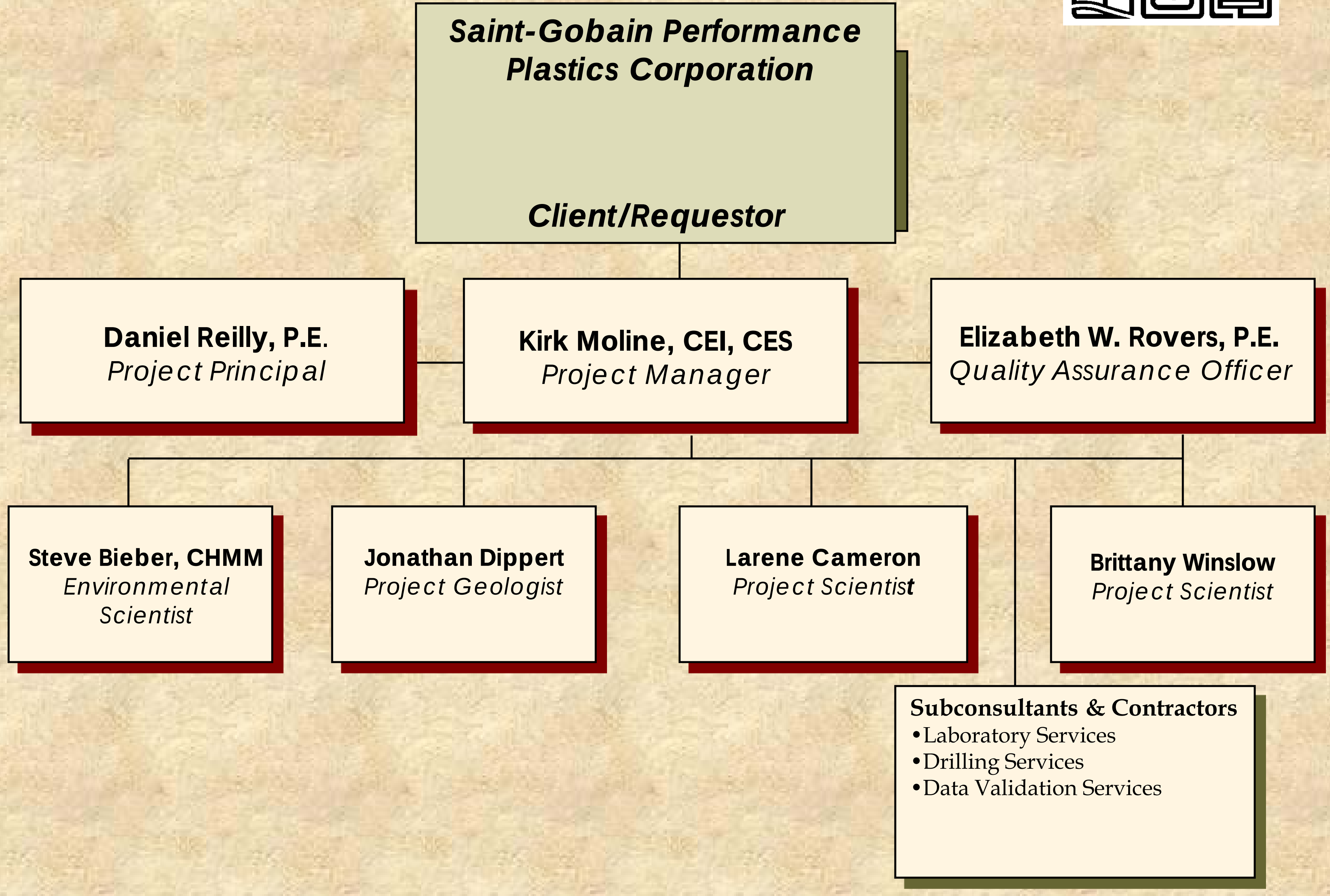
Documentation of each phase of the project and all work tasks performed are kept in the file on the project. The documentation is available at all times for review by the Quality Assurance Officer, who will randomly check files for their completeness.

If any occurrences or conditions are encountered during the course of work that may require a change in the scope of work or departure from the approved work plan, the NYSDEC and Saint-Gobain will be notified and the situation reported as soon as possible.

FIGURE 1

Project Organizational Chart

C.T. Male Project Organizational Chart



Saint-Gobain Performance Plastics Corporation

Client/Requestor

Daniel Reilly, P.E.
Project Principal

Kirk Moline, CEI, CES
Project Manager

Elizabeth W. Rovers, P.E.
Quality Assurance Officer

Steve Bieber, CHMM
Environmental Scientist

Jonathan Dippert
Project Geologist

Larene Cameron
Project Scientist

Brittany Winslow
Project Scientist

Subconsultants & Contractors

- Laboratory Services
- Drilling Services
- Data Validation Services

ATTACHMENT A

Laboratory Certifications

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015
Revised May 20, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved analytes are listed below:

Bacteriology	
Coliform, Total / E. coli (Qualitative)	SM 18-22 9223B (-97) (Colilert)
Chlorinated Acids	
2,4,5-TP (Silvex)	EPA 515.1
2,4-D	EPA 515.1
Dalapon	EPA 515.1
Dicamba	EPA 515.1
Dinoseb	EPA 515.1
Pentachlorophenol	EPA 515.1
Picloram	EPA 515.1
Fuel Additives	
Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2
Metals I	
Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Metals I	
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
Zinc, Total	EPA 200.7 Rev. 4.4
Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Metals III	
Calcium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4
Methylcarbamate Pesticides	
3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1
Aldicarb Sulfoxide	EPA 531.1
Carbaryl	EPA 531.1

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015
Revised May 20, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Methylcarbamate Pesticides	
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1
Microextractibles	
1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Miscellaneous	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 1613B
Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Di (2-ethylhexyl) adipate	EPA 525.2
Hexachlorobenzene	EPA 508
	EPA 525.2
Hexachlorocyclopentadiene	EPA 508
	EPA 525.2
Non-Metals	
Alkalinity	SM 18-22 2320B (-97)
Calcium Hardness	SM 18-22 2340C (-97)
	SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 18-22 2120B (-01)
Cyanide	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 18-22 4500-F C (-97)

Non-Metals	
Nitrate (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
Nitrite (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
Silica, Dissolved	SM 20-22 4500-SiO2 C (-97)
Solids, Total Dissolved	SM 18-22 2540C (-97)
Specific Conductance	SM 18-22 2510B (-97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
Organohalide Pesticides	
Alachlor	EPA 507
	EPA 525.2
Aldrin	EPA 508
Atrazine	EPA 507
	EPA 525.2
Butachlor	EPA 525.2
Chlordane Total	EPA 508
Dieldrin	EPA 508
	EPA 525.2
Endrin	EPA 508
	EPA 525.2
Heptachlor	EPA 508
	EPA 525.2
Heptachlor epoxide	EPA 508
	EPA 525.2
Lindane	EPA 508

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Organohalide Pesticides	
Lindane	EPA 525.2
Methoxychlor	EPA 508
	EPA 525.2
Metolachlor	EPA 525.2
Metribuzin	EPA 525.2
Propachlor	EPA 525.2
Simazine	EPA 507
	EPA 525.2
Toxaphene	EPA 508
Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2

Volatile Aromatics	
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2

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All approved analytes are listed below:

Volatile Halocarbons

1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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Acrylates

Acrolein (Propenal)	EPA 8260C
	EPA 624
Acrylonitrile	EPA 8260C
	EPA 624

Amines

1,2-Diphenylhydrazine	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
a,a-Dimethylphenethylamine	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D
Propionitrile	EPA 8260C
Pyridine	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 625
	EPA 8270D

Benzidines

3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 625
	EPA 8270D

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
	EPA 608
4,4'-DDE	EPA 8081B
	EPA 608
4,4'-DDT	EPA 8081B
	EPA 608
Aldrin	EPA 8081B
	EPA 608
alpha-BHC	EPA 8081B
	EPA 608
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
	EPA 608
Chlordane Total	EPA 8081B
	EPA 608
delta-BHC	EPA 8081B
	EPA 608
Dieldrin	EPA 8081B
	EPA 608
Endosulfan I	EPA 8081B
	EPA 608

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Chlorinated Hydrocarbon Pesticides

Endosulfan II	EPA 8081B
	EPA 608
Endosulfan sulfate	EPA 8081B
	EPA 608
Endrin	EPA 8081B
	EPA 608
Endrin aldehyde	EPA 8081B
	EPA 608
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
	EPA 608
Heptachlor epoxide	EPA 8081B
	EPA 608
Kepone	EPA 8081B
Lindane	EPA 8081B
	EPA 608
Methoxychlor	EPA 8081B
Mirex	EPA 8081B
Toxaphene	EPA 8081B
	EPA 608

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 625
	EPA 8270D
Hexachlorobenzene	EPA 625
	EPA 8270D
Hexachlorobutadiene	EPA 625
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625
	EPA 8270D
Hexachloroethane	EPA 625
	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A

Demand

Biochemical Oxygen Demand	SM 5210B-01,-11

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Demand

Carbonaceous BOD	SM 5210B-01,-11
Chemical Oxygen Demand	EPA 410.4 Rev. 2.0

Dioxins and Furans

1,2,3,4,6,7,8,9-Octachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-diox	EPA 8290A EPA 1613B
1,2,3,4,6,7,8-Heptachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxi	EPA 8290A EPA 1613B
1,2,3,4,7,8,9-Heptachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,4,7,8-Hexachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A EPA 1613B
1,2,3,6,7,8-Hexachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A EPA 1613B
1,2,3,7,8,9-Hexachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	EPA 8290A EPA 1613B

Dioxins and Furans

1,2,3,7,8-Pentachlorodibenzofuran	EPA 8290A EPA 1613B
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	EPA 8290A EPA 1613B
2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A EPA 1613B
2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A EPA 1613B
2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A EPA 1613B
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 8290A EPA 1613B

Dissolved Gases

Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175

Fuel Oxygenates

Di-isopropyl ether	EPA 8260C
Ethanol	EPA 8260C
Methyl tert-butyl ether	EPA 8260C EPA 8021B
tert-amyl alcohol	EPA 8260C
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C

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Fuel Oxygenates

tert-butyl ethyl ether (ETBE)	EPA 8260C

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 625 EPA 8270D
4-Bromophenylphenyl ether	EPA 625 EPA 8270D
4-Chlorophenylphenyl ether	EPA 625 EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625 EPA 8270D
Bis(2-chloroethyl)ether	EPA 625 EPA 8270D

Low Level Halocarbons

1,2-Dibromo-3-chloropropane, Low Level	EPA 8011
1,2-Dibromoethane, Low Level	EPA 8011

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Metals I

Barium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Calcium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4

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Metals I

Copper, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Lead, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Magnesium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Potassium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A

Metals I

Potassium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Sodium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Strontium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4

Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Antimony, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Arsenic, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A

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Metals II

Arsenic, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Chromium VI	EPA 218.6 Rev. 3.3
	EPA 7196A
	EPA 7199
	SM 3500-Cr B-09,-11
Mercury, Low Level	EPA 1631E
Mercury, Total	EPA 245.1 Rev. 3.0
	EPA 7470A
Selenium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4

Metals III

Cobalt, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Tin, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
Titanium, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A

Mineral

Acidity	SM 2310B-97,-11
Alkalinity	SM 2320B-97,-11
Chloride	EPA 300.0 Rev. 2.1
	SM 4500-Cl- C-97,-11
	EPA 9056A
Fluoride, Total	EPA 300.0 Rev. 2.1

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LANCASTER, PA 17601-5994

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Mineral	
Fluoride, Total	SM 4500-F C-97,-11
	EPA 9056A
Hardness, Total	SM 2340C-97,-11
	SM 2340B-97,-11
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
	EPA 9056A
Miscellaneous	
Boron, Total	EPA 200.7 Rev. 4.4
	EPA 6010C
	EPA 6020A
	EPA 200.8 Rev. 5.4
Bromide	EPA 300.0 Rev. 2.1
Color	SM 2120B-01,-11
Cyanide, Available	OIA-1677
Cyanide, Total	EPA 335.4 Rev. 1.0
	EPA 9012B
Formaldehyde	EPA 8315A
Oil and Grease Total Recoverable (HEM)	EPA 1664A
Organic Carbon, Total	SM 5310B-00,-11
	SM 5310C-00,-11
	EPA 9060A
Perchlorate	EPA 6850
Phenols	EPA 420.4 Rev. 1.0
	EPA 9066
Silica, Dissolved	SM 4500-SiO2 C-97,-11

Miscellaneous	
Specific Conductance	SM 2510B-97,-11
Sulfide (as S)	SM 4500-S2- F-00,-11
	SM 4500-S2- D-00,-11
Surfactant (MBAS)	SM 5540C-00,-11
Turbidity	EPA 180.1 Rev. 2.0
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270D
	EPA 8330A
1,3-Dinitrobenzene	EPA 8270D
	EPA 8330A
1,4-Naphthoquinone	EPA 8270D
2,4,6-Trinitrotoluene	EPA 8330A
2,4-Dinitrotoluene	EPA 625
	EPA 8270D
	EPA 8330A
2,6-Dinitrotoluene	EPA 625
	EPA 8270D
	EPA 8330A
2-Amino-4,6-dinitrotoluene	EPA 8330A
2-Nitrotoluene	EPA 8330A
3-Nitrotoluene	EPA 8330A
4-Amino-2,6-dinitrotoluene	EPA 8330A
4-Nitrotoluene	EPA 8330A
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330A
Isophorone	EPA 625

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Nitroaromatics and Isophorone

Isophorone	EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330A
Nitrobenzene	EPA 625
	EPA 8270D
	EPA 8330A
Nitroquinoline-1-oxide	EPA 8270D
Octahydro-tetranitro-tetrazocine	EPA 8330A

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 625
	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625
	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D

Nutrient

Ammonia (as N)	SM 4500-NH3 C-97,-11
	EPA 350.1 Rev. 2.0
	SM 4500-NH3 D or E-97,-11
Kjeldahl Nitrogen, Total	EPA 351.2 Rev. 2.0

Nutrient

Nitrate (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
	EPA 9056A
Nitrite (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
	EPA 9056A
Orthophosphate (as P)	EPA 365.3 Rev. 1978
	SM 4500-P E-99,-11
Phosphorus, Total	EPA 365.1 Rev. 2.0
	SM 4500-P F-99,-11

Organophosphate Pesticides

Atrazine	EPA 8141B
	EPA 8270D
Azinphos methyl	EPA 8141B
Chlorpyriphos	EPA 8141B
Demeton-O	EPA 8141B
Demeton-S	EPA 8141B
Diazinon	EPA 8141B
Disulfoton	EPA 8141B
Famphur	EPA 8141B
Malathion	EPA 8141B
Parathion ethyl	EPA 8141B
Parathion methyl	EPA 8141B
Phorate	EPA 8141B
Simazine	EPA 8141B

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Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015D
	EPA 8015C
Gasoline Range Organics	EPA 8015D
	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270D
Diethyl phthalate	EPA 625
	EPA 8270D
Dimethyl phthalate	EPA 625
	EPA 8270D
Di-n-butyl phthalate	EPA 625
	EPA 8270D
Di-n-octyl phthalate	EPA 625
	EPA 8270D
Polychlorinated Biphenyls	
PCB 1	EPA 1668 A
PCB 10	EPA 1668 A
PCB 100	EPA 1668 A
PCB 101	EPA 1668 A
PCB 102	EPA 1668 A
PCB 103	EPA 1668 A
PCB 104	EPA 1668 A

Polychlorinated Biphenyls	
PCB 105	EPA 1668 A
PCB 106	EPA 1668 A
PCB 107	EPA 1668 A
PCB 108	EPA 1668 A
PCB 109	EPA 1668 A
PCB 11	EPA 1668 A
PCB 110	EPA 1668 A
PCB 111	EPA 1668 A
PCB 112	EPA 1668 A
PCB 113	EPA 1668 A
PCB 114	EPA 1668 A
PCB 115	EPA 1668 A
PCB 116	EPA 1668 A
PCB 117	EPA 1668 A
PCB 118	EPA 1668 A
PCB 119	EPA 1668 A
PCB 12	EPA 1668 A
PCB 120	EPA 1668 A
PCB 121	EPA 1668 A
PCB 122	EPA 1668 A
PCB 123	EPA 1668 A
PCB 124	EPA 1668 A
PCB 125	EPA 1668 A
PCB 126	EPA 1668 A
PCB 127	EPA 1668 A
PCB 128	EPA 1668 A

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Polychlorinated Biphenyls		**Polychlorinated Biphenyls**	
PCB 129	EPA 1668 A	PCB 152	EPA 1668 A
PCB 13	EPA 1668 A	PCB 153	EPA 1668 A
PCB 130	EPA 1668 A	PCB 154	EPA 1668 A
PCB 131	EPA 1668 A	PCB 155	EPA 1668 A
PCB 132	EPA 1668 A	PCB 156	EPA 1668 A
PCB 133	EPA 1668 A	PCB 157	EPA 1668 A
PCB 134	EPA 1668 A	PCB 158	EPA 1668 A
PCB 135	EPA 1668 A	PCB 159	EPA 1668 A
PCB 136	EPA 1668 A	PCB 16	EPA 1668 A
PCB 137	EPA 1668 A	PCB 160	EPA 1668 A
PCB 138	EPA 1668 A	PCB 161	EPA 1668 A
PCB 139	EPA 1668 A	PCB 162	EPA 1668 A
PCB 14	EPA 1668 A	PCB 163	EPA 1668 A
PCB 140	EPA 1668 A	PCB 164	EPA 1668 A
PCB 141	EPA 1668 A	PCB 165	EPA 1668 A
PCB 142	EPA 1668 A	PCB 166	EPA 1668 A
PCB 143	EPA 1668 A	PCB 167	EPA 1668 A
PCB 144	EPA 1668 A	PCB 168	EPA 1668 A
PCB 145	EPA 1668 A	PCB 169	EPA 1668 A
PCB 146	EPA 1668 A	PCB 17	EPA 1668 A
PCB 147	EPA 1668 A	PCB 170	EPA 1668 A
PCB 148	EPA 1668 A	PCB 171	EPA 1668 A
PCB 149	EPA 1668 A	PCB 172	EPA 1668 A
PCB 15	EPA 1668 A	PCB 173	EPA 1668 A
PCB 150	EPA 1668 A	PCB 174	EPA 1668 A
PCB 151	EPA 1668 A	PCB 175	EPA 1668 A

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Polychlorinated Biphenyls		**Polychlorinated Biphenyls**	
PCB 176	EPA 1668 A	PCB 2	EPA 1668 A
PCB 177	EPA 1668 A	PCB 20	EPA 1668 A
PCB 178	EPA 1668 A	PCB 200	EPA 1668 A
PCB 179	EPA 1668 A	PCB 201	EPA 1668 A
PCB 18	EPA 1668 A	PCB 202	EPA 1668 A
PCB 180	EPA 1668 A	PCB 203	EPA 1668 A
PCB 181	EPA 1668 A	PCB 204	EPA 1668 A
PCB 182	EPA 1668 A	PCB 205	EPA 1668 A
PCB 183	EPA 1668 A	PCB 206	EPA 1668 A
PCB 184	EPA 1668 A	PCB 207	EPA 1668 A
PCB 185	EPA 1668 A	PCB 208	EPA 1668 A
PCB 186	EPA 1668 A	PCB 209	EPA 1668 A
PCB 187	EPA 1668 A	PCB 21	EPA 1668 A
PCB 188	EPA 1668 A	PCB 22	EPA 1668 A
PCB 189	EPA 1668 A	PCB 23	EPA 1668 A
PCB 19	EPA 1668 A	PCB 24	EPA 1668 A
PCB 190	EPA 1668 A	PCB 25	EPA 1668 A
PCB 191	EPA 1668 A	PCB 26	EPA 1668 A
PCB 192	EPA 1668 A	PCB 27	EPA 1668 A
PCB 193	EPA 1668 A	PCB 28	EPA 1668 A
PCB 194	EPA 1668 A	PCB 29	EPA 1668 A
PCB 195	EPA 1668 A	PCB 3	EPA 1668 A
PCB 196	EPA 1668 A	PCB 30	EPA 1668 A
PCB 197	EPA 1668 A	PCB 31	EPA 1668 A
PCB 198	EPA 1668 A	PCB 32	EPA 1668 A
PCB 199	EPA 1668 A	PCB 33	EPA 1668 A

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Polychlorinated Biphenyls	
PCB 34	EPA 1668 A
PCB 35	EPA 1668 A
PCB 36	EPA 1668 A
PCB 37	EPA 1668 A
PCB 38	EPA 1668 A
PCB 39	EPA 1668 A
PCB 4	EPA 1668 A
PCB 40	EPA 1668 A
PCB 41	EPA 1668 A
PCB 42	EPA 1668 A
PCB 43	EPA 1668 A
PCB 44	EPA 1668 A
PCB 45	EPA 1668 A
PCB 46	EPA 1668 A
PCB 47	EPA 1668 A
PCB 48	EPA 1668 A
PCB 49	EPA 1668 A
PCB 5	EPA 1668 A
PCB 50	EPA 1668 A
PCB 51	EPA 1668 A
PCB 52	EPA 1668 A
PCB 53	EPA 1668 A
PCB 54	EPA 1668 A
PCB 55	EPA 1668 A
PCB 56	EPA 1668 A
PCB 57	EPA 1668 A

Polychlorinated Biphenyls	
PCB 58	EPA 1668 A
PCB 59	EPA 1668 A
PCB 6	EPA 1668 A
PCB 60	EPA 1668 A
PCB 61	EPA 1668 A
PCB 62	EPA 1668 A
PCB 63	EPA 1668 A
PCB 64	EPA 1668 A
PCB 65	EPA 1668 A
PCB 66	EPA 1668 A
PCB 67	EPA 1668 A
PCB 68	EPA 1668 A
PCB 69	EPA 1668 A
PCB 7	EPA 1668 A
PCB 70	EPA 1668 A
PCB 71	EPA 1668 A
PCB 72	EPA 1668 A
PCB 73	EPA 1668 A
PCB 74	EPA 1668 A
PCB 75	EPA 1668 A
PCB 76	EPA 1668 A
PCB 77	EPA 1668 A
PCB 78	EPA 1668 A
PCB 79	EPA 1668 A
PCB 8	EPA 1668 A
PCB 80	EPA 1668 A

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Polychlorinated Biphenyls	
PCB 81	EPA 1668 A
PCB 82	EPA 1668 A
PCB 83	EPA 1668 A
PCB 84	EPA 1668 A
PCB 85	EPA 1668 A
PCB 86	EPA 1668 A
PCB 87	EPA 1668 A
PCB 88	EPA 1668 A
PCB 89	EPA 1668 A
PCB 9	EPA 1668 A
PCB 90	EPA 1668 A
PCB 91	EPA 1668 A
PCB 92	EPA 1668 A
PCB 93	EPA 1668 A
PCB 94	EPA 1668 A
PCB 95	EPA 1668 A
PCB 96	EPA 1668 A
PCB 97	EPA 1668 A
PCB 98	EPA 1668 A
PCB 99	EPA 1668 A
PCB-1016	EPA 8082A
	EPA 608
PCB-1221	EPA 8082A
	EPA 608
PCB-1232	EPA 8082A
	EPA 608

Polychlorinated Biphenyls	
PCB-1242	EPA 8082A
	EPA 608
PCB-1248	EPA 8082A
	EPA 608
PCB-1254	EPA 8082A
	EPA 608
PCB-1260	EPA 8082A
	EPA 608
PCB-1262	EPA 8082A
PCB-1268	EPA 8082A
Polynuclear Aromatics	
2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625
	EPA 8270D
Acenaphthylene	EPA 625
	EPA 8270D
Anthracene	EPA 625
	EPA 8270D
Benzo(a)anthracene	EPA 625
	EPA 8270D
Benzo(a)pyrene	EPA 625
	EPA 8270D
Benzo(b)fluoranthene	EPA 625

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Polynuclear Aromatics	
Benzo(b)fluoranthene	EPA 8270D
Benzo(ghi)perylene	EPA 625 EPA 8270D
Benzo(k)fluoranthene	EPA 625 EPA 8270D
Chrysene	EPA 625 EPA 8270D
Dibenzo(a,h)anthracene	EPA 625 EPA 8270D
Fluoranthene	EPA 625 EPA 8270D
Fluorene	EPA 625 EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625 EPA 8270D
Naphthalene	EPA 625 EPA 8270D
Phenanthrene	EPA 625 EPA 8270D
Pyrene	EPA 625 EPA 8270D

Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 625

Priority Pollutant Phenols	
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 625 EPA 8270D
2,4-Dimethylphenol	EPA 625 EPA 8270D
2,4-Dinitrophenol	EPA 625 EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 625 EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625 EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 625 EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 625 EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 625 EPA 8270D
Pentachlorophenol	EPA 8151A EPA 625 EPA 8270D
Phenol	EPA 625 EPA 8270D

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Residue	
Solids, Total	SM 2540 B-97,-11
Solids, Total Dissolved	SM 2540 C-97,-11
Solids, Total Suspended	SM 2540 D-97,-11
Semi-Volatile Organics	
1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
	EPA 8315A
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270D
Phenacetin	EPA 8270D

Semi-Volatile Organics	
Safrole	EPA 8270D
Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624
1,4-Dichlorobenzene	EPA 8260C
	EPA 624
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 8021B
	EPA 624
	EPA 602
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
	EPA 624
Ethyl benzene	EPA 8260C
	EPA 8021B
	EPA 624
	EPA 602
Isopropylbenzene	EPA 8260C

Serial No.: 53523

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015
Revised December 11, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10670

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatile Aromatics

m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 8021B
	EPA 624
	EPA 602
Total Xylenes	EPA 8260C
	EPA 8021B
	EPA 624
	EPA 602

Volatile Chlorinated Organics

Benzyl chloride	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 624
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624

Volatile Halocarbons

1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
	EPA 624
1,1-Dichloroethane	EPA 8260C
	EPA 624
1,1-Dichloroethene	EPA 8260C
	EPA 624
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 624
1,2-Dichloropropane	EPA 8260C
	EPA 624
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
	EPA 624
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
	EPA 624
Bromoform	EPA 8260C

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MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons	
Bromoform	EPA 624
Bromomethane	EPA 8260C EPA 624
Carbon tetrachloride	EPA 8260C EPA 624
Chloroethane	EPA 8260C EPA 624
Chloroform	EPA 8260C EPA 624
Chloromethane	EPA 8260C EPA 624
cis-1,2-Dichloroethene	EPA 8260C EPA 624
cis-1,3-Dichloropropene	EPA 8260C EPA 624
Dibromochloromethane	EPA 8260C EPA 624
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C EPA 624
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C EPA 624
Tetrachloroethene	EPA 8260C EPA 624

Volatile Halocarbons	
trans-1,2-Dichloroethene	EPA 8260C EPA 624
trans-1,3-Dichloropropene	EPA 8260C EPA 624
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C EPA 624
Trichlorofluoromethane	EPA 8260C EPA 624
Vinyl chloride	EPA 8260C EPA 624

Volatiles Organics	
1,4-Dioxane	EPA 8260C
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethyl Acetate	EPA 1666 EPA 8260C
Ethylene Glycol	EPA 8015C

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All approved analytes are listed below:

Volatiles Organics

Isobutyl alcohol	EPA 8260C
Isobutyraldehyde	EPA 1666
Isopropyl Acetate	EPA 1666
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl formate	EPA 1666
n-Amyl Acetate	EPA 1666
n-Amyl alcohol	EPA 1666
n-Butanol	EPA 8260C
n-Butyl Acetate	EPA 1666
o-Toluidine	EPA 8270D
Tetrahydrofuran	EPA 1666
Vinyl acetate	EPA 8260C

Sample Preparation Methods

SM 4500-P B(5)-99,-11
EPA 5030C
EPA 4.1.3
EPA 200.2
EPA 3010A
EPA 3005A
EPA 3510C
EPA 3520C
EPA 3020A
SM 4500-NH3 B-97,-11
SM 4500-CN G-99,-11

Sample Preparation Methods

SM 4500-F B-97,-11

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Acrylates

Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Ethyl methacrylate	EPA 8260C
Methyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D

Carbamate Pesticides

Aldicarb	EPA 8318A
Aldicarb Sulfone	EPA 8318A

Carbamate Pesticides

Carbofuran	EPA 8318A

Characteristic Testing

Corrosivity	EPA 9045D
Ignitability	EPA 1010A
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
Diallate	EPA 8270D
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B

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All approved analytes are listed below:

Chlorinated Hydrocarbon Pesticides

Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Kepone	EPA 8081B
	EPA 8270D
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
Simazine	EPA 8141B
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A

Chlorophenoxy Acid Pesticides

2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A
MCPA	EPA 8151A
MCPP	EPA 8151A
Pentachlorophenol	EPA 8151A

Dioxins and Furans

1,2,3,4,6,7,8,9-Octachlorodibenzofuran	EPA 8290A
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-diox	EPA 8290A
1,2,3,4,6,7,8-Heptachlorodibenzofuran	EPA 8290A
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxi	EPA 8290A
1,2,3,4,7,8,9-Heptachlorodibenzofuran	EPA 8290A
1,2,3,4,7,8-Hexachlorodibenzofuran	EPA 8290A
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
1,2,3,6,7,8-Hexachlorodibenzofuran	EPA 8290A
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
1,2,3,7,8,9-Hexachlorodibenzofuran	EPA 8290A
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	EPA 8290A
1,2,3,7,8-Pentachlorodibenzofuran	EPA 8290A
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	EPA 8290A
2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A
2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A

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All approved analytes are listed below:

Dioxins and Furans	
2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 8290A

Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 8270D
4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270D

Low Level Polynuclear Aromatic Hydrocarbons	
Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Metals I	
Barium, Total	EPA 6010C EPA 6020A
Cadmium, Total	EPA 6010C EPA 6020A
Calcium, Total	EPA 6010C EPA 6020A
Chromium, Total	EPA 6010C EPA 6020A
Copper, Total	EPA 6010C EPA 6020A
Iron, Total	EPA 6010C EPA 6020A
Lead, Total	EPA 6010C EPA 6020A
Magnesium, Total	EPA 6010C EPA 6020A
Manganese, Total	EPA 6010C EPA 6020A
Nickel, Total	EPA 6010C EPA 6020A
Potassium, Total	EPA 6010C EPA 6020A
Silver, Total	EPA 6010C EPA 6020A
Sodium, Total	EPA 6010C EPA 6020A

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2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Metals I	
Strontium, Total	EPA 6010C
	EPA 6020A
Metals II	
Aluminum, Total	EPA 6010C
	EPA 6020A
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A
Chromium VI	EPA 7196A
	EPA 7199
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6020A
Metals III	
Cobalt, Total	EPA 6010C
	EPA 6020A
Molybdenum, Total	EPA 6010C
	EPA 6020A
Metals III	
Thallium, Total	EPA 6010C
	EPA 6020A
Tin, Total	EPA 6010C
	EPA 6020A
Titanium, Total	EPA 6010C
	EPA 6020A
Miscellaneous	
Boron, Total	EPA 6010C
Cyanide, Total	EPA 9012B
Organic Carbon, Total	Lloyd Kahn Method
	EPA 9060A
Phenols	EPA 9066
Nitroaromatics and Isophorone	
1,2-Dinitrobenzene	EPA 8270D
1,3,5-Trinitrobenzene	EPA 8270D
	EPA 8330A
1,3-Dinitrobenzene	EPA 8270D
	EPA 8330A
1,4-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 8270D
2-Amino-4,6-dinitrotoluene	EPA 8330A
2-Nitrotoluene	EPA 8330A
3-Nitrotoluene	EPA 8330A

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All approved analytes are listed below:

Nitroaromatics and Isophorone

4-Amino-2,6-dinitrotoluene	EPA 8330A
4-Dimethylaminoazobenzene	EPA 8270D
4-Nitrotoluene	EPA 8330A
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330A
Isophorone	EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330A
Nitrobenzene	EPA 8270D
	EPA 8330A
Nitroquinoline-1-oxide	EPA 8270D
Octahydro-tetranitro-tetrazocine	EPA 8330A
Pyridine	EPA 8270D

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D

Organophosphate Pesticides

Azinphos methyl	EPA 8141B
Bolstar	EPA 8141B
Chlorpyriphos	EPA 8141B

Organophosphate Pesticides

Coumaphos	EPA 8141B
Demeton-O	EPA 8141B
Demeton-S	EPA 8141B
Diazinon	EPA 8141B
Dichlorvos	EPA 8141B
Disulfoton	EPA 8141B
EPN	EPA 8141B
Ethion	EPA 8141B
Ethoprop	EPA 8141B
Famphur	EPA 8141B
Fensulfothion	EPA 8141B
Fenthion	EPA 8141B
Malathion	EPA 8141B
Mevinphos	EPA 8141B
NALED	EPA 8141B
Parathion ethyl	EPA 8141B
Parathion methyl	EPA 8141B
Phorate	EPA 8141B
Ronnel	EPA 8141B
Tokuthion	EPA 8141B
Trichloronate	EPA 8141B

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D
	EPA 8015C
Gasoline Range Organics	EPA 8015D

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Petroleum Hydrocarbons	
Gasoline Range Organics	EPA 8015C
Oil and Grease Total Recoverable (HEM)	EPA 9071B (Solvent:Hexane)
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D
Polychlorinated Biphenyls	
PCB 1	EPA 1668 A
PCB 10	EPA 1668 A
PCB 100	EPA 1668 A
PCB 101	EPA 1668 A
PCB 102	EPA 1668 A
PCB 103	EPA 1668 A
PCB 104	EPA 1668 A
PCB 105	EPA 1668 A
PCB 106	EPA 1668 A
PCB 107	EPA 1668 A
PCB 108	EPA 1668 A
PCB 109	EPA 1668 A
PCB 11	EPA 1668 A
PCB 110	EPA 1668 A
PCB 111	EPA 1668 A

Polychlorinated Biphenyls	
PCB 112	EPA 1668 A
PCB 113	EPA 1668 A
PCB 114	EPA 1668 A
PCB 115	EPA 1668 A
PCB 116	EPA 1668 A
PCB 117	EPA 1668 A
PCB 118	EPA 1668 A
PCB 119	EPA 1668 A
PCB 12	EPA 1668 A
PCB 120	EPA 1668 A
PCB 121	EPA 1668 A
PCB 122	EPA 1668 A
PCB 123	EPA 1668 A
PCB 124	EPA 1668 A
PCB 125	EPA 1668 A
PCB 126	EPA 1668 A
PCB 127	EPA 1668 A
PCB 128	EPA 1668 A
PCB 129	EPA 1668 A
PCB 13	EPA 1668 A
PCB 130	EPA 1668 A
PCB 131	EPA 1668 A
PCB 132	EPA 1668 A
PCB 133	EPA 1668 A
PCB 134	EPA 1668 A
PCB 135	EPA 1668 A

Serial No.: 53026

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015
Revised June 16, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Polychlorinated Biphenyls		**Polychlorinated Biphenyls**	
PCB 136	EPA 1668 A	PCB 160	EPA 1668 A
PCB 138	EPA 1668 A	PCB 161	EPA 1668 A
PCB 139	EPA 1668 A	PCB 162	EPA 1668 A
PCB 14	EPA 1668 A	PCB 163	EPA 1668 A
PCB 140	EPA 1668 A	PCB 164	EPA 1668 A
PCB 141	EPA 1668 A	PCB 165	EPA 1668 A
PCB 142	EPA 1668 A	PCB 166	EPA 1668 A
PCB 143	EPA 1668 A	PCB 167	EPA 1668 A
PCB 144	EPA 1668 A	PCB 168	EPA 1668 A
PCB 145	EPA 1668 A	PCB 169	EPA 1668 A
PCB 146	EPA 1668 A	PCB 17	EPA 1668 A
PCB 147	EPA 1668 A	PCB 170	EPA 1668 A
PCB 148	EPA 1668 A	PCB 171	EPA 1668 A
PCB 149	EPA 1668 A	PCB 172	EPA 1668 A
PCB 15	EPA 1668 A	PCB 173	EPA 1668 A
PCB 150	EPA 1668 A	PCB 174	EPA 1668 A
PCB 151	EPA 1668 A	PCB 175	EPA 1668 A
PCB 152	EPA 1668 A	PCB 176	EPA 1668 A
PCB 153	EPA 1668 A	PCB 177	EPA 1668 A
PCB 154	EPA 1668 A	PCB 178	EPA 1668 A
PCB 155	EPA 1668 A	PCB 179	EPA 1668 A
PCB 156	EPA 1668 A	PCB 18	EPA 1668 A
PCB 157	EPA 1668 A	PCB 180	EPA 1668 A
PCB 158	EPA 1668 A	PCB 181	EPA 1668 A
PCB 159	EPA 1668 A	PCB 182	EPA 1668 A
PCB 16	EPA 1668 A	PCB 183	EPA 1668 A

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Polychlorinated Biphenyls		**Polychlorinated Biphenyls**	
PCB 184	EPA 1668 A	PCB 207	EPA 1668 A
PCB 185	EPA 1668 A	PCB 208	EPA 1668 A
PCB 186	EPA 1668 A	PCB 209	EPA 1668 A
PCB 187	EPA 1668 A	PCB 21	EPA 1668 A
PCB 188	EPA 1668 A	PCB 22	EPA 1668 A
PCB 189	EPA 1668 A	PCB 23	EPA 1668 A
PCB 19	EPA 1668 A	PCB 24	EPA 1668 A
PCB 190	EPA 1668 A	PCB 25	EPA 1668 A
PCB 191	EPA 1668 A	PCB 26	EPA 1668 A
PCB 192	EPA 1668 A	PCB 27	EPA 1668 A
PCB 193	EPA 1668 A	PCB 28	EPA 1668 A
PCB 194	EPA 1668 A	PCB 29	EPA 1668 A
PCB 195	EPA 1668 A	PCB 3	EPA 1668 A
PCB 196	EPA 1668 A	PCB 30	EPA 1668 A
PCB 197	EPA 1668 A	PCB 31	EPA 1668 A
PCB 198	EPA 1668 A	PCB 32	EPA 1668 A
PCB 199	EPA 1668 A	PCB 33	EPA 1668 A
PCB 2	EPA 1668 A	PCB 34	EPA 1668 A
PCB 20	EPA 1668 A	PCB 35	EPA 1668 A
PCB 200	EPA 1668 A	PCB 36	EPA 1668 A
PCB 201	EPA 1668 A	PCB 37	EPA 1668 A
PCB 202	EPA 1668 A	PCB 38	EPA 1668 A
PCB 203	EPA 1668 A	PCB 39	EPA 1668 A
PCB 204	EPA 1668 A	PCB 4	EPA 1668 A
PCB 205	EPA 1668 A	PCB 40	EPA 1668 A
PCB 206	EPA 1668 A	PCB 41	EPA 1668 A

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Polychlorinated Biphenyls		**Polychlorinated Biphenyls**	
PCB 42	EPA 1668 A	PCB 66	EPA 1668 A
PCB 43	EPA 1668 A	PCB 67	EPA 1668 A
PCB 44	EPA 1668 A	PCB 68	EPA 1668 A
PCB 45	EPA 1668 A	PCB 69	EPA 1668 A
PCB 46	EPA 1668 A	PCB 7	EPA 1668 A
PCB 47	EPA 1668 A	PCB 70	EPA 1668 A
PCB 48	EPA 1668 A	PCB 71	EPA 1668 A
PCB 49	EPA 1668 A	PCB 72	EPA 1668 A
PCB 5	EPA 1668 A	PCB 73	EPA 1668 A
PCB 50	EPA 1668 A	PCB 74	EPA 1668 A
PCB 51	EPA 1668 A	PCB 75	EPA 1668 A
PCB 52	EPA 1668 A	PCB 76	EPA 1668 A
PCB 53	EPA 1668 A	PCB 77	EPA 1668 A
PCB 54	EPA 1668 A	PCB 78	EPA 1668 A
PCB 55	EPA 1668 A	PCB 79	EPA 1668 A
PCB 56	EPA 1668 A	PCB 8	EPA 1668 A
PCB 57	EPA 1668 A	PCB 80	EPA 1668 A
PCB 58	EPA 1668 A	PCB 81	EPA 1668 A
PCB 59	EPA 1668 A	PCB 82	EPA 1668 A
PCB 6	EPA 1668 A	PCB 83	EPA 1668 A
PCB 60	EPA 1668 A	PCB 84	EPA 1668 A
PCB 61	EPA 1668 A	PCB 85	EPA 1668 A
PCB 62	EPA 1668 A	PCB 86	EPA 1668 A
PCB 63	EPA 1668 A	PCB 87	EPA 1668 A
PCB 64	EPA 1668 A	PCB 88	EPA 1668 A
PCB 65	EPA 1668 A	PCB 89	EPA 1668 A

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Polychlorinated Biphenyls

PCB 9	EPA 1668 A
PCB 90	EPA 1668 A
PCB 91	EPA 1668 A
PCB 92	EPA 1668 A
PCB 93	EPA 1668 A
PCB 94	EPA 1668 A
PCB 95	EPA 1668 A
PCB 96	EPA 1668 A
PCB 97	EPA 1668 A
PCB 98	EPA 1668 A
PCB 99	EPA 1668 A
PCB-1016	EPA 8082A
PCB-1221	EPA 8082A
PCB-1232	EPA 8082A
PCB-1242	EPA 8082A
PCB-1248	EPA 8082A
PCB-1254	EPA 8082A
PCB-1260	EPA 8082A
PCB-1262	EPA 8082A
PCB-1268	EPA 8082A

Polynuclear Aromatic Hydrocarbons

2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 8270D

Polynuclear Aromatic Hydrocarbons

Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(ghi)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Dibenzo(a,j)acridine	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 8270D

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Priority Pollutant Phenols

2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D

Semi-Volatile Organics

Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 8021B
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
	EPA 8021B
Isopropylbenzene	EPA 8260C
	EPA 8021B
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C

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All approved analytes are listed below:

Volatile Aromatics

o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 8021B
Total Xylenes	EPA 8260C
	EPA 8021B

Volatile Chlorinated Organics

Benzyl chloride	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C
1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C

Volatile Halocarbons

1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C
trans-1,3-Dichloropropene	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C

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All approved analytes are listed below:

Volatile Halocarbons

Vinyl chloride	EPA 8260C

Volatile Organics

1,4-Dioxane	EPA 8260C
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Ethyl Acetate	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl tert-butyl ether	EPA 8260C EPA 8021B
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propionitrile	EPA 8260C
tert-butyl alcohol	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

EPA 5035A-L
EPA 5035A-H

Sample Preparation Methods

EPA 3010A
EPA 3005A
EPA 3050B
EPA 3550C
EPA 3540C
EPA 3020A
EPA 3546
EPA 5035
EPA 3060A

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All approved analytes are listed below:

Acrylates

Acetonitrile	EPA TO-15
Acrylonitrile	EPA TO-15
Ethyl acrylate	EPA TO-15
Methyl methacrylate	EPA TO-15

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA TO-14A
	EPA TO-15
Hexachlorobutadiene	EPA TO-14A
	EPA TO-15

Polynuclear Aromatics

Naphthalene	EPA TO-15

Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA TO-14A
	EPA TO-15
1,2-Dichlorobenzene	EPA TO-14A
	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-14A
	EPA TO-15
1,3-Dichlorobenzene	EPA TO-14A
	EPA TO-15
1,4-Dichlorobenzene	EPA TO-14A
	EPA TO-15
2-Chlorotoluene	EPA TO-15
Benzene	EPA TO-14A

Purgeable Aromatics

Benzene	EPA TO-15
Chlorobenzene	EPA TO-14A
	EPA TO-15
Ethyl benzene	EPA TO-14A
	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15
o-Xylene	EPA TO-15
Styrene	EPA TO-14A
	EPA TO-15
Toluene	EPA TO-14A
	EPA TO-15
Total Xylenes	EPA TO-14A
	EPA TO-15

Purgeable Halocarbons

1,1,1-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1,2,2-Tetrachloroethane	EPA TO-14A
	EPA TO-15
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-14A
	EPA TO-15
1,1,2-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1-Dichloroethane	EPA TO-14A
	EPA TO-15

Serial No.: 52074

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Purgeable Halocarbons	
1,1-Dichloroethene	EPA TO-14A
	EPA TO-15
1,2-Dibromoethane	EPA TO-14A
	EPA TO-15
1,2-Dichloroethane	EPA TO-14A
	EPA TO-15
1,2-Dichloropropane	EPA TO-14A
	EPA TO-15
Bromodichloromethane	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-14A
	EPA TO-15
Carbon tetrachloride	EPA TO-14A
	EPA TO-15
Chloroethane	EPA TO-14A
	EPA TO-15
Chloroform	EPA TO-14A
	EPA TO-15
Chloromethane	EPA TO-14A
	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-14A
	EPA TO-15
cis-1,3-Dichloropropene	EPA TO-14A
	EPA TO-15
Dibromochloromethane	EPA TO-15
Dichlorodifluoromethane	EPA TO-14A

Purgeable Halocarbons	
Dichlorodifluoromethane	EPA TO-15
Methylene chloride	EPA TO-15
Tetrachloroethene	EPA TO-14A
	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-14A
	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-14A
	EPA TO-15
Trichloroethene	EPA TO-14A
	EPA TO-15
Trichlorofluoromethane	EPA TO-14A
Vinyl bromide	EPA TO-15
Vinyl chloride	EPA TO-15
Volatile Organics	
1,3-Butadiene	EPA TO-15
1,4-Dioxane	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15
Acetone	EPA TO-15
Carbon Disulfide	EPA TO-15
Hexane	EPA TO-15
Methyl iodide	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
n-Heptane	EPA TO-15

Serial No.: 52074

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10670

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Volatile Organics

tert-butyl alcohol	EPA TO-15
Vinyl acetate	EPA TO-15

Serial No.: 52074

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WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015
Revised December 11, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 11398

DR. YONGTAO LI
EUROFINS EATON ANALYTICAL, INC
110 SOUTH HILL STREET
SOUTH BEND, IN 46617

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology

Coliform, Total / E. coli (Qualitative)	Colisure
E. coli (Enumeration)	SM 18-22 9223B (-97) (Colilert)
Standard Plate Count	SimPlate

Chlorinated Acids

2,4,5-TP (Silvex)	EPA 515.3
2,4-D	EPA 515.3
Acifluorofen	EPA 515.3
Dalapon	EPA 515.3
Dicamba	EPA 515.3
Dinoseb	EPA 515.3
Pentachlorophenol	EPA 515.3
Picloram	EPA 515.3

Disinfection By-products

Bromate	EPA 317.0 Rev. 2.0
Bromide	EPA 300.0 Rev. 2.1
Bromochloroacetic acid	EPA 552.2
Chlorate	EPA 300.0 Rev. 2.1
Chlorite	EPA 300.0 Rev. 2.1
Dibromoacetic acid	EPA 552.2
Dichloroacetic acid	EPA 552.2
Monobromoacetic acid	EPA 552.2
Monochloroacetic acid	EPA 552.2
Trichloroacetic acid	EPA 552.2

Fuel Additives

Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2

Metals I

Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.8 Rev. 5.4

Metals II

Aluminum, Total	EPA 200.8 Rev. 5.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.8 Rev. 5.4

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WADSWORTH CENTER

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110 SOUTH HILL STREET
SOUTH BEND, IN 46617

NY Lab Id No: 11398

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Metals III

Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4
Uranium (Mass)	EPA 200.8 Rev. 5.4

Methylcarbamate Pesticides

3-Hydroxy Carbofuran	EPA 531.2
Aldicarb	EPA 531.2
Aldicarb Sulfone	EPA 531.2
Aldicarb Sulfoxide	EPA 531.2
Carbaryl	EPA 531.2
Carbofuran	EPA 531.2
Methomyl	EPA 531.2
Oxamyl	EPA 531.2

Microextractibles

1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1

Miscellaneous

Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Di (2-ethylhexyl) adipate	EPA 525.2
Diquat	EPA 549.2
Endothall	EPA 548.1
Glyphosate	EPA 547
Hexachlorobenzene	EPA 525.2
Hexachlorocyclopentadiene	EPA 525.2
Organic Carbon, Dissolved	SM 21-22 5310C (-00)
Organic Carbon, Total	SM 21-22 5310C (-00)
Perchlorate	EPA 331.0
Turbidity	EPA 180.1 Rev. 2.0
UV 254	SM 19-22 5910B (-00)

Non-Metals

Alkalinity	SM 18-22 2320B (-97)
Calcium Hardness	SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 18-22 2120B (-01)
Corrosivity	SM 18-22 2330
Cyanide	EPA 335.4 Rev. 1.0
Fluoride, Total	SM 18-22 4500-F C (-97)
Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	SM 18-22 4500-P E (-99)
Silica, Dissolved	EPA 200.7 Rev. 4.4
Solids, Total Dissolved	SM 18-22 2540C (-97)
Specific Conductance	SM 18-22 2510B (-97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1

Organohalide Pesticides

Alachlor	EPA 525.2
Aldrin	EPA 525.2

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All approved analytes are listed below:

Organohalide Pesticides

Atrazine	EPA 525.2
Butachlor	EPA 525.2
Chlordane Total	EPA 505
Dieldrin	EPA 525.2
Endrin	EPA 525.2
Heptachlor	EPA 525.2
Heptachlor epoxide	EPA 525.2
Lindane	EPA 525.2
Methoxychlor	EPA 525.2
Metolachlor	EPA 525.2
Metribuzin	EPA 525.2
Propachlor	EPA 525.2
Simazine	EPA 525.2
Toxaphene	EPA 505
Trifluralin	EPA 525.2

Polychlorinated Biphenyls

PCB Screen	EPA 505

Radiological Analytes

Gross Alpha	SM 17-22 7110B (-00) SM 18-22 7110C (-00)
Gross Beta	SM 17-22 7110B (-00)
Radium-226	SM 17-22 7500-Ra B (-01)
Radium-228	SM 17-22 7500-Ra D (-01)
Radon	SM 20-22 7500 Rn (-06)
Tritium	EPA 906.0

Trihalomethanes

Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2

Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2

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NELAP RECOGNIZED TNI ACCREDITATION BODY

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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All approved analytes are listed below:

Volatile Aromatics

Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2

Volatile Halocarbons

Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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ATTACHMENT B

Data Validator Qualifications and Experience

(Pending)

ATTACHMENT C

Guidance for the Development of Data Usability Summary Reports

Appendix 2B
Guidance for Data Deliverables and the Development of Data Usability Summary Reports

1.0 Data Deliverables

(a) DEC Analytical Services Protocol Category A Data Deliverables:

1. A Category A Data Deliverable as described in the most current DEC Analytical Services Protocol (ASP) includes:

   - i. a Sample Delivery Group Narrative;
   - ii. contract Lab Sample Information sheets;
   - iii. DEC Data Package Summary Forms;
   - iv. chain-of-custody forms; and,
   - v. test analyses results (including tentatively identified compounds for analysis of volatile and semi-volatile organic compounds)

2. For a DEC Category A Data Deliverable, a data applicability report may be requested, in which case it will be prepared, to the extent possible, in accordance with the DUSR guidance detailed below.

(b) DEC Analytical Services Protocol Category B Data Deliverables

1. A Category B Data Deliverable is includes the information provided for the Category A Data Deliverable, identified in subdivision (a) above, plus related QA/QC information and documentation consisting of:

   - i. calibration standards;
   - ii. surrogate recoveries;
   - iii. blank results;
   - iv. spike recoveries;
   - v. duplicate results;
   - vi. confirmation (lab check/QC) samples;
   - vii. internal standard area and retention time summary;
   - viii. chromatograms;

ix. raw data files; and

x. other specific information as described in the most current DEC ASP.

2. A DEC Category B Data Deliverable is required for the development of a Data Usability Summary Report (DUSR).

2.0 Data Usability Summary Reports (DUSRs)

(a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

1. The development of the DUSR must be carried out by an experienced environmental scientist, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

i. a DEC ASP Category B Data Deliverable; or

ii. the *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation*.

2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later date on the same data package used for the development of the DUSR.

(b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.

(c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?

2. Have all holding times been met?

3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

(d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.

APPENDIX C

HEALTH & SAFETY PLAN

July 2016

SITE SPECIFIC HEALTH & SAFETY PLAN

Saint-Gobain Performance
Plastics Site
1 Liberty Street
Village of Hoosick Falls
Rensselaer County
New York

Prepared by:

C.T. MALE ASSOCIATES
50 Century Hill Drive
Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Associates Project No: 16.6132

SITE SPECIFIC HEALTH & SAFETY PLAN
SAINT-GOBAIN PERFORMANCE PLASTICS CORP.
1 LIBERTY STREET
VIALLAGE OF HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK

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SAINT-GOBAIN PERFORMANCE PLASTICS CORP.
1 LIBERTY STREET
VIALLAGE OF HOOSICK FALLS
RENSSELAER COUNTY, NEW YORK
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1.0 GENERAL

1.1 Overview

This Health and Safety Plan (HASP) has been prepared for use during implementation of a Site Characterization Investigation (SCI) at the Saint-Gobain Performance Plastics, Corp. (Saint-Gobain) Site ("the Site") located at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York.

Site specific training will be provided by Saint-Gobain in addition to the procedures presented within this plan. These will include health and safety, emergency communications and procedures, and monitoring.

A designated Health and Safety Officer (HSO) will be responsible for implementing this HASP during the completion of the field work. All persons or parties who enter the work area (support zone, decontamination zone or exclusion zone) must review, sign and comply with this HASP. A partial list of individuals authorized to enter the exclusion zone at the site is presented in Section 13.0 of this HASP. Others may be added to the list as needed. A copy of this HASP will be maintained at the Site throughout the duration of the project. A complete description of the SCI work is presented in the SC Work Plan. A brief description of the proposed scope of work is outlined below:

<u>Site Investigation:</u>

- Oversee the drilling of soil borings and installation of groundwater monitoring wells;
- Collection of surface soil, shallow soil and sediment samples for classification and submission for laboratory analyses;
- Collection of subsurface soil samples from the soil borings for classification and submission for laboratory analyses;
- Collection of surface water samples for laboratory analyses;
- Collection of quality control samples of aqueous and solid materials for laboratory analysis;
- Installation and development of monitoring wells;

- Monitoring well location and elevation survey;
- Groundwater purging and sampling for laboratory analyses;
- Falling/Rising Head permeability testing;
- Periodic water level gauging of groundwater within the monitoring wells;
- Installation of pressure transducers in monitoring wells and periodic retrieval of the recorded data, and
- Other unforeseen environmental conditions which may be encountered during investigative work

1.2 Contact Names & Numbers

For this project, the following project contacts have been assigned.

SGPP CONTACTS:
DIRECTOR HEALTH, SAFETY & ENVIRONMENT:
Edward Canning
Saint-Gobain
One Sealants Park
Granville, New York 12832 518.642.2200 (O)

EHS MANAGER: Alicia M. Dorsey, M.S.E.
SGPP
16 McCaffery Street
Hoosick Falls, NY 12090 518.686.6278 (O)
518.203.9127 (C)

CONSULTANT CONTACTS:

CONSULTING ENGINEER: C.T. Male Associates 518.786.7400
50 Century Hill Drive
Latham, NY 12110
Dan Reilly, Project Principal 518.786.7625 (O)
518. 928.9792 (C)
Kirk Moline, Project Manager 518.786.7502 (O)
518.265.1708 (C)

	Kirk Moline, Health & Safety Officer	518.786.7502 (O) 518.265.1708 (C)
	Jon Dippert, HSO Designee	518.786.7563 (O) 518.469.1183 (C)

EMERGENCY PHONE NUMBERS:

PERSONAL INJURY OR EMERGENCY:	Southwestern Vermont Medical Center 100 Hospital Drive Bennington, VT 05210 (approx. 20 minutes)	800.543.1624
FIRE DEPARTMENT:	Emergency	911
	Village of Hoosick Falls Fire Department Main Street Hoosick Falls, NY 12090	518.686.7427
POLICE:	Emergency	911
	Village of Hoosick Falls Police Department 24 Main Street Hoosick Falls, NY 12090	518.686.7900
NYS State Police	Emergency	911
	NYS Troopers Barracks Town Hall, Route 66 Sand Lake, NY	518.674.4440
UPSTATE NEW YORK REGIONAL POISON CONTROL CENTER:	University Hospital Upstate Medical University SUNY Health Science Center 750 East Adams Street Syracuse, NY 13201	(800) 222-1222
NATIONAL RESPONSE CENTER:	c/o United States Coast Guard (G-OPF) 2100 2nd Street, Southwest - Room 2611 Washington, DC 20593-0001	(800) 424-8802
NYSDEC SPILL HOTLINE:		(800) 457-7362

2.0 HEATLH AND SAFETY PERSONNEL

The Health and Safety Officer (HSO) will be responsible for implementation of the HASP and the delegation of health and safety duties. The HSO will coordinate the resolution of safety issues that arise during site work. When field operations require only Level D protection, it will not be necessary for the HSO to be present on-site at all times. When the HSO is not present on-site, a designee will be authorized to perform the duties of the HSO, and the designee will be responsible for implementation of the HASP.

The HSO or designee has authority to stop work upon their determination of an imminent safety hazard, emergency situation or other potentially dangerous situations (e.g. weather conditions). Authorization to resume work will be issued by the HSO.

3.0 SITE LOCATION AND DESCRIPTION

The Site is located at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York. The Site is approximately 11.40 acres in size.

The eastern portion of the Site contains a single story manufacturing building that is currently occupied by Saint-Gobain. The Site building was originally constructed in a "U" shape; the open portion of the "U" at the western end of the building. Subsequent building additions have been constructed, the most recent in 2015/16, resulting in the formation of open courtyard areas that are only accessed from the interior of the building. The Site building is generally situated on the highest portion of the Site property. The lands immediately surrounding the building slope gentley to moderately in all directions. The western portion of the Site consists of vegetated wetland type areas. A pond with associated inlet and outlet drainage ways is located on the southwestern portion of the Site.

The Site is accessed from Liberty Street. A paved parking lot for employees and visitors is located to the east of the manufacturing building. Access ways for company, shipping and delivery vehicles are located along the southern and western portions of the manufacturing building.

The site is serviced with municipal water and sewer. Electric service is provided overhead, with the main lines entering the site from Liberty Street. The building heating fuel is propane, which is stored above ground to the west of the site building.

Overall, the site topography slopes gently to moderately from east to west.

4.0 POTENTIAL SITE CONTAMINANTS

Potential site contaminants which may be encountered during the SCI include Perfluorinated Compounds (PFCs), particularly perfluorooctanoic acid (PFOA), petroleum hydrocarbons, solvents, polynuclear aromatic hydrocarbons (PAHs), and metals. PFOA has been recently scrutinized by EPA, mainly as it relates to drinking water impacts. PFOA is used in the manufacture of many products including Teflon pans, Teflon tape, pipe dope, new clothing, carpet, upholstery, Tyvek, Goretex clothing and gear, paint additives, stain repellents, and coating on food grade containers. A Safety Data Sheet for PFOA is presented in Exhibit 1.

5.0 HAZARD ASSESSMENT

5.1 General

The hazard assessment, use of specific protective equipment, and monitoring associated with each field work task of the investigation to be conducted at the subject site are presented in following subsections.

For this project, C.T. Male will be subcontracting portions of the Site Investigation activities. Each subcontractor will be responsible for developing and implementing a site specific health and safety plan for their activities, for protection of their employees, and use of personal protective equipment. The subcontractor will also be responsible for developing and following their own Respiratory Protection Program, as applicable.

5.2 Soil, Sediment, Surface Water and Groundwater Sampling

Surface soil, shallow soil, subsurface soil, sediment, surface water and groundwater sampling are planned for the site. The potential hazards to personnel during this work are dermal contact. Level D protection should be sufficient to protect against dermal contact during handling of soils, sediment and water. If organic vapors are present at the action levels described in Section 5.4, on the basis of organic vapor monitoring of the area during the work, it may be necessary to upgrade to Level C respiratory protection.

5.3 Subsurface Work

Exploratory soil test borings (including the installation of monitoring wells) are planned for the site. The potential hazards to personnel during this work are dermal contact. Level D protection should be sufficient to protect against dermal contact during drilling of and/or handling of the subsurface soils and groundwater. If organic vapors are present at the action levels described in Section 5.4, on the basis of organic vapor monitoring of the area during the work, it may be necessary to upgrade to Level C respiratory protection.

5.4 Air Monitoring

During ground intrusive activities, including the completion of test borings, the ambient air in the work area will be monitored with a photoionization detection meter (total volatile compound – MiniRAE 2000 or 3000) prior to the start of work and periodically as conditions warrant. If a concentration of 10 ppm (sustained for 5 minutes) of total volatile compounds is detected within the work area on the instrument, relative to an isobutylene standard (used to calibrate the instrument), work will cease immediately and the workers shall shut down equipment and leave the area immediately. The level of personal protective equipment (PPE) protection will be evaluated prior to continuing work. If a PPE upgrade to Level C is required, it will include: a half face air purifying respirator equipped with combination organic vapor and particulate cartridges for 10-15 ppm exposure levels; and a full-face air purifying respirator for greater than 15 ppm to less than 50 ppm exposure levels, prior to continuing work. If a concentration greater than 50 ppm is encountered, work will cease immediately and the situation will be evaluated prior to continuation of work. Table 1 summarizes the action levels relative to the required respiratory protection.

Table 1
C.T. Male Action Levels & Required Respiratory Protection

Action Level	**Level of PPE**	**Type of Respiratory Protection**
0-10 parts per million	Level D	No respiratory protection
10-15 parts per million	Level C	Negative pressure half-face respirator
15-50 parts per million	Level C	Positive pressure full-face respirator
Greater than 50	Cease Work	Evaluate work procedures

-Facial hair is not permitted while wearing most respirators.
-Workers required to wear a respirator must have a minimum of OSHA 40 Hour training with current medical monitoring and fit test documentation.

5.5 Community Air Monitoring Plan

A site specific Community Air Monitoring Plan (CAMP) will be followed for the project on the basis of the New York State Department of Health Generic Community Air Monitoring Plan dated May 2010. The CAMP is presented in Appendix C. Air monitoring for organic vapors and particulates will be conducted during portions of the remedial investigation where the site's soils may be disturbed. Investigative tasks having the potential to disturb the site's soils include collection of surface, shallow and subsurface soil samples, collection of sediment samples, and advancement of test borings.

5.6 Hazard Identification and Control

The following table presents generalized hazards potentially involved with the tasks to be completed on this project. Table 2 identifies general procedures to follow to prevent or reduce accident, injury or illness. Any worker on-site who identifies a potential hazard must report the condition to the HSO or designee, and initiate control of the hazardous condition.

Table 2
Potential Hazards and Control

Potential Hazard	Control
Vehicular Traffic	1. Wear safety vest when vehicular hazards exist. 2. Use cones, flags, barricades, and caution tape to define work area. 3. Use vehicle to block work area. 4. Contact police for high traffic situations.
Slip, Trip, and Fall Protection	1. Assess work area to determine if there is a potential for falling. 2. Make sure work area is neat and tools are staged in one general area. 3. Wear steel-toe boots with adequate tread and always watch where the individual is walking. Carry flashlight when walking in poorly lighted areas. 4. Wear life preserver in watercraft (boat).
Inclement Weather	1. Stop outdoor work during electrical storms and other extreme weather conditions such as extreme heat or cold temperatures. 2. Take cover indoors or in vehicle. 3. Listen to local forecasts for warnings about specific weather hazards such as tornadoes, hurricanes, and flash floods.
Utility Lines Contact	1. Contact UFPO to have utility lines marked prior to any underground excavation, trenching or drilling. UFPO must be contacted at least 72 hours prior to work. 2. Refer to site drawings for utility locations. 3. Manually dig 3 to 5 feet below grade and 5 feet on each side of utility

Table 2
Potential Hazards and Control

Potential Hazard	Control
	marked to avoid breaking utility lines.
Noise	1. Wear hearing protection when equipment such as a drill rig, excavator, jackhammer, or other heavy equipment is operating on-site. 2. Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source; as this much noise indicates the need for protection. 3. Hearing protection is required when measured sound exceeds 85 decibels (dB) where employees stand or conduct work.
Electrical Shock	1. Maintain appropriate distance between heavy equipment and overhead utilities; 20 foot minimum clearance from power lines; and 10 foot minimum clearance from shielded power lines. 2. Contact local underground utility locating service prior to penetrating the ground surface.
Physical Injury	1. Wear hard hats and safety glasses at all times when on-site. 2. Maintain visual contact with equipment operators and wear orange safety vest when heavy equipment is operating on-site. 3. Avoid loose clothing when working around rotary equipment. 4. Keep hands and feet away from drilling augers and excavation equipment tracks/tires. 5. Test emergency shut-off switches on drill rigs and excavation equipment regularly.
Back Injury	1. Use a mechanical lifting device or a lifting aid where appropriate. 2. Ensure the route is free of obstructions. 3. Bend at the knees and use leg muscles when lifting. 4. Use the buddy system if lifting heavy or awkward objects. 5. Do not twist or jerk your body when lifting.
Heat Stress	1. Increase water intake while working. 2. Avoid excessive alcohol intake the night before working in heat stress situations. 3. Increase number of rest breaks as necessary, and rest in a shaded area. 4. Watch for signs and symptoms of heat exhaustion and fatigue.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	5. Rest in cool, dry areas. 6. In the event of heat stress or heat stroke, bring the victim to a cool environment and call 911.
Cold Stress	1. Wear cotton, wool or synthetics (polypropylene) undergarments to absorb perspiration from the body. 2. Wear additional layers of light clothing as needed for warmth. The layering effect holds in air, trapping body heat, and some layers could be removed as the temperature rises during the day. 3. Pay close attention to body signals and feelings (hypothermia symptoms), especially to the extremities. Correct any problem indications by breaking from the work activity and moving to a rest area to warm up and add additional clothing. 4. Increase water intake while working. 5. Avoid excessive alcohol intake the night before working in cold conditions. 6. Increase the number of rest breaks as necessary, and rest in a warm area. 7. In the event of hypothermia or frost bite, bring the victim to a warm environment and call 911.
Fire Control	1. Smoking is not allowed on-site. 2. Keep flammable liquids in closed containers. 3. Isolate flammable and combustible materials from ignition sources. 4. Keep fire extinguisher nearby and use only if deemed safe.
Media Sampling (water, soil, etc.)	1. Wear appropriate PPE to avoid skin, eye, and inhalation contact with contaminated media. 2. Stand upwind to minimize possible inhalation exposure, especially when opening monitoring wells or closed containers/vessels. 3. Conduct air monitoring, whenever necessary to determine level of respiratory protection. 4. If necessary, employ engineering controls to assist in controlling chemical vapors.
Cleaning Equipment	1. Wear appropriate PPE to avoid skin and eye contact with Alconox or

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	other cleaning materials. 2. Stand upwind to minimize possible inhalation exposure. 3. Properly dispose of spent chemical cleaning solutions and rinse accordingly.
Poor Structural Building Condition	1. Assess building condition prior to entering and note where exit points are at all times. 2. Be cautious when walking inside the building. Always look for holes in the floors or hanging debris which could cause injury. 3. Carry a high power flashlight and use as necessary in low light areas. 4. If working in the building, ensure work area is neat and tools are staged in one general area. 5. Wear steel-toe boots with adequate tread. 6. Attempt to employ the buddy system so someone knows what part of the building individuals are in.
Deer Ticks	1. Wear pants and long sleeve shirts 2. Use tick repellent 3. Perform personal body checks for the presence of ticks 4. Notify the Health and Safety Officer immediately if you have been bitten by a tick and contact your physician.
Note: A first aid kit and fire extinguisher will be located in the C.T. Male company vehicle.	

Response actions to personal exposure from on-site contaminants include skin contact, eye contact, inhalation, ingestion, and puncture or laceration. The recommended response actions are presented in Section 11.2.

6.0 TRAINING

Site specific training of workers and personnel will be conducted and provided by the HSO or designee prior to any on-site activity. The training will specifically address the activities, procedures, monitoring and equipment for the site operations. It will include area and facility layout, hazards, emergency services (police, hospital, fire, etc.), and review of this HASP. Questions by workers, field personnel, etc. will be addressed at this time.

Workers and personnel conducting and/or supervising the project must have attended and successfully completed a 40 Hour Health and Safety Training Course for Hazardous Waste Operations and an annual 8 hour Refresher Course. Workers must take part in an employer medical surveillance program in accordance with OSHA 1910.120 requirements, including that the workers have had a medical physical within one (1) year prior to the date the work begins and that they are physically able to wear a respirator.

Documentation of training and medical surveillance will be submitted to the HSO or designee prior to the start of any on-site work. A copy of the training certificates shall be inserted into the pocket of this HASP in Appendix A.

7.0 SITE ACCESS

The SCI will primarily be performed within the Site boundaries, with one (1) sampling location outside of the Site boundaries. Due to the site location, it is possible that the public or curious bystanders will be present at the time of the work. As such, the work area and exclusion zone will be considered as the following, dependent on the investigative tasks performed.

- Chain-link fencing will be used to delineate an approximate 30 foot square around each test boring location. All work and equipment will remain within the designated work area/exclusion zone until completion of the test boring and installation of the monitoring well.

- Caution tape will be used to delineate an approximate 10 foot square around each sediment sampling location not located in the on-site pond and each soil sampling location not originating from a test boring. All work and equipment will remain within the designated work area/exclusion zone until completion of the sediment and soil sampling.

- The boat will be considered as the designated work area/exclusion zone for sediment and surface water samples to be collected from open waters of the on-site pond.

Only OSHA trained individuals which are qualified to do the work and have read and signed this Site specific HASP will be allowed within the work/exclusion zone. The HSO or designee will be responsible for limiting access to unauthorized individuals.

The Contamination Reduction Zone (decontamination area), and Support Zone (clean area, everywhere else) will be established outside the Exclusion Zone, as necessary. The exclusion, contamination reduction, and support zone during SCI work have been identified and designated as follows:

Work/Exclusion Zone - The location of the work/exclusion zone will be determined in the field prior to the start of work and will vary depending on the work activities conducted. For the most part, the work/exclusion zone is anticipated to be defined with chain link fencing and/or caution tape (see above). Only authorized persons with proper training and protective gear will be allowed to enter the work/exclusion zone.

Contamination Reduction Zone – If applicable, this zone will generally be a 10'± x 10'± area, marked off with stakes and colored flagging or equal method, containing the decontamination pad. The location will be determined in the field prior to the start of work and will vary depending on the area(s) the work is being conducted. This zone is where decontamination of personnel and equipment will take place, as necessary, on the basis of the work being performed.

Support Zone - Area outside of the contamination reduction zone and not including the work/exclusion zone. Unauthorized or untrained individuals must remain in this zone.

8.0 PERSONAL PROTECTION

8.1 Level of Protection

Based on evaluation of the potential hazards, the minimum level of protection to be worn by workers during implementation of the SCI activities is defined as Level D protection, and will be controlled by the HSO or designee.

The minimum level D protective equipment will consist of field clothes, rubber gloves **(NITRILE ONLY)**, hard hats, safety glasses, and safety boots (steel-toe preferred). As appropriate, this level of protection may be modified to include protective suits **(NOT TYVEK)**, coveralls, leg chaps, or face shield for additional protection. Both full-face and half-face air purifying respirators should be readily available. Appropriate combination organic vapor and particulate cartridge filters will be available at the site to use, if necessary, with the air purifying respirators.

If required, level C protective equipment will consist of the items listed for Level D protection with the added protection of full-face, air purifying (organic vapor and particulate) respirator, chemical resistant clothing (NOT TYVEK), inner and outer chemically resistant gloves (i.e. nitrile), and chemical resistant safety overboots.

Level B is not anticipated, but if required, level B protective equipment will consist of the items listed for Level D protection except a self-contained breathing apparatus (SCBA) will be worn dependent on the level of contaminants present in the work zone, and protective suits (NOT TYVEK) will be required. When site conditions warrant the need for level B protective equipment, work will cease and the project will be re-evaluated to determine the necessity for employing engineering controls to reduce or eliminate the potential contaminants of concern.

8.2 Safety Equipment

Basic emergency and first aid equipment will be available at an area within the Support Zone clearly marked and available or within C.T. Male's company vehicle. This shall include a first aid kit, fire extinguisher, supply of potable water, soap and towels. The HSO or designee shall be equipped with a cellular phone in case of emergencies. If the cellular phone is not available, or is inoperable, a phone in the Saint-Gobain facility will be used.

9.0 COMMUNICATIONS

Land line phone service is available within the site building. Regardless, the HSO or designee shall be equipped with a cellular phone in case of emergencies. If the cellular phone is not available, or is inoperable, the facility phone will be used. The HSO or designee shall notify the C.T. Male Project Manager as soon as safely possible in the event of an accident, injury or emergency action.

Hand signals for certain work tasks will be employed, as necessary, and the buddy system will be employed during drilling and sampling activities.

10.0 DECONTAMINATION PROCEDURES

10.1 Personnel Decontamination Procedures

Decontamination procedures will be carried out by all personnel leaving the Work/Exclusion Zone (except under emergency evacuation). The amount of decontamination performed will be dependent on the level of personal protection currently being worn within the exclusion zone.

1. Do not remove respiratory protection until all steps have been completed.
2. Clean outer protective gloves and outer boots, if worn, with water (preferably with a pressurized washer) over designated wash tubs in the exclusion zone to remove the gross amount of contamination.
3. Deposit equipment used (tools, sampling devices, and containers) at designated drop stations - on plastic drop sheets or in plastic lined containers.
4. Rinse outer boots if worn and gloves with clean water in designated rinse tubs. Remove outer boots if worn and gloves and deposit in designated area to be determined in the field for use the next day or when necessary. If disposable outer boots are worn, remove and discard in designated container.
5. Remove hard hat & safety glasses, rinse with clean water as necessary and deposit in designated area for use the next day or when necessary.
6. Remove protective suit, if worn, and discard in designated container. Remove respirator at this time, if used; wash and rinse with clean water. Organic vapor cartridges, when used, will be replaced daily. Used cartridges will be discarded in the designated waste container. Remove inner gloves and discard in designated container.

10.2 Equipment and Sample Containers Decontamination

All decontamination will be completed by personnel in protective gear appropriate for the level of protection determined by the site HSO or designee. Manual sampling equipment including hand augers, macro-core samplers and sampling barrels which come into contact with the site's soils and sediments, will be cleaned with a tap water/detergent wash and a distilled water rinse. The sampling equipment will be decontaminated after each sample is collected at the Contaminant Reduction Zone (Decontamination Station). The sampling equipment wash and rinse water will be captured in plastic pails or tubs and ultimately transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on-site at a secure location.

Drill rig equipment (i.e., augers, casing, drill rods, bits, and tubes) which comes into contact with the site's soils will be decontaminated with a high pressure/hot water wash and/or other methods within the Contaminant Reduction Area. The cleaning will be performed at the completion of each boring location. Equipment decontamination wastes will be transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on-site at a secure location.

Larger equipment (i.e., drilling rig unit) which comes into contact with the site's soils will be decontaminated with a high pressure/hot water wash and/or other methods within a decontamination pad. The decontamination procedure will focus on portions of the equipment that has come into contact with the site's soils such as the tires, tracks, and bottom of the cat head. The cleaning will be performed prior to the equipment leaving the site so that potential site contaminants are not transported off-site. Equipment decontamination wastes will be transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on-site at a secure location.

If a boat is utilized for collection of surface water/sediment samples, portions of the boat that comes into contact with water will be decontaminated at the shoreline by scrubbing with a tap water/detergent wash and a distilled water rinse. The wash/rinse water will be allowed to discharge to the shoreline.

Exterior surfaces of sample containers will be wiped clean with disposable paper towels in the decontamination zone and transferred to a clean cooler for transportation or shipment to the analytical laboratory. Sample identities will be noted and checked off against the chain-of-custody record. The disposable paper towels will be placed in the designated disposal container and disposed of as solid waste.

11.0 EMERGENCY RESPONSE PROCEDURES

THE PROJECT EMERGENCY COORDINATOR IS:

Site Health and Safety Officer (HSO)	Kirk Moline

The following standard emergency procedures will be used by on-site personnel. The Project Manager and HSO shall be notified of any on-site emergencies and be responsible for assuring that the appropriate procedures are followed.

11.1 Personal Injury

Emergency first aid shall be administered on-site as deemed necessary and only by a trained individual, if available at the site. If a trained individual is not available on-site, decontaminate, if feasible, and transport individual to nearest medical facility (Southwestern Vermont Medical Center). The HSO will supply medical data sheets to appropriate medical personnel and be responsible for completing the incident report. If the HSO is injured or controlling the emergency situation, the medical data sheets are available in Appendix B of this Health and Safety Plan.

11.2 Personal Exposure

The recommended response to worker exposure from contaminants on-site includes the following:

SKIN CONTACT:	Use generous amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention, as necessary.
EYE CONTACT:	Wash eyes thoroughly with potable water supply provided on site. Eyes should be rinsed for at least 15 minutes subsequent to chemical contamination. Provide medical attention, as necessary.
INHALATION:	Move worker to fresh air and outside of the work zone and/or, if necessary, decontaminate and transport to hospital (Southwestern Vermont Medical Center). If respirator use is

implemented at the time of inhalation, worker must not remove respirator until completely away from the work zone.

INGESTION: Decontaminate, if feasible, and transport to hospital (Southwestern Vermont Medical Center).

PUNCTURE WOUND OR
LACERATION: Provide first aid at the site and if wound needs medical attention, decontaminate, if feasible, and transport to hospital (Southwestern Vermont Medical Center).

If the affected worker is exposed to contaminants on-site and the injury or accident prevents decontamination of the individual, the emergency responders must be notified of this condition and the exposure must be kept to a minimum.

11.3 Potential or Actual Fire or Explosion

Immediately evacuate area in the event of potential or actual fire or explosion. Notify the local Fire and Police Departments, and other appropriate emergency response groups, as listed in Section 1.2. Perform off-site decontamination and contain wastes for proper disposal. If a fire or explosion occurs, all on-site personnel must meet in the designated area of the site (established by the HSO or designee) for an accurate head count.

11.4 Equipment Failure

Should there be any equipment failure, breakdown, etc. the Project Manager and HSO shall be contacted immediately. The Project Manager or the HSO will make every effort to replace or repair the equipment in a timely manner.

11.5 Spill Response

The site HSO or designee shall initiate a corrective action program with the subcontractors in the event of an accidental release of a hazardous material, suspected hazardous material or petroleum. The HSO or designee will act as the Emergency Coordinator with the subcontractors for the purposes of: spill prevention; identifying releases; implementing clean up measures; and notification of appropriate personnel.

The corrective action program will be implemented by the HSO and subcontractor to effectively control and minimize any impact accidental releases may have to the environment.

Effective control measures will include:

- Preliminary assessment of the release.
- Control of the release source.
- Containment of the released material.
- Effective clean-up of the released material.

Potential sources of accidental releases include: hydraulic oil spills or petroleum leaks from heavy equipment; cooling oils (potentially PCB containing) for electrical equipment handling and cleaning; and spills from drums, vats, vessels, and tanks. The HSO/Emergency Coordinator in conjunction with the subcontractor shall respond to an accidental release in the following manner:

- Identify the character, source, amount and area affected by the release.
- Have subcontractor take all reasonable steps to control the release.
- Notify facility personnel.
- Notify the NYSDEC Spill Hotline at 1-800-457-7362 if required.
- Contain the release with sorbent material which should include speedi-dry, spill socks and sorbent pads.
- Prevent the release from entering sensitive receptors (i.e., catch basins and surface water) using the specified sorbent material or sandbags.
- Coordinate cleanup of the released material.
- Oversee proper handling and storage of contaminated material for disposal.

At no time should personal health or safety be compromised or jeopardized in an attempt to control a release. All health and safety measures as outlined in this HASP should be adhered to.

12.0 ADDITIONAL WORK PRACTICES

Workers will be expected to adhere to the established safety practices. Work on the project will be conducted according to established protocol and guidelines for the safety and health of all involved. The following will be adhered to:

- Employ the buddy system when possible, and for those work tasks which require it. Establish and maintain communications.
- Minimize contact with potentially contaminated soil, sediment and water.
- Employ disposable items when possible to minimize risks during decontamination and possible cross-contamination during sample handling.
- Smoking, eating, or drinking after entering the work zone and before decontamination will not be allowed.
- Avoid heat and other work stress related to wearing personal protective equipment. Take breaks as necessary and drink plenty of fluids to prevent dehydration.
- Withdrawal from a suspected or actual hazardous situation to reassess procedures is the preferred course of action.
- The removal of facial hair (except mustaches) prior to working on-site will be required to allow for a proper respiratory face piece fit.
- The Project Manager, the HSO, and sampling personnel shall maintain records recording daily activities, meetings, facts, incidents, data, etc. relating to the project. These records will remain at the project site during the full duration of the project so that replacement personnel may add information while maintaining continuity. These daily records will become part of the permanent project file.

13.0 AUTHORIZATIONS

Personnel authorized to enter the exclusion zone at the Saint-Gobain Performance Plastics, Corp. Site at 1 Liberty Street in the Village of Hoosick Falls, Rensselaer County, New York while operations are being conducted must be certified by the HSO. Authorization will involve completion of appropriate training courses and review and sign off of this HASP.

Personnel authorized to perform work on-site are as follows:

1. Kirk Moline C.T. Male
3. Jeffrey Marx C.T. Male
4. Dan Achtyl C.T. Male
5. Steve Bieber C.T. Male
6. Jon Dippert C.T. Male
7. Brittany Winslow C.T. Male
8. Chris Ormsby C.T. Male
9. Larene Cameron C.T. Male
10. Nicole Castagnier C.T. Male
11.
12.
13.
14.
15.
16.
17.

14.0 MEDICAL DATA SHEET

This medical data sheet will be completed by all on-site personnel and will be kept on-site during the duration of the project. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

PROJECT: Site Characterization Investigation to be conducted at the Saint-Gobain Performance Plastics, Corp. Site at 1 Liberty Street in the Village of Hoosick Falls, New York.

Name ____________________________ Home Telephone ________________________

Address ____

Emergency Contact ____

Drug or Other Allergies ____

Particular Sensitivities ____

Do You Wear Contact Lenses ____

Provide a Checklist of Previous Illness or Exposure to Hazardous Chemicals

____

What Medications Are You Presently Using ______________________________________

____

Do You Have Any Physical or Medical Restrictions ________________________________

____

Are You Qualified to Wear Respirator (Provide Fit Test Results)___________________

Name, Address, and Telephone Number of Personal Physician:

____

____

____

15.0 FIELD TEAM REVIEW

Each field team member shall sign this section after site specific training is completed and before being permitted to work on-site.

I have read and understood this Site Specific Health and Safety Plan, and I will comply with the provisions contained therein.

PROJECT: Site Characterization Investigation
Saint-Gobain Performance Plastics Corp. Site
1 Liberty Street
Village to Hoosick Falls
Rensselaer County, New York

Name: Printed Signature Date

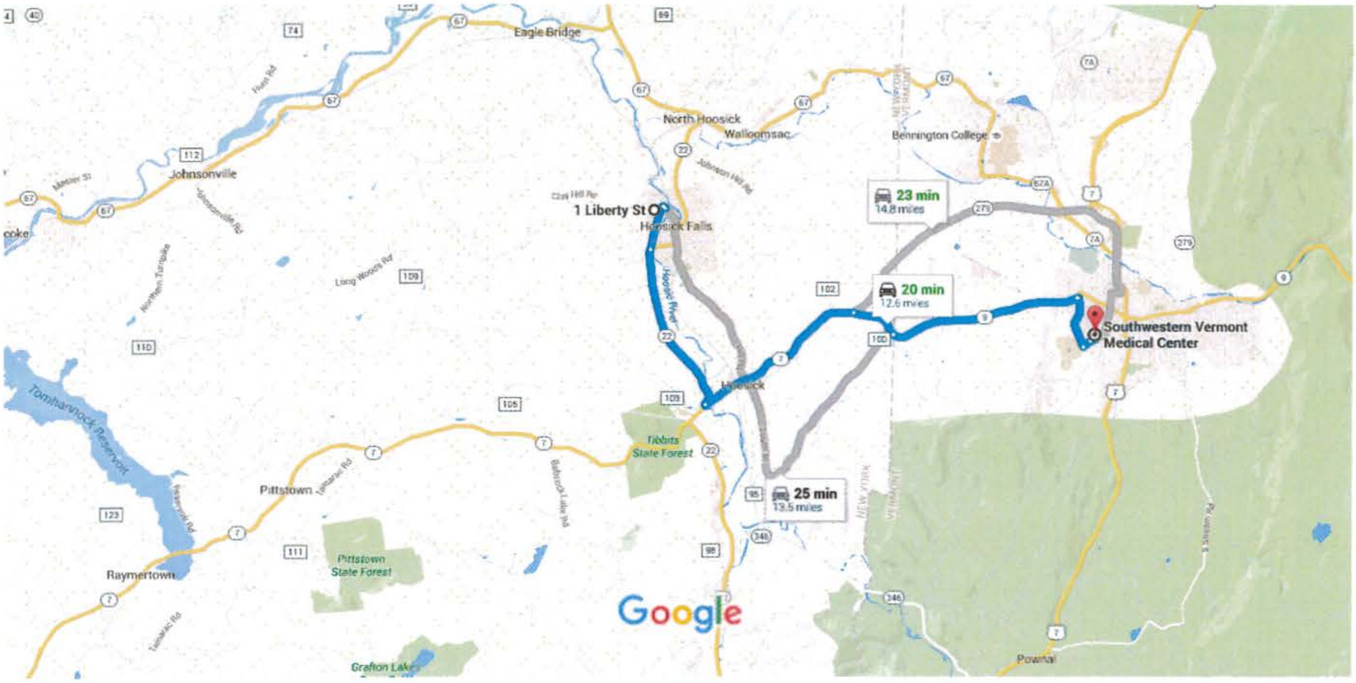
FIGURE 1

MAP SHOWING ROUTE TO SOUTHWESTERN VERMONT MEDICAL CENTER

Google Maps

1 Liberty Street, Hoosick Falls, NY to Southwestern Vermont Medical Center, 100 Hospital Drive, Bennington, VT 05201

Drive 12.6 miles, 20 min



Map data ©2016 Google 2 mi

1 Liberty St

Hoosick Falls, NY 12090

Take River Rd to NY-22 S

3 min (0.9 mi)

1. Head northeast on Liberty St toward Mechanic St

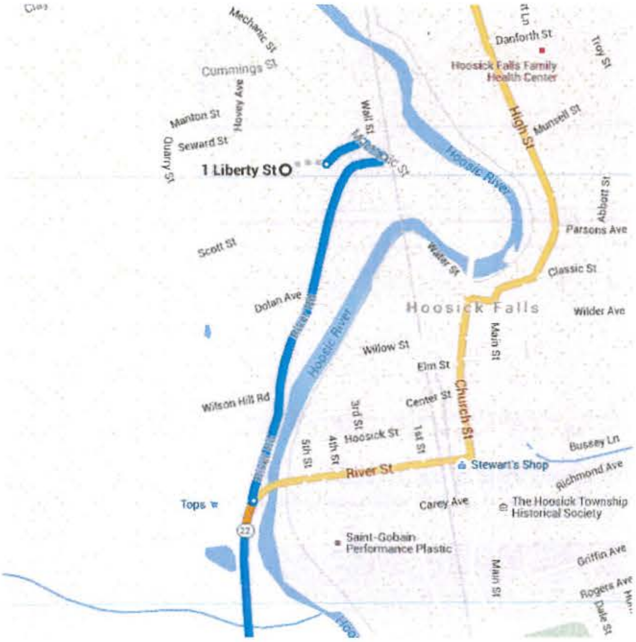
479 ft

2. Turn right onto Mechanic St

289 ft

3. Turn right onto River Rd

0.8 mi



Follow NY-22 S, NY-7 E and VT-9 E to W Rd in Bennington

14 min (10.4 mi)

↑ 4. Continue straight onto NY-22 S

3.0 mi

↰ 5. Sharp left onto NY-7 E

3.2 mi

↱ 6. Turn right to stay on NY-7 E

ⓘ Entering Vermont

0.9 mi

↑ 7. Continue onto VT-9 E/W Rd

3.4 mi

Take Monument Ave to Hospital Dr

4 min (1.2 mi)

↱ 8. Slight right onto W Rd

118 ft

↱ 9. Turn right at the 1st cross street onto Monument Ave

0.9 mi

↰ 10. Turn left toward Hospital Dr

0.2 mi

↱ 11. Turn right at the 1st cross street onto Hospital Dr

ⓘ Destination will be on the left

0.2 mi

Southwestern Vermont Medical Center

100 Hospital Drive, Bennington, VT 05201

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the

APPENDIX A

TRAINING CERTIFICATES

APPENDIX B

MEDICAL DATA SHEETS

14.0 MEDICAL DATA SHEET

This medical data sheet will be completed by all on-site personnel and will be kept on-site during the duration of the project. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

PROJECT: <u>Site Characterization Investigation to be conducted at the Saint-Gobain Performance Plastics, Corp. Site at 1 Liberty Street in the Village of Hoosick Falls, New York.</u>

Name ____________________________ Home Telephone ________________________

Address ____

Emergency Contact ____

Drug or Other Allergies ____

Particular Sensitivities ____

Do You Wear Contact Lenses ____

Provide a Checklist of Previous Illness or Exposure to Hazardous Chemicals

____

What Medications Are You Presently Using ____________________________________

____

Do You Have Any Physical or Medical Restrictions ___________________________

____

Are You Qualified to Wear Respirator (Provide Fit Test Results)___________________

Name, Address, and Telephone Number of Personal Physician:

____

____

____

APPENDIX C

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. APeriodic@ 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

EXHIBIT 1

MATERIAL SAFETY DATA SHEETS

Printer-friendly version

Perfluorooctanoic acid (Pentadecafluorooctanoic acid)

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL IDENTIFICATION

Exfluor Product ID: C8AC
Name: Perfluorooctanoic acid
Synonyms: Pentadecafluorooctanoic acid
Chemical Formula: CF3(CF2)6COOH
Issue Date: 12/15/1997
Revised: 07/21/2008

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS#: 335-67-1
EINECS#: 206-397-9

SECTION 3 - HAZARDS IDENTIFICATION

Precautionary Statements: Corrosive, irritant, irritating to eyes, respiratory system and skin, causes burns, harmful by inhalation and if swallowed
Target Organs: None known

SECTION 4 - FIRST-AID MEASURES

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Assure adequate flushing of the eyes by separating the eyelids with fingers.
Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.
Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
Ingestion: Do not induce vomiting. Allow victim to rinse his mouth with water provided person is conscious. Drink 2-4 cupfulls of water, and seek medical advice.

SECTION 5 - FIRE FIGHTING MEASURES

General Information: As in any fire, wear a self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent), and protective gear.
Extinguishing Media: In case of fire, use water spray, carbon dioxide, dry chemical, or polymer foam.
Flash Point: None
Fire Hazard: Slight fire hazard. Dust/air mixtures may ignite or explode.
Combustion: Carbon monoxide, Carbon dioxide, Hydrogen fluoride

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as in section 8.
Spills/Leaks: Do not touch spilled material. Stop leak if possible without personal risk. Small spills: Avoid raising dust. Collect spilled material in appropriate container for disposal. Absorbent may be used. Move containers away from spill to a safe area. Large spills: dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate area and wash spill site after material pickup is complete.

SECTION 7 - HANDLING AND STORAGE

General Information: Use proper personal protective equipment as in section 8.
Precautions: Store and handle in accordance with all current regulations and standards.
Handling:
Storage: Store in a cool dry place. Store in a tightly closed container. Keep seperated from incompatible substances.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits: 0.1 Mg/M3 recommended TWA (3m) (skin)
Ventilation: Provide local exhaust or process enclosure ventilitation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present.

Respiratory Protection: Wear a NIOSH/MSHA approved (or equivalent) respirator.
Eye Protection: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Gloves: Wear appropriate chemical resistant glove.

SECTION 9 - PHYSICAL PROPERTIES

Molecular Formula: C8HF15O2
Physical State: White solid
Boiling Point: 189 C / 736 mmHg
Melting Point: 55-56 C
Freezing Point:
Liquid Density:
Specific Gravity: 1.7 Approximate
Vapor Pressure: 10.0 mm Hg @ 25C Approximate
Refractive Index:
Molecular Weight: 414
Solubility:
Odor:

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and pressure.
Conditions to Avoid: Heat and generating dust.
Incompatibilities: Strong oxidizing agents, strong bases, reducing agents
Hazardous Polymerization: Has not been reported
Hazardous Combustion: Carbon monoxide, Carbon dioxide, Hydrogen fluoride
RTECS#: RH0781000

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Effects: May cause irritation of the respiratory tract, eyes, and skin.
Chronic Effects: May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous membranes. In some cases, pulmonary edema may develop, either immediately or more often within a period of 5-72 hours. The symptoms may include tigtness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include moist rales, low blood pressure and high pulse pressure. Severe cases may be fatal direct contact may cause severe irritation, pain and possibly burns. There may be discoloration of the tissue. Swallowing and speech may be difficult at first and then almost impossible. The effects on the esophagus and gastrointestinal tract may range from irritation to severe corrosion. Edema of the epiglottis and shock may occur.
Toxicological Data: Eye Contact - Caused extreme irritation in animal studies, with a score of 108/110. Ingestion - Caused erosian of gastric mucosa in animal studies. The LD50 was estimated to lie between 500 and 1000 Mg/Kg. IPR-RAT LD50:189 Mg/Kg. TXAPA9 70,362,83. Toxicological properties have not been fully investigated.

SECTION 12 - ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 - DISPOSAL INFORMATION

Place in a chemical secured landfill or incinerate at 1200 (C) with a 2 second dwell time or at 1600 (C) with a 1.5 second dwell time.

SECTION 14 - TRANSPORTATION INFORMATION

Shipping Name: Corrosive solid, n.o.s. (Perfluorooctanoic acid)
UN/ID#: UN 1759
Hazard Class: 8
Packing Group: II
Labels: 8

SECTION 15 - REGULATORY INFORMATION

TSCA Inventory - Yes. Sara 311/312 (40CFR370.21): Acute yes

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES
Indication of Danger: C - Corrosive
R-Phrases: 22-34-52/53
Harmful if swallowed. Causes burns. Harmful to aquatic organisms, may cause long-term adverse effects in the

aquatic environment.
S-Phrases: 26-36/37/39-45
In case of contact with eyes, rinse immeditately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 16 - OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. EXFLUOR RESEARCH CORPORATION SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

APPENDIX D

PROJECT SCHEDULE

Preliminary Project Schedule -July 15, 2016

Liberty Street Site

Village of Hoosick Falls, Rensselaer County

NYSDEC Site No. 442048

	July				August				September				October				November				December				January				February				March				April				May				June				July				August			
	2016				2016				2016				2016				2016				2016				2017				2017				2017				2017				2017				2017				2017				2017			
DEC Approval of the Site Characterization (SC) Work Plan			■																																																					
Source Materials Quality Control Sampling/Analysis		■	■																																																					
Shallow Soil/Fill Sampling/Analysis/Validation			■	■	■	■	■	■	■	■	■	■	■	■	■	■																																								
Subsurface Soil/Fill Sampling/Analysis/Validation				■	■	■	■	■	■	■	■	■	■	■	■	■	■																																							
Surface Water Sampling/Analysis/Validation			■	■	■	■	■	■	■	■	■	■	■	■	■	■																																								
Sediment Sampling/Analysis/Validation			■	■	■	■	■	■	■	■	■	■	■	■	■	■																																								
Storm Water Dye Testing									■	■																																														
Site Survey							■	■																																																
Groundwater Sampling/Analysis/Validation						■	■	■	■	■	■	■																																												
Submission of Prelim. Lab Data and SC Invest. Data for DEC Review													■	■	■	■	■																																							
Meeting with NYSDEC to Discuss Further Actions																		■																																						
Prepare Site Characterization Investigation Report																			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■																
Submit Draft SC Report and NYSDEC Review																																									■	■	■	■												
SC Revisions per NYSDEC Comments and Final Submission																																													■	■	■	■								

EXHIBIT 1

PARSONS 1996 PHASE II ESA

DRAFT PHASE II

ENVIRONMENTAL SITE ASSESSMENT

FURON COMPANY

LIBERTY STREET MANUFACTURING FACILITY
HOOSICK FALLS, NEW YORK 12090

PREPARED FOR

furon

MAY 1996

PREPARED BY

PARSONS ENGINEERING SCIENCE, INC.
PRUDENTIAL CENTER
BOSTON, MASSACHUSETTS 02199

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List of Acronyms

ASTM	-	American Society for Testing and Materials
BTEX	-	Benzene, toluene, ethylbenzene, xylene (total)
CLP	-	Contact Laboratory Protocol
ESA	-	Environmental Site Assessment
I.D.	-	Inside Diameter
MCL	-	Maximum Contaminant Level
Mg/Kg	-	Milligrams per Kilogram
Mg/L	-	Milligrams per Liter
NTU	-	Nephelometric Turbidity Unit
NYSDEC	-	New York State Department of Environmental Conservation
OVM	-	Organic Vapor Meter
PCB	-	Polychlorinated Biphenyls
POTW	-	Publicly Owned Treatment Works
PSAT	-	Pressure Sensitive Adhesive Tape
PTFE	-	Polytetrafluoroethylene
QA/QC	-	Quality Assurance/Quality Control
SVOC	-	Semivolatile Organic Compound
TAGM	-	Technical and Administration Guidance Memorandum
TAL	-	Target Analyte List
TCE	-	Trichloroethene
TCL	-	Target Compound List
TPH	-	Total Petroleum Hydrocarbons
ug/kg	-	Micrograms per Kilogram
ug/L	-	Micrograms per Liter
USCS	-	Unified Soil Classification System
USEPA	-	United States Environmental Protection Agency
UST	-	Underground Storage Tank
VOC	-	Volatile Organic Compound

1.0 INTRODUCTION

A limited Phase II Environmental Site Assessment (ESA) was conducted by Parsons Engineering Science (Parsons ES) on February 20-27, 1996 and March 7-8, 1996, at the request of Furon Company and O'Melveny and Myers who are outside counsel for Furon Company.

The Phase II investigation plan was developed to focus specifically on the findings and conclusions of a prior Phase I ESA, completed for the site in July and August 1995. As such, the Phase II ESA was designed to develop data relevant to:

- Areas of "recognized environmental conditions,"
- Other conditions of environmental concern, and
- "Baseline environmental conditions" at the site.

The objective of the Phase II investigation was to identify, to the extent feasible through limited sampling and analysis, whether any evidence of contamination existed due to historic site operations. The investigation process would also yield a limited data set that could be used by Furon Company to define "baseline environmental conditions" at the time of their initial occupancy and ownership of the property.

The Phase II ESA was conducted by Parsons ES in accordance with Title 6 of the New York State Compilation of Rules and Regulations, 6 NYCRR Part 360, April 1995, except as otherwise specified. The Phase II ESA was begun on February 21, 1996 and reported on May 2, 1996.

1.1 FINDINGS OF THE PHASE I ESA

Parsons ES performed a Phase I ESA at the Liberty Street facility between July 24 and July 27, 1995, for Furon Company. The results of the Phase I ESA were presented to Furon Company in a Final Phase I Environmental Site Assessment Report on April 9, 1996. The Phase I ESA identified three "recognized environmental conditions," as defined in American Society of Testing and Materials (ASTM) Standard Practice E 1527-94 and eight additional conditions of environmental concern. Each condition is described briefly and the rationale presented for inclusion or exclusion from the Phase II ESA.

The "recognized environmental conditions" are:

1. Potential asbestos containing floor tiles,
2. Potential fuel oil releases from former on-site underground storage tanks (UST), which may have been present on-site for up to forty-seven years, and
3. Potential releases related to the use of solvents in manufacturing processes.

The conditions of environmental concern are:

1. Potential process leach fields,
2. Fluorescent Light-ballast,
3. Hazardous Waste Storage,
4. Waste Water Collection and Discharge System,
5. Exterior Drainage Systems,
6. Catalytic Oxidizer Odor Issue,
7. Condensate Spill Event, and
8. Housekeeping Issues.

These conditions, with the exceptions of the suspected asbestos containing floor tiles, the fluorescent light ballasts, and the catalytic oxidizer odor issue, present a past or present potential for releases of petroleum products and hazardous materials to the soil and groundwater of the Liberty Street facility.

The suspected asbestos containing building material (ACBM) identified during the Phase I visual inspection is limited to floor tiles (9" x 9"). These tiles were not sampled for confirmation of asbestos content. Although worn, the observed tiles were found to be in a nonfriable condition. If the tiles become broken and in a friable condition, they may present a health hazard to occupants of the building. Ultimately, these tiles will require removal, remediation, and disposal in accordance with applicable Federal and State regulations. Additional investigations under this Phase II ESA were not performed.

AlliedSignal Fluorglas and New York State Department of Environmental Conservation (NYSDEC) records indicate the presence of three underground storage tanks (USTs) at the Liberty Street facility since the early 1970's. Given the presence of a boiler room in the original section of the building, it is plausible that USTs were present on-site since 1948.

The Phase I ESA noted the presence of an underground storage tank that had been taken out of service in the Spring of 1995. Additionally, two other USTs were identified and were reported by Allied Signal Fluorglas to have been closed. All three of these tanks were still buried when the Phase I was completed.

The UST which had been taken out of service was removed in August of 1995, subsequent to the performance of the Phase I ESA for the site. AlliedSignal Fluorglas contracted Clean Harbors Environmental Services to remove the 8,000 gallon #4 oil tank in accordance with New York State Department of Environmental Conservation (NYSDEC) guidance.

During this operation, visual staining by fuel oil contamination was noted around the fill pipe. This soil was excavated, drummed, and disposed of off-site. The excavated hole at the UST location evidenced no visual staining of the soil. Screening of the excavation by photoionization detector failed to detect volatile organic compounds. Two soil samples, one collected from the side walls of the excavation and one collected from the bottom of the excavation underneath the tank, were analyzed by EPA Method 8260 for volatile organic compounds and EPA Method 8270 for semi-volatile organic compounds. No contamination was detected in these samples. The excavation was then backfilled with material from within the court area.

Based on discussions with facility personnel during the Phase I ESA investigations, it was unclear that the two other USTs, although "closed," had not been excavated and removed. This remains a minor source of confusion. In a memorandum from AlliedSignal dated September 21, 1995, in which the draft Phase I ESAs were reviewed, AlliedSignal stated that "...The two "former" USTs were removed in 1992 and 1988. Closure information and sampling results will be provided [to Furon] in an Addendum to the Disclosure Document."

Nonetheless, these tanks present the potential for past fuel oil releases. Copies of the UST closure reports documenting the removal and disposal of the USTs and including the analytical results of sampled soils were provided to Furon Company by AlliedSignal Fluorglas. This ESA was formulated with the expectation that the UST closure reports were comprehensive and did not identify petroleum hydrocarbon contamination attributable to the removed USTs.

Short term, less than 90 day, hazardous waste storage is conducted within a designated area within the Liberty Street facility. During the Phase I ESA, an inspection of this area revealed it to have slab on grade concrete floor, however secondary containment was notably absent.

The use of solvents in both past and current manufacturing processes present the potential for releases. This potential is heightened by the presence of perimeter floor drains within the building and the suggestion of former process water drain fields. Groundwater sampling and analysis was performed as part of this Phase II ESA to characterize groundwater quality and possibly identify solvents present at the Liberty Street facility.

The historic presence of one or more process leach fields was suggested by an individual formerly associated with the Laminants Division manufacturing at the Liberty Street facility in the 1970s. Three potential areas are described as follows:

A pit or swale located near the southeast corner of the building reportedly received metallic liquid wastes from the laboratory etcher unit. The discharge into this pit may be substantiated by facility personnel who recall a copper hydroxide release and subsequent cleanup in this area. The date and precise location of this release are not known. Furon Company has requested additional information concerning this event and documentation of any cleanup effort from AlliedSignal Fluorglas.

Two leach fields, one on the southwest corner of the building and the other in proximity to the northwest corner of the building were also suspected. The former, described as a former leach field that potentially received metallic waste from the plant, may correspond to a concrete sump found exterior to the Pressure Sensitive Adhesive Tape (PSAT) coating room. This sump has a pipe, currently blocked off, that appears to run from a perimeter floor drain within the PSAT coating room. The latter suspected leach field is in the area of, and exterior to, the "Can" extrusion process mixing rooms.

Fluorescent lighting within the Liberty Street building was noted in the Phase I report as a potential source of Polychlorinated Biphenyls (PCBs). Although this potential still exists, no visible evidence of leakage from the light ballasts was noted.

The wastewater collection system within the Liberty Street building is at best ill-defined. Process and domestic wastewater is combined and discharged into the community sewer system, which ultimately is treated at the Hoosick Falls Publicly Owned Treatment Works (POTW) and then discharged into the Hoosick River. The Phase II ESA did not characterize waste streams within the facility or sample wastewater discharges. This work was considered to be beyond the scope of this investigation and would require a detailed analysis of plant process and waste streams in order to develop an appropriate sampling program.

During the Phase I ESA, four drain pipes were identified discharging to the field west of the Liberty Street facility. A fifth drain pipe was discovered during the Phase II ESA. These drain pipes appear to be associated with stormwater collection systems and/or underdrains associated with the building. During the Phase II ESA, three of the five drain pipes were discharging liquid. The sources and areas drained by these pipes are not defined. In one instance, however, discharge was traced from the boiler room sump to a stormwater catchbasin and ultimate discharge via the drain pipes to the ground surface.

A sump located in the "old" boiler room receives discharge from several drain pipes emanating from the front office and laboratory area of the building. During the Phase I ESA, oil stains and a waste oil drum were also observed in proximity to the sump. The integrity of the sump was not assessed. Additionally, during the Phase II ESA it was learned that a sump located in the courtyard area, in proximity to the boiler room, receives the overflow discharge from the boiler room sump.

Air emissions from the “Can” extrusion process area resulted in condensate occurring along the north wall of the facility, immediately east of the catalytic oxidizer unit, and runoff to the ground surface. One release event was reported to the local fire department and NYSDEC; however, discussions with facility personnel suggest the condensate was an ongoing process event. AlliedSignal Fluorglas has indicated the condensate is primarily comprised of kerosene.

The NYSDEC issued a draft Consent Order to the Liberty Street facility concerning odor complaints made by neighbors to the facility. The odors are attributed to the catalytic oxidizer unit and corrective measures have been implemented and are currently under evaluation by Furon Company. This issue was outside the scope of the Phase II ESA.

Housekeeping issues related to the PSAT coating process and condensate were identified. Control of low volume drips is best accomplished with sorbent pans, such as currently used in portions of this process area. This issue was outside of the scope of the Phase II ESA.

1.2 SCOPE OF WORK

The scope of the Phase II investigation was designed to:

- Address the "recognized environmental conditions" associated with the former USTs and solvent use and disposal from the manufacturing processes,
- Evaluate six other conditions of environmental concern, and
- Establish the "baseline environmental conditions" for the property.

The scope of the Phase II investigations was as follows:

- The installation of six (6) soil borings/monitoring wells to determine baseline soil and groundwater quality at the Liberty Street property. Two (2) monitoring wells were located in the undeveloped property west of the manufacturing building. The remaining four (4) monitoring wells were located in close proximity of the building.

- Development of the six (6) monitoring wells followed by the collection of six (6) groundwater samples to be analyzed for volatile organics, semivolatile organics and metals. One of the monitoring wells, MW-2L, was also analyzed for Total Petroleum Hydrocarbons (TPH).

- The collection of one (1) surface soil sample from the gravel driveway for TPH and Polychlorinated Biphenyls (PCBs) analysis to determine potential impacts from the historic spreading of oils on the gravel driveways for dust suppression.

- The collection of two (2) near-surface soil samples from the exterior of a sump/drywell located exterior to the PSAT coating process room. These samples were analyzed for volatile organics, semivolatile organics, and metals.

- The collection of one (1) near-surface soil sample from the area of a suspected copper hydroxide solution release, in the vicinity of the southeast corner of the building. The sample was analyzed for volatile organics, semivolatile organics, metals, and TPH.

- The collection of two (2) near surface soil samples targeting the "can" extrusion process condensate release in the vicinity of the catalytic oxidizer. These samples were analyzed for volatile organics, semivolatile organics, metals, and TPH.

- The collection of one (1) soil sample exterior of the northwest corner of the building in the vicinity of a possible historic process discharge area. This sample was analyzed for volatile organics, semivolatile organics, metals, and TPH.

- The collection of one (1) soil sample near the exterior northwest corner of the building, in an area of stressed vegetation. This sample was analyzed for volatile organics, semivolatile organics, and metals.

- The collection of five (5) sediment samples, one (1) sample from below each drain pipe outfall. Samples were taken from the drainage channel bed immediately below the outfalls and analyzed for volatile organics, semivolatile organics, metals, TPH, and PCBs.

- The collection of two (2) soil samples adjacent to the sump located in the courtyard, in proximity to the boiler room. These samples were analyzed for volatile organics, semivolatile organics, metals, and TPH.

- The collection of one (1) soil sample in proximity to the boiler room sump.

1.3 SUMMARY OF THE PHASE II FINDINGS

The soil results from the Phase II ESA indicate that four volatile organic compounds, four polynuclear aromatic hydrocarbons, TPHs, and four metals were present in surface/near surface soils at concentrations above their respective NYSDEC recommended soil cleanup objective concentrations. Five metals and TPHs were detected in the sediment samples.

Five metal compounds, aluminum, antimony, cobalt, iron and magnesium, were detected in the groundwater at concentrations which exceeded the Federal Maximum Contaminant Level (MCL) or New York State Groundwater Quality Standards. The Federal MCL is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. The New York State Groundwater Quality Standards are the maximum levels of a contaminant in fresh groundwater. The monitoring wells sampled were installed in clay soils. The exceedances for aluminum, iron, and magnesium are considered to be reflective of the natural variability of the clay soils. The exceedances may also be attributed to the elevated turbidity levels encountered during the sampling event. The metal concentrations encountered in the groundwater at the Liberty Street facility are not believed to be indicative of environmental site problems.

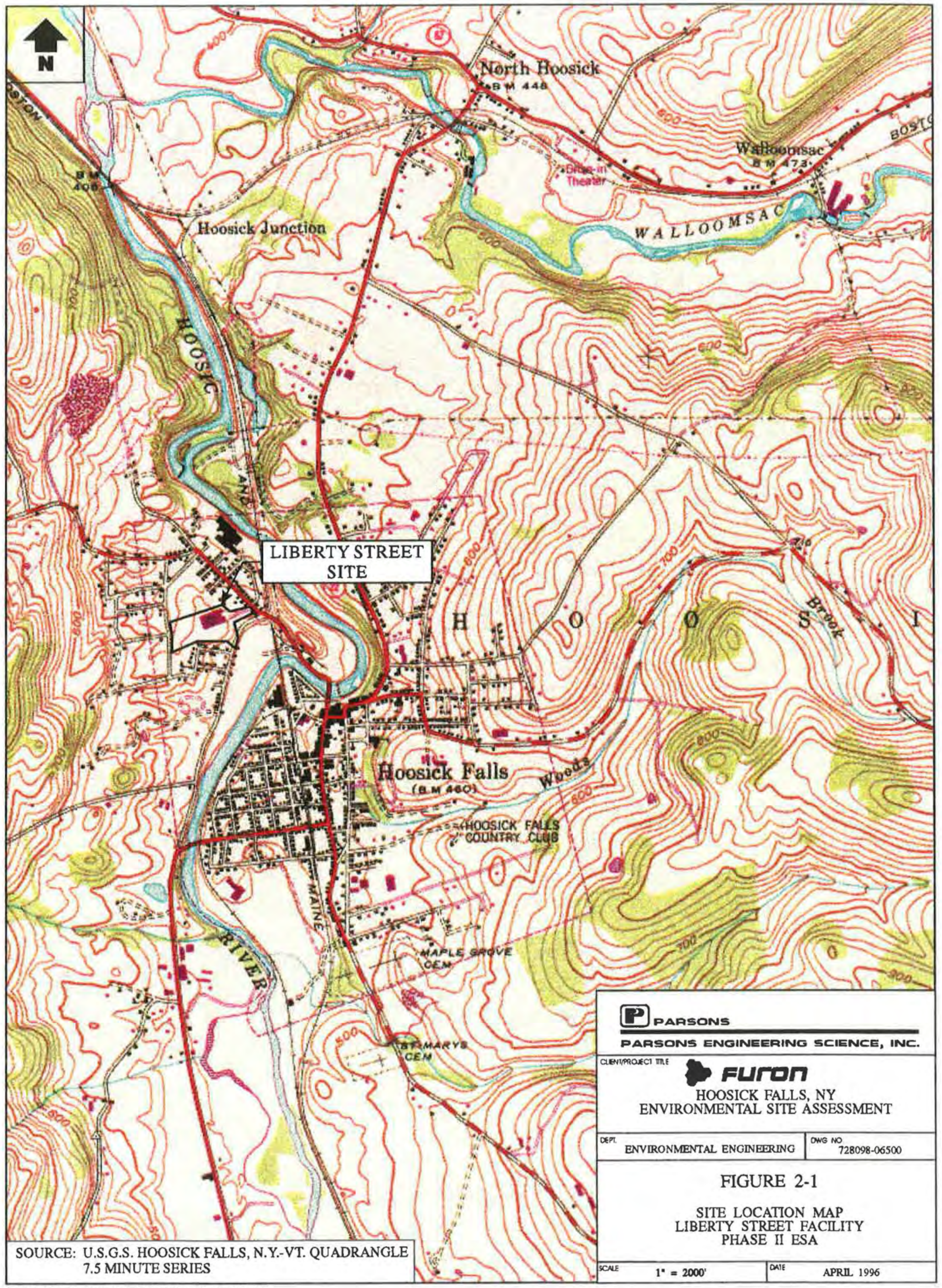
2.0 SITE DESCRIPTION

2.1 LOCATION AND DESCRIPTION OF PROPERTY

The Furon Company Liberty Street facility is located in Rensselaer County in the Village of Hoosick Falls, New York. **Figure 2-1** presents a site location map compiled from the United States Geological Service (USGS) 7.5 minute, Hoosick Falls Quadrant, revised in 1984. The site is an irregularly shaped 10.8 acre lot situated within the northwest quadrant of the Village of Hoosick Falls, New York. **Figure 2-2** present the Map of Lands of the Liberty Street facility. The subject property is located on an erosion ridge [approximate elevation 485 ft. above mean sea level (msl)] that extends northeast and down-gradient from Clay Hill (approximate elevation 900 ft. above msl). The ground surface topography of the property is relatively flat, with the surrounding land surface sloping away to the north, east, south, and west in the general direction of the Hoosick River.

The Liberty Street building footprint, situated in the eastern half of the lot, is rectangular with the long axis running east to west **(Figure 2-2)**. The structure encompasses 55,200 square feet of office, production, and warehouse interior space. The current building is a composite of a core U-shaped industrial structure built around 1948 and later structural expansions, additions, and renovations. Following construction in circa (c.) 1948, major expansion of the facilities occurred in the 1970s and early 1990s. **Figure 2-3** presents the facility footprint and general areas and dates of structural expansion as best reconstructed from structural details and interviews of facility personnel.

The original structure is a 1 1/2 story concrete block, slab-on-grade, and wooden arch-truss roof construction. The roof appears to be a built-up fibre composition coated with a metallic "silvered" roof sealer. The concrete block exterior walls at the southwest end of the 1948 structure were enclosed by vertical metal siding, possibly in the late 1970s or early 1980s. The 1970s warehouse expansion(s) consisted of wood "pole-barn" post and truss construction covered by corrugated sheet metal. Floors are concrete slab-on-grade and the roof is a corrugated sheet metal. Post 1986 construction, such as the boiler room expansion along the northern wall, and the raised roof over the barrel storage area along the south wall,



SOURCE: U.S.G.S. HOOSICK FALLS, N.Y.-VT. QUADRANGLE
7.5 MINUTE SERIES

PARSONS

PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

FURON

HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT.	DWG NO
ENVIRONMENTAL ENGINEERING	728098-06500

FIGURE 2-1

SITE LOCATION MAP
LIBERTY STREET FACILITY
PHASE II ESA

SCALE	DATE
1" = 2000'	APRIL 1996

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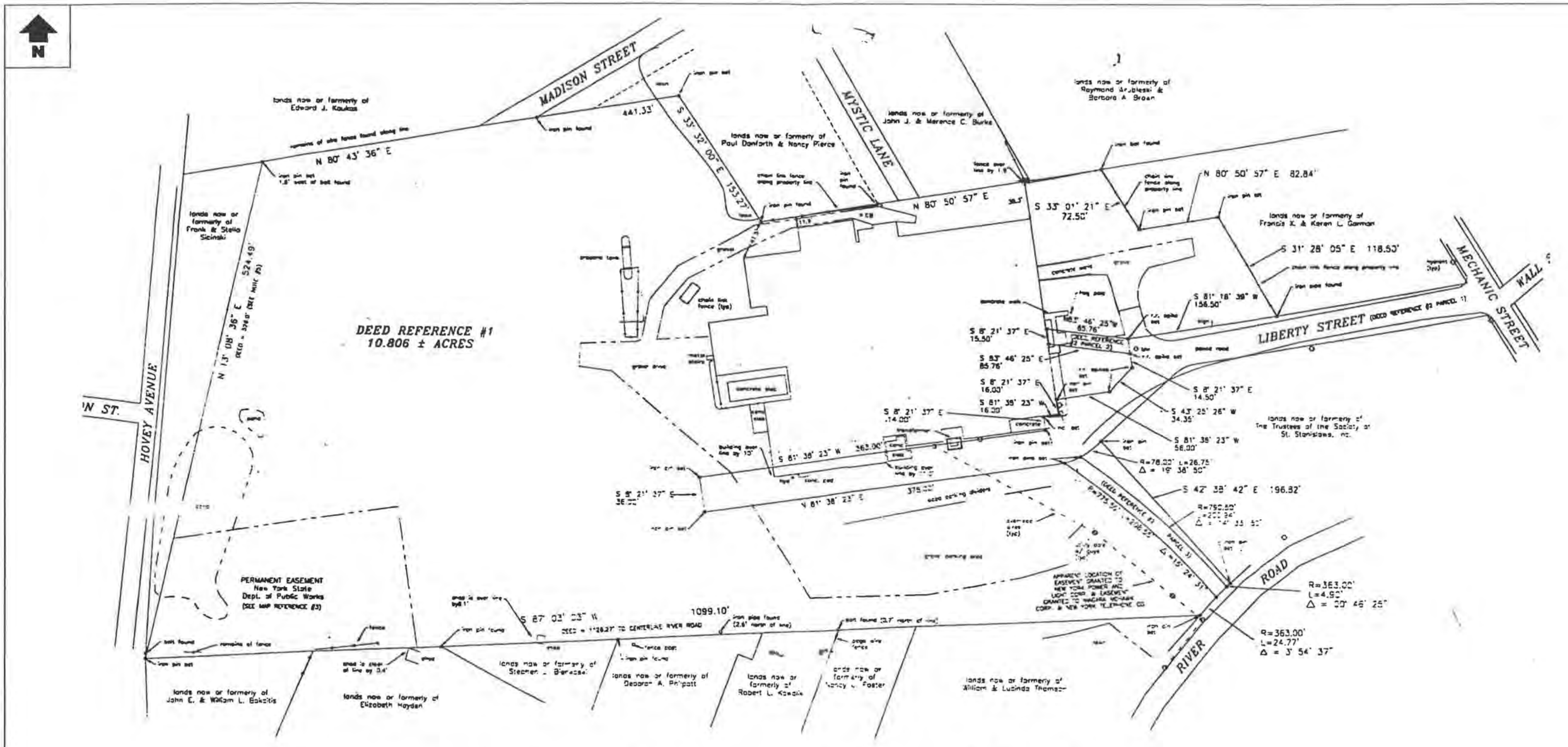

NOTES

1. UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
2. ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.
3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE OR TITLE REPORT AND IS, THEREFORE, SUBJECT TO ANY EASEMENTS, COVENANTS, OR RESTRICTIONS OF RECORD OR ANY STATEMENT OF FACTS SUCH DOCUMENTS WOULD DISCLOSE.
4. BOUNDARY LINES SHOWN ON THIS MAP ARE BASED ON THE RECORD DESCRIPTIONS. SET FORTH IN DEED REFERENCE #1 AND DEED REFERENCE #2 AND ON MONUMENTATION FOUND.
5. THE DISTANCE ALONG THE WESTERLY BOUNDARY WAS ADJUSTED SLIGHTLY TO AGREE WITH EVIDENCE AND MONUMENTATION FOUND ALONG THE SOUTHERLY BOUNDARY.
6. NO UNDERGROUND UTILITIES ARE SHOWN ON THIS MAP.

DEED REFERENCES

1. B & W SHOE COMPANY, INC. TO DODGE INDUSTRIES, INC., DATED JULY 13, 1972 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE ON JULY 18, 1972 IN LIBER 1239 OF DEEDS AT PAGE 286.
2. COMMITTEE FOR INDUSTRY, INC. TO VILLAGE OF HOOSICK FALLS. DATED NOVEMBER 28, 1949 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE IN LIBER 842 OF DEEDS AT PAGE 432.

MAP REFERENCES

1. MAP OF PART OF THE WHITE LOT (DORR FARM), PREPARED BY PERCY AND PERCY, DATED OCTOBER 20, 1949.
2. SURVEY OF LANDS PURCHASED BY ELDREDGE AND WHITE, PREPARED BY L. C. WILDER, SURVEYOR, DATED NOVEMBER 1880
3. NEW YORK STATE DEPARTMENT OF PUBLIC WORKS APPROPRIATION MAP, HOOSICK FALLS FLOOD PROTECTION PROJECT - HOOSICK RIVER - WOODS BROOK MAP NO. 74.

TAX MAP REFERENCE

VILLAGE OF HOOSICK FALLS 27.10 - 9 - 20

GRAPHIC SCALE

50' 25' 0 50' 100' 150'

SOURCE OF SURVEY MAP: SURVEYED BY DAVID F. BARRASS LAND SURVEYOR
9 MAPLE STREET, CORINTH, NEW YORK

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
FURON

HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT	DWG NO.
ENVIRONMENTAL ENGINEERING	728098-06500

FIGURE 2-2

Map of Lands
Liberty Street Facility
Phase II ESA

SCALE	DATE
	APRIL 1996

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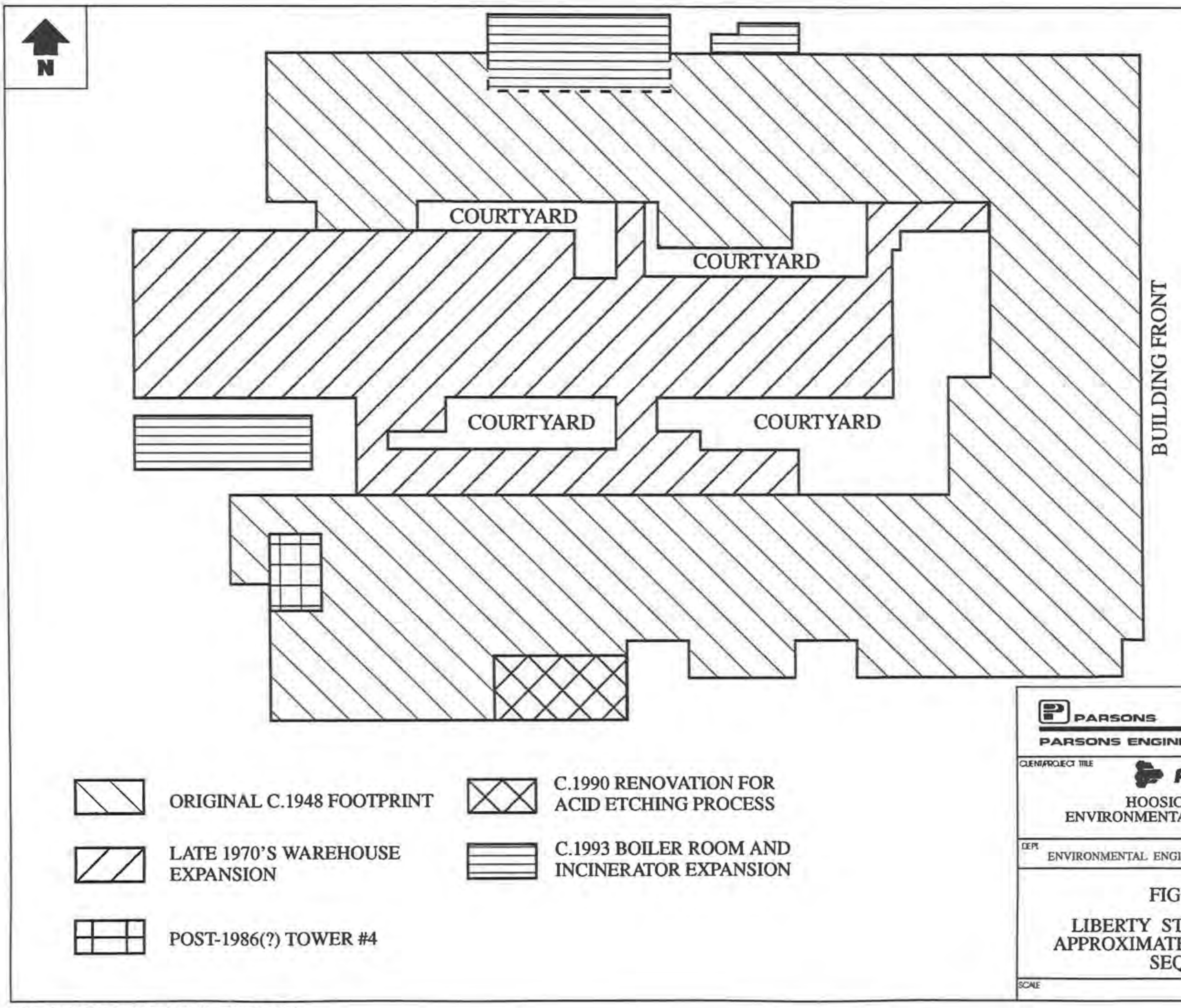


PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
FURON
HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT ENVIRONMENTAL ENGINEERING
DWG NO. 728098-06500

FIGURE 2-3

LIBERTY STREET FACILITY
APPROXIMATE CONSTRUCTION
SEQUENCE

SCALE
DATE APRIL 1996

R:\GRAPHICS\ALLIEDS\FURON\CONSTSEQ.CDR(MCB) is slab-on-grade, concrete footings and a lapped sheet metal over 2" x 4" wood or metal frame wall. The roof is a similar lapped sheet metal construction.

With the exception of a three-story tower surrounding the vertical pressure sensitive adhesive tape (PSAT) dip coater (also referred to as tower #4) at the southwest corner of the plant, the facility operations are on one floor level. The front office and laboratory areas have a suspended ceiling height of about 10 feet. The arch truss roof over the production areas provides a ceiling height ranging up to approximately 20 feet at its apex. Similarly, the central warehouse areas have ceiling heights ranging between approximately 14 and 20 feet.

Perimeter floor drains were observed in the new boiler room and one of the mixing rooms in the northwest area of the building (extruded tape area) and in the PSAT coating room. Floor drains were not observed in the balance of the facility. The facility manager informed us that the perimeter drains are currently blind drains, with no discharge pipes. During the visual inspection, an operator was observed draining fluids from one of the PSAT coating units to a metal basin placed in the perimeter drain. When filled, this basin was manually lifted out of the drain and the liquid contents poured into a five gallon waste container. AlliedSignal Fluorglas personnel informed us that accumulated liquids were also pumped from these drains to one of two collection sumps, from which the liquids are pumped into the Village of Hoosick Falls POTW sanitary sewer system. One sump is located in the center of Warehouse #1 and the other sump is located in a mixing room west of the can-press area. The historical floor drain system was apparently dissimilar to the present system, for two dry sumps were found exterior (west) of the manufacturing building with discharge pipes (currently plugged) running from the building to the sumps. The southernmost sump is just outside of a room with a perimeter drain system, suggesting the past potential for floor drain release to these sumps.

The Facility Manager responsible for the Oak Atlantic Laminates manufacturing facility located in the Liberty Street building in the 1970's and 1980's, recollected the presence of process drain fields northwest and southwest of the buildings. No evidence of these drain fields was noted by the visual reconnaissance. Furthermore, the current Furon Company personnel questioned did not have knowledge of these process drain fields.

Electrical power to the building is provided by the commercial entity Niagara Mohawk. Above ground power lines follow an easement heading northwest from River Road to a 1,000 KiloVolt-ampere (KVA) pad mounted transformer adjacent to the Liberty Street building. The transformer is the property of Niagara Mohawk. Water and sanitary sewer services are provided by the Village of Hoosick Falls POTW.

2.2 SITE AND VICINITY CHARACTERISTICS

The Liberty Street property is northwest and across the Hoosic River from the center of the Village of Hoosick Falls. The lot is surrounded by a patchwork of undeveloped lands and residential areas. To the north, contiguous to the Liberty Street property and within 150 feet of the plant building, are three residences fronting Madison Street and Mystic Lane. North of Madison Street, and centered along Mechanic Street is a residential area composed of an estimated thirty houses. Within 300 feet of the plant and to the south is a residential area of more than ten homes. Residential and isolated commercial properties are east of the property. The Society of St. Stanislaws owns and operates a society hall at the corner of Mechanic and Liberty Streets. Within one half a mile to the southeast and northeast are industrial manufacturing facilities, historically the location of the W.A.Wood Mowing and Reeping Machine Company. The 1 Mechanic Street complex is currently an AlliedSignal Laminate Systems manufacturing facility. The Lydall CMD Division manufacturing facility is located on Davis Street. A power substation is located south/southeast of the subject property, near the Hoosick River. Residential land use was observed to the west on Hovey Avenue and Hampton Street.

Surface water drainage at the facility is believed to be controlled by the site topography. The facility is situated on a relatively flat ground surface. The surrounding land surface slopes away to the north, east, south, and west. Surface water drainage at the facility may also be controlled by stormwater collection systems (i.e., any of the five drain pipes which discharge to the field west of the facility). In the westernmost portion of the site a wet and poorly drained area was observed. Phragmities, a common wetland plant, was also observed in this area.

2.3 PHYSICAL SETTING

2.3.1 Regional Geologic Setting

Hoosick Falls lies in the New England Upland (Taconic Range) physiographic province. Bedrock outcrops are found at the surface throughout the New England Upland area. The bedding planes of the bedrock are often inclined, and other distortions from the horizontal are evident. These are the result of thrust and folding pressures exerted from the east as a landmass (actually an arc of volcanic islands) moved gradually westward during the Middle Ordovician Taconic mountain-building episode. This westward movement stacked and displaced large deposits of clay, sand, gravel and carbonates, which had accumulated on the floor of a deep ancient sea, moving them westward along faults as slices of rock, that became intermixed and stratigraphically disordered. As a result, the older rock graywacke, that forms the cap of the Rensselaer Plateau became perched on top of younger rock. Localized exposures of limestone and dolomite, found in association with thrust faults here and there in the area, were dragged westward as blocks of carbonate-rich rock. Shales in the area were altered (metamorphosis) into phyllites and slates during this period of mountain building.

Galcial sediment deposits overlay the bedrock surface, resulting in deposits of sands, gravels, clays, and glacial till.

Most of Hoosick Falls lies along the Hoosic River flood plain. The area is relatively flat with some hills, except along the eastern town boundary where the topography slopes moderately to the west, towards the Hoosic River. The average elevation of Hoosick Falls is approximately 500 feet above sea level.

2.3.2 Site Geologic Setting

Six soil borings were advanced during the Phase II ESA at the Liberty Street facility to total depths ranging from 14.5 feet to 32 feet below ground surface. During the advancement of these soil borings, the two geologic materials observed were artificial fill and clay. The Overburden Boring Reports are presented in Appendix A.

The fill material was observed at all soil borings except boring MW-5L. At soil boring locations MW-1L, MW-2L, MW-4L, and MW-6L, the fill material was observed to be up to 3.5 feet thick. At soil boring MW-3L, the fill material was observed to approximately 6 feet thick. The fill material generally consists for olive-brown silt and clay, with trace amounts of fine to medium sized gravel.

A clay unit was observed stratigraphically below the fill material, except at MW-5L where the clay was encountered below topsoil, 0.5 feet below ground surface. The clay unit generally consists of light brown-gray clay, with very thin lenses of silt (laminated), wet, and plastic.

2.3.3 Site Hydrogeologic Setting

The distribution of groundwater in the aquifer underlying the Liberty Street facility was characterized by wet to saturated clay. The depth to groundwater as observed during the advancement of the soil borings was estimated as follows:

Location	Depth (feet below grade)
MW-1L	12-15 feet
MW-2L	7-10 feet
MW-3L	12-15 feet
MW-4L	7-10 feet
MW-5L	6.3 feet
MW-6L	5.0 feet

Table 2-1 presents the Monitoring Well Water Level Summary at the Liberty Street facility. **Figure 2-4** presents the Groundwater Elevations and Flow Directions. Relative elevations in the five monitoring wells were obtained with a level and a graduated surveying rod, after establishing an arbitrary datum. The arbitrary datum control point was located in the southern section of the site, adjacent to the transformer. The groundwater flow direction was determined to be radially towards the southeast, south, and west based on the relative groundwater elevations measured in the six monitoring wells on February 26-27, 1996, and March 7, 1996. The radial flow is due to the high relative water level measurement in MW-2L. Recharge to the monitoring wells during well development and sampling was poor

TABLE 2-1

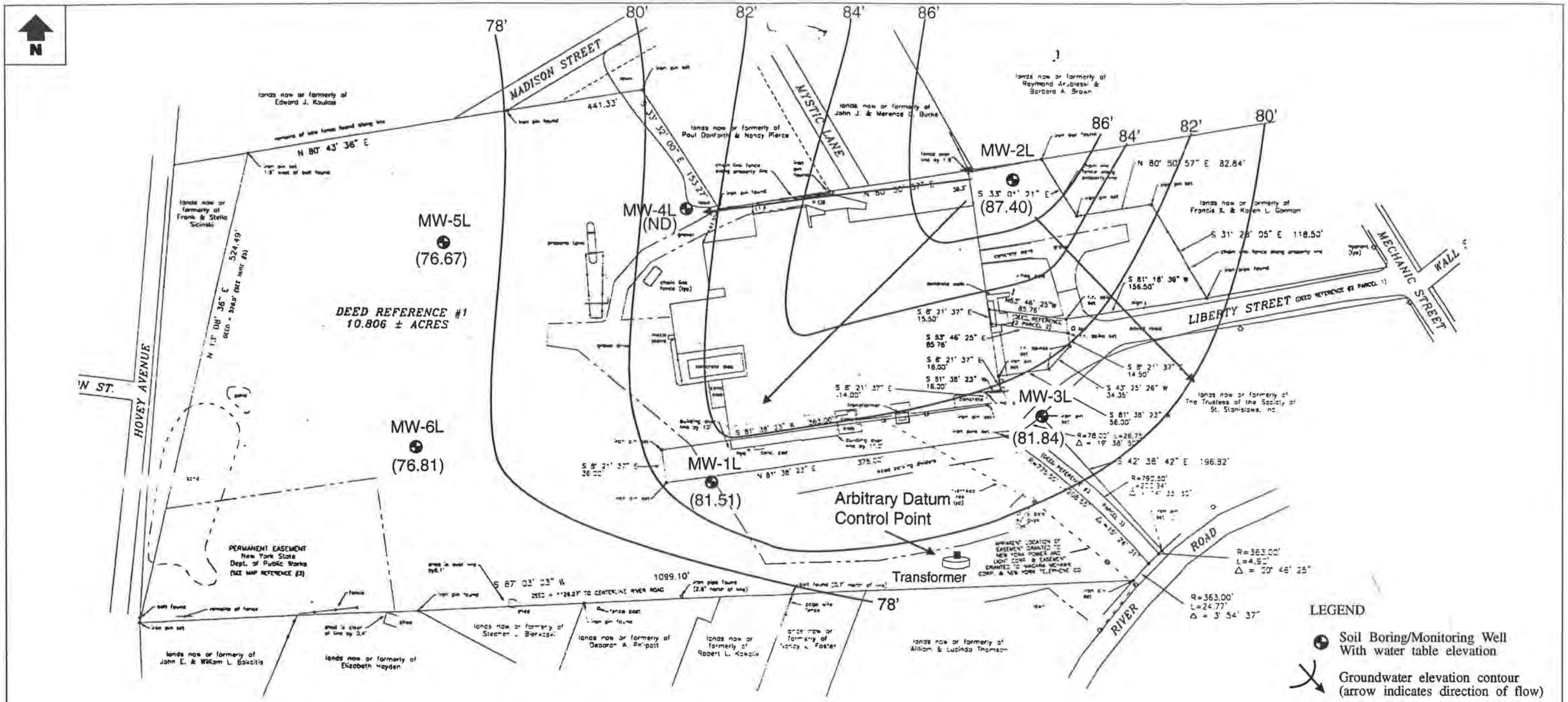
FURON COMPANY PHASE II ESA
LIBERTY STREET
MONITORING WELL WATER LEVEL SUMMARY

Location	Top of PVC Casing Elevation (feet)[1]	Date of Water Level Measurement	Depth to Groundwater (feet)[2]	Groundwater Elevation (feet)[1]
MW-1L	103.40	2/26/96 2/27/96 3/7/96	20.48 21.12 21.53	82.56 81.92 81.51
MW-2L	98.05	2/26/96 2/27/96 3/7/96	11.64 11.40 10.65	86.41 86.65 87.40
MW-3L	99.57	2/26/96 2/27/96 3/7/96	19.51 20.88 17.33	80.06 78.69 81.84
MW-4L	101.0	2/26/96 2/27/96 3/7/96	Dry Well Dry Well Dry Well	Dry Well Dry Well Dry Well
MW-5L	83.77	2/26/96 2/27/96 3/7/96	12.82 12.68 7.10	70.95 71.09 76.67
MW-6L	83.97	2/26/96 2/27/96 3/7/96	12.64 12.19 7.16	71.33 71.78 76.81

Notes:

(1) All elevations are based upon an assumed elevation of 100 feet set for the arbitrary reference point located adjacent to the transformer.

(2) Distance to groundwater referenced to top of well casing.



LEGEND

● Soil Boring/Monitoring Well With water table elevation

Groundwater elevation contour (arrow indicates direction of flow)

ND No Datum

Groundwater level measurements taken on 3/7/96

NOTES

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5. THE DISTANCE ALONG THE WESTERLY BOUNDARY WAS ADJUSTED SLIGHTLY TO AGREE WITH EVIDENCE AND MONUMENTATION FOUND ALONG THE SOUTHERLY BOUNDARY.
6. NO UNDERGROUND UTILITIES ARE SHOWN ON THIS MAP.

DEED REFERENCES

1. B & M SHOE COMPANY, INC. TO DODGE INDUSTRIES, INC., DATED JULY 13, 1972 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE ON JULY 18, 1972 IN LIBER 1239 OF DEEDS AT PAGE 286.
2. COMMITTEE FOR INDUSTRY, INC. TO VILLAGE OF HOOSICK FALLS, DATED NOVEMBER 28, 1949 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE IN LIBER 842 OF DEEDS AT PAGE 432.

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2. SURVEY OF LANDS PURCHASED BY ELDREDGE AND WHITE, PREPARED BY L. C. WILDER, SURVEYOR, DATED NOVEMBER 1880
3. NEW YORK STATE DEPARTMENT OF PUBLIC WORKS APPROPRIATION MAP, HOOSICK FALLS FLOOD PROTECTION PROJECT – HOOSICK RIVER – WOODS BROOK MAP NO. 74.

TAX MAP REFERENCE

VILLAGE OF HOOSICK FALLS 27.10 – 9 – 20

GRAPHIC SCALE

50' 25' 0 50' 100' 150'

SOURCE OF SURVEY MAP: SURVEYED BY DAVID F. BARRASS LAND SURVEYOR
9 MAPLE STREET, CORINTH, NEW YORK

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
FURON

HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT. ENVIRONMENTAL ENGINEERING
DWG NO. 728098-06500

FIGURE 2-4

GROUNDWATER ELEVATIONS
AND FLOW DIRECTIONS
LIBERTY STREET FACILITY
PHASE II ESA

SCALE
DATE APRIL 1996

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(recharge rate of less than 0.2 gallons per hour) at MW-1L and MW-3L, and poor to fair (recharge rate of approximately 0.4 gallons per hour) at MW-2L, MW-5L and MW-6L. Monitoring well MW-4L did not contain water.

3.0 SITE HISTORY

3.1 PAST SITE USE

In 1948, the Committee for Industry, Inc., a local economic development organization, built the Liberty Street industrial building to entice new manufacturing companies to Hoosick Falls. Historical documents suggest that prior to construction of this building, the subject property was undeveloped. The Rensselaer County Book of Deeds indicates the area was divided into several small farm lots as early as 1806, although nineteenth century land use appears to not have included the construction of any substantial buildings here. An 1860 Map of Hoosick Falls indicates three residential structures near the present-day intersection of Mechanic and Madison Streets, yet no buildings within the bounds of the subject property. The area remained undeveloped woodlands or pasture. In 1868 the Walter A. Wood Mowing and Reeping Machine Co. obtained title to portions of the property. The W.A. Wood Company was the primary manufacturer and employer in Hoosick Falls in the late nineteenth century with an extensive industrial complex located east of Mechanic Street along the Hoosic River. However, the historical records suggest the Liberty Street property was not developed by the W.A. Wood Company for industrial purposes.

The Liberty Street industrial building was occupied by the Nancy Shoe Company in the late 1940s or early 1950s. Manufacturing entailed the assembly of shoes. Apparently no leather curing or tanning processes were located on site. Shoe assembly continued here through the late 1960s. The B&M Shoe Company is listed as the property title holder in 1968.

The Dodge Industries Division of Oak Materials Group purchased the Liberty Street building in 1972. The building was used to house various Teflon® product processes here through the present. Ownership of this property changed from Oak Materials Group to AlliedSignal in 1986.

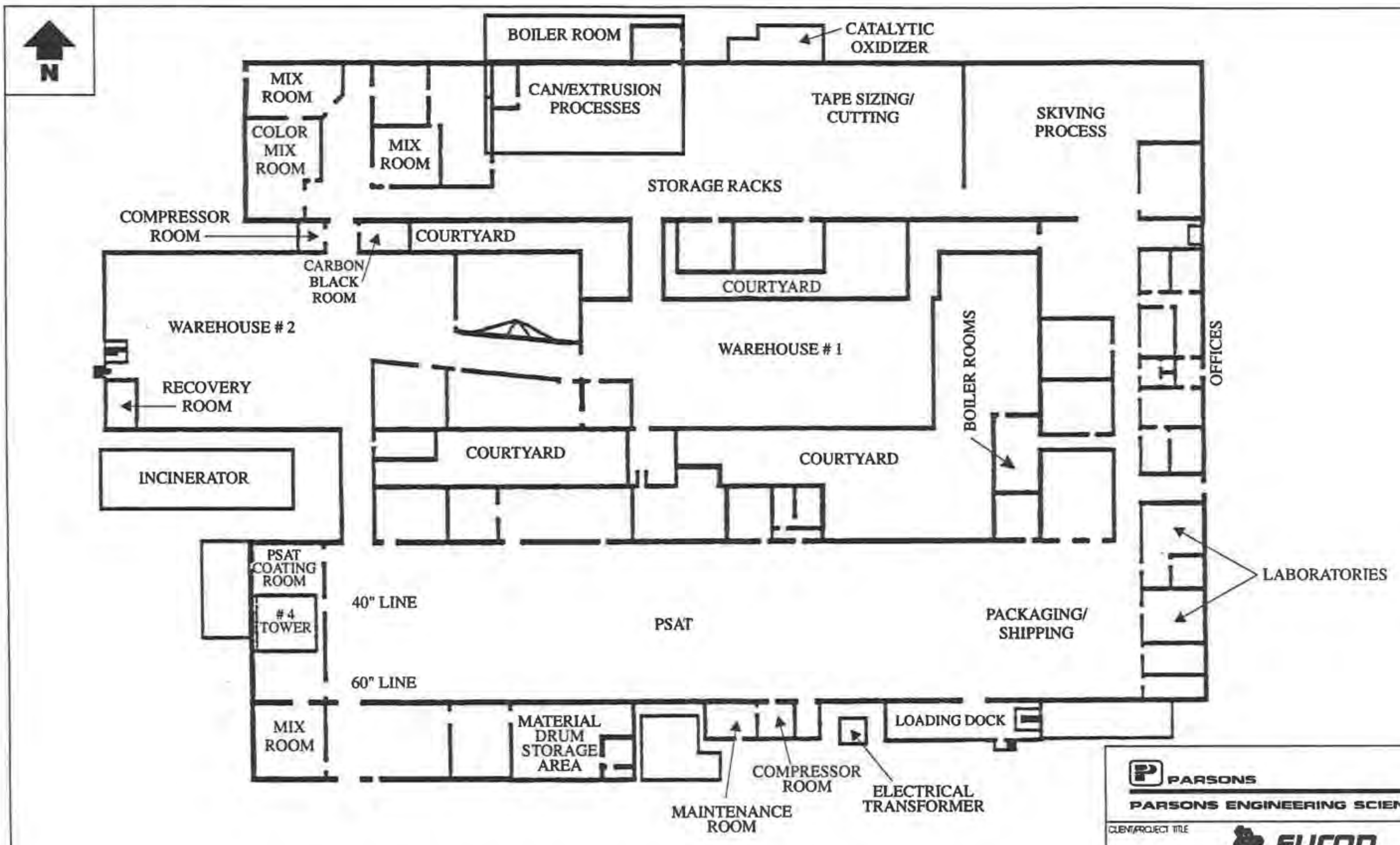
Prior to the acquisition of the property by AlliedSignal, a laminate process was located in the southern half of Liberty Street facility. This was apparently removed in the late 1980s, to be replaced by the PSAT process.

Furon Company purchased the Liberty Street facility from AlliedSignal, Inc. Fluorglas Products in February 1996.

3.2 CURRENT SITE USE

The Liberty Street Building is currently used by Furon Company for the production of a variety of Polytetrafluoroethylene (PTFE) film products and PSAT products on three process lines; skiving, extrusion, and Pressure Sensitive Adhesive Tape (Standard Industrial Classification codes 2295, 3089). Manufacturing operations are run 24 hours per day, seven days per week, with up to 80 total employees.

Figure 3-1 provides a floorplan of the facility with general functional areas identified. The main entrance and facility offices are located at the east end of the building. Immediately west of this office area are the boiler rooms for heating. A laboratory for physical and chemical materials testing is located in two rooms in the southeast corner of the building. The large open space in the southeast corner of the building is used for preparation and shipping of finish products. The loading dock is immediately adjacent to this work area. The PSAT manufacturing process occupies most of the southwestern portion of the facility, and includes mixing rooms, the coating room, the #4 tower, and the two horizontal line driers. Drummed materials used in the manufacturing processes are stored in the drum storage area along the south wall. In an adjacent room, hazardous materials contained in drums are temporarily stored (less than 90 day holding time according to facility personnel) until removed for off site disposal. The skiving process is contained in the northeast corner of the building. Adjoining work areas proceeding west include tape cutting/sizing, tape packaging, and storage racks. A temperature controlled area is the location of can presses and extrusion processes. Recent improvements in this area include the boiler room and the catalytic oxidizer incinerator. Mix rooms associated with the extrusion process are located in the northwest corner of the building. Warehousing of dry materials, with one noted exception, was found in the central area of the building. In the northwest corner of warehouse #2, drums containing liquid solvents were observed.



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

FURON

HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT. ENVIRONMENTAL ENGINEERING

DWG NO 728098-06500

FIGURE 3-1

LIBERTY STREET
MANUFACTURING FACILITY
FLOOR PLAN

SCALE NTS

DATE APRIL 1996

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4.0 FIELD INVESTIGATION METHODOLOGY

4.1 SOIL BORINGS

The objective of the soil boring program was to identify, through limited sampling and analysis, the possible presence of contamination in subsurface soils.

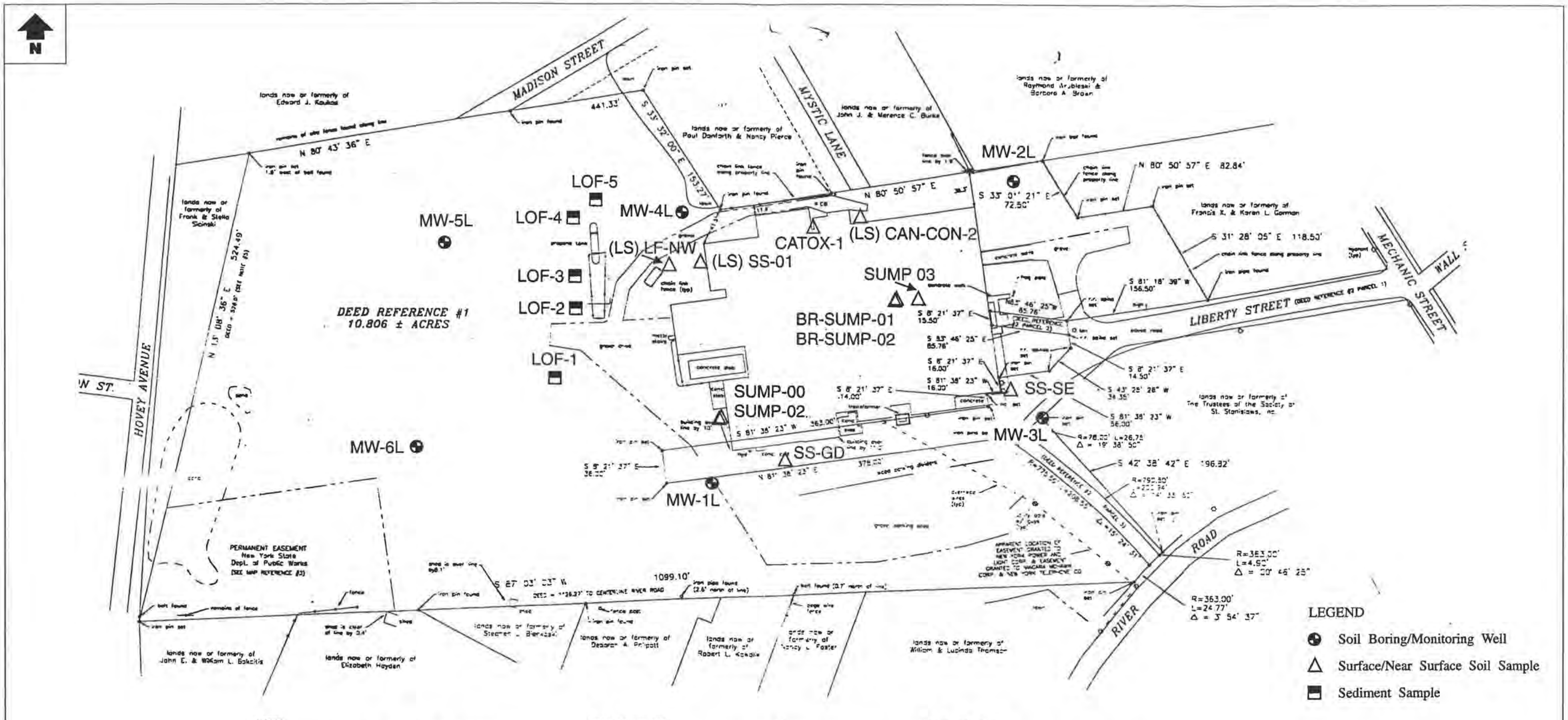
The soil borings were completed in accordance with the work plan. The only deviation in the soil boring program from that described in the work plan is discussed below.

The first two soil borings advanced at the Liberty Street facility were MW-2L and MW-4L. Clay was observed in both borings at approximately two feet below ground surface to approximately 32 feet, where drilling was terminated. In both borings, the clay was wet to saturated between 7 and 10 feet below ground surface. Generally, it is not a common practice to install a monitoring well in a clay unit. Therefore, the borings were advanced to 32 feet in search of a more permeable lithology. Since one was not encountered, and because the water table was observed to be between 7 and 10 feet below ground surface, the borings were backfilled to approximately 14 feet below ground surface. Afterwards, filter sand was placed at the bottom of the boring and a monitoring well was installed. **Figure 4-1** presents the Sample Location Map. The Overburden Boring Reports are presented in **Appendix A**. Maxim Technologies Inc. of Ballston Spa, New York performed the drilling under the direction of Parsons ES personnel.

Photographs of all soil boring/monitoring well locations are presented in **Appendix B**.

4.1.1 Sampling Methods

A total of eight soil borings were advanced using an ATV 850 track mounted rig or an Acker Soil Max drilling rig, equipped with 4.25-inch inside diameter (I.D.) hollow stem augers. During drilling, soil samples were collected at the surface (0-2 feet below grade) and at 5 foot intervals or at a stratigraphic change to the total depth of the boring. The soil samples were collected using a decontaminated 2-inch by 2-foot long carbon steel split spoon sampler. The split spoon was driven into undisturbed soil with a rig-mounted 140 lb hammer. Once the



LEGEND

- ● Soil Boring/Monitoring Well
- △ Surface/Near Surface Soil Sample
- ▬ Sediment Sample

NOTES

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TAX MAP REFERENCE

VILLAGE OF HOOSICK FALLS 27.10 – 9 – 20

SOURCE OF SURVEY MAP: SURVEYED BY DAVID F. BARRASS LAND SURVEYOR
9 MAPLE STREET, CORINTH, NEW YORK

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
FURON
HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	728098-06500

FIGURE 4-1

SAMPLE LOCATION MAP
LIBERTY STREET FACILITY
PHASE II ESA

SCALE	DATE
	APRIL 1996

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sample was collected, the augers were advanced to the top of the next sample interval. Samples were collected to the total depth of the boring.

Once the split spoon was driven and removed from the soil boring, the split spoon was opened and immediately screened for volatile organics compounds (VOCs) using an Organic Vapor Meter (OVM) 580B. No elevated OVM readings were observed during the drilling program.

Soil samples were classified according to the Unified Soil Classification System (USCS).

In addition to screening the split spoon sample, a soil sample was then collected and placed into a 16 ounce mason jar for headspace screening. Sufficient sample was placed in the mason jar to fill it half full. The mason jar was then sealed with aluminum foil and placed in a vehicle for approximately 20 minutes, allowing the temperature of the sample to equilibrate. Afterwards, a small hole (1/4-inch) was made in the aluminum foil and a headspace reading was taken with the OVM. No elevated OVM readings were observed during the headspace screenings.

Since no elevated OVM readings were observed during the screening process, the soil boring samples selected for chemical analysis were collected at or just above the water table, or where there was a sufficient change in the lithology as per the workplan. **Table 4-1** presents the Soil Sampling Summary. Samples to be analyzed for VOCs were collected first. The remaining soil from the split spoon was then mixed in a decontaminated stainless steel bowl with a decontaminated stainless steel utensil, and placed in the appropriate sample containers. The eight soil borings were analyzed for Target Compound List (TCL) volatiles, semivolatiles, and Target Analyte List (TAL) metals. Four of the eight soil boring samples were also analyzed for Total Petroleum Hydrocarbons. In addition, a thin wall Shelby tube was collected at soil boring MW-6L. The Shelby tube was tested for permeability by Triaxial cell with back pressure. The results indicate that the clay encountered at the soil boring MW-6L has an average hydraulic conductivity (K) of 8.710E-08 cm/sec. According to Groundwater (R.A. Freeze and J.A. Cherry, 1979) the hydraulic conductivity of clays range from 1E-07 cm/sec to 1E-09 cm/sec. The clay unit observed at soil boring MW-6L was characteristic of the clay encountered in the other soil borings advanced at the facility. The permeability results are presented in **Appendix C**. **Table 4-1** includes the analytical parameters for all soil samples collected.

TABLE 4-1

FURON COMPANY PHASE II ESA
LIBERTY STREET
SOIL SAMPLING SUMMARY

Sample #	Sampling Method	Sample Depth (ft.)	Sample Location	Justification for Sample Collection	Parameter Suites
SUMP-00	Split Spoon	0-2	Collected adjacent to the west side of the concrete sump/drywell, located exterior to the PSAT coating process room.	Evaluate integrity of the sump/drywell which may have been associated with a perimeter floor drain within the PSAT coating room.	VOCs, SVOCs and Metals
SUMP-02	Split Spoon	2-4	Collected adjacent to the west side of the concrete sump/drywell, located exterior to the PSAT coating process room.	Evaluate integrity of the sump/drywell which may have been associated with a perimeter floor drain within the PSAT coating room.	VOCs, SVOCs and Metals
SS-GD	Split Spoon	0-0.5	Collected in gravel drive near the southwestern corner of the facility, 25 feet south of the building.	Evaluate soil conditions in the gravel drive where oils were historically sprayed for dust suppression. Sample was collected near two entrances to the facility.	TPHs and PCBs
SS-SE	Split Spoon	0.5-1.5	Collected exterior to the southeast corner of the facility.	Evaluate the soils in the area of a suspected copper hydroxide solution release.	VOCs, SVOCs, TPHs and Metals

TABLE 4-1
(CONT.)

Sample #	Sampling Method	Sample Depth (ft.)	Sample Location	Justification for Sample Collection	Parameter Suites
CATOX-1	Hand Auger	1.0-1.5	Collected along the exterior north wall of the facility, between the boiler room and the catalytic oxidizer unit.	Evaluate soil conditions along the exterior north wall of the facility, in the vicinity of the catalytic oxidizer, where the historic "CAN" extrusion process condensate release occurred.	VOCs, SVOCs, TPHs and Metals
(LS)CAN-CON-2	Hand Auger	1-2	Collected along the exterior north wall of the facility, east of the catalytic oxidizer unit.	Evaluate soil conditions along the exterior north wall of the facility, in the vicinity of the catalytic oxidizer, where the historical"CAN"extrusion process condensate release occurred.	VOCs, SVOCs, TPHs and Metals
(LS)LF-NW	Hand Auger	1.0-1.5	Collected in proximity of the northwest corner of the facility.	Evaluate soil conditions in the area of a possible historic process discharge.	VOCs, SVOCs, TPHs and Metals
(LS)SS-01	Hand Auger	1.0-1.5	Collected exterior to the northwest corner of the facility, 2.5 feet from the entrance to the mixing room.	Evaluate soil conditions in an area of stressed vegetation.	VOCs, SVOCs, and Metals

TABLE 4-1
(CONT.)

Sample #	Sampling Method	Sample Depth (ft.)	Sample Location	Justification for Sample Collection	Parameter Suites
BR-SUMP-01	Hand Auger	0.5-1.0	Collected one foot south of the sump in the courtyard, which is located in proximity (north) of the boiler room.	Evaluate integrity of the sump and soils adjacent to the sump which receive a liquid discharge from the condensate return tank and overflow from the "old" boiler room sump.	VOCs, SVOCs, TPHs and Metals
BR-SUMP-02	Hand Auger	2.5-3.0	Collected one foot south of the sump in the courtyard which is located in proximity (north) of the boiler room.	Evaluate integrity of the sump and soils adjacent to the sump which receive a liquid discharge from the condensate return tank and overflow from the "old" boiler room sump.	VOCs, SVOCs, TPHs and Metals
SUMP-03	Hand Auger	3.2-3.7	Collected adjacent to northern exterior wall of "old" boiler room. (Collected in the courtyard).	Evaluate the sediment immediately below the outfall drain pipe.	VOCs, SVOCs, TPHs and Metals
MW-1L-0	Split Spoon	0-1.5	Soil boring MW-1L	Collected to confirm background concentrations.	VOCs, SVOCs, TPHs and Metals

TABLE 4-1
(CONT.)

Sample #	Sampling Method	Sample Depth (ft.)	Sample Location	Justification for Sample Collection	Parameter Suites
MW-1L-15	Split Spoon	15-17	Soil boring MW-1L	Collected at the water table, as per the workplan.	VOCs, SVOCs, TPHs and Metals
MW-2L-05	Split Spoon	5-7	Soil boring MW-2L	Collected at the water table, as per the workplan.	VOCs, SVOCs, TPHs and Metals
MW-3L-10	Split Spoon	10-11.7	Soil boring MW-3L	Collected at the water table, as per the workplan.	VOCs, SVOCs and Metals
MW-4L-05	Split Spoon	5-6.7	Soil boring MW-4L	Collected at the water table, as per the workplan.	VOCs, SVOCs and Metals
MW-5L-02	Split Spoon	0.6-1.6	Soil boring MW-5L	Collected to characterize the topsoil.	VOCs, SVOCs, and Metals
MW-5L-57	Split Spoon	5-6.7	Soil boring MW-5L	Collected at the water table, as per the workplan.	VOCs, SVOCs, and Metals
MW-6L-1	Split Spoon	0.2-1.4	Soil boring MW-6L	Collected to characterize the soils at soil boring location MW-6L. (A Shelby tube sample was collected at the water table).	VOCs, SVOCs, TPH and Metals

TABLE 4-1
(CONT.)

Sample #	Sampling Method	Sample Depth (ft.)	Sample Location	Justification for Sample Collection	Parameter Suites
MW-6L	Shelby Tube	5.5-7.5	Soil boring MW-6L	Collected to investigated the permeability of the clay.	Permeability Analysis
LOF-1	Stainless Steel Utensil	0.2-0.4	Collected sample immediately below the drain pipe outfall located in the field west of the facility. Southern most drain pipe outfall location.	Evaluate the sediment immediately below the outfall drain pipe.	VOCs, SVOCs, TPHs, PCBs and Metals
LOF-2	Stainless Steel Utensil	0.2-0.4	Collected sample immediately below the drain pipe outfall, located in the field west of the facility, near the southern end of the propane tank.	Evaluate the sediment immediately below the outfall drain pipe.	VOCs, SVOCs, TPHs, PCBs and Metals
LOF-3	Stainless Steel Utensil	0.2-0.4	Collected sample immediately below the drain pipe outfall, located in the field west of the facility, near the middle area of the propane tank.	Evaluate the sediment immediately below the outfall drain pipe.	VOCs, SVOCs, TPHs, PCBs and Metals
LOF-4	Stainless Steel Utensil	0.2-0.5	Collected sample immediately below the drain pipe outfall, located in the field west of the facility, near the northern end of the propane tank.	Evaluate the sediment immediately below the outfall drain pipe.	VOCs, SVOCs, TPHs, PCBs and Metals

TABLE 4-1
(CONT.)

Sample #	Sampling Method	Sample Depth (ft.)	Sample Location	Justification for Sample Collection	Parameter Suites
LOF-5	Stainless Steel Utensil	0.2-0.5	Collected sample immediately below the drain pipe outfall located in the field west of the facility, northern most drain pipe outfall location.	Evaluate the sediment immediately below the outfall drain pipe.	VOCs, SVOCs, TPHs, PCBs and Metals

The soil cuttings generated from the soil borings were placed into 55-gallon drums and labeled as non-hazardous. A total of seven soil drums were generated and staged in a central location.

After each soil boring was completed, a monitoring well was installed at that location. **Section 4.4** discusses the monitoring well installation procedures.

4.2 SURFACE/NEAR-SURFACE SOILS

The objective for the collection of surface/near-surface soil samples was to identify, through limited sampling and chemical analysis to the extent feasible, the presence of contamination in surface/near-surface soils from historic practices. **Table 4-1** presents the Soil Sampling Summary.

Apart from the modifications presented in **Table 4-2**, Surface/Near-Surface Soil Sampling Deviations from the Work Plan, surface/near-surface soil samples were collected in accordance with the work plan. **Figure 4-1** presents the Sample Location Map. Photographs of the surface/near surface soil sample locations are included in **Appendix B**.

4.2.1 Sampling Methods

A total of 11 surface/near-surface soil samples were collected. Seven of the eleven soil samples were collected using a decontaminated hand auger. The auger boring was screened for VOCs with an OVM as the boring was advanced; no elevated OVM readings were recorded. Upon reaching the sample depth, the hand auger was removed from the boring and samples for VOC analysis were collected first. The remaining soil from the auger was mixed in a decontaminated stainless steel bowl with a decontaminated stainless steel utensil and placed in the appropriate sample containers.

The remaining four surface/near-surface soil samples were collected using a decontaminated 3-inch by 2-foot long carbon steel split spoon. The split spoon was driven with a rig mounted 140lb. hammer. Once the sample was collected, the split spoon was opened and immediately screened for VOCs. No elevated readings were observed. Then, samples to be analyzed for VOCs were collected. The remaining soil from the split spoon was mixed in a

TABLE 4-2

FURON COMPANY - PHASE II ESA
LIBERTY STREET

Surface/Near-Surface Soil Sampling
Deviations to the Work Plan

Proposed Sampling	**Actual Sampling Performed**
Collect two (2) near-surface soil samples from the area of a suspected copper hydroxide solution release, in the vicinity of the southeast corner of the building.	Collected one (1) near-surface soil sample (SS-SE).
Collect two (2) soil samples exterior of the northwest corner of the building, in the vicinity of a possible historic process discharge area.	Collected one (1) soil sample (LF-NW) in the vicinity of a possible historic process discharge area. Collected a second soil sample (SS-01) exterior of the northwest corner of the building.
Collect a total of four (4) sediment samples, one (1) sample from below each drain pipe outfall. Samples will be taken from the drainage channel bed immediately below the outfalls.	Five (5) sediment samples were collected. The fifth drain pipe outfall was discovered during the Phase II ESA.
Collect two (2) soil samples in proximity to the boiler room sump, at depths of 0.5-1.5 and 4.0-5.0 feet.	One soil sample (Sump-03) was collected in proximity to the boiler room sump. Two other soil samples (BR-Sump-01 and BR-Sump-02) were collected adjacent to the sump located in the courtyard area.

decontaminated stainless bowl with a decontaminated stainless steel utensil, and placed in the appropriate sample containers.

4.3 SEDIMENTS

The objective for the collection of the sediment samples was to identify whether contamination was evident in the sediments associated with the drain pipes identified as discharging to the field west of the facility. These drain pipes may be associated with the stormwater collection system and/or underdrains associated with the building.

The sediment samples were collected in accordance with the work plan. The sediment sample locations are presented in **Figure 4-1**, Sample Location Map. Photographs of the sediment sample locations are presented in **Appendix B**.

4.3.1 Sampling Methods

A total of five sediment samples were collected, one per outfall pipe, from the drainage channel bed immediately below the drainage pipe outfalls.

The sediment samples were collected using decontaminated stainless steel bowls and utensils. First, the top 0.2 feet of soil (containing organic material) was removed. Then, a representative section of soil from 0.2 to 0.5 feet below grade was collected for VOC analysis. Afterwards, additional soil from the sample depth was collected and placed in a decontaminated stainless steel bowl, mixed, and then placed in the remaining sample containers.

4.4 MONITORING WELL INSTALLATION

The installation of each monitoring well began after the soil boring was completed. Six monitoring wells were installed: MW-1L, MW-2L, MW-3L, MW-4L, MW-5L and MW-6L. The monitoring wells were installed in accordance with NYSDEC guidelines.

The six wells were installed at the Liberty Street facility to identify and characterize potential releases of hazardous materials or chemicals from identified sources or areas of environmental concern, and to establish baseline groundwater quality at the site.

The six monitoring wells were constructed of new 10-foot long, 2-inch schedule 40 Polyvinyl Chloride (PVC) piping with a screen slot size of 0.010 inch, threaded flush joints and an expandable cap. A coarse grained sand pack (morie #0 sand) was poured in the annular space between the well screen and the hollow stem augers, at least to the top of the screen and not more than 6 inches below the bottom of the screen. The augers were removed as the annular space was filled with sand. A finer grained sand pack (morie #00) was placed on top of the coarser grained sand. The total length of sand pack placed above the top of the screen did not exceed 3.0 feet. Bentonite pellets were then placed on top of the sand to approximately 1 to 2 feet below ground surface, and then hydrated. Afterward, a protective steel casing, 4 inches in diameter by 5 feet long, was placed over the monitoring well pipe. The protective steel casing extended at least 1.5 feet below the ground surface, but not in contact with the sandpack. The protective steel casing was then held in place by pouring bentonite pellets or chips around the steel casing, up to the ground surface. A padlock was placed on the protective steel casing. The monitoring well completion diagrams are presented in Appendix D.

After well installation was completed, the downhole drilling tools (i.e., hollow stem augers, drilling rods, split spoons, etc.) were decontaminated in accordance with the work plan. All liquids generated from the decontamination process were placed in 55-gallon drums and staged in a central location. A total of three drums, containing decontamination water, were generated. These drums were labeled as non-hazardous waste, and staged in a central location.

4.5 MONITORING WELL DEVELOPMENT

Five of the six monitoring wells installed at the Liberty Street facility were developed no sooner than two days after well installation. One monitoring well, MW-4L, was dry. Therefore, monitoring well MW-4L was not developed. The following is the procedure used for the development of these wells:

- Measure depth to groundwater and well depth with an electronic water level meter.
- Calculate volume of water within the well and the sand pack.
- Using a PVC bailer, surge the well for approximately five minutes to remove any silt and clay "skin" that may have formed on the borehole wall while drilling.
- Measure the conductivity, pH, temperature, and turbidity of the surge water.
- Purge the wells to dryness (due to slow recharge of the well).

The monitoring well development procedures were repeated three times for each well, after allowing the wells to recover to static water levels. The monitoring wells recovered to static water levels within approximately eight hours.

The groundwater generated during monitoring well development was placed in 55-gallon drums. A total of two drums were generated and labeled as non-hazardous waste. These drums were staged in a central location.

4.6 GROUNDWATER SAMPLING

4.6.1 Monitoring Well Purging

Five of the six monitoring wells installed at the Liberty Street facility were sampled on March 7-8, 1996. Monitoring well MW-4L was not sampled because it was dry. The five monitoring wells were purged on March 7 prior to sampling. Before sampling the wells, the following well purging procedure was followed:

- Measure depth to groundwater and well depth with a decontaminated electronic water level meter.
- Calculate the standing water volume in the well.
- Purge the wells dry with a dedicated disposable Teflon® bailer. Conductivity, pH, temperature, and turbidity measurements were taken at the start of purging.
- After purging the well, the Teflon® bailer was left in the monitoring well to be used for sampling.

Due to their slow recharge rate and limited quantities of water in the wells, the monitoring wells were allowed to recharge approximately 5.5 hours before they were sampled.

4.6.2 Monitoring Well Sampling

The five monitoring wells at the Liberty Street facility were sampled using dedicated disposable Teflon® bailers. Groundwater samples collected for volatile analyses were collected first, before any of the other parameters, in a manner that minimized the loss of volatile compounds. Sampling for the remaining parameters was carried out in the following sequence: metals, semivolatiles, and TPH. Only one of the 5 wells, MW-2L, was analyzed for TPH. The turbidity values recorded during sampling, after the metals were collected, were as follows:

- MW-1L >1000 NTUs
- MW-2L 36 NTUs
- MW-3L 52 NTUs
- MW-5L 46 NTUs
- MW-6L 27 NTUs

Groundwater samples were collected with the required quality assurance/quality control (QA/QC) samples, and transported to the laboratory for chemical analysis following NYSDEC-CLP methodology.

5.0 RESULTS

5.1 ANALYTICAL METHODS

The eleven surface/near surface soil samples, eight soil boring samples, five sediment samples, and five groundwater samples collected during the Phase II ESA at the Liberty Street facility were analyzed by IEA, Inc. IEA, Inc., is a Contract Laboratory Protocol (CLP) laboratory certified by the New York State Department of Health. The samples were analyzed for one or more of the following parameter suites: TCL volatile organics per NYSDEC-CLP, TCL semivolatiles organics per NYSDEC-CLP, PCBs and TAL metals per NYSDEC-CLP, and TPHs per USEPA Method 418.1.

5.2 SOIL SAMPLING RESULTS

NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046 (revised January 24, 1994) values were used as a basis of comparison for the soil sample results. For metals, the value used for comparison was the NYSDEC TAGM value or the background concentration determined from the background sample, whichever was higher. The TAGM values are designated as the recommended soil cleanup objective concentration. These concentrations are presented on **Table 5-1**. Soil sample MW-2L-05 was collected at the topographic high elevation at the facility and was designated as the background sample location. The full chemical analysis results for the soil borings are presented in **Appendix E**. The full chemical analysis results for the surface/near surface soils are presented in **Appendix F.**

Volatile Organic Compounds

Soil Borings

Six VOCs were detected in the eight soil boring samples. These VOCs included 1,1,2,2-tetrachloroethane, 1,2-dichloroethene (total), 2-butanone, acetone, chloroform, and methylene chloride. All six compounds were detected below their associated TAGM value.

TABLE 5-1

FURON COMPANY PHASE II ESA
LIBERTY STREET FACILITY
RECOMMENDED SOIL CLEANUP OBJECTIVE CONCENTRATIONS

Metal Compound	NYSDEC TAGM Value (mg/kg) (*Source)	Site Background Concentration (mg/kg)	Recommended Soil Cleanup Objective Concentration (mg/kg) (*Source)
Aluminum	SB	21,400	21,400
Antimony	SB	ND	ND
Arsenic	7.5 or SB	9.9	9.9
Barium	300 or SB	129	300
Beryllium	0.16 or SB	0.94	0.94
Cadmium	1 or SB	0.52	1
Calcium	SB	19,900	19,900
Chromium	10 or SB	22.5	22.5
Cobalt	30 or SB	21.7	30
Copper	25 or SB	40.9	40.9
Iron	2000 or SB	45,300	45,300
Lead	4-61	20.5	**61
Magnesium	SB	15,100	15,100
Manganese	SB	1,110	1,110
Mercury	0.1	ND	0.1
Nickel	13 or SB	40.9	40.9
Potassium	SB	2,150	2,150
Selenium	2 or SB	3.3	3.3
Silver	SB	ND	ND
Sodium	SB	129	129
Thallium	SB	ND	ND
Vanadium	150 or SB	21.6	150
Zinc	20 or SB	122	122

Notes:

SB - Site Background
ND - Not Detected
* Source: Division Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels.
** Special Condition (see text)

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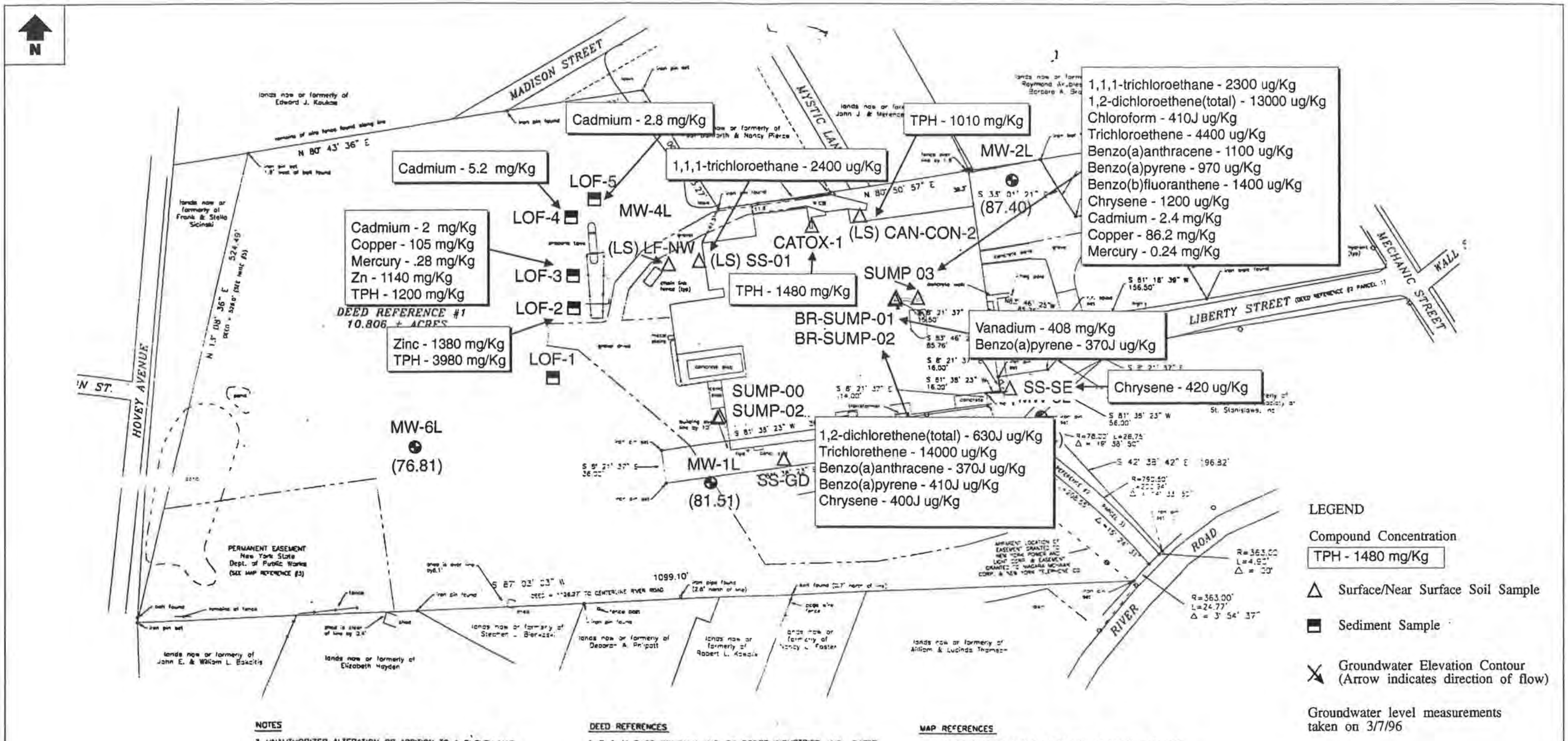

NOTES

1. UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2. OF THE NEW YORK STATE EDUCATION LAW.
2. ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.
3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE OR TITLE REPORT AND IS, THEREFORE, SUBJECT TO ANY EASEMENTS, COVENANTS, OR RESTRICTIONS OF RECORD OR ANY STATEMENT OF FACTS SUCH DOCUMENTS WOULD DISCLOSE.
4. BOUNDARY LINES SHOWN ON THIS MAP ARE BASED ON THE RECORD DESCRIPTIONS. SET FORTH IN DEED REFERENCE #1 AND DEED REFERENCE #2 AND ON MONUMENTATION FOUND.
5. THE DISTANCE ALONG THE WESTERLY BOUNDARY WAS ADJUSTED SLIGHTLY TO AGREE WITH EVIDENCE AND MONUMENTATION FOUND ALONG THE SOUTHERLY BOUNDARY.
6. NO UNDERGROUND UTILITIES ARE SHOWN ON THIS MAP.

DEED REFERENCES

1. B & M SHOE COMPANY, INC. TO DODGE INDUSTRIES, INC., DATED JULY 13, 1972 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE ON JULY 18, 1972 IN LIBER 1239 OF DEEDS AT PAGE 286.
2. COMMITTEE FOR INDUSTRY, INC. TO VILLAGE OF HOOSICK FALLS, DATED NOVEMBER 28, 1949 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE IN LIBER 842 OF DEEDS AT PAGE 432.

MAP REFERENCES

1. MAP OF PART OF THE WHITE LOT (DORR FARM), PREPARED BY PERCY AND PERCY, DATED OCTOBER 20, 1949.
2. SURVEY OF LANDS PURCHASED BY ELDREDGE AND WHITE, PREPARED BY L. C. WILDER, SURVEYOR, DATED NOVEMBER 1880
3. NEW YORK STATE DEPARTMENT OF PUBLIC WORKS APPROPRIATION MAP, HOOSICK FALLS FLOOD PROTECTION PROJECT – HOOSICK RIVER – WOODS BROOK MAP NO. 74.

TAX MAP REFERENCE

VILLAGE OF HOOSICK FALLS 27.10 - 9 - 20

GRAPHIC SCALE
50' 25' 0 50' 100' 150'

SOURCE OF SURVEY MAP: SURVEYED BY DAVID F. BARRASS LAND SURVEYOR
9 MAPLE STREET, CORINTH, NEW YORK

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
FURON
HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT. ENVIRONMENTAL ENGINEERING
DWG NO. 728098-06500

FIGURE 5-1
Concentrations of Compounds of Concern in Soils and Sediments

Liberty Street Facility
Phase II ESA

SCALE
DATE APRIL 1996

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Surface/Near Surface Soils

Eight VOCs were detected in the 11 surface/near surface soil samples. They were acetone, methylene chloride, toluene, tetrachoroethene, 1,1,1-trichloroethane, 1,2-dichloroethene (total), trichloroethene, and chloroform. The latter four VOC compounds were detected at concentrations above their respective NYSDEC TAGM values.

The NYSDEC TAGM value for 1,1,1-trichloroethane is 800 ug/kg. The compound was detected in two soil samples at concentrations of 2,400 ug/kg at sample location (LS) SS-01 (sample depth 1.0-1.5feet below grade) and 2,300 ug/kg at sample location SUMP-03 (sample depth 3.2-3.7 feet below grade). The NYSDEC TAGM value for 1,2-dichloroethene (total) is 300 ug/kg. At sample location SUMP-03, 1,2-dichloroethene (total) was detected at a concentration of 13,000 ug/kg. The compound was also detected at an estimated concentration of 630 ug/kg at sample location BR-SUMP-02 (sample depth 2.5-3.0 feet below grade). Trichloroethene was also present at sample locations BR-SUMP-02 at 14,000 ug/kg, and at sample location SUMP-03 at 4,400 ug/kg. The NYSDEC TAGM value for trichloroethene is 700 ug/kg. Chloroform was detected in the sample SUMP-03 at an estimated concentration of 410 ug/kg. The NYSDEC TAGM for chloroform is 300 ug/kg. **Figure 5-1** presents the Concentrations of Compounds of Concern in Soils and Sediments.

Semivolatile Organic Compounds

Soil Borings

No SVOCs were detected in the soil boring samples at concentrations above their respective TAGM values.

Surface/Near Surface Soils

Of the 23 semivolatile compounds detected in the surface/near surface soil samples, four Polynuclear Aromatic Hydrocarbon (PAH) compounds were detected above their associated NYSDEC TAGM values. The compound benzo(a)anthracene, with a TAGM value of 330 ug/kg, was detected at two sample locations: BR-SUMP-02 at an estimated concentration of 370 ug/kg, and at SUMP-03 at a concentration of 1,100 ug/kg. Benzo(a)pyrene (TAGM value of 330 ug/kg) was detected at concentrations of 370 ug/kg (estimated) at sample location BR-SUMP-01 (sample depth 0.5-1.0 feet below grade), 410 ug/kg at BR-SUMP-02 and 970 ug/kg at SUMP-03. Chrysene was detected at sample location BR-SUMP-02 at its corresponding NYSDEC TAGM value of 400 ug/kg. Chrysene was also detected in the soil samples SS-SE (collected 0.5-1.5 feet below grade) at a concentration of 420 ug/kg, and at sample SUMP-03 at a concentration of 1200 ug/kg. At soil sample SUMP-03 benzo(b)fluoranthene (TAGM valve of 1,100 ug/kg) was detected at a concentration of 1400 ug/kg. **Figure 5-1** presents the Concentrations of Compounds of Concern in Soils and Sediments.

Metals

Soil Borings

Fifteen out of 23 metal compounds were detected at concentrations slightly above (1.0-1.2 times) their associated NYSDEC TAGM value. Antimony, which was not detected in the background sample, reported a maximum concentrations of 2.6 mg/kg in sample MW-1L-0. These exceedances are all considered to be reflective of natural soil chemistry variations.

Surface/Near Surface Soils

A total of sixteen metal compounds were detected at concentrations slightly above their respective recommended soil cleanup objective concentration.

Four of these compounds cadmium, copper, mercury and vanadium were reported at concentrations which were at least two times their associated TAGM value. Cadmium was detected at a maximum concentration of 2.4 mg/kg (TAGM value of 1 mg/kg) in soil sample SUMP-03. Copper was detected at a maximum concentration of 86.2 mg/kg (TAGM value of 40.9 mg/kg) in soil sample SUMP-03. Vanadium was reported at a maximum concentration of 408 mg/kg (TAGM value of 150 mg/kg) in soil sample BR-SUMP-01. Mercury was reported at a maximum concentration of 0.24 mg/kg (TAGM value of 0.1 mg/kg) in soil sample SUMP-03.

The balance of these exceedances are considered to be reflective of natural soil chemistry variations.

Figure 5-1 presents the Concentrations of Compounds of Concern in Soils and Sediments. The metals presented were detected at concentrations at least two times above their respective recommended soil cleanup objective concentration.

Total Petroleum Hydrocarbons

Soil Borings

TPH was detected in the soil boring sample MW-1L-0 at a concentration of 188 mg/kg. There is no NYSDEC TAGM value for TPHs.

Surface/Near Surface Soils

TPHs was detected in all eight surface/near surface soils samples. Two soil samples, CATOX-1 and (LS) CAN-CON-2, had concentrations of 1480 mg/kg and 1010 mg/kg, respectively. **Figure 5-1** presents the concentrations of compounds of concern in soils and sediments.

Polychlorinated Biphenyls

Soil Borings

No soil boring samples were analyzed for PCBs.

Surface/Near Surface Soils

One surface/near surface soil sample, SS-GD (collected in the gravel driveway) was analyzed for PCBs. No PCBs were detected at concentrations above the TAGM values.

5.3 SEDIMENT RESULTS

Sediment sampling results were compared to the NYSDEC TAGM values. For metals, the value used for comparison was the NYSDEC TAGM, or the background concentration determined from the background sample (MW-2L-05), whichever was higher. The full chemical analysis results for the sediment samples are included in **Appendix E**.

Volatile Organic Compounds

Six VOCs were detected in four of the five sediment samples at concentrations well below their respective TAGM values. The highest VOC concentration detected was in sample LOF-3 where trichloroethene was detected at a concentration of 120 ug/kg. The NYSDEC TAGM value for trichloroethene is 700 ug/kg.

Semivolatile Organic Compounds

A total of 24 SVOCs were detected in the five sediment samples. No SVOCs were detected above their respective TAGM value. The maximum concentration detected was 4,000 ug/kg of bis(2-ethylhexyl)phthalate at sample location LOF-3.

Polychlorinated Biphenyls

Two PCB compounds, aroclor-1254 and aroclor-1260, were detected in samples LOF-1, LOF-2 and LOF-3 at concentrations well below their NYSDEC TAGM value of 1,000 ug/kg.

Metals

A total of twenty metal compounds were detected in the sediment samples. Seventeen of the 20 compounds were detected at concentrations only slightly above their respective recommended soil cleanup objective concentration. The following summarizes the metals which were detected at concentrations at least two times above the recommended soil cleanup objective concentration:

Metal	Sample Location	Background Value(mg/kg)	Detected Concentration (mg/kg)
Cadmium	LOF-3	1	2
Cadmium	LOF-4	1	5.2
Cadmium	LOF-5	1	2.8
Copper	LOF-3	40.9	105
Mercury	LOF-3	0.1	0.28
Zinc	LOF-3	122	1,140
Zinc	LOF-2	122	1,380

Figure 5-1 presents the Concentrations of Compounds of Concern in Soils and Sediments.

Total Petroleum Hydrocarbons

TPH was detected in three of the five sediment samples. The highest concentration detected was in sediment sample LOF-2, at 3,980 mg/kg. The TPH concentrations for the other two samples were 1,200 mg/kg at LOF-3 and 189 mg/kg at LOF-1.

5.4 GROUNDWATER SAMPLING RESULTS

The analytical results from the groundwater sampling were compared to the New York State Groundwater Class GA Standards, the New York State Primary Drinking Water Quality Standards, and the Federal Safe Drinking Water Act MCLs.

The full chemical analysis results for groundwater are presented in **Appendix** F.

Volatile Organic Compounds

No VOCs were detected in the five groundwater samples above their respective Federal MCLs or New York State Groundwater Standards.

Semivolatile Organic Compounds

No SVOCs were detected above the Federal MCLs or New York State Groundwater Standards.

Metals

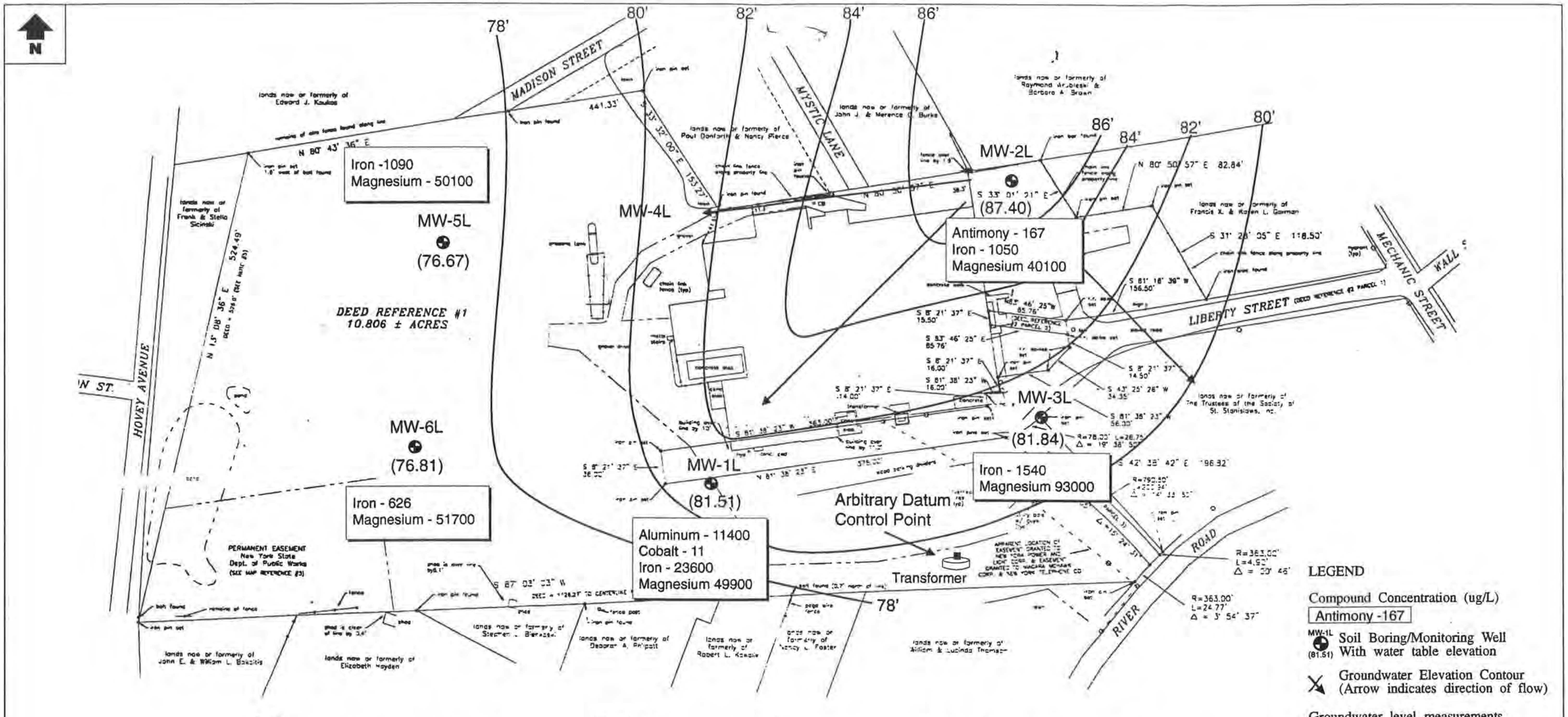
Twenty out of 23 metals were detected in the five groundwater samples. Nine of the twenty compounds were detected at concentrations above their respective standards. Five of the nine compounds were detected at concentrations which were at least two times above their respective standard. Iron and magnesium were detected above their standards in all five monitoring wells. Along with iron and magnesium, the following metals are common constituents found in groundwater: aluminum, calcium, potassium, manganese and sodium.

The Metals of Concern in Groundwater are summarized below and are presented in **Figure 5-2.**

Metal	Monitoring Well	Federal MCL or New York Standards(ug/l)	Detected Concentration (ug/l)
Aluminum	MW-1L	1000	11400
Antimony	MW-2L	6	167
Cobalt	MW-1L	5	11
Iron	MW-1L	300	23600
Iron	MW-2L	300	1050
Iron	MW-3L	300	1540
Iron	MW-5L	300	1090
Iron	MW-6L	300	626
Magnesium	MW-1L	35000	49900
Magnesium	MW-2L	35000	40100
Magnesium	MW-3L	35000	93000
Magnesium	MW-5L	35000	50100
Magnesium	MW-6L	35000	51700

Total Petroleum Hydrocarbons

One groundwater sample collected from monitoring well MW-2L was analyzed for TPHs. No TPHs were detected.



LEGEND

Compound Concentration (ug/L)

Antimony -167

MW-1L (81.51) Soil Boring/Monitoring Well With water table elevation

Groundwater Elevation Contour (Arrow indicates direction of flow)

Groundwater level measurements taken on 3/7/96

NOTES

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MAP REFERENCES

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2. SURVEY OF LANDS PURCHASED BY ELDREDGE AND [illegible], PREPARED BY L. C. WILDER, SURVEYOR, DATED NOVEMBER 188[illegible].
3. NEW YORK STATE DEPARTMENT OF PUBLIC WORKS APPROPRIATION MAP, HOOSICK FALLS FLOOD PROTECTION PROJECT - HOOSICK RIVER - WOODS BROOK MAP NO. 74.

TAX MAP REFERENCE

VILLAGE OF HOOSICK FALLS 27.10 - 9 - 20

GRAPHIC SCALE

50' 25' 0 50' 100' 150'

SOURCE OF SURVEY MAP: SURVEYED BY DAVID F. BARRASS LAND SURVEYOR
9 MAPLE STREET, CORINTH, NEW YORK

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
FURON

HOOSICK FALLS, NY
ENVIRONMENTAL SITE ASSESSMENT

DEPT. ENVIRONMENTAL ENGINEERING
DWG NO. 728098-06500

FIGURE 5-2

Concentrations of Metals of Concern in Groundwater
Liberty Street Facility
Phase II ESA

SCALE
DATE APRIL 1996

R:\GRAPHICS\ALLIEDS\FURON\MAPLANPT.CDR(CVM)

6.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 FINDINGS

6.1.1 Soil Analysis Results

The soil analyses results of the Phase II ESA conducted at the Liberty Street facility indicates that four VOCs were present in the soils at concentrations above their respective TAGM value.

The compound 1,1,1-trichloroethane was detected above the NYSDEC TAGM value in two soil samples including SUMP-03 and (LS)SS-01. Soil sample SUMP-03 was collected north and adjacent to the old boiler room, approximately 3.5 feet below grade. Soil sample (LS)SS-01 was collected in proximity to the northwest corner of the facility, 1-1.5 feet below grade.

The VOC 1,2-dichloroethane (total) was detected at sample location SUMP-03 at a concentration of 13,000 ug/kg which is more than 43 times the TAGM value of 300 ug/kg. The compound was also detected in the sample BR-SUMP-02 at an estimated concentration more than 2 times the TAGM value. The soil sample BR-SUMP-02 was collected adjacent to the sump located in the courtyard area, 2.5-3.0 feet below grade.

Trichloroethene was also detected in the samples SUMP-03 and BR-SUMP-02 at concentrations above the TAGM value.

And finally, chloroform was detected in the sample SUMP-03 above the NYSDEC TAGM value.

The soil analysis results also indicate that four semivolatiles (PAHs) were detected above their respective NYSDEC TAGM value.

Benzo(a)anthracene was detected in SUMP-03 and in sample BR-SUMP-02 above the TAGM value.

Benzo(a)pyrene was detected in samples SUMP-03, BR-SUMP-02 and in BR-SUMP-01 above the TAGM value.

Chrysene was detected in samples SUMP-03 and BR-SUMP-02 at concentrations at above the TAGM value.

And finally, benzo(b)fluorenthene was detected in soil sample SUMP-03 at a concentration slightly above the TAGM value.

The only sample analyzed for PCBs was sample SS-GD, collected in the gravel driveway. It reported two PCBs aroclor-1254 and aroclor-1260 at concentrations well below their respective TAGM value.

Non-inclusive of those metals which are common constituents in clay soils (i.e., aluminum, calcium, iron, manganese, magnesium and potassium), the soil analysis results indicate that four metals were detected at concentrations which were more than two times their respective recommended soil cleanup objective concentration. The compounds of concern and their concentrations are as follows: cadmium 2.4 mg/kg, copper - 86.2 mg/kg, mercury - 0.24 mg/kg, and vanadium - 408 mg/kg. Three of the four compounds, cadmium, copper and mercury, were detected at their maximum concentrations at sample location SUMP-03. The remaining compound, vanadium, was detected at a maximum concentration at sample location BR-SUMP-01. Although vanadium was detected at a concentration approximately 2.7 times the TAGM value, its exceedance may be representative of natural soil chemistry variations.

TPH was detected in three soil samples. The soil sample MW-IL-0 had a TPH concentration of 188 mg/kg. The other two samples CA-TOX-1 and (LS) Can-Con-2 had concentrations of 1,480 mg/kg and 1,010 mg/Kg, respectively. The latter two samples were collected in the area of the historic "CAN" extrusion process condensate release area.

6.1.2 Sediment Analysis Results

The results of the sediment sampling analysis reported no VOC, SVOC or PCB concentrations above their respective TAGM value. Sixteen metals were detected above their respective recommended soil cleanup objective concentration. Seven of the 16 metals are common constituents of clay soils. The nine remaining metals are the following: arsenic, beryllium, cadmium, chromium, copper, mercury, nickel, selenium and zinc. Four of these nine metals were detected at concentrations which were at least two times the recommended soil cleanup objective concentration. These are listed below:

Compound	Sample Location	Recommended Soil Cleanup Objective Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)
Cadmium	LOF-4	1.0	5.2
Copper	LOF-3	40.9	105
Mercury	LOF-3	0.1	0.28
Zinc	LOF-2	122	1,380

The sediment sampling results also detected elevated concentrations of TPH at two of the five sample locations. The sample collected at location LOF-2 had a concentration of 3,980 mg/kg, while sample LOF-3 had a concentration of 1,200 mg/kg.

6.1.3 Groundwater Analysis Results

The groundwater analysis results of the Phase II ESA indicate that no VOCs, SVOCs or TPHs, exceeded their respective Federal MCLs or New York State Groundwater Quality standards. Five metals were detected at concentrations which were at least two times their respective standards. These were aluminum, antimony, cobalt, iron and magnesium. Aluminum, iron and magnesium are common constituents found in groundwater. Antimony was detected in monitoring well MW-2L at a concentration which was over 27 times the New York State Class GA Standard. Cobalt was detected in monitoring well MW-1L at a concentration which was 2.2 times the Standard. Although antimony and cobalt are not generally common constituents in groundwater, their concentrations could be attributed to the elevated turbidity of the samples analyzed.

6.2 CONCLUSIONS

The Phase II Environmental Site Assessment was designed to address the two "recognized environmental conditions," evaluate other conditions of environmental concern identified in the Phase I ESA, and to establish the "baseline environmental conditions" for the property.

The two recognized environmental conditions were the potential fuel oil releases from the recently (August, 1995) removed USTs and the potential releases related to the use of solvents as part of the manufacturing processes. Other conditions of environmental concern included the potential process leach fields, hazardous waste storage area, the waste water collection and discharge system, exterior drainage systems sumps, the "can" extrusion process condensate spill event and housekeeping issues.

The soil analysis results indicate that the soil sample (SUMP-03) collected adjacent to the exterior wall of the boiler room sump contained four VOCs, four PAHs and three metals at concentrations above their respective NYSDEC recommended soil cleanup objective concentration. These detected concentrations may be attributed to the "old" boiler room sump. According to the Phase I ESA Report, the boiler room sump receives discharge from several drain pipes emanating from the front office and laboratory area of the facility. Also during the Phase I ESA, oil stains and a waste oil drum were observed in proximity to the sump. According to Tom Wykoski, a Liberty Street facility employee, the sump collects boiler "blow-down water." The boiler room sump also has an overflow line which discharges into a sump located in the courtyard, in proximity to the boiler room sump. The soil sample SUMP-03 was collected adjacent to the overflow line. The limited sampling and analysis conducted in this area indicates that the integrity of the "old" boiler room sump, and/or the overflow line associated with it, may have been breached at some point in their history.

The soil sample (BR-SUMP-02) collected adjacent to the courtyard sump, (2.5-3.0 below grade), showed the presence of two VOCs and three PAHs at concentrations above their respective TAGM value. The five compounds detected at sample location BR-SUMP-02 were also found at sample location SUMP-03. The soil sample BR-SUMP-01, collected above sample BR-SUMP-02 (0.5-1.0 feet below grade), showed Vanadium at a concentration which is above the TAGM value. The reported concentration for vanadium may be reflective of natural soil chemistry variations. The presence of vanadium may also be attributed to other sources such as fuel oils, since vanadium is a common constituent in fuel oils.

During the Phase II ESA, two pipes emanating from the boiler room were observed discharging liquid which flowed into the sump located in the courtyard. According to Mr. Wykoski, the liquid is water from the condensate return tank located in the "old" boiler room. This liquid may also be a source for the reported concentrations of vanadium.

Results from the soil sample (LS) SS-01 showed a concentration of 1,1,1-trichloroethane above the TAGM value. This sample was collected near the northwest corner of the facility in proximity to the entrance to the mixing rooms, in an area of stressed vegetation, from a depth of 1.0-1.5 feet below grade.

Both of the soil samples collected to investigate the historic "CAN" extrusion process condensate release, indicated the presence of TPH (1480 mg/kg and 1,010 mg/kg). Both of these samples were collected from a depth of 1 - 2 feet below grade.

Sediment samples collected from the five drain pipes located in the field west of the facility indicated the presence of metals including cadmium, copper, zinc, and mercury, at concentrations at least two times the recommended soil cleanup objective concentration. TPHs were also detected in two of the five sediment samples (i.e., LOF-2 and LOF-3). These results suggest that present or past sources drained by these pipes may have potentially contained metals and TPHs.

One soil sample, SS-GD, was collected from 0-1.5 feet below grade in the gravel driveway and was analyzed for PCBs and TPHs. No PCBs were detected above the respective TAGM value and TPH was reported at 23.4 mg/kg. There is no TAGM value for TPH in New York State.

One soil sample, SS-SE, was collected at a depth of 0.5-1.5 feet below grade from the area of a suspected copper hydroxide release. The soil analysis results detected the PAH compound chrysene. The limited sampling and analysis conducted in this area suggests that metals are present at background concentrations.

Sampling and analysis conducted to investigate the sump located exterior to the PSAT coating process room, showed that no VOCs, SVOCs or metals were detected above their TAGM values in the soil samples collected adjacent to the sump.

The soil sample (LS) LF-NW, collected 1.0-1.5 feet below grade in the vicinity of the historic process discharge area, had no VOCs, SVOCs, or metals reported above the TAGM values.

The groundwater analysis results indicate that five metals are present in five monitoring wells at concentrations at least two times their respective Federal MCL or New York State Groundwater Quality Standards.

Three of the five metals aluminum, iron, and magnesium, are common constituents in groundwater. The presence of the other two metals, antimony and cobalt, could be attributed to the elevated turbidity of the samples analyzed.

6.3 RECOMMENDATIONS

VOCs, PAHs, and metals were detected in the soil sample collected exterior to the sump in the "old" boiler room. The discharge received by the sump should be investigated for the presence of VOCs, PAHs, and metals. It is also recommended that the integrity of the sump, and the overflow line associated with it, should be investigated to prevent possible releases to the surrounding soils and groundwater.

VOCs, PAHs, and the metal vanadium, were also detected in the soils collected adjacent to the sump located in the courtyard. It is recommended that the integrity of the sump, and the overflow line associated with it, also be investigated. Also, aqueous samples of this material believed to be water from the condensate return tank should be collected and analyzed from the two pipes emanating from the boiler room which discharge into the sump. Additionally, it is recommended the Furon Company begin record searches to determine if past evidence of vanadium usage at the facility can be found.

Further soil investigations should be conducted in the historic "CAN" extrusion process condensate release area to delineate the extent of TPHs in soils.

The wastewater collection system including the five drainage pipes located in the field west of the facility should be investigated to more fully document the sources drained by these pipes.

Further soil investigations should be conducted in proximity to the entrance of the mixing room where 1,1,1-trichloroethane was detected.

The metal concentrations encountered in the groundwater at the Liberty Street facility are not believed to be indicative of environmental site problems.

It is recommended that no further groundwater sampling is presently warranted at the facility. The six newly installed monitoring wells are to be closed in accordance with NYSDEC guidelines.

7.0 REFERENCES

40 Code of Federal Regulations (CFR), Parts 141 and 142, May 1995.

Goldsmith R. Ratcliffe, N.M., Robinson P., and Stanley, R.S. 1983. Bedrock Geologic Map of Massachusetts, Department of Public Works, and Joseph A. Sinnot.

Miller, Norton G. 1987. Natural History of Rensselaer County, pp 6 and 8j. Landmarks of Rensselaer County New York.

New York State Department of Environmental Conservation. Revised January 24, 1994. Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046.

Official Compilation of Codes, Rules, and Regulations of the State of New York, Title 6, Part 360, April 1995 and Parts 701-705, June 1995. Class GA Groundwater.

Parsons Engineering Science 1995. Draft Phase I Environmental Site Assessment, McCaffrey Street Facility.

EXHIBIT 2

NYSDEC Comment Letter (June 22, 2016)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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June 22, 2016

Mr. Edward J. Canning
Director Environment, Health & Safety
Saint-Gobain Performance Plastics
14 McCaffrey Street
Hoosick Falls, NY 12090

Re: Draft Site Characterization Work Plan - Saint-Gobain Liberty Site – April 2016 (Site No. 4-42-046)

Dear Mr. Canning:

The New York State Department of Environmental Conservation (Department) has reviewed the April 6, 2016 "Draft Site Characterization Work Plan, Saint-Gobain Performance Plastics Site" (Work Plan) for the Liberty Street site. This Work Plan was transmitted *via* a May 6, 2016 letter from Kirk Moline of C.T. Male Associates to William Daigle of the Department. The Work Plan must be revised before it can be approved. The following comments describe needed revisions for incorporation into the revised work plan.

1. Section 2.4 Site Utilities: The text states that there are no known water supply wells at the site. Is there a known former septic system on site?

2. Section 3.2.1 Shallow Soil/Fill Sampling: The surface soil samples should be obtained from the 0 to 2-inch interval.

3. Section 3.2.1 Shallow Soil/Fill Sampling: Shallow soil/fill samples should be analyzed for the Full Target Compound List, Full Target Analyte List, and Tentatively Identified Compound contaminants, in addition to analysis for Perfluorinated Coumpounds (PFCs).

4. Section 3.2. Subsurface Soil/Fill Sampling and Groundwater Sampling, <u>Subsurface Soil Sampling</u>: The text should be expanded to include the ability to adjust sample depths to include mottling zones within a boring. This adjustment would be made in the field with input from Department field-oversight staff.

5. Section 3.2.4 Sediment Sampling: Sediment samples should also be analyzed for TCL/TAL parameters.

6. Section 3.2.5 Surface Water Sampling: Surface water samples should also be analyzed for TCL/TAL parameters.

7. Section 3.2.8 Sampling Quality control: Field samplers should be aware of possible cross contamination of samples from certain clothing and food packaging, and eliminate these materials from the sampling event.

8. Section 4.3 Health and Safety Plan: It does not appear that a Community Air Monitoring Plan (CAMP) was submitted. The revised document should contain a CAMP.

9. Section 5.2 Schedule: The schedule should be updated in the revised document.

10. Section 6.0 Submittals: Please add Albert DeMarco as the NYSDOH Project Manager.

11. Table 1: Proposed Sampling Schedule, Groundwater: The table discusses low-flow sampling using a peristaltic pump. Please ensure that the peristaltic sump does not have Teflon components. The Department has used mechanical pumps for PFOA sampling to eliminate Teflon components.

12. Appendix A, Field Sampling Plan, Section 3.6 Monitoring Well Development: In addition to the field parameters discussed in the section, dissolved oxygen should also be measured and recorded.

It is recommended we meet to discuss these comments and/or your corresponding proposed responses/plan revisions in advance of your submission of the revised work plan in order to help expedite development of an approvable document. The revised document should be submitted to the Department for review and approval by July 22, 2016.

If you have any questions regarding this letter and/or if you would like to arrange a meeting to discuss these comments, please contact feel free to contact me at 518-402-9788.

Sincerely,

Richard A. Mustico, P.E.
Project Manager
Remedial Bureau D
Division of Environmental Remediation

ec: Bill Daigle – NYSDEC
Jim Quinn – NYSDEC, Schenectady
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Thomas Byrne, Esq. - Honeywell
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Christopher Gibson, Esq. - Archer & Greiner
Dale Desnoyers, Esq. – Allen & Desnoyers