REMEDIAL INVESTIGATION

PHASE III SUPPLEMENTAL INVESTIGATION

WORK PLAN

QUALITROL COMPANY LLC
1385 Fairport Road
Monroe County
Fairport, NY 14450

Brownfield Cleanup Program No. C828185

Prepared for:

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October 2016

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TABLE OF CONTENTS

GLOSSARY/ABBREVIATIONS AND ACRONYMS

SECTION **PAGE**

LIST OF TABLES

LIST OF FIGURES

SEPARATELY PROVIDED DOCUMENTS

- Revised Quality Assurance Project Plan (QAPP) (FPM, October 2016)
- Site Safety and Health Plan including Community Air Monitoring Program (FPM, November, 2013)

GLOSSARY/ABBREVIATIONS AND ACRONYMS

Term/Abbreviation/ Acronym	Definition
amsl	Above mean sea level
BCA	NYSDEC Brownfield Cleanup Agreement (ref. DER-32, Brownfield Cleanup Program Applications and Agreements, and 6 NYCRR 375-1.5, 375-3.4 and 375-3.5).
BCP	NYSDEC Brownfield Cleanup Program [ref. Article 27, Title 14 of the Environmental Conservation Law (ECL)) and ECL 27-1409].
bgs	Below ground surface
CAMP	Community Air Monitoring Program – requires real-time monitoring for volatile organic compounds (VOCs) and particulates at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites.
DUSR	Data Usability Summary Report. A document that provides a thorough evaluation of the analytical data to determine whether or not the data, as presented, meets the site/project-specific criteria for data quality and use.
DCE	Dichloroethene or dichloroethylene
DNAPL	Dense non-Aqueous phase liquid. A liquid contaminant that is denser than water and does not dissolve or mix easily in water. DNAPL is a non-aqueous phase or immiscible liquid which remains as a separate phase or layer and has a specific gravity greater than water. A DNAPL has the potential to sink through a formation until it pools on a confining unit or is immobilized as a residual. Unlike LNAPLs, DNAPLs may flow down the slope of the aquifer bottom independent of the direction of the hydraulic gradient.
DER	NYSDEC's Division of Environmental Remediation
DER Project Manager	The DER staff member with primary responsibility for ensuring that an investigation or remediation was completed in accordance with the applicable sections of this guidance, using appropriate professional judgment and experience to ensure the goals and objectives of a given remedial program are achieved.
DO	Dissolved Oxygen. Measurement of the dissolved oxygen in water.
ECL	New York State Environmental Conservation Law
FPM	FPM Remediations, Inc. Environmental Consultant/Contractor to Qualitrol Company LLC.
FID	Flame Ionization Detector
GC/MS	Gas Chromatograph / Mass Spectrometer
Groundwater	Water below the land surface in a saturated zone of soil or rock. This includes perched water separated from the main body of groundwater by an unsaturated zone [ref. 6 NYCRR 375-1.2(v)].
GWQS	Groundwater Quality Standard. From compilation of ambient water quality guidance values and groundwater effluent limitations for use where there are no standards (6 NYCRR 703.5) or regulatory effluent

	limitations (in 703.6). NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) – Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
HPT	Hydraulic Profiling Tool (Geoprobe®)
Inorganic Analyte or Metal	Non-organic compounds/elements as identified as target analyte list analytes in the United States Environmental Protection Agency (USEPA) "Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration" (ILM05.3) and also identified in Part II of Exhibit C of the current NYSDEC ASP.
HVAC	Heating, Ventilation and Air Conditioning.
ID	Inside Diameter or Identification
LNAPL	Light, non-aqueous phase liquid
MDL	Method Detection Limit. Minimum concentration of a substance that can be measured and reported with a 99 percent confidence that the analyte concentration is greater than zero and is determined from the analysis of a sample in a given matrix containing the analyte.
µg/m^3	Micrograms per cubic meter
µg/L	Microgram per liter
µg/kg	Microgram per kilogram
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
MIP	Membrane Interface Probe. A system manufactured by Geoprobe Systems® for the detection and measurement of VOCs in the subsurface. A heated probe carrying a permeable membrane is advanced to a depth in the soil. VOCs in the subsurface cross the membrane, enter into a carrier gas stream, and are swept to gas phase detectors at ground surface for measurement. http://geoprobe.com/mip-membrane-interface-probe
mV	Millivolt
NTU	Nephelometric Turbidity Unit The unit by which turbidity in a sample is measured.
NAPL	Nonaqueous-phase liquid
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
Off-site Contamination	Any contamination which has emanated from a remedial site beyond the real property boundaries of such site, via movement through air, indoor air, soil, surface water or groundwater [ref. 6 NYCRR 375-1.2(ad)].
ORP	Oxidation-reduction potential, or ORP, is a measurement that indicates the degree to which a substance is capable of oxidizing or reducing another substance. ORP is measured in millivolts (mv) using an ORP meter.
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic aromatic hydrocarbon

Participant	As stated in the BCA as defined by ECL 27-1405(1)(a).
PCB	Polychlorinated biphenyl
PID	Photoionization Detector
POTW	Publically-Owned Treatment Works
PPE	Personal Protective Equipment
PE	Professional Engineer. An individual or firm licensed or otherwise authorized under Article 145 of the Education Law of the State of New York to practice engineering [ref. 6 NYCRR 375-1.2(aj)].
PEL	Permissible exposure limit (OSHA)
PVC	Polyvinyl chloride
QEP	Qualified Environmental Professional. A person, including a firm headed by such person, who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a site or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this guidance. Such a person must: i. hold a current professional engineer's or a professional geologist's license or registration and have the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this guidance; or ii. be a site remediation professional licensed or certified by the federal government, a state or a recognized accrediting agency, to perform investigation or remediation tasks identified by this guidance, and have the equivalent of three (3) years of full-time relevant experience. Examples of such license or certificate include the following titles: (1) Licensed Site Professional, by the State of Massachusetts; (2) Licensed Environmental Professional, by the State of Connecticut; (3) Qualified Environmental Professional by the Institute of Professional Environmental Practice; or (4) Certified Hazardous Materials Manager, by the Institute of Hazardous Materials Management
QAO	Quality Assurance Officer
Qualitrol	Qualitrol Company LLC.
QA	Quality Assurance. The total integrated program for assuring the reliability of monitoring and measurement data which includes a system for integrating the planning, assessment and improvement efforts to meet data end use data quality requirements.
QAPP	Quality Assurance Project Plan. A document which presents in specific terms the policies, organization, objectives, functional activities and specific quality assurance/quality control activities designed to achieve the data quality goals or objectives of a specific project or operation.
QC	Quality Control. The routine application of procedures for attaining prescribed standards of performance in the monitoring and measurement process.
Receptor	Any humans or biota which are, or may be expected to be, or have been, exposed to or affected by a contaminant from a site.

RI	Remedial Investigation. A process undertaken to determine the nature and extent of contamination at a site or operable unit of a site. The scope of a RI is more fully described in 6 NYCRR 375-a.8(e) and in Chapter 3 of *DER-10, Technical Guidance for Site Investigation and Remediation*, May 2010.
RIR	Remedial Investigation Report, prepared in accordance with *DER-10, Technical Guidance for Site Investigation and Remediation*, May 2010.
RIWP	Remedial Investigation work plan
REL	Recommended Exposure Limit (NIOSH)
Remedial Site or Site	Any real property consisting of a parcel, adjacent properties or parcels, or portions of properties or parcels, identified as: a brownfield site, or being investigated in conjunction with the execution of a BCA.
SCOs	Soil Cleanup Objectives. Environmental Conservation Law (ECL) Subpart 375-6 (6 NYCRR Part 375): Remedial Program Soil Cleanup Objectives.
SVOC	Semi-volatile Organic compound. Organic compounds amenable to analysis after extraction of the sample with an organic solvent. For the purposes of this guidance, semi-volatiles are those target compound list compounds identified in the USEPA *Contract Laboratory Program Statement of Work for Organics Analysis; Multi-Media, Multi-Concentration* (OLM04.2) and also identified in Part I of Exhibit C of the current NYSDEC ASP.
SCG	Standards, Criteria and Guidance. Standards and criteria that are generally applicable, consistently applied, and officially promulgated, that are either directly applicable, or that are not directly applicable but are relevant and appropriate, unless good cause exists why conformity should be dispensed with, and with consideration being given to guidance determined, after the exercise of scientific and engineering judgment, to be applicable. This term incorporates both the CERCLA concept of applicable or relevant and appropriate requirements (ARARs) and the USEPA "To Be Considered (TBCs) category of non-enforceable criteria or guidance". The most common applicable SCGs are identified on the NYSDEC website identified in the table of contents. For purposes of this Guidance, "soil SCGs" means the soil cleanup objectives and supplemental soil cleanup objectives identified in 6 NYCRR 375-6.8 and the NYSDEC Commissioner Policy on *Soil Cleanup Guidance* (CP-Soil).
SSHP	Site Safety and Health Plan
SIM	Selective Ion Monitoring
SVI	Soil Vapor Intrusion
TAL	Target Analyte List. The list of inorganic compounds/elements designated for analysis as contained in the version of the US*EPA Contract Laboratory Program Statement of Work for Inorganics Analysis, Multi-Media, Multi-Concentration (*ISM01.2, January 2010, or the most current version).

TCL	Target Compound List. The list of organic compounds designated for analysis (TCL) as contained in the version of the EPA *Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration* in effect as of the date on which the laboratory is performing the analysis, and up to 30 non-targeted organic compounds (plus 30) as detected by gas chromatography/mass spectroscopy (GC/MS) analysis.
TOGS	NYSDEC Technical & Operational Guidance Series
TIC	Tentatively identified compound. A chemical compound that is not on the target compound list but is detected in a sample analyzed by a GC/MS analytical method. TICs are only possible with methods using mass spectrometry as the detection technique. The compound is tentatively identified using a mass spectral instrumental electronic library search and the concentration of the compound estimated.
TCE	Trichloroethene or Trichloroethylene
VOC	Volatile Organic Compound. Organic compounds as identified as target compound list compounds in the USEPA *Contract Laboratory Program Statement of Work for Organics Analysis; Multi-Media, Multi-Concentration@* (OLM04.2) or identified in Part I of Exhibit C of the current NYSDEC ASP.
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
Well Development	Application of energy to a newly installed well to establish a good hydraulic connection between the well and the surrounding formation. During development, fine-grained formation material that may have infiltrated the sand pack and/or well during installation is removed, allowing water from the formation to enter the well without becoming turbid and unrepresentative of groundwater in the formation.
XSD	Halogen-Specific Detector

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1.0 INTRODUCTION

1.1 SITE BACKGROUND

Qualitrol Company LLC (Qualitrol), the "Participant" and property owner, has elected to enter into the New York State Brownfield Cleanup Program (BCP) for their property located at 1385 Fairport Road, Fairport, NY (the "Site") to investigate and remediate the presence of volatile organic compounds (VOCs) and chromium detected at the Site.

Qualitrol submitted a BCP application on January 4, 2013, which was subsequently approved by the New York State Department of Environmental Conservation (NYSDEC) after the public comment period on March 6, 2013. Qualitrol and the NYSDEC entered into a Brownfield Cleanup Agreement (BCA) on April 11, 2013. Qualitrol is serving as the Participant pursuant to this Agreement, as defined in Environmental Conservation Law (ECL) 27-1405(1)(a). The activities being conducted pursuant to the BCP are being conducted pursuant to the New York State BCP, as defined by ECL, Article 27, Title 14 and the associated Part 375 regulations.

The Site is defined by Tax Map Identification (ID) Nos. 152.15-2-9, Lot 53 (9.948 acres) and 152.15-2-13, Lot 53 (4.891 acres). The NYSDEC has issued BCP Site No. C828185 for the Site.

Three former leach fields, possible sources of contamination to soils and groundwater, have been identified at the Site. The original leach field (Leach Field #1) operated from 1955 to 1978, and is currently located under the Qualitrol building (1978 Building Addition). Leach Field #2 was constructed at the time of the 1978 Building Addition, and was operated until Qualitrol was tied in to the municipal sanitary sewer system in the mid-1980s. FPM Remediations, Inc. (FPM) removed contaminated soil from Leach Field #2 (including its subsurface tanks) in 2012 per approval of the NYSDEC. Leach Field #3 was recently discovered to have existed in the west-central portion of the Site. Leach Field #3 will be investigated as part of Phase III of the Remedial Investigation (RI) discussed herein.

1.2 LEACH FIELD #2 REMOVAL ACTION (2012)

During construction of a 15,000 square foot building addition directly behind the main Qualitrol operational building in the Spring of 2012, the building contractor encountered two underground concrete septic tanks. Qualitrol subsequently located historical corporate documents indicating the presence of the two underground septic tanks and a former leach field (now titled Former Leach Field #2) (**Figure 1**). The tanks were allegedly constructed in the late 1970s to replace the tanks used at Former Leach Field #1. Building construction activities were halted, and the tank contents were sampled and analyzed. Analysis of the septic tanks contents determined the presence of hazardous substances at concentrations greater than the NYSDEC Soil Cleanup Objectives (SCOs) (6 NYCRR Part 375).

Upon receipt of the analytical results from the sampling of the contents of the two tanks, Qualitrol reported the historical hazardous waste release to the NYSDEC spill hotline and the National Response Center on May 9, 2012. The notification was followed up the same day with correspondence sent to the NYSDEC Division of Environmental Remediation (DER) and the Monroe County Department of Health, which contained the laboratory analytical results of the tank contents.

The Leach Field #2 soils and tanks were then removed, and post-excavation confirmatory sampling was conducted in June 2012. Only one post-excavation sampling location, at the northern eastern side of the new building additional, exceeded NYSDEC SCO for chromium. The field activities and sampling conducted, as well as the results of the removal action, were summarized in the report, *Septic Tanks and Leach Field Site Characterization and Removal Report* (FPM Remediations, Inc. [FPM], November 2012), which was submitted to the NYSDEC.

1.3 REMEDIAL INVESTIGATION

As required by the BCA, a remedial investigation (RI) work plan (RIWP)[1] was submitted to NYSDEC in May 2013 (FPM, May 2013), and was conditionally approved by NYSDEC on August 13, 2013. Qualitrol agreed with NYSDEC's conditions on August 19, 2013. As also required by the BCA, a *Quality Assurance Project Plan* (QAPP) (FPM, May 2013) and a *Site Safety and Health Plan* (SSHP) and Community Air Monitoring Plan (CAMP) (FPM, November 2013) were provided to NYSDEC.

As specified in the RIWP, the RI is being conducted in accordance with the NYSDEC Program Policy, *DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, May 2010), and applicable NYSDEC and United States Environmental Protection Agency (USEPA) Guidance Documents, as referenced in the RIWP.

1.3.1 Phase I Activities Completed (2014)

The RIWP Phase I activities were completed and reported to NYSDEC in the following Technical Memoranda submitted to NYSDEC. These activities included:

- Performance of a Site Assessment, Membrane Interface Probe (MIP) survey, and Hydraulic Profiling Testing (HPT) at the Site in September 2013, the results of which were reported to the NYSDEC in *Remedial Investigation Technical Memorandum - Site Assessment, Membrane Interface Probe (MIP)/Hydraulic Profiling Tool Results, and Proposed Groundwater Sampling* (FPM, November 2013).

[1] The initial investigation activities contained in this work plan are now called RI Phase I.

- Performance of sub-slab and indoor air sampling at the Qualitrol building to assess whether soil vapor intrusion (SVI) was occurring at the Qualitrol facility. This work resulted in the collection of two rounds of SVI data, which was reported in the *Soil Vapor Intrusion Evaluation Technical Memorandum* (FPM, December 2014).
- Based on the results of the MIPs survey, 22 borings were installed, and soils were screened every five-foot depth, using a photoionization detector (PID), and the borings were completed as groundwater monitoring wells (17 temporary and 5 permanent monitoring wells). All the monitoring wells were sampled for VOCs, SVOCs, and metals. The sampling results of this investigation were reported in the *Monitoring Wells Installation, Soil Screening, and Groundwater Sampling Result Technical Memorandum* (FPM, November 2014).
- A meeting was held with NYSDEC and NYSDOH representatives on December 8, 2014 to discuss the results of the Phase I RI activities and FPM's recommendations for supplemental data collection in a RI Phase II supplemental investigation.
- Based on briefing meetings held with NYSDEC and NYSDEC, a RI Phase II Work Plan was prepared and submitted to the NYSDEC and NYSDOH in January 2015 and in revised version (based on NYSDEC and NYSDOH comments) in April 2015, for approval. Upon NYSDEC's approval, the Phase II activities were conducted.

1.3.2 Phase II Activities Completed (2015-2016)

- Installed two new monitoring wells (MW-12D and MW-23 (off-Site))[2] and converted three temporary monitoring wells (TW-11, TW-16, AND TW-22) to permanent wells (MW-11, MW-16, and MW-22).
- Conducted a second round of groundwater sampling for VOCs at the 10 permanent monitoring wells, including the three new monitoring wells.
- Conducted PID soil screening of all soils collected by split-spoons at the three new monitoring well borings.
- Collected and analyzed 14 soil samples for VOCs, SVOCs, metals, pesticides and polychlorinated biphenyls (PCBs).
- Conducted two events (January 2016 and April 2016) of SVI sampling events and analyses at off-Site neighboring residences on Pilgrim Circle.
- Conducted data validation of the groundwater, soils, vapor and indoor air laboratory analytical results.
- Conducted air pressure testing at the Site to evaluate the existence of positive pressure from the operating heating, ventilation and air conditioning (HVAC) system.
- Conducted additional soil sampling adjacent to former Leach Field #2 removal action northeastern-most sidewall sample (XS-1) that exhibited exceedance of chromium SCO.

- Abandonment of the 17 Site temporary monitoring wells.

The results of the Phase II supplemental investigation activities were presented to NYSDEC on August 22, 2016, and are documented in two technical memoranda submitted to the NYSDEC and NYSDOH:

- *Remedial Investigation Technical Memorandum (Phase II) – Monitoring Well Installations, Soil Screening, Hydraulic Testing, and Groundwater Sampling Results* (FPM, October 2016); and
- *Remedial Investigation Technical Memorandum (Phase II) – Residential Soil Vapor Intrusion Sampling and Analytical Results* (FPM, October 2016).

1.4 PROJECT ORGANIZATION AND RESPONSIBILITIES

Mr. Scott Saroff, CPG of FPM Remediations, Inc. will manage the RI on behalf of Qualitrol. FPM has been involved with all Site investigation and remedial activities since 2012. FPM will report to Qualitrol's Environmental, Health and Safety Manager, Ms. Virginia (Ginny) Murn. Field activities will be conducted by FPM field staff. Soil and groundwater samples will be analyzed by Paradigm Environmental Services, Inc. of Rochester, NY (NYDOH Certification #10958), and air and vapor samples will be analyzed by Centek Laboratories, Inc. of Syracuse, NY (NYSDOH Certification #11830). Both are certified for the methods specified in this work plan by the NYSDOH. Laboratory analytical data validation will be conducted by FPM's chemist, Connie van Hoesel, who will prepare the DUSR. Mr. van Hoesel was previously approved by NYSDEC for data validation for this project.

The NYSDEC DER (Region 8), in consultation with the NYSDOH, will monitor the investigation and remedial actions to verify that the work is performed in accordance with the BCA, the NYSDEC-approved RI Phase III Supplemental Work Plan, the associated RI work plans, and NYSDEC's DER-10 *Technical Guidance for Site Investigation and Remediation* (NYSDEC, May 2010).

Key project personnel and subcontractors are presented in **Tables 1** and **2**, respectively.

2.0 SITE DESCRIPTION

2.1 GENERAL

The Qualitrol facility is located in a residential/commercial, light manufacturing and wooded area of Fairport, New York, a suburb of Rochester, New York, located approximately one mile west of the center of the village of Fairport. The property is zoned for industrial use.

Besides the main operational facility, the only other structure on the property is a small storage shed for lawn maintenance equipment. The remainder of the property consists of grassy areas and woods. As part of the 2012 building addition permit requirements, new surface drainage features were constructed in the mid-section of the property. The property is bounded by Fairport Road (north) residential homes and apartments (west and south), and by light industrial facilities (east) (**Figure 1**).

2.2 FACILITY HISTORY

Qualitrol manufactures equipment for original equipment manufacturers and end users of power transmission and distribution systems, instrumentation, and control and monitoring systems for all sizes and types of transformers. Its manufacturing processes include design engineering, machining, powder coatings, and equipment assembly. Additional information regarding Qualitrol can be found at www.qualitrolcorp.com. Qualitrol employs approximately 220 personnel at the facility.

The original Qualitrol building was constructed in 1955 by Wetmore & Sugden, a greeting card company. Qualitrol acquired the property in 1962 and subsequently moved into the building. In 1978, an approximately 17,000 square foot addition was constructed directly behind the original building. At that time a sanitary leach field was constructed directly behind the addition. Shortly thereafter (exact year unknown), the facility was connected to the Monroe County municipal wastewater treatment system, and sanitary wastes were directed to the Monroe County Publically Owned Treatment Works (POTW). According to a drawing located at the facility, a previous sanitary leach field operated in the area of the 1978 Building addition (**Figure 1**).

2.3 SITE CHARACTERISTICS

2.3.1 Topography

The Site is relatively flat in the northern developed portion. Surface elevations range from approximately 445 feet above mean sea level (amsl) in the northeastern corner to approximately 440 feet amsl along the western property boundary.

2.3.2 Soils

Site soils consist of well-drained Colonie loamy fine sand, of glacial lacustrine origin, with high to very high capacity to transmit water (1.98 to 19.98 inches/hour) (United States Department of Agriculture [USDA, 2012]).

2.3.3 Geology/Hydrogeology

The Site is located within the Lake Ontario Lowlands Physiographic Province, a plateau-like feature extending along the shores of the Great Lakes. Bedrock at the Site is Upper Silurian dolostone of the Lockport Group, underlain by the Depew Dolostone, Rochester Shale, Irondequoit Limestone and other shale, limestone, and sandstone units of the Lower Silurian Clinton Group (Rickard and Fisher, 1970; Cadwell et. al., 1986). These units dip gently to the south. Depth to bedrock at the facility property is approximately 75 to 100 feet, since the elevation of the Site is approximately 450 feet above sea level, and the bedrock surface at the Site is approximately 350 to 375 feet above sea level (amsl) (Waller et. al., 1982).

The Site lies within the preglacial Genesee Valley (Waller et. al., 1982), which drains northward into Irondequoit Bay and Lake Ontario. Surficial deposits in this valley generally include alluvial silt, sand and gravel, as well as lacustrine silt and clay (Waller et. al., 1982; Cadwell et. al., 1986). Surficial deposits at the location of the Site were mapped as fine to medium well-sorted lake sand with moderate permeability, deposited as offshore deposits in proglacial or postglacial lakes (Waller et. al., 1982).

The Genesee Valley generally contains the Irondogenesee Aquifer, a significant aquifer system that was designated in 1980 as one of 18 Primary Water Supply Aquifers in New York State by the New York State Department of Health. Groundwater moves from the south, east, and west to the Genesee Valley, and from there to the Irondequoit Creek and Lake Ontario. The potentiometric surface at the Site slopes to the west, and more regionally to the north-northwest The water-infiltration potential of the soil at the Site has been mapped as moderate, having moderate infiltration rates when thoroughly wetted (Waller et. al., 1982).

Shallow groundwater at the property occurs within fine sands and silts at depths ranging from 2 to 10 feet below ground surface (bgs).

3.0 RI ACTIVITIES COMPLETED TO DATE

3.1 RI PHASE I (INITIAL) RESULTS

In accordance with the NYSDEC-approved RIWP, FPM completed a Site Assessment, MIP survey, Hydraulic Profiling Testing (HPT), and an SVI evaluation at the Qualitrol building in September 2013. The results and were reported to the NYSDEC in *Remedial Investigation Technical Memorandum - Site Assessment, Membrane Interface Probe (MIP)/Hydraulic Profiling Tool Results, and Proposed Groundwater Sampling* (FPM, November 2013) and the *Soil Vapor Instruction Evaluation Technical Memorandum* (FPM, December 2014).

3.1.1 Site Assessment

The Site assessment identified 36 spills of petroleum and chlorinated hydrocarbons releases within one quarter mile of the Site. No nearby releases appear to have impacted the Site based on a review of proximity to the Site and/or expected groundwater flow and elevation differentials.

3.1.2 Membrane Interface Probe Survey

MIP screening was conducted at 22 locations at the Site from ground surface to depths of 30 to 50 feet bgs. The results indicated PID, Flame Ionization Detector (FID), and Halogen-Specific Detector (XSD) responses at various depth intervals. These detections were used to determine the locations and screen intervals of the proposed monitoring wells installed as part of RI Phase I activities.

3.1.3 Hydraulic Profile Testing

Continuous hydraulic testing was conducted at 17 MIP locations from ground surface to depths of 30 to 50 feet bgs. The results indicated hydraulic conductivities ranging from 0 to greater than 150 feet per day.

3.1.4 Groundwater Monitoring Well Installations, Well Development and Sampling

Based on the results of the MIP survey, monitoring well installation, and soil screening, a groundwater sampling program was implemented at the Site in January-March 2014. These activities involved the installation of 17 temporary monitoring wells and 5 permanent monitoring wells, and PID screening and characterization of soils collected by split spoons. No PID detections were observed in any of the soil samples.

In accordance with the RIWP, the temporary groundwater well samples were analyzed for volatile organic compounds (VOCs) by USEPA SW846 Method 8260 plus Tentatively Identified Compounds (TICs). The permanent monitoring well groundwater samples were analyzed for

Target Compound List (TCL) VOCs, TCL SVOCs by USEPA Method SW846 8270 and Target Analyte List (TAL) Metals by USEPA Methods SW846 6010/7471.

As required by NYSDEC, air monitoring during installation of borings for the monitoring wells was conducted in accordance with the NYSDEC-approved Site CAMP.

The soil and groundwater results were presented in *Monitoring Wells Installation, Soil Screening, and Groundwater Sampling Result Technical Memorandum* (FPM, November 2014). The following conclusions were presented in the technical memorandum:

- The groundwater geochemical measurement results indicate a wide range of aerobic (oxidizing) and anaerobic (reducing) geochemical conditions, and a discernable area of anaerobic (reducing) conditions favorable for natural attenuation of the detected trichloroethene (TCE) and cis-1,2-dichloroethene (DCE) in groundwater.
- TCE in groundwater was detected above the NYSDEC Technical & Operational Guidance Series. (TOGS) 1.1.1 groundwater standard (5 µg/L) at five locations, TW-10 (7.82 µg/L), TW-22 (1,820 micrograms per liter [µg/L]), MW-9 (159 µg/L), MW-12 (26.8 µg/L /27.9 µg/L), and MW-13 (12.8 µg/L). A groundwater TCE plume appears to be emanating from the southern portion of the facility building (locations of the two former leach fields), which has migrated in groundwater to the west side of the facility property boundary.
- Cis-1,2-DCE, a natural anaerobic degradation daughter product of TCE, was detected in groundwater above the NYSDEC TOGS 1.1.1 groundwater standard (5 µg/L) at three locations TW-10 (5.11 µg/L), TW-22 (112 µg/L), and MW9 (15.4 µg/L), located within the TCE groundwater plume.
- TAL metal sodium was detected in groundwater above NYSDEC TOGS 1.1.1 groundwater standards at five locations, MW-3, MW-9, MW-12, MW-13, and MW-19. Iron was detected at four locations (MW-3, MW-9, MW-13, and MW-19) above TOGS 1.1.1 groundwater standards, and magnesium was detected in groundwater at MW-3 above TOGS 1.1.1 groundwater standards. All the detections are likely naturally occurring, except for those detected in monitoring well MW-3, an upgradient location located next to Fairport Road, which is likely the result of influences of road salt.

In the technical memorandum, FPM recommended the following:

- Installation and sampling of a new monitoring well located downgradient of the TCE groundwater plume on the adjacent residential property. The well screen should be constructed at the same elevation as the nearby MW-12 (410.66 to 400.66 feet amsl, approximately 31 to 41 feet bgs). The actual location of the well may need to be adjusted dependent upon receiving an approved access agreement.
- All six permanent monitoring wells should be sampled again for VOCs, along with geochemical parameter measurements.
- Water levels should be conducted again at all the monitoring wells.

- The temporary wells should be abandoned after collection of the second round of water levels.
- A technical memorandum should be prepared summarizing the results of the well installation, temporary well abandonments, geochemical measurement results, water level elevation interpretation and sampling/analysis.

3.1.5 Soil Vapor Intrusion Evaluation at Qualitrol Building

As requested by NYSDEC and NYSDOH, FPM performed two rounds of sub-slab and indoor air sampling at the main Site building in accordance with NYSDOH Soil Vapor Intrusion (SVI) guidance (NYSDOH, October 2006) to assess for SVI. The first event conducted in January 2013 consisted of the collection of indoor air and sub-slab samples at three paired locations inside the facility, which were analyzed by USEPA Method TO-15. After discussion of the results with NYSDEC and NYSDOH, a second sampling event was conducted that consisted of subslab and indoor air samples at six locations in the building. The sub-slab and indoor air samples were collected above the two former leach fields and elsewhere in the building during this event. Outdoor air samples were collected at the intake of one of the roof mounted HVAC units over the same time period. All samples were analyzed for VOCs by USEPA Method TO-15.

The results of the evaluation were reported in the *Soil Vapor Intrusion Evaluation Technical Memorandum* (FPM, December 2014). The results indicate the presence of VOCs in air and sub-slab vapor samples located in the areas of former Leach Field #1 exceeded NYSDOH and USEPA soil vapor screening criteria. An inventory of chemicals stored in the facility indicated that many of the indoor air detections were likely from these chemicals. None of the VOC detections in the subslab vapor and indoor air samples exceeded industrial worker Occupational Safety and Health Administration (OSHA) screening levels.

The results of these two rounds of testing suggest that there may be the potential for SVI at the facility; however, the presence of an active heating, ventilation and air conditioning (HVAC) system, which is in operation 24-hours a day, provides appropriate mitigation by creating a positive pressure condition in the building.

The technical memorandum recommended:

- Continued operation of the HVAC systems 24 hours a day as the mitigation technology (USEPA recognizes this appropriate as an acceptable mitigation strategy).
- Periodic indoor and outdoor air pressure monitoring to insure positive pressure conditions within the building.

- Periodic monitoring of indoor air quality and screening against relevant OSHA Permissible Exposure Limit (PEL) and the American Conference of Government Industrial Hygienists (ACGIH) Recommended Exposure Limits (RELs).
- Future removal or treatment of the leach field soils upon building demolition.

3.2 RI PHASE II RESULTS

3.2.1 Soil Sample Laboratory Analytical results

Thirteen soil samples were collected from the split-spoon and surface soil samplers at the Site in accordance with the Phase II Work Plan. The validated data were screened against NYCRR Part 375 Unrestricted, Restricted Residential, and Industrial Land Use SCO criteria.

VOCs
All VOCs were below the Unrestricted Land Use SCO criteria in all 13 soil samples analyzed.

SVOCs
The following polycyclic aromatic hydrocarbons (PAHs) were detected above NYSDEC Unrestricted, Restricted Residential and/or Industrial Land Use SCO screening criteria in the soil surface (0-3 inches depth) samples collected and discussed below:

Sampling Location SS-4 (Employee Break Area)

- Benzo(a)anthracene at 12,400 micrograms per kilogram (µg/kg) – above all three Land Use screening criteria.
- Benzo(a)pyrene at 13,100 µg/kg – above all three Land Use screening criteria.
- Benzo(b)fluoranthene at 14,600 µg/kg – above all Land Use screening criteria.
- Benzo(k)fluoranthene at 11,000 µg/kg – above all Land Use screening criteria.
- Chrysene at 15,100 µg/kg – above all three Land Use screening criteria.
- Dibenz(a,h)anthracene at 2,580 J µg/kg – above all three Land Use screening criteria.
- Indeno(1,2,3-cd)pyrene at 13,900 µg/kg – above all three Land Use screening criteria.
- Phenanthrene at 17,900 µg/kg – above the Unrestricted Land Use screening criteria.

Sampling Location SS-5 (Parking Lot Area)

- Benzo(a)anthracene at 4,180 µg/kg – above all three Land Use screening criteria.
- Benzo(a)pyrene at 4,750 µg/kg – above all three land use screening criteria.
- Benzo(b)fluoranthene at 5,950 µg/kg – above all three Land Use screening criteria.
- Chrysene at 5,460 µg/kg – above all three Land Use screening criteria.
- Dibenz(a,h)anthracene at 1,020 µg/kg – above all three Land Use screening criteria.
- Indeno(1,2,3-cd)pyrene at 5,140 µg/kg – above all three Land Use screening criteria.
- Phenanthrene at 5,740 µg/kg – above the Unrestricted Land Use screening criteria.

Sampling Location SS-6 (Employee Break Area)

- Indeno(1,2,3-cd)pyrene at 714 µg/kg – above all three Land Use screening criteria.
- Phenanthrene at 1,220 µg/kg – above the Unrestricted Land Use screening criteria.

Boring TW-08

- Low levels of PAHs were detected at the boring TW-08 (0-6 inch bgs) at concentrations below all the Land Use screening criteria.

None of the detected PAHs have been used, stored, or produced at the Site. The sample locations referenced above are all in close proximity to the asphalt-paved parking lot for the facility, and PAHs are known to be a component of both asphalt pavement and vehicular emissions. Although the source of the detected PAHs cannot be unequivocally confirmed, the most likely source seems to be vehicle emissions and/or surface runoff from asphalt.

Metals

Chromium was detected below restricted residential and industrial SCOs in all 13 soil samples analyzed. It was detected above Unrestricted Land Use screening criteria in all the soils samples. Copper, magnesium, and zinc were also below restricted residential and industrial SCOs in all the soil samples analyzed, but were detected at SS-4 (0-3 inch bgs) above the Unrestricted Land Use screening criteria.

No other metals exceeded the Unrestricted, Restricted Residential, or Industrial Land Use SCO screening criteria.

Polychlorinated Biphenyls (PCBs)

No PCBs were detected in the soil samples. All the reported laboratory detection limits were below the Unrestricted Land Use screening criteria.

Pesticides

No pesticides exceeded Restricted Residential or Industrial Land Use SCOs.

3.2.2 Groundwater Elevations and Interpreted Flow Direction

The groundwater flow direction based on August 19, 2015 data is westerly, consistent with the interpretation conducted for the previous Site groundwater levels measured on January 29-February 6, 2014, February 12-13, 2014, and March 5, 2014.

3.2.3 Groundwater Field Geochemical Parameter Measurements

The field groundwater geochemical measurement results for the August 19-21, 2015 sampling event indicated a varying aerobic (oxidizing) and anaerobic (reducing) geochemical conditions

across the Site. There are spatial patterns in the data that may suggest the remnants of the former leach field system at the Site.

There is a group of temporary and permanent monitoring wells that have historically had negative oxidation-reduction potential (ORP) measurements well below 0 millivolt (mV), as measured during the February 2014 and August 2015 groundwater monitoring events, ranging from -378 mV to -33 mV, and averaging -184 mv over that period. These wells are located beneath the building footprint, and extend to the southwest away from the building, including TW-5, TW-7, TW-8, MW-9, TW-14, TW-15, TW-18, TW-20, and TW/MW-22. Another group of wells to the north and west of the building, and south of the building along the eastern property boundary, includes TW-1, TW-2, MW-3, TW-4, TW-6, TW-10, TW-11, MW-12, MW-19, and TW-21. These wells have historically had ORP values ranging from -93.4 mV to 194.2 mV, and an average of 57.4 mV over the same period. The spatial pattern between the typically positive ORP readings and negative readings that are routinely less than -100 mV suggests that the former leach field system may have created a reservoir of organic carbon in the soil that depleted oxygen levels due to the microbial breakdown of organic material. This condition would help maintain favorable conditions for the reductive dechlorination of organic contaminants such as TCE, as evidenced by the detection of cis-1,2-DCE, an anaerobic biodegradation product of TCE.

3.2.4 Groundwater Laboratory Analytical Results

Groundwater was sampled at the ten Site wells between August 19-21, 2015. The validated groundwater sample analytical results are summarized in the following paragraphs.

VOCs

VOCs were detected in groundwater samples collected from eight of the ten Site monitoring wells sampled: MW-3, MW-9, MW-12, MW-12D, MW-13, MW-19, MW-22, MW-23 **(Table 9)**.

TCE and/or cis-1,2-DCE were detected in groundwater during the August 2015 sampling event above the NYSDEC Groundwater Quality Standards (GWQS) (5 µg/L) at five monitoring wells:

- MW-9 (1,270 µg/L TCE and 83.5 µg/L cis-1,2-DCE)
- MW-12 (15.8 µg/L TCE)
- MW-13 (21.0 µg/L TCE)
- MW-22 (515 µg/L TCE and 40 µg/L cis-1,2-DCE)
- MW-23 (7.43 µg/L TCE)

Similar results for MW-9, MW-12, MW-13, and TW-22 were reported for the earlier groundwater sampling event conducted in March 2014 (FPM, October 2016b, Table 9).

A groundwater TCE plume appears to be emanating from the southern portion of the facility building (locations of the two former leach fields), which has migrated in groundwater to the west side of the Site property boundary.

Cis-1,2-DCE, a natural, anaerobic, degradation daughter product of TCE, was detected in groundwater above the NYSDEC GWQS (5 µg/L) at MW-9 (83.5 µg/L) and MW-22 (40.0 µg/L) located within the TCE groundwater plume.

SVOCs

No SVOCs were detected in the groundwater samples collected from the Site monitoring wells. All the laboratory reported detection limits were below the NYSDEC GWQS.

Metals

TAL Metals were detected above NYSDEC GWQS as follows:

Arsenic (GWQS: 0.010 milligrams per liter [mg/L])

- MW-12D – 0.0196 mg/L

Iron (GWQS: 0.300 mg/L):

- MW-9 – 4.74 mg/L
- MW-12 – 0.56 mg/L
- MW-12D – 4.03 mg/L
- MW-13 – 1.09 mg/L
- MW-22 – 1.42 mg/L

Magnesium (GWQS: 35 mg/L)

- MW-11 – 45.1 mg/L
- MW-12D – 98.5 mg/L
- MW-22 – 49.1 mg/L
- MW-23 – 37.8 mg/L

Manganese (GWQS: 0.300 mg/L)

- MW-11 – 1.58 mg/L
- MW-12 – 0.474 mg/L
- MW-22 – 1.01 mg/L

Selenium (GWQS: 0.010 mg/L)

- MW-11 – 0.0161 mg/L
- MW-12D – 0.0256 mg/L

- MW-16 – 0.0184 mg/L
- MW-22 – 0.0132 mg/L
- MW-23 – 0.0122 mg/L

Sodium (GWQS: 20 mg/L)

- MW-11 - 421 mg/L
- MW-12D – 38.1 mg/L
- MW-16 – 73.8 mg/L
- MW-22 – 42.7 mg/L
- MW-23 – 289 mg/L

None of the metals identified during this sampling event were used or produced in manufacturing at the Site. The detected concentrations are likely natural as a consequence of the leaching of minerals in the soils adjacent to the monitoring well screens, except for the sodium at hydraulically upgradient monitoring well MW-3 located next to Fairport Road, which is likely the result of road salt.

In an ambient water quality study conducted by the USGS for the Genesee River Basin in New York (Reddy, 2012), the natural concentration ranges for the metals discussed above were determined from certain wells across the basin to be:

- Iron – Ranged from 17 to 3,100 mg/L with a median of 388 mg/L;
- Magnesium – Ranged from 6.80 mg/L to 34.4 mg/L with a median of 16.6 mg/L; and
- Sodium – Ranged from 6.80 mg/L to 34.4 mg/L with a median of 16.6 mg/L.

None of the metals, except for chromium, detected in groundwater at the Site were used, stored or discharged at the Site. The elevated magnesium and sodium concentrations may be the result of road salt used along Fairport Road. The elevated iron levels appear consistent with the USGS study for the Genesee River Basin in New York.

3.2.5 MNA Parameter Results

Geochemical Analyses

The results of the Monitored Natural Attenuation parameter testing conducted at groundwater monitoring wells MW-9, MW-11, MW-12, MW-13, and MW-23 indicated that:

- Alkalinity is directly correlated with carbon dioxide in groundwater at the three monitoring wells. Carbonate alkalinity (HCO_3^-) is produced by the dissociation of carbon dioxide (CO_2) in water:

$$CO_2 + H_2O \rightarrow HCO_3^- + H^+$$

This reaction also produces hydrogen ions that depress pH and enhance the solubility of native aquifer materials, thereby dissolving carbonate minerals and further increasing alkalinity levels. (although H^+ is produced pH may change very little due to the natural buffer capacity of most aquifers). Carbon dioxide is a byproduct of biodegradation by aerobic respiration, such that there is a positive correlation between microbial activity and alkalinity. Microbial activity, by relatively high levels of alkalinity and carbon dioxide were interpreted for the area west (downgradient) of the Site building. This area is west and downgradient of the zone of low ORP described earlier. The groundwater sampled at monitoring wells close to and within the low ORP zone (MW-9, MW-12, and MW-13) have lower alkalinity and carbon dioxide levels that wells outside the low ORP zone (MW-11 and MW-23). This indicates anaerobic degradation is not occurring in the low ORP zone, which is consistent with the fact that conditions in the low ORP zone are favorable for reductive dechlorination.

- Alkalinity is directly correlated with ORP, substantiating the causal relationship between alkalinity and aerobic biodegradation processes outside the low-ORP zone.

- It is evident that sulfate is negatively correlated with both alkalinity and ORP. In the case of ORP, sulfate becomes unstable as ORP decreases, and is reduced to sulfide. The former septic system and leach fields were almost certainly a source of sulfide. Over time, as groundwater became less anoxic (due to recharge and mixing with more oxygenated water), much of the sulfide was likely oxidized to sulfate. This could explain why the sulfate detections for wells MW-9, MW-11, MW-12, MW-13, and MW-23 seem to conflict with what would be expected for the low ORP zone described earlier; sulfate levels in MW-9, -12, and -13 (in or near the low ORP zone) are higher than in MW-11 and -23. This may be explained by the gradual oxidation of historic sulfide in the low ORP zone to sulfate, as groundwater re-equilibrated after removal of the leach fields to conditions that were no longer able to sustain sulfate reduction (but are still reducing enough to dechlorinate organic contaminants).

  An alternate explanation is that sulfate levels at MW-11 and MW-23 are indicative of biodegradation of organic compounds via sulfate reduction, which produces alkalinity:

$$CH_2O + SO_4^{2-} \rightarrow H_2S + 2HCO_3^-$$

  This explanation seems unlikely, however, due to the fact that ORP levels in groundwater at MW-11 and MW-23 are not suitable for sulfate reduction to occur. The overall data seem to support that sulfate levels in area groundwater are naturally less than 100 mg/L (MW-11 and MW-23), that the former septic leach field system is very likely to have created a low-ORP reservoir that contain sulfide, and that over time as the groundwater

system re-equilibrated toward more natural ORP conditions, some of the sulfide was oxidized to sulfate.

- Chloride was also analyzed in groundwater samples from monitoring wells MW-9, -11, -12, -13 and -23, but the analytical results are inconclusive. It is evident that chloride is positively correlated with alkalinity. However, this could be caused by mineral dissolution, and it should also be recalled that lasting year-round chloride impacts may also be caused by road de-icing. In fact, the two wells with the highest chloride levels (MW-11 and MW-23), also have appreciable levels of sodium, and the sodium-to-chloride molar ratio for these two wells is very near one (0.72 and 0.81, respectively), which gives strong indication that the presence of chloride is related to sodium chloride dissolution. It was previously noted that there is evidence of reductive dechlorination in Site groundwater, due to the presence of the TCE breakdown product cis-1,2-DCE. This reaction would be expected to produce chloride, but it would not be expected to positively correlate with alkalinity. Although chloride may not serve as a good natural attenuation indicator for this Site due to various ambient sources, there is ample evidence of biological activity and chemical degradation from the other analyzed indicator parameters.

- Ethene is the final degradation byproduct of the complete reductive dechlorination of TCE. Ethene was detected in in groundwater at monitoring well MW-9, but not in wells MW-11, MW-12, MW-13, or MW-23. This seems consistent with the fact that MW-9 has the lowest ORP values among these wells.

Microbial Analysis

Groundwater samples were collected from monitoring wells MW-9, MW-11, MW-12, MW-13, and MW-23 and analyzed for *Dehalococcoides*, a microbe that has found to be capable of complete reductive dechlorination to ethene (Maymo-Gatyell, et. al, 1999). The results are presented below:

cells/mL	MW-9	MW-11	MW-12	MW-13	MW-23
Dehalococcoides	1.00 E-01	5.7 E+00	<5.00 E-01	<4.00 E-01	1.96 E+01

Although there is some groundwater data for the Site to support that some degree of reductive dechlorination can and has occurred (e.g. negative ORP values and detections of cis-1,2-DCE for particular wells), the detected concentrations of *Dehalococcoides* are considered low, suggesting that complete dechlorination of TCE to ethene is unlikely to naturally occur under existing conditions for the particular wells sampled, except perhaps for MW-9, which had the highest detection of *Dehalococcoides* in groundwater along with the only detection of ethene in groundwater.

3.2.6 Saturated Soils Hydraulic Properties

In-situ hydraulic "slug" tests were conducted on seven Site monitoring wells (MW-11, MW-12, MW-12D, MW-13, MW-16, MW-22, MW-23) using both falling head and rising head Bower Rice Methods to determine hydraulic conductivity at the Site. The hydraulic conductivity results ranged from 0.11 to 13 feet/day. The monitoring wells for these wells were screened in the surficial aquifer which consists primarily of fine sand with silt, gravel and coarser sands.

Based on these conductivities, a hydraulic gradient of 0.017 foot/foot, and an assumed effective porosity of 30%, the estimated average linear velocities ranged from 0.003 to 9.6 feet per day.

3.2.7 Temporary Groundwater Monitoring Well Abandonments

The 17 temporary groundwater monitoring wells installed during Phase I RI activities were abandoned in accordance with NYSDEC requirements. Specifically, the temporary wells were pulled, and the bore hole was filled with bentonite-cement from the bottom of the borehole to ground surface using a tremie pipe.

3.2.8 Residential Homes Soil Vapor Intrusion Assessment

A TCE groundwater plume was determined to have migrated from the Site underneath some of the residential properties located on Pilgrim Circle (west of the Qualitrol property). In response to these findings, residences located on Pilgrim Circle were investigated in January 2016 and April 2016 for potential SVI by the collection of sub-slab and indoor air samples. The potential for soil vapor intrusion from the TCE groundwater plume were evaluated through the collection of basement sub-slab and indoor air samples.

The validated results of the sampling event from January 2016 were presented to NYSDEC and NYSDOH. Based on the screening of the January 2016 results against NYSDOH guidance Matrix 1, it was agreed between Qualitrol and NYSDEC and NYSDOH to conduct a second sampling event in April 2016 at those residential homes where the results for additional monitoring or mitigation were specified. Both sampling event results and proposed actions are discussed in, the *Soil Vapor Intrusion Evaluation Technical Memorandum* submitted to NYSDEC and the NYSDOH (FPM, September 2016).

The screening of the analytical data results for both sampling events against NYSDOH indicated the following[3]:

- Mitigate Vapor Intrusion (via sub-slab depressurization system) at 1 Pilgrim Circle;

[3] At the request of NYSDEC and NYSDOH and with the execution of a property access agreement for the location previously not sampled, Qualitrol has agreed to conduct indoor air sampling in the basements and 1st floor at the Pilgrim Circle residences, and to mitigation activities at 6 and 9 Pilgrim Circle. Additional details are provided in Sections 4.4 and 4.5 of this report.

- Conduct additional indoor air sampling at 3, 5, 6, and 9 Pilgrim Circle; and

No Further Action is required at 7 Pilgrim Circle, 10 Pilgrim Circle and 60 Jefferson Avenue.

3.2.9 Qualitrol Building Air Pressure Testing

Qualitrol conducted monitoring of indoor air pressures to document the existence of positive pressure conditions within the facility. The results were inconclusive. It was decided by Qualitrol that their HVAC contractor would collect indoor and outdoor pressure measurements in order to produce recommendations for optimal operation of the HVAC units to maintain higher indoor air pressures compared to outdoor air pressures.

3.2.10 Presentation of Results to NYSDEC and NYSDOH

Qualitrol met with representatives of NYSDEC and NYSDOH (by telephone) on August 22, 2016, and presented much of the data presented in this technical memorandum. Subsequent discussions with NYSDEC and NYSDOH (by telephone) have been held during September and October 2016 to discuss SVI-related issues for the Pilgrim Circle residences.

4.0 RI PHASE III SCOPE OF WORK

4.1 UTILITY CLEARANCE

Prior to any intrusive activities, Dig Safely New York (Call 811) will be contacted by FPM, a minimum of three days in advance of the intrusive investigation activities, to inform Dig Safely New York of the intent to perform excavation work at the Site. If underground utilities are present on the Site that are anticipated to interfere with intrusive activities, the Participant and the NYSDEC will be contacted by FPM to discuss mitigating measures. Dig Safely New York will mark out the location of all buried utilities for which they are responsible (e.g., municipal, public utilities).

Additionally, prior to commencing subsurface intrusive investigation activities, Qualitrol will identify to FPM the location of facility-specific buried utilities on the Site prior to initiating intrusive investigation activities from historic facility documents, and will mark out all utilities. FPM will review those documents prior to commencing the investigative intrusive activities.

4.2 DELINEATION OF SURFACE SOIL PAH IMPACTS

Nine surface soil samples will be collected from the three areas investigated during Phase II activities to delineate the nature and extent of contamination in these areas, specifically (**Figure 1**):

Employee Break Areas

- Two surficial samples will be collected 10 feet north and south of former surficial soil sampling location SS-4, and analyzed for TCL SVOCs.

Open Areas

- Three surficial soil samples will be collected 10 feet from former surficial soil sampling location SS-5 and analyzed for TCL SVOCs.
- Four surficial soil samples will be collected 10 feet from former surficial soil sampling location SS-6 and analyzed for TCL SVOCs.

Each sample will be collected using a clean spoon sampler from 0-2 inches below the vegetation layer in laboratory-provided clean containers, and transported to the laboratory under chain-of-custody the day of sampling. The samples will be analyzed by USEPA Method 8270C, and the data will be validated by FPM's chemist.

4.3 DELINEATION OF TCE GROUNDWATER PLUME

4.3.1 Installation of Three New Groundwater Monitoring Wells

Three new groundwater monitoring wells (MW-24, MW-25, and MW-26) are proposed to be installed at the Pilgrim Circle area to further delineate the down-gradient extent of TCE in

groundwater (**Figure 2**).[4] Borings will be installed by six-inch diameter hollow-stem augers using a suitable drill rig. Standard penetration testing will be conducted and the N-counts will be recorded in field notebook by the FPM field geologist. Soil samples will be collected using client two-inch diameter two-foot split-spoon samplers from ground surface to the water table and then at five-foot depth increments to the bottom of the boring. Samples will be screened with a PID outfitted with a 10.6 eV lamp, characterized by the FPM's field geologist and the information will be recorded in the field notebook.

Monitoring wells will be constructed of flush threaded two-inch inside diameter polyvinylchloride (PVC) riser, and flush threaded two-inch ID 10-foot long PVC well screen (0.010-inch slotted), and capped on the bottom. All monitoring wells will be constructed using professional grade Schedule 40 PVC materials and screwed together; no glue will be used. A filter pack consisting of Morie Type 0 Sand will be placed two feet below the well to 2 feet above the top of the screen; the filter pack will be allowed to settle and hydrate before placing a tremie pipe and inserting water. The two-foot thick annual seal will be constructed above the filter pack using either pelletized or granular bentonite clay. The remainder of the annual space will be filled with a neat mixture of bentonite clay, and concrete to 4 feet below ground surface. A 2-foot by 2-foot well pad will be constructed around the well above the bentonite clay-concrete to ground surface. The newly installed monitoring wells will be completed with keyed-alike locks, a lockable J-plug, and a steel flush mounted road box or above grad protective cover.

All non-dedicated drilling tools and equipment will be decontaminated between boring locations using potable tap water and a phosphate-free detergent. All boring and monitoring well construction field information will be recorded in the field notebook. Boring and monitoring well construction details will be presented on installation logs.

4.3.2 Monitoring Well Development

At least 24 hours after monitoring well installation, the three new monitoring wells will be developed in accordance with NYSDEC and/or USEPA protocols. Monitoring wells will be developed by surging and/or pumping. Groundwater within the wells will be cleared of silt and sand. Development will be determined when groundwater turbidity stabilizes or when turbidity is less than 50 Nephelometric Turbidity Units (NTUs).

The following information, where applicable, will be reported for each monitoring well sampled for each groundwater sampling event:

Before purging:

[4] Site access agreements will be sought from the property owners to allow for such installations to occur.

- date, time and weather conditions;
- well identification number;
- PID reading taken from the well immediately after the cap is removed;
- thickness of Nonaqueous-phase Liquid (NAPL), if present;
- pH, dissolved oxygen, temperature and specific conductance;
- total depth of the well from the top of casing or surveyors mark, if present;
- depth from the top of the casing to the water; and
- estimated water volume in the well.

After purging:

- start and end time for purging;
- purge method;
- purge rate(s);
- total volume purged;
- depth from the top of the casing to the water after purging; and
- pH, dissolved oxygen, temperature, turbidity and specific conductance.

Before sampling, the depth from the top of the casing to the water prior to sampling; and after sampling:

- start and end time for sampling;
- water level measurements before sampling;
- sampling method; and
- pH, dissolved oxygen, temperature, turbidity and specific conductance (samples collected through a flow thru cell).

4.3.3 Groundwater Flow Evaluation

The monitoring well locations and top of casing elevations of the three new monitoring wells will be instrument surveyed by a NYS-licensed surveyor to the State planar coordinates and the local USGS vertical datum. The information will be used to update the monitoring well location base map, and to calculate water level elevations in feet amsl.

All monitoring wells will be gauged for water levels. The water levels will be used to prepare a potentiometric elevation contour map. The map will be presented in the RIR along with an interpretation of flow direction, and calculations of average linear (seepage) flow velocities using Darcy's equation based on the hydraulic conductivities obtained from hydraulic conductivity (slug) testing and hydraulic gradients calculated from the potentiometric elevation contour maps.

4.3.4 Groundwater Sample Collection, Analysis, and Data Validation

Groundwater samples will be collected from the thirteen (10 existing and 3 new) permanent monitoring wells (MW-3, MW-9, MW-11, MW-12, MW-12D, MW-13, MW-16, MW-19, MW-22, MW-23, MW-24, MW-25, and MW-26). Prior to groundwater sampling, groundwater in monitoring wells will be purged using a submersible pump placed in the monitoring well. Groundwater samples will be collected pursuant to USEPA Region 2 *Ground Water Sampling Procedure – Low Stress (Low Flow) Purging and Sampling* (USEPA, 1998). In accordance with that procedure, groundwater samples will be collected when field parameters including pH, temperature, turbidity, dissolved oxygen (DO), ORP and specific conductance measurements become relatively stable. Stability will be defined as variation between measurements of approximately 10 percent or less with no overall upward or downward trend in the measurements.

Groundwater samples will be collected in clean, laboratory provided containers specified in the QAPP, and placed in a cooler (temperature of 4^{o}C), and transported to Paradigm Environmental Services, Inc., Rochester, NY under an executed chain-of-custody. QA/QC samples will also be collected per the project QAPP, and as specified in **Table 3**. All monitoring well groundwater samples will be analyzed for USEPA SW-846 TCL VOCs (USEPA Method 8260B). The three new monitoring wells will also be sampled for TCL SVOCs (USEPA Method 8270C) and TAL Metals (USEPA Method 6010) in accordance with the project QAPP.

Upon receipt of the laboratory Category B data deliverable sampling results, the data will be validated in accordance with USEPA *Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation* (USEPA, 1999; 2004) in a Data Usability Summary Report (DUSR) prepared by FPM's chemist.

4.3.5 Interpretation of Sampling Results

The laboratory analytical results along with the interpretation of groundwater flow direction will be depicted on the base map and the extent of contamination in groundwater will be interpreted. The results will be presented in the RIR.

4.4 INSTALLATION OF SUB-SLAB DEPRESSIZATION SYSTEMS AT 1, 6 AND 9 PILGRIM CIRCLE

A sub-slab depressurization (SSD) system will be installed at 1, 6, and 9 Pilgrim Circle in accordance with a separately submitted work plan (FPM, October 2016).

4.5 SUPPLEMENTAL AIR QUALITY MONITORING AT PILGRIM CIRCLE RESIDENCES

4.5.1 Indoor Air Sampling

Twenty-four-hour vapor sampling will be conducted in accordance with NYSDOH SVI Guidance using clean summa canisters to be located in both in the basement and 1st floors at six Pilgrim Circle residences (1, 3, 5, 6, 8, & 9 Pilgrim Circle) (**Figure 3**). Sampling at 1, 6, and 9 Pilgrim Circle will be conducted once the sub-slab depressurization (SSD) system has been determined to be operating as designed (FPM, October 2016a).

Each summa canister will be delivered to (under chain-of-custody) and analyzed at Centek Laboratories, a NYSDOH-certified laboratory by USEPA Method TO-15 (Volatile Organics). Detection limits of 0.25 µg/m^3 will be maintained for TCE utilizing the Chlorinated SIM method and the remaining compounds in the TO-15 analyte list will have reporting limits of 1.0 µg/m3 where possible. This reporting limit cannot be attained for certain compounds such as naphthalene. It should also be noted that these limits may be compromised in those instances where dilution due to the presence of high contaminant concentrations.

Further inventory activities will be undertaken at all residences to make sure all possible contributing sources to indoor air quality will be properly identified and documented.

4.5.2 Sub-Slab Vapor Sampling at 8 Pilgrim Circle

Sub-slab vapor sampling will be conducted at 8 Pilgrim Circle, as a response was recently received from the homeowner requesting such an event to occur. The resident has been sent a request to sign a property access agreement, consistent in the form and substance of those received from the other Pilgrim Circle residents that had previously responded to a request for surveying activities.

The sub-slab sampling point will be purged of three volumes of air, the purged air will be collected in a Tedlar® bag and emptied outside the residence. Subsequent to purging the point will be attached to the summa canister for collection of the analytical sample. Purging and sampling flow-rates shall not exceed 0.2 liters per minute as per the NYSDOH guidance and will be set for a 24-hour sampling period. The canister will be delivered to, and analyzed by, Centek Laboratories, a NYSDOH-certified laboratory using USEPA Method TO-15 (Volatile Organics). Detection limits of 0.25 µg/m3 will be maintained for TCE utilizing the Chlorinated Selective Ion Monitoring (SIM) method and the remaining compounds in the TO-15 analyte list will have reporting limits of 1.0 µg/m^3 where possible. This reporting limit cannot be attained for certain compounds such as naphthalene.

Upon completion of sampling activities, the basement floor will be repaired using a concrete patching material.

An inventory of household chemical products stored in the basement will be conducted at the residence.

4.5.3 Screening of Indoor Air Quality at Pilgrim Circle Residences

A Inficon HAPSITE® portable Gas Chromatograph/Mass Spectrometer (GC/MS)[5], or equivalent, will be used to collect and analyze onsite, short-term, indoor air samples for the purpose of identifying background indoor air VOC sources at all of the Pilgrim Circle residences. Short-duration air samples (approximately 8 minutes from start to start) will be collected and analyzed with the HAPSITE®, moving from larger areas within the building (such as levels/floors) to smaller and smaller subareas, focusing on those areas with the highest detected concentrations (if any) of the target analyte(s). The detection limits for samples collected and analyzed with this method will be below screening levels for the expected range of target analytes.

Specific rooms will then be targeted within the subareas found to have the highest concentrations of the target analyte(s). Before moving into closed rooms, samples will first be collected under the closed door. During the room-specific sampling, the portable GC/MS will be run in survey mode. This mode bypasses the chromatograph and does not allow quantification. It does, however, provide near-instantaneous relative responses for ions specific to the target analyte(s) allowing the user to quickly find potential sources.

All possible contributing sources effecting indoor air quality will be identified and documented.

4.6 COMPLETION OF QUALITROL BUILDING AIR PRESSURE TESTING

Qualitrol has contracted with Milner Air Conditioning Services of Rochester, NY (Milner), the contractor that maintains Qualitrol's HVAC systems, to conduct air pressure testing at the Qualitrol building. The purpose of the pressure testing is to evaluate the building's HVAC performance and to make recommendations to Qualitrol to provide outward pressure gradients to mitigate the potential for vapor intrusion of VOCs into the building.

Milner's specific scope of work is to:

[5] http://products.inficon.com/en-us/Product/Detail/HAPSITE-Smart-Plus-Chemical-Identification-System?path=Products%2Fpg-ChemicalDetection

- Take indoor building pressure readings with respect to outdoors using electronic manometer (Retrotec® DM2). Readings to be taken in Pascals (Pa).
- If initial readings are negative, adjust outside air intake (economizers) on existing HVAC units to provide positive pressure, if possible.
- Take three readings one hour apart at each test location.
- Provide initial report and actions taken and review strategy going forward.
- Provide additional recommendations as required.
- Repeat step #3 for six months.
- Provide a final report to include the six-month data.

The results of the report will be included in the RIR along with recommendations to operate Qualitrol's HVAC system to facilitate outward air pressures.

4.7 INVESTIGATON OF LEACH FIELD #3

Leach Field #3 will be investigated as follows:

- The locations of the leach field will be confirmed by a qualified geophysicist using ground penetrating radar (GSSI® Model SIR-3000) equipped with a 400 MHz antenna, and EM-38 (depths of approximately 5 feet) or EM-31 (depths of approximately 16 feet) geophysical techniques.
- Based on the geophysical delineation of the leach field, soil samples will be collected at 8 locations using a Geoprobe® or equivalent rig from depths 2 to 4 feet bgs, and 6 to 8 feet bgs). The soil samples will be collected using a clean Macro-Core or equivalent, and placed in clean containers provided by the laboratory. The samples will be placed in a cooler with ice, and transported to the laboratory under chain-of-custody the day of sampling. The samples will be analyzed for VOCs by USEPA Method 8260B, SVOCs by USEPA Method 8270C, and TAL Metals by USEPA Method 6010C. A field duplicate sample and a MS/MSD sample will also be collected and transported to the laboratory for the same analyses.
- Shallow (water table) groundwater samples will also be collected at two of the eight soil sampling locations using the Geoprobe® or equivalent rig or temporary monitoring wells. The samples will be placed in coolers with ice, and transported to the laboratory under chain-of-custody. The samples will be analyzed for the same parameters as the soil samples.
- All the sample results will be validated by FPM's Chemist in accordance with the project QAPP, and presented in DUSRs.

4.8 INVESTIGATIVE-DERIVED WASTE MANAGEMENT

During installation of the monitoring wells, excess soil cuttings will be containerized in United States Department of Transportation-approved 55-gallon drums and sampled to determine if they can be utilized on-Site or require treatment or off-Site disposal. Groundwater from well development and purging will be containerized, sampled and analyzed for parameter required by Monroe County for discharge to the sanitary sewer.

However, if light nonaqueous phase liquid (LNAPL) or dense nonaqueous phase liquid (DNAPL) is encountered within a particular well, development and purge waters from that location will be containerized. Drums will be labeled with regard to contents, origin, and date of generation using a paint stick marker on two sides and the top of each drum. The drums will be staged on-site pending analyses and remedial measures assessment.

All health and safety disposable personal protective equipment (PPE) will be placed in garbage receptacles and transmitted offsite to a licensed solid waste landfill or incinerated.

5.0 REPORTING AND SCHEDULE

5.1 REMEDIAL INVESTIGATION REPORT

Upon completion of these supplemental tasks, FPM will produce a detailed RIR in accordance with NYSDEC *DER-10 Technical Guidance for Site Remediation* (NYSDEC, May 2010) and will include the following:

- Introduction and background.
- Description of the Site and investigation areas, including the Pilgrim Circle residences.
- Description of the field procedures and methods used during the RI.
- Characterization of Site conditions, including hydrogeology and geology.
- Discussion of the nature and rational for any significant variances from scope of work described in this RI Work Plan.
- Summary of analytical data obtained during the RI and previous investigations.
- Characterization of nature and extent of contamination.
- Discussion of contaminant fate and transport.

Qualitative Human Health Exposure Assessment

- Summary and conclusions.
- Appendices will include the RI data (e.g., boring logs, monitoring well construction diagrams, MIPs survey data, laboratory analytical reports, etc.), the DUSRs, and copies of the previously submitted technical memoranda.

5.2 PROJECT SCHEDULE

An estimated project schedule for the major tasks to be performed is presented below.

- November- December 2016 – Field Activities Completed.
- December 2016-January 2017 – Data Validation Conducted.
- January 2017-March 2017 – Preparation of the RIR.
- March 31, 2017 – Submittal of the RIR to NYSDEC.

Qualitrol will request a meeting with the NYSDEC and NYSDOH once the soil and groundwater analytical data has been received and validated to discuss the findings of the RI prior to the RIR be completed.

6.0 REFERENCES

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Reedy, J.E., *Groundwater Quality in the Genesee River Basin, NY*, USGS Open File Report 2012-1135, 2010.

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United States Department of Agriculture (USDA), Natural Resources Conservation Service, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, July 2012.

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Waller, R.M., T.J. Holecek, W.B. Stelz, and J.L. Belli, *Geohydrology of the Preglacial Genesee Valley in Monroe County, New York*., USGS Open-File Report: 82-552, 1982.

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TABLES

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Table 1. Key Project Personnel

Project Role	Key Personnel	Contact Information
NYSDEC Region 8 Remedial Project Manager	Charlotte Theobold	585-226-5356 gbmaclea@gw.dec.state.ny.us
NYSDOH Project Manager	Mark Sergott	518-402-7860 beei@health.state.ny.us
Qualitrol Project Manager	Virginia (Ginny) Murn	585-643-3659 vmurn@qualitrolcorp.com
FPM Project Manager and Principal Hydrogeologist	Scott Saroff, CPG	315-336-7721, ext. 251 s.saroff@fpm-remediations.com
Quality Assurance Officer (QAO)	Dan Ours, CPG	315-336-7721, ext. 218 d.ours@fpm-remediations.com
FPM Project/Field Geologist, and Health and Safety Officer	Jeff Kiggins	315-336-7721, ext. 212 j.kiggins@fpm-remediations.com
Data Validator / Chemist	Connie van Hoesel	315-336-7721 c.vanhoesel@fpm-remediations.com

Table 2. Key Project Subcontractors

Key Support Services	Subcontractor
Geoprobe®, Auger Drilling, Monitoring Well Installation, and Well Development	**Parratt-Wolff, Inc.** 5879 Fisher Road P.O. Box 56 East Syracuse, New York 13057 P: 800-782-7260 or 315-437-1429 Email: info@pwinc.com
Analytical Laboratory Services (soil and groundwater samples)	**Paradigm Environmental Services, Inc.** 179 Lake Avenue Rochester NY 14608 800.724.1997 585.647.2530 Fax 585.647.3311 http://paradigmenv.com Contact: Jane Daloia New York State Department of Health (NELAC) Environmental Analysis/Potable Water #10958, New York State Department of Health (NELAC) Environmental Analysis/Solid and Hazardous Waste #10958
Analytical Laboratory Services (air and vapor samples)	**Centek Laboratories, Inc.** 143 Midler Park Drive Syracuse, New York 13206 (315) 431-9730 (315) 431-9731 fax NYSDOH Lab ID #11830 (TO-15 Analysis)
Engineering Services	**FPM Engineering Group, P.C.** 315-336-7721, ext. 202 Contact: Gaby Atik, PE (NY)* g.atik@fpm-group.com

* Gaby Atik, PE, is also president of FPM Remediations, Inc. He is also a Qualified Environmental Professional.

Table 3. Sample and Analytical Plan
Remedial Investigation Phase III

Sampling	Number of Sampling Locations	Analysis			
		TCL VOCs (USEPA Method 8260B)	TCL SVOCs (USEPA Method 8270D)	TAL Metals (USEPA Methods 6010C and 7471B)	VOCs in Vapor and Air (USEPA Method TO-15)
Surface Soil Samples					
Employee Break Area	2	--	2	--	--
Open Areas	7	--	7	--	--
Field Duplicate (10%)	1	--	1	--	--
MS/MSD	1	--	1	--	--
Subtotals	**11**	**--**	**11**	**--**	**--**
Groundwater Samples					
Monitoring Wells	13	13	--	--	--
Groundwater QA/QC Blind Duplicate	2	2	--	--	--
Groundwater QA/QC MS/MSD	1	1	--	--	--
Daily Groundwater QA/QC Trip Blank	2	2	--	--	--
Subtotals	**15**	**15**	**--**	**--**	**--**
Air and Vapor Samples					
Air Samples (6 Pilgrim Circle Residences) – Basement and 1st Floor	12	--	--	--	12
Sub-Slab at 8 Pilgrim Circle	1	--	--	--	1
Outdoor Background Sample	1	--	--	--	1
Subtotal	**14**	**--**	**--**	**--**	**14**

Leach Field #3 Investigation Soil Samples					
Soils Samples (2-4 feet and 6-8 feet)	16	16	16	16	--
Field Duplicate	1	1	1	1	--
MS/MSD	1	1	1	1	--
Subtotal	**18**	**18**	**18**	**18**	**--**
Totals	***62***	***33***	***29***	***18***	***18***

Notes:
TCL VOCs = USEPA SW-846 Target Analyte Volatile Organic Compounds
TCL SVOC = USEPA SW-846 Target Analyte Semi-Volatile Organic Compounds
TAL Metals = USEPA SW-846 Target Analyte List Metals

1. Analysis will be performed via USEPA SW-846 methodology with equivalent Category B deliverables package.
2. Trip blanks will be submitted to the laboratory each day aqueous VOCs are collected.
3. Blind duplicate and MS/MSD samples will be collected at a frequency of 1 per 20 samples/media collected.
4. As appropriate, dedicated sampling equipment will be used for groundwater.

FIGURES

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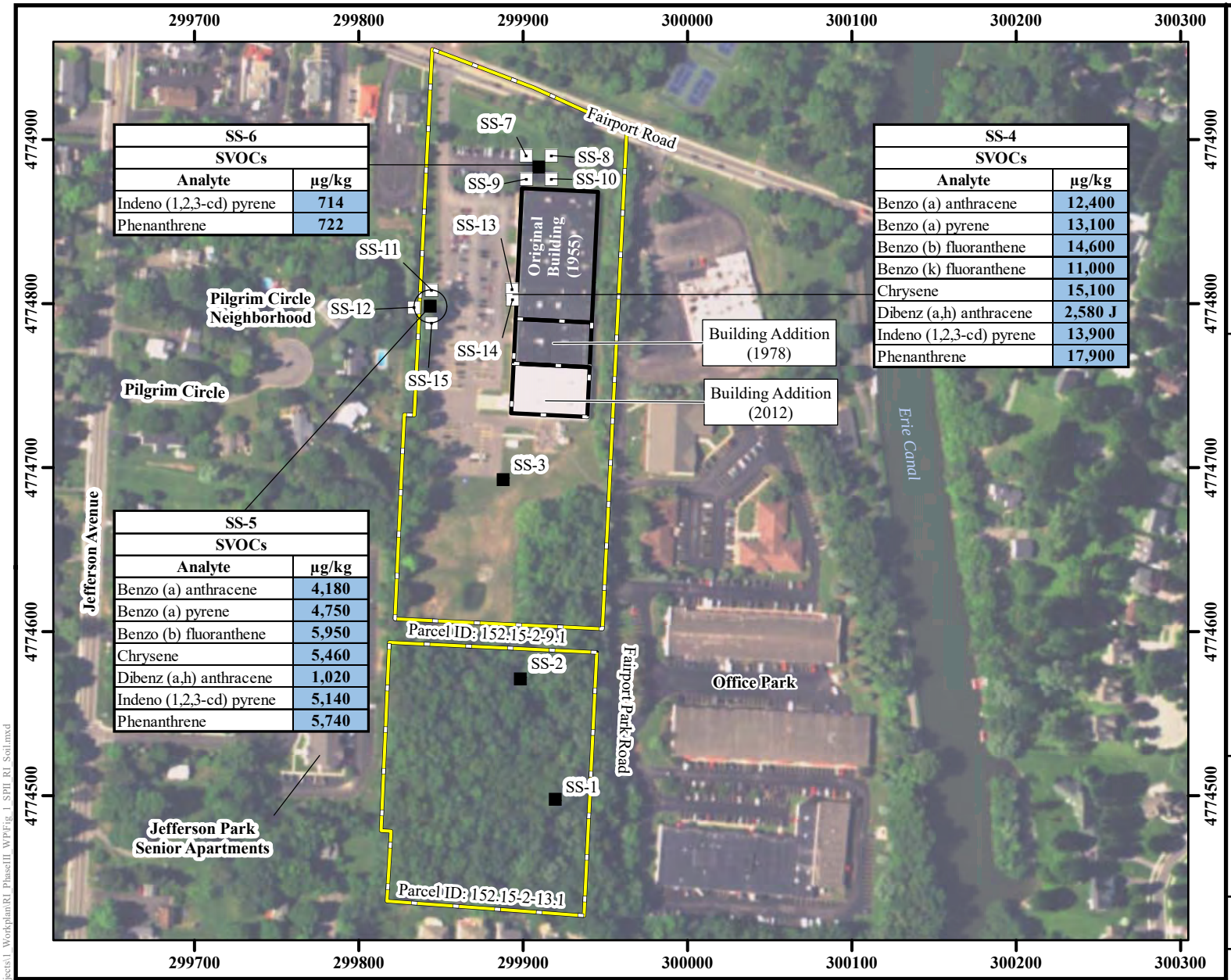

SS-6	
SVOCs	
Analyte	µg/kg
Indeno (1,2,3-cd) pyrene	714
Phenanthrene	722

SS-4	
SVOCs	
Analyte	µg/kg
Benzo (a) anthracene	12,400
Benzo (a) pyrene	13,100
Benzo (b) fluoranthene	14,600
Benzo (k) fluoranthene	11,000
Chrysene	15,100
Dibenz (a,h) anthracene	2,580 J
Indeno (1,2,3-cd) pyrene	13,900
Phenanthrene	17,900

SS-5	
SVOCs	
Analyte	µg/kg
Benzo (a) anthracene	4,180
Benzo (a) pyrene	4,750
Benzo (b) fluoranthene	5,950
Chrysene	5,460
Dibenz (a,h) anthracene	1,020
Indeno (1,2,3-cd) pyrene	5,140
Phenanthrene	5,740

Legend

- Surface Soil Sample Location
- Proposed New Surface Soil Sample Location
- Original Building (1955)
- Building Addition (1978 & 2012)
- Qualitrol Co. LLC Parcel Boundary

NOTES:

1. Bold and shaded values indicate exceedance.of NYSDEC unrestricted landuse SCOs.
2. J = Result is estimated.
3. Revision Date: 10/3/2016

Coordinate System:
WGS 1984 UTM Zone 18N
Projection: Transverse Mercator
Datum: WGS 1984
Units: Meter
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

1 inch = 300 feet

0 45 90 Meters

0 150 300 Feet

N W E S

RI Phase III Work Plan
Qualitrol Company LLC
Brownfield Site
1385 Fairport Road
Fairport, NY 14450

FIGURE 1

Proposed Location of Surficial Soil Samples

FPM Remediations, Inc.

2016

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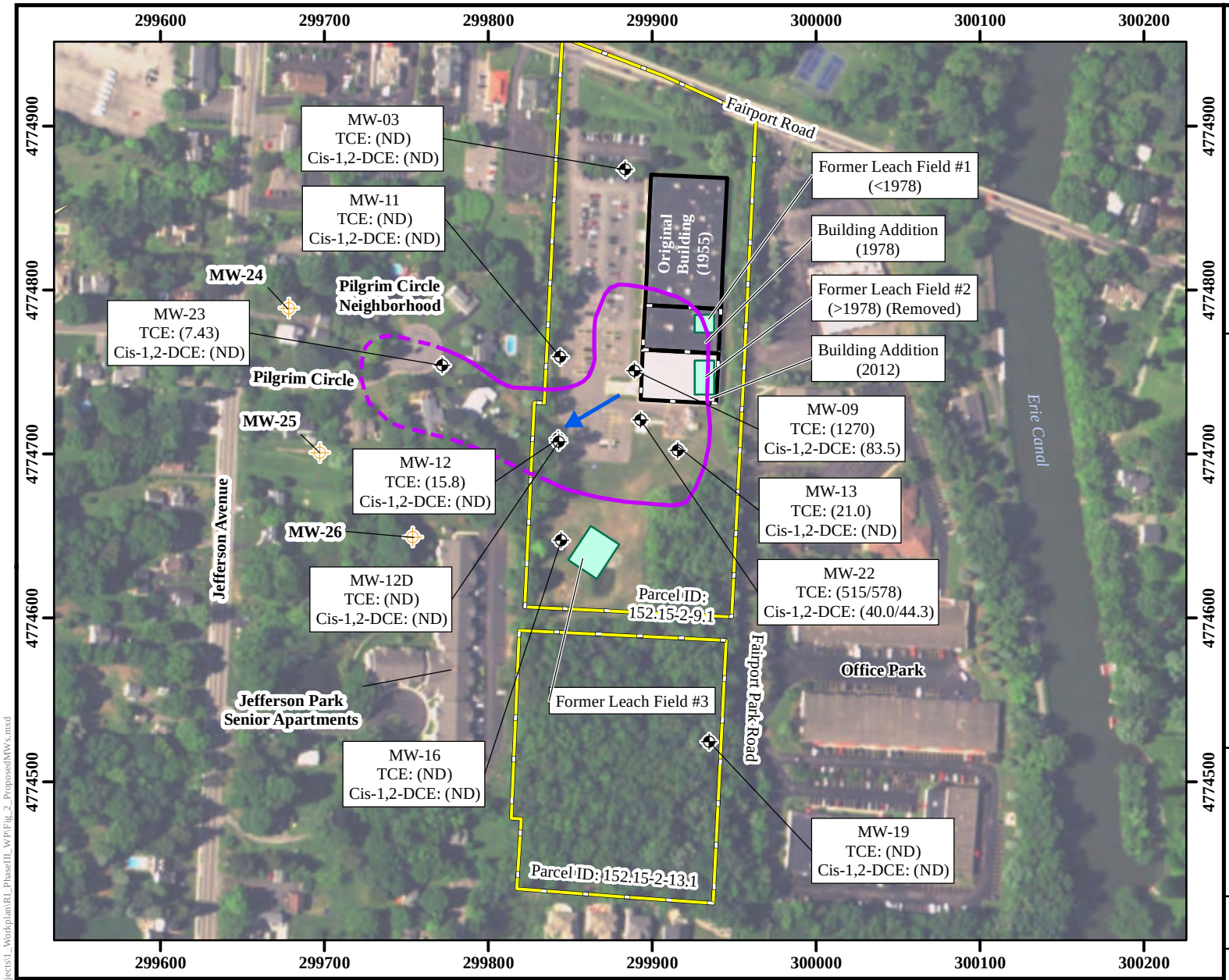

Legend

- Proposed New Monitoring Well
- Permanent Monitoring Well (MW)
- Extent of TCE and Cis-1,2-DCE in Groundwater above NYS Ambient Groundwater (GA) Standards
- Inferred Extent of TCE and Cis-1,2-DCE in Groundwater above NYS Ambient Groundwater (GA) Standards
- Interpreted Groundwater Flow Direction
- Former Leach Field #3
- Original Building (1955)
- Building Addition (1978 & 2012)
- Qualitrol Co. LLC Parcel Boundary

NOTES:

1. Groundwater sampled 8/19/2015 to 8/21/2015.
2. New York State Ambient Water Quality Standards Groundwater (GA) (TOGs 1.1.1, June 1998) Cis-1,2-DCE 5µg/L TCE 5µg/L.
3. ND = Non-detect.
4. All units in µg/L = micrograms per Liter.
5. Values expressed as "(515/578)" indicate a duplicate (split) sample.
6. Revision Date: 10/3/2016

Coordinate System:
WGS 1984 UTM Zone 18N
Projection: Transverse Mercator
Datum: WGS 1984
Units: Meter
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

1 inch = 300 feet

0 45 90 Meters

0 150 300 Feet

N W E S

RI Phase III Work Plan
Qualitrol Company LLC
Brownfields Site
1385 Fairport Road
Fairport, NY 14450

FIGURE 2

Proposed New Monitoring Wells

FPM Remediations, Inc.

2016

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Key Features

- Monitoring Well
- Extent of TCE and Cis-1,2-DCE in Groundwater above NYS Ambient Groundwater (GA) Standards
- Inferred Extent of TCE and Cis-1,2-DCE in Groundwater above NYS Ambient Groundwater (GA) Standards
- Groundwater Flow Direction
- SVI Sampling Location (January 2016)
- SVI Sampling Location (January and April 2016)
- Qualitrol Co. LLC Parcel Boundary

NOTES:
1. ND = Non-detect.
2. Revision Date: 10/4/2016

Coordinate System:WGS 1984 UTM Zone 18N
Projection: Transverse Mercator
False Easting: 1,148,291.6667
Central Meridian: -78.5833
Latitude Of Origin: 40.0000
Base Map Date: 2015
Base Map Source: Google Earth
Horizontal Datum: North American 1983
False Northing: 0.0000
Scale Factor: 0.9999
Units: Foot US

1 inch = 55 feet

0 8.5 17 Meters

0 27.5 55 Feet

N W E S

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RI Phase III Work Plan
Qualitrol Company LLC
Brownfields Site
1385 Fairport Road
Fairport, NY 14450

FIGURE 3

Proposed Pilgrim Circle Residential
Indoor Air Sampling Locations

FPM Remediations, Inc.

2016

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