Department of Environmental Conservation

Division of Environmental Remediation

# Off-Site Groundwater Investigation Work Plan

## Buffalo Business Park
## Buffalo
## Erie County, New York
## Site No. V00663

September 2008

New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

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## 1. INTRODUCTION and BACKGROUND

According to the historical Sanborn maps, the Buffalo Business Park property was used for railroad transport/tracks associated with Pullman Car Company from 1900 to 1950. Since early 1960s, other operations at the site included an iron shop, machine shop, planing mill, engine room, boiler house, and cabinet shop. Scrap storage areas were also located on-site. Railroad tracks once bisected the entire subject property.

In 2001-2002, LCS investigated sub-surface soil and groundwater by several soil borings and monitoring wells. The data showed that primary contaminants in soil and groundwater were tetrachloroethene, trichloroethene , and their related compounds. The current owner entered into the State's Voluntary Cleanup Program in October 2003 to address contamination in the approximately one acre parking-lot parcel of the Buffalo Business Park. Further site investigation which included soil and groundwater assessment, was performed in 2004. Under an Interim Remedial Measure, the soils from the source area were excavated and disposed of off-site in 2006.

In order to determine contamination in the bedrock four additional bedrock wells (three off-site and one on-site) were installed by Golder Associates in 2007. The off-site wells were installed west of the Buffalo Business Park property in the Tops supermarket parcel. For the three off-site wells MW-5BR, MW-7BR and MW-8BR in the Tops parcel, bedrock consisted of gray crystalline Onondaga Limestone and varied from 13 to 18 feet below ground surface. The levels of contamination for chlorinated solvents exceeded TOGS 1.1.1 in one on-site well (MW-4BR) and two off-site wells (MW-5BR, MW-7BR).

## 2. SCOPE of WORK:

- Marking of underground utilities.
- Decontamination of Drilling equipment
- Continuous split spoon soil sampling of overburden to refusal on bedrock .

- Head Space readings of soil samples with PID and description of soil samples in accordance with Unified Soils Classification System.
- Air Monitoring during drilling.
- Installation of three to four 2" groundwater monitoring bedrock wells, 10-15 feet into the bedrock, and with open boreholes within the bedrock.
- Collect rock coring information.
- Flush mount all the wells.
- Develop the wells.
- Take water elevations of newly installed wells as well as old wells (MW-4, MW-5, MW-7, and MW-8) .
- Sample all newly installed wells as well as old wells (MW-5, MW-7, and MW-8) to be analyzed for VOCs - EPA Method 8260.
- Submit groundwater samples to the Contract Laboratory along with QA/QC samples (Duplicates; Matrix Spike/ Matrix Spike Duplicate (MS/MSD); Trip Blank).
- Containerizing and Disposal of soils and groundwater produced during drilling operations.
- Survey well locations.
- Dressing up disturbed areas, if any.
- Document and Log in all the pertinent information.

## 3. WELL INSTALLATION and SAMPLING PLAN

Three to four bedrock wells will be installed to examine contamination in groundwater and hydrogeologic conditions. The locations of the monitoring wells are subject to accessibility and the location of underground utility lines or other buried objects. All monitoring wells will be advanced at a minimum distance of 2.5 feet away from marked out utilities or known Underground Storage Tanks (USTs), to reduce the possibility of accidentally damaging an underground line or UST. Approximate locations of the bedrock wells are shown on Figure 1.

All drilling equipment will be properly decontaminated in between well locations on a Decon Pad using a steam cleaner. Ambient air and soil samples will be screened with a PID for VOCs. Any waste (soil, liquid) generated during drilling will be placed in drums to be disposed off later.

**(i) Installation of Bedrock Wells:**

Three to four bedrock wells will be installed . The total depth of wells may vary from 30-35 feet bgs, (with approx. 15 feet overburden and 15 feet into the bedrock.). Continuous soil samples will be collected in the overburden to identify soil conditions, examined visually, and scanned with a PID.

A 4" inside diameter steel casing will be placed in the borehole and seated in top of bedrock. The casing will be pressure grouted with a bentonite cement mixture. The grout will be let set for 24 hours before coring starts. Continuous core samples will be collected, labeled and stored for each well. All pertinent information such as core recoveries, loss of water, PID readings, well construction details, etc. will be recorded. All the bedrock wells will be 10-15 feet into the bedrock with open holes. All the wells will be finished as flush mounts with a 9" curb box.

**(ii) Well Development and Sampling:**

All newly installed wells will be developed using standard methods. Field measurements of pH, turbidity, temperature, and specific conductivity will taken during development. Water generated during development will be drummed to be disposed off later.

After the monitoring wells are developed, they should be sampled at least two weeks later. Prior to groundwater sampling, water elevations will be taken from newly installed wells and old wells (MW-4,5,7,8). All the wells will be purged to three well volumes or until dry. Also field measurements of pH, turbidity, temperature, and specific conductivity will be taken . All groundwater samples will be labeled, placed in coolers, and shipped to the assigned laboratory with proper Chain of Custody papers. All the groundwater samples will be analyzed for Volatile Organic Compounds by USEPA method 8260 . QA/QC Samples will also be collected and submitted to the Laboratory.

After the contractor receives the laboratory data, the contractor will provide both electronic and paper copies of the following items: field notes; geologic logs; well construction logs; relevant site summary

Tables; surveyed site map (extent to be discussed); groundwater flow direction map; and survey site map with box and whisker plots for the borings, soil samples and monitoring well data. The details of these submittals should be discussed with the NYSDEC Project Manager. The soil concentrations should be compared to 6 NYCRR Part 375 industrial and commercial Soil Cleanup Objectives (SCOs). The groundwater concentrations should be compared to TOGs 1.1.1.

**(iii) Disposal of Drummed Soil and Water:**

The drummed soil and water will be tested. Upon obtaining the laboratory data, drummed soil and water will be disposed of as required.

## 4. SCHEDULE:

The field work to collect soil samples and to install 3-4 bedrock monitoring wells should take from 4-5 days. The Department will send out access letters to property owners of parcels where the wells are to be installed A minimum 10-days notice is required to contact property owners for access.

FIGURE 1

# Buffalo Business Park
# Voluntary Cleanup Program #V00663


**Legend**

**RPS-Erie**

**PROP_CLASS**

- Agricultural
- Residential
- Vacant Land
- Commercial
- Entertainment
- Community Services
- Industrial
- Public Services
- Wild, Forested, Conservation Lands, and Public Parks
- Tax Parcel-Erie

0 70 140 280 420 560 Feet