

# Remedial Investigation/ Alternatives Analysis Report/ Interim Remedial Measures (RI/AAR/IRM) Report

*7503 Niagara Falls Boulevard Site  
Niagara Falls, New York*

October 2007  
Revised December 2007

0101-002-400

Prepared For:

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**REMEDIAL INVESTIGATION, ALTERNATIVES ANALYSIS REPORT  
AND INTERIM REMEDIAL MEASURES REPORT  
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## 1.0 INTRODUCTION

This Remedial Investigation/Alternatives Analysis Report/Interim Remedial Measures (RI/AAR/IRM) Report has been prepared on behalf of GLR Holdings, LLC (GLR) for the 7503 Niagara Falls Boulevard Site in Niagara Falls, New York (Site; see Figure 1). GLR has entered into a Brownfield Cleanup Agreement (BCA) with the NYSDEC to investigate and cleanup the Site under the Brownfield Cleanup Program (BCP). This RI/AAR/IRM was completed pursuant to 6NYCRR Part 375-3 (Brownfield Cleanup Program) and New York State Department of Environmental Conservation's (NYSDEC's) Draft DER-10 Technical Guidance for Site Investigation and Remediation.

Based on the findings of historic site investigations, a RI was necessary to confirm the nature and extent of contamination at the Site, to identify a source area and to produce sufficient data to evaluate remedial alternatives for the Site. Benchmark Environmental Engineering & Science, PLLC (Benchmark) implemented RI activities per the approved RI Work Plan in June 2006. Upon evaluation of the RI data and subsequent meetings with the New York State Department of Environmental Conservation (NYSDEC), it was determined that an IRM would be implemented to address groundwater impacted with volatile organic compounds (VOCs). An IRM Work Plan, which called for in-situ enhanced bioremediation of VOC-impacted groundwater, was submitted and approved by the NYSDEC in November 2006. As part of the IRM, the NYSDEC also required that soil gas samples be collected on-Site as part of the RI. The IRM field work was completed in November 2006 and the soil gas sampling was completed in January 2007. Based on the findings of the January 2007 soil gas sampling, the NYSDEC and NYSDOH required off-Site soil gas sampling at residential properties south of the Site, which was completed in June and July 2007. GLR initiated commercial redevelopment of the Site as a fast food restaurant in September 2007.

### 1.1 Background

GLR is redeveloping the 7503 Niagara Falls Boulevard Site and the east adjacent parcel addressed at 7543-7555 Niagara Falls Boulevard as a fast food restaurant. 7503 Niagara Falls Boulevard is subject to the BCP, while 7543-7555 Niagara Falls Blvd is not. For purposes of this RI, reference to the Site from this point forward refers only to 7503 Niagara Falls Boulevard parcel.

The Site encompasses approximately 0.89 acres of vacant land along Niagara Falls Boulevard in the City of Niagara Falls, New York. The property is generally bounded by Niagara Falls Boulevard to the north, a vacant lot and apartment buildings to the east (i.e., 7543-7555 Niagara Falls Blvd owned by GLR), private residences to the south, and commercial (fast-food restaurant) property to the west (i.e., 7403 Niagara Falls Blvd.). A concrete slab remnant from a former building foundation is present across the majority of the western portion of the property. The remainder of the Site is generally covered by asphalt.

Beginning in the late 1960s and continuing through the mid-1990s, the Site was occupied by several commercial establishments. These included various restaurants, auto parts sales and auto repair facilities. The property has been vacant since approximately 1998. The history of Site from an environmental perspective is summarized in Section 1.2.3.

## 1.2 Previous Investigations

The nature and distribution of chemical constituents in soil/fill and groundwater at the Site and adjacent site were described during five historic investigations (References 1-5). These included:

- A July 2004 Phase I Environmental Site Assessment (ESA) by GZA GeoEnvironmental (GZA).
- A September 2004 Subsurface Phase II Environmental Assessment conducted by Nature's Way Environmental Consultants and Contractors (NWECC&C).
- A May 2005 Focused Phase II Type Environmental Investigation conducted by NWECC&C.
- An August 2005 Downgradient Groundwater Characterization study conducted by Benchmark.
- An October 2005 Supplemental Site Characterization Adjacent to Site study conducted by Benchmark.

Appendix A presents the previous investigation sample results; the sample locations are shown on Figure 2. Table A-1 in Appendix A presents the maximum concentrations observed in Site soil/fill and groundwater. Table A-2 in Appendix A presents a summary of

historic analytical soil data. The following sections describe the results of those sampling programs to provide a historic-based description of the nature and distribution of chemical constituents at the Site.

### ***1.2.1 July 2004 – Phase I Environmental Assessment***

In July 2004, GZA conducted a Phase I Environmental Site Assessment (ESA) of the Site and adjacent site encompassing 7503-7555 Niagara Falls Boulevard, Niagara Falls, New York (Ref. 1). GZA reportedly identified historic auto repair and collision operations in association with the subject property.

### ***1.2.2 September 2004 – Subsurface Phase II Environmental Assessment***

NWEC&C performed a focused subsurface Phase II Environmental Assessment (EA) based on the historic use of the property (Ref. 2). In August 2004, eight soil borings were advanced to between 12 and 16 feet below ground surface (fbgs) at the Site. Two soil samples (EP2 and EP8) were analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs). No NYSDEC STARS List SVOCs were identified above method detection limits in either soil sample. Several chlorinated VOCs were reported as present in both samples, one of which exceeded its Technical and Administrative Guidance Memorandum #4046 (TAGM 4046) threshold. Specifically, the sample from EP2 reportedly contained cis-1,2-dichloroethene at a concentration of 257 parts per billion (ppb). The other chlorinated VOCs detected were trans-1,2-dichloroethene, trichloroethene (TCE), tetrachloroethene (PCE), and vinyl chloride (VC). Two soil borings were completed with temporary well screens to allow for accumulation and sampling of shallow groundwater. There were no VOCs identified in the sample from EP/PZ3. The sample from EP/PZ8 was reported to contain the same five chlorinated VOCs as identified in the soil sample from that location, four of which at concentrations exceeding NYSDEC Groundwater Quality Standards (GWQS) published in NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1. Specifically, cis-1,2-dichloroethene at 20.5 ppb, TCE at 31 ppb, PCE at 10.1 ppb, and VC at 16.3 ppb exceeded NYSDEC GWQS.



### ***1.2.3 May 2005 – Focused Phase II Type Environmental Investigation***

NWEC&C performed a focused Phase II Type Environmental Investigation on-Site (Ref. 3). A total of 14 soil borings (EP9-EP22) were advanced to depths of 8 to 12 fbs. Eleven soil samples were analyzed for chlorinated VOCs and compared to the NYSDEC TAGM 4046 guidance values. With the exception of EP9, all borings in which contaminant concentrations were reported above TAGM 4046 were located in the southwest section of the Site (EP14, EP20, EP21, and EP22). The highest individual contaminant concentrations were reported for the 4 to 6-foot sample at EP21. Specifically, trans-1,2-dichloroethene (2,750 ppb), cis-1,2-dichloroethene (3,450 ppb), and vinyl chloride (4,170 ppb). The 8 to 10-foot sample collected from EP9, located in the eastern section of the Site, contained two contaminant concentrations above TAGM 4046 guidance values; specifically, PCE at 1,430 ppb and TCE at 760 ppb. NWEC&C concluded that distinct areas of impacted soils existed in the southwest and eastern section of the Site.

Three, two-inch diameter permanent groundwater monitoring wells (MW14, MW17, and MW19) were constructed and screened from 2.5 to 12.5 fbs. Samples from each well were analyzed for chlorinated VOCs and results compared to the NYSDEC groundwater quality standards (GWQS). The highest concentrations were reported for the sample from MW14 in which six compounds were identified at concentrations significantly in excess of the NYSDEC GWQS. Specifically, cis-1,2-dichloroethene (316 ppb), 1,1-dichloroethene (32 ppb), trans-1,2-dichloroethene (351 ppb), PCE (760 ppb), TCE (411 ppb), and VC (192 ppb). Concentrations of PCE in MW17 and cis-1,2-dichloroethene and VC in MW19 exceeded NYSDEC GWQS, but at relatively lower concentrations than those observed in MW14.

### ***1.2.4 August 2005 – Downgradient Groundwater Characterization***

In August 2005, Benchmark, on behalf of GLR Holdings, mobilized a drill rig to advance two borings to approximately 7.5 fbs and subsequently constructed two-inch diameter flush-joint monitoring wells designated as MW-1 and MW-2. Both wells were initially found to contain an inadequate volume of groundwater for development or sample collection (i.e., dryness), indicating the saturated formation observed during well installation did not yield sufficient groundwater for sample collection possibly due to the extended dry weather pattern at that time. The wells were subsequently sampled for TCL VOC analysis

on August 23, 2005. No VOCs were detected at either location, with the exception of trace concentrations (below laboratory reporting limits; J-qualified) of acetone and carbon disulfide. The results were described in a letter report to GLR on August 11, 2005 (Ref. 4).

### ***1.2.5 October 2005 - Supplemental Site Characterization Adjacent to Site***

In October 2005, Benchmark completed limited subsurface soil boring activities for GLR at 7543-7555 Niagara Falls Blvd., Niagara Falls, New York. The boring program consisted of advancing five direct-push boreholes (SB-1 through SB-5) to an approximate depth of 4 fbgs. A composite sample was prepared from grab samples collected from approximately 2 fbgs and analyzed for Target Compound List (TCL) SVOCs, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. Two grab samples were also collected from the boring locations SB-1 and SB-4, which exhibited the highest headspace PID readings, and analyzed for TCL VOCs. No VOCs were detected in soil with the exception of methylene chloride, which is a common laboratory contaminant. Various SVOCs were detected in the composite soil sample. In particular, several polynuclear aromatic hydrocarbons (PAHs) were detected above the NYSDEC Recommended Soil Cleanup Objectives (RSCOs). A trace level of PCB Aroclor 1254 was detected in the soil composite sample; however, it was present at a concentration well below NYSDEC RSCOs. Metals concentrations were below the upper range of eastern U.S. background concentrations published in TAGM 4046, with the exception of calcium and magnesium. However, these metals are generally not considered toxic and NYSDEC does not typically require corrective measures to address these substances. The results were described in a letter report to GLR on November 15, 2005 (Ref. 5).

## **1.3 Constituents of Primary Concern (COPCs)**

Based on findings the RI and previous investigations, primary Constituents of Potential Concern (COPCs) are comprised of certain chlorinated VOCs. Specifically, the site-specific COPCs are identified as: tetrachloroethene (PCE); trichloroethene (TCE); 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE); trans-1,2-dichloroethene (trans-1,2-DCE); vinyl chloride (VC); and 1,1,2-trichloroethane (1,1,2-TCA).

## 1.4 Report Organization

This report contains the following eight sections:

- Section 1.0 is the introduction and provides Site background information.
- Section 2.0 presents the investigation approach.
- Section 3.0 describes the Site physical characteristics as they pertain to the investigation findings.
- Section 4.0 presents the investigation results by media.
- Section 5.0 describes the fate and transport of the COPCs.
- Section 6.0 presents the qualitative risk assessment.
- Section 7.0 presents the project summary and conclusions.
- Section 8.0 describes the IRM activities
- Section 9.0 presents the alternative analysis
- Section 10.0 provides a list of references for this report.

## 2.0 INVESTIGATION APPROACH

### 2.1 Sewer and Drain Investigation

The 2005 Supplemental Site Investigation performed by others involved inspection of manholes to check the orientation of sewer penetrations, and to evaluate sediment for visual or olfactory evidence of impacts by chlorinated organics. As part of this RI, Benchmark performed a physical inspection of the manholes and a dye test to investigate sewer flow patterns. Benchmark also interviewed City of Niagara Falls Wastewater Treatment Department personnel to obtain pertinent data. This information was collected and evaluated in the context of assessing potential localized hydrogeological effects and factors potentially impacting contaminant fate and transport.

### 2.2 Supplemental Soil Investigation

A substantial amount of soil data was collected during previous investigations of 7503 Niagara Falls Boulevard and the adjacent GLR property at 7543-7555 Niagara Falls Boulevard. Therefore, the RI soil sampling program was designed to supplement previous findings and to further evaluate subsurface conditions. As such, two soil samples were collected from MW-3 and MW-5 to assess on-site subsurface soil, and one soil sample was collected from MW-4 to determine whether off-site subsurface soil impacts exist. Figure 3 presents soil sample locations.

#### *2.2.1 Subsurface Soil Investigation*

Borings MW-3, MW-4, and MW-5 were advanced through unconsolidated overburden soil/fill material using 4¼-inch hollow stem augers to a depth of 8 to 10 fbs (i.e., target depth). Continuous 2-inch diameter split-spoon samples were collected at 2-foot intervals and described on stratigraphic field borehole logs from ground surface to the target depth. Each 2-foot split-spoon soil sample was scanned for total volatile organic vapors with a Photovac 2020 photoionization detector (PID) equipped with a 10.2 eV lamp, and any visual and/or olfactory observations were noted. Soil descriptions, PID scan results, and visual/olfactory observations recorded during boring advancement are presented on the Field Borehole Logs in Appendix B.

### ***2.2.2 Soil Samples***

Soil samples were collected from MW-3, MW-4, and MW-5 in accordance with the requirements of the RI Work Plan (Ref. 6). As PID screening results did not indicate significant VOC impact, samples were collected from native soil directly above the apparent groundwater table, if encountered, or as selected based on field observations. Upon collection, soil samples MW-3 (2-4 fbgs), MW-4 (2-4 fbgs) and MW-5 (4-6 fbgs) were transferred to laboratory supplied, pre-cleaned sample containers for analysis of TCL VOCs, TCL SVOCs, TCL PCBs, and TAL metals using NYSDEC ASP CLP methodology.

## **2.3 Groundwater Investigation**

In accordance with the Work Plan, three new groundwater monitoring wells (MW-3, MW-4, and MW-5) were installed at the Site to depths of 8 fbgs, 8 fbgs, and 10 fbgs, respectively on June 12 and 13, 2006. The new monitoring wells were installed to assist in determining the extent of impacted groundwater and whether these impacts extend off-site. Groundwater samples were also collected from existing monitoring wells MW-1, MW-2, MW-14, MW-17 and MW-19 for analysis to confirm the impact observed during previous investigations. Figure 3 presents new and existing monitoring well locations.

### ***2.3.1 Well Installation***

The borings for MW-3, MW-4, and MW-5 were advanced through unconsolidated overburden soil/fill material as described in Section 2.2.1 to facilitate monitoring well installation. Monitoring well construction details are presented on the Field Borehole Logs in Appendix B.

### ***2.3.2 Groundwater Samples***

The new and existing monitoring wells were developed following installation. Field parameters were measured periodically during well development, and the results are presented in Appendix B on field development logs. Prior to sample collection, static water levels were measured and recorded for all on-site monitoring wells. Appendix B contains purge and sample collection logs. The groundwater samples were analyzed for USEPA TCL VOCS. In addition, samples from existing monitoring wells MW-14, MW-17, and MW-19 were analyzed for Chemical Oxygen Demand (COD); nitrate and sulfate; as well as total and

soluble iron and manganese to evaluate enhanced in-situ bioremediation as a potential future remedial approach. Field parameters including pH, temperature, specific conductance, turbidity and ORP were measured during sampling and are summarized on Table 3.

### ***2.3.3 Groundwater Flow Data***

Following monitoring well installation, Benchmark personnel surveyed the top of each riser pipe from new and existing monitoring wells using an arbitrary reference elevation of 500.00 feet above mean sea level (fmsl). In addition, water levels were measured in new and existing monitoring wells on June 23, 2006. Survey and groundwater level data is summarized in Table 1.

## **2.4 Soil Gas Investigation**

As required by the NYSDEC in a letter dated November 1, 2006 (see Appendix D), soil gas sampling was completed on-Site to evaluate whether a potential off-Site soil gas exposure pathway exists. Soil gas samples SG-MW-14(1), SG-MW-14(2), SG-MW-19(1) and SG-MW-19(2) were collected at the locations as shown on Figure 2. The soil gas samples were analyzed for VOCs via USEPA method TO-15. Soil gas sample results are shown on Table 4 and discussed in Section 4.4.

## **2.5 Off-Site Soil Gas Investigation**

As required by the NYSDEC and the New York State Department of Health (NYSDOH) in letter dated April 11, 2007 (see Appendix D), off-Site soil gas sampling was completed at residential properties south of the Site to further evaluate whether a potential off-Site soil gas exposure pathway exists. Off-Site soil gas samples were collected at a total of four sampling locations at 658 75<sup>th</sup> Street and 668 75<sup>th</sup> Street in accordance with the Off-Site Soil Gas Sampling Plan (Ref. 7) dated June 15, 2007, which was approved by the NYSDEC and NYSDOH. The soil gas samples were analyzed for VOCs via USEPA method TO-15. Soil gas sample results are shown on Table 5 and discussed in Section 4.5

### 3.0 SITE PHYSICAL CHARACTERISTICS

The physical characteristics of the Site observed during the RI are described below.

#### 3.1 Surface Features

The Site is currently vacant, with remnants of a concrete slab associated with a former building, on the northwestern portion of the site, with the remainder of the Site covered with asphalt. Additional surface features include drainage structures (storm water collection basins, sanitary sewer collection basins and one trench-style floor drain within the concrete foundation area).

#### 3.2 Geology

The Site is located in the Erie-Ontario Lake Plain Physiographic Province of Western New York. The geology of the Erie-Niagara Basin is described as consisting of unconsolidated deposits (predominantly of glacial origin) overlying Silurian- and Devonian-age sedimentary bedded or layered bedrock. The naturally occurring unconsolidated deposits in the area consist of the following three types: alluvial silt, sand, and gravel deposited during comparatively recent geologic time; lacustrine sediments composed primarily of silt, sand, and clay deposited during the late Pleistocene Epoch; and glacial till, a heterogeneous mixture of particles (i.e., clay, silt, sand, gravel, and cobbles) deposited directly from glacial ice during the Pleistocene Epoch. Relief in the area is generally flat and the result of pre-glacial erosion of bedrock and subsequent topographic modification by glaciation.

The bedrock formations in the region dip to the south at approximately 30 to 40 feet per mile and exhibit only very gentle folding. In the Erie-Niagara Basin, the major areas of groundwater are within glacial sand and gravel deposits and limestone and shale bedrock. The main sources of groundwater within the bedrock are fractures and solution cavities.

As discussed in the Subsurface Phase II Environmental Assessment (Ref. 2) and the Focused Phase II Type Environmental Investigation (Ref. 3), the subsurface soil at the Site consists of three distinct horizons: (1) asphalt or concrete at grade to approximately 0.3 fbg; (2) a soil/fill layer consisting of varying textured soils, from sand to silty clay, mixed with concrete, gravel, and brick with occasional slag and cinders ranging in thickness from 1.5 feet

along the perimeter of the Site becoming thicker within the central portion of the Site up to 6.0 feet; and (3) a native lacustrine clayey silt to silty clay.

Native soils at the Site were classified as silty clay (CL), firm to hard, with silt and fine sand filled desiccations (i.e., healed) with sand and silt lenses present. The U.S. Department of Agriculture Soil Conservation Service soil survey map of Niagara County (Ref. 7) describes the general soil type at the Site as an association of Canandaigua, Raynham, and Rhinebeck types. Based on field characterization, the soil type at the Site more closely resembles the Rhinebeck type due in part to excessive mottling and a perched water table above the slowly permeable subsoil and substratum.

Depth to and type of bedrock below the Site has not been determined.

### 3.3 Hydrogeology

Unconfined groundwater was encountered at the Site within the soil/fill and native soil interface at a depth of 2.5 to 7.5 fbgs (see Table 1). Figure 5 shows that mounding occurs within the western portion of the Site creating radial flow outward. The shallow groundwater appears to be a perched condition present within the firm silty clay native soils. Regional groundwater, however, appears to flow south toward the Niagara River (see Figure 5) based on groundwater elevations outside of the former building foundation.

The entire area within 3 miles of the Site is served by two municipal water companies that acquire their drinking water from Lake Erie or the west branch of the Niagara River.



## 4.0 INVESTIGATION RESULTS

The following sections discuss the results of the Remedial Investigation. Tables 2 and 3 summarize the soil and groundwater analytical data, respectively. Analytical data is included in Appendix C. Figure 2 presents the locations of the soil samples and groundwater monitoring wells.

### 4.1 Sewers and Drains

In May 2005, Nature's Way collected a sample of soil/sediment from the grated floor drain (identified as historic floor drain of Figure 3). According to the Phase II report, an earthprobe was used to advance a sampling spoon into the sediment of the floor drain to a depth of 0.9 feet, at which time hard bottom was encountered. No unnatural odors were noted during sample handling, and no visible staining or discoloration was observed. The sample, designated EP-13, was screened with a PID and analyzed for TCL VOCs (Method 8260B). The PID reading was 0.3 ppm and no VOCs were detected in the sample submitted for analysis.

In July 2006, Benchmark completed an assessment of the floor drains, sewer manholes and catch basins on-Site and adjacent to the Site, with particular attention to sewer manholes and sewer lines proximate the areas of impact. Mr. James Hook of the Niagara Falls Wastewater Treatment Department accompanied Benchmark personnel to identify existing manholes and/or catch basins by sewer type (i.e. storm sewer or sanitary sewer) and to provide likely flow direction. The information provided by the Niagara Falls Wastewater Treatment Department was supplemented with a dye test. Figure 3 presents the approximate layout and flow direction of the sanitary and storm sewer lines, including the location of manholes, catch basins, and sewer cleanouts.

Based on the results of the dye test and information provided by the Niagara Falls Wastewater Treatment Department, there is a storm-water collection system and a sanitary sewer system on-Site. In general, the drains flow from their collection points, through their respective network and exit the eastern boundary of the Site, where they discharge to sewer mains along 76<sup>th</sup> Street.

There are stormwater sewer lines that are located in the approximate areas of the groundwater impact in the southwestern portion of the Site and the eastern boundary of the Site. Based on the depths of the manholes in those areas, the sewer lines are not located

within the groundwater table. Specifically, the depths of MH-2, MH-5 and MH-10 are four fbgs and depth to groundwater in those areas ranges from approximately five fbgs (MW-19) to approximately seven fbgs (MW-2). Furthermore, there was no water flow noted within the manholes at the time of the inspection, until water was introduced into the manholes or catch basins during the dye test. Based on the results of this investigation, it does not appear that the sewer system would facilitate migration of contaminated groundwater on-site.

## 4.2 Soil/Fill

As was discussed in Section 2.2, a soil sample was collected from MW-3 and MW-5 to assess on-site subsurface soil, and MW-4 to determine whether off-site subsurface soil impacts exist. Impacted soil/fill was not observed during sampling in any of the three soil borings. As indicated on the Field Borehole Logs in Appendix B, PID headspace readings from the soil samples collected within the borings were 0.0 ppm, further supporting field observations.

Table 2 presents a comparison of the detected soil/fill parameters to NYSDEC Soil Cleanup Objectives (SCOs) 6NYCRR Part 375-6 (June 2006). Analytical data show that all sampled constituents meet restricted-commercial SCOs for soils. Therefore, on-Site subsurface soil impacts were not identified at sample locations MW-3 and MW-5. Similarly, off-site subsurface soil impacts were not identified at MW-4. Table A-2 in Appendix A presents the historic soil analytical data.

## 4.3 Groundwater

Groundwater samples were collected from two of the three new monitoring wells (i.e., MW-4 and MW-5) and five existing monitoring wells (MW-1, MW-2, MW-14, MW-17 and MW-19) on June 23, 2006. MW-3 was dry at the time of sampling and, therefore, no sample was collected. Results for detected constituents are summarized on Table 3. NYSDEC Class GA Groundwater Quality Standards/Guidance Values (GWQS/GV) are presented for comparison. A discussion of the results is presented below.

### 4.3.1 Volatile Organic Compounds

As indicated in Table 3, VOCs detected in the newly installed wells (MW-4 and MW-5) were limited to one parameter (i.e., methylene chloride) reported at trace (estimated)

concentrations below the sample quantitation limit. Methylene chloride is a common laboratory contaminant.

The COPCs listed in Section 1.3 were detected in existing monitoring well MW-14 at concentrations above the Class GA GWQS. The concentration of benzene in MW-14 was estimated at 1 ppb, which is equal to the GWQS. Vinyl chloride and cis-1,2-dichloroethene were detected in existing monitoring well MW19 at concentrations above their respective GWQS.

#### ***4.3.2 Wet Chemistry***

Total and soluble iron and total manganese concentrations in existing wells MW-14 and MW-19 exceeded their respective Class GA GWQS. These data were collected in the context of evaluating enhanced in-situ bioremediation as a potential remedial alternative to address impacted groundwater on-site.

#### ***4.3.3 Summary***

VOC impacts do not extend to down-gradient wells MW-1 and MW-2, newly installed on-site monitoring well MW-5 or off-site monitoring well MW-4. MW-3 was dry at the time of groundwater sampling and, therefore, no sample was collected.

The groundwater results presented above indicate VOC-impacted groundwater at the location of MW-14 and, to a lesser extent, at MW-19. It appears that natural degradation of PCE may be occurring as PCE concentrations have decreased since May 2005 and PCE breakdown products concentrations have increased. Table A-1 in Appendix A presents the maximum concentrations historically observed in Site groundwater. Figure 5 presents the approximate boundaries of two chlorinated VOC groundwater plumes, based on the June 2006 RI and historic groundwater data.

#### ***4.3.4 Groundwater Flow Direction***

Figure 4 is an isopotential map for the June 2006 RI water level measurements obtained from the new and existing groundwater monitoring wells. Survey and groundwater level data is summarized in Table 1. As discussed in Section 3.3, unconfined groundwater was encountered at the Site within the soil/fill and native soil interface at a depth of 2.5 to 7.5 fbs. Mounding occurs within the western portion of the Site creating radial flow

outward. The shallow groundwater appears to be a perched condition present within the firm silty clay native soils. Shallow groundwater flow in the central area of the Site appears to flow in a south to southeast direction.

#### 4.4 Soil Gas Investigation

As summarized on Table 4, soil gas samples SG-MW-14(1), SG-MW-14(2), SG-MW-19(1) and SG-MW-19(2) were collected at the sampling locations shown on Figure 2. COPCs detected in the soil gas samples included PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE and VC.

NYSDEC and NYSDOH does not currently have standards, criteria or guidance values for concentrations of compounds in soil gas, thus no comparative regulatory guidance values or cleanup concentrations are included in Table 4. However, in the absence of such information, NYSDOH indicates that guidelines for VOCs in indoor air (i.e., Table 3.1 of NYSDOH October 2006 Soil Vapor Intrusion guidance document) may be used to evaluate potential indoor air concerns related to soil gas concentrations. PCE was detected in SG-MW-19(1) at a concentration of 240 ug/m<sup>3</sup>, above the NYSDOH indoor air guideline of 100ug/m<sup>3</sup>. TCE was detected in SG-MW-14(1), SG-MW-19(1) and SG-MW-19(2) at concentrations of 8.1 ug/m<sup>3</sup>, 520 ug/m<sup>3</sup> and 170 ug/m<sup>3</sup>, respectively, above the NYSDOH indoor air guideline of 5 ug/m<sup>3</sup>. No other COPCs are included on Table 3.1 of the NYSDOH guidance document.

#### 4.5 Off-Site Soil Gas Investigation

As summarized in Table 5, off-Site soil gas samples GLR-SV-658A, GLR-SV-658B, GLR-SV-668A and GLR-SV-668B were collected at the sampling locations shown on Figure 2 in accordance with the Off-Site Soil Gas Sampling Plan (Ref. 9). The only COPC identified in those samples was PCE in samples GLR-SV-658A and GLR-SV-658B at a concentration of 22 ug/m<sup>3</sup> and 14 ug/m<sup>3</sup>, respectively. PCE was not detected in off-site soil gas samples GLR-SV-668A and GLR-SV-668B that are located downgradient of the highest detection of PCE in on-site soil gas [SG-MW-19 (1)].

As indicated in Section 4.4, NYSDEC and NYSDOH does not currently have standards, criteria or guidance values for concentrations of compounds in soil gas, thus no comparative regulatory guidance values or cleanup concentrations are included in Table 5.

However, in the absence of such information, NYSDOH indicates that guidelines for VOCs in indoor air (i.e., Table 3.1 of NYSDOH October 2006 Soil Vapor Intrusion guidance document; Ref. 11) may be used to put some perspective on the soil vapor data. As such, it should be noted that PCE was detected in off-Site soil gas samples below the NYSDOH indoor air guideline of 100 ug/m<sup>3</sup> and is not present at concentrations of concern.

#### 4.6 Data Usability Summary

In accordance with the Quality Assurance Project Plan (QAPP) for the RI Work Plan (Ref. 8), the laboratory analytical data from this investigation was independently assessed and, as required, submitted for independent review. Ms. Judy Harry of Data Validation Services located in North Creek, New York performed the data usability summary assessment, which involved a review of the summary form information and sample raw data, and a limited review of associated QC raw data. Specifically, the following items were reviewed:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate Recoveries
- Field Duplicate Correlation
- Preparation/Calibration Blanks
- Control Spike/Laboratory Control Samples
- Instrumental IDLs
- Calibration/CRI/CRA Standards
- ICP Interference Check Standards
- ICP Serial Dilution Correlations
- Sample Results Verification

The Data Usability Summary Reports (DUSR) was conducted using guidance from the USEPA Region 2 validation Standard Operating Procedures, the USEPA National Functional Guidelines for Data Review, as well as professional judgment. Appendix C includes the DUSR, which was prepared in accordance with Appendix 2B of NYSDEC's draft DER-10 guidance. Those items listed above that demonstrated deficiencies are discussed below; all other items were determined to be acceptable for this level of review.

In general, sample processing was conducted in compliance with protocol requirements. Sample results are usable as reported; usable with minor edit or qualification; or reported as estimated values. Internal laboratory quality control (QC) samples and site-specific QC samples indicate satisfactory analytical accuracy, precision, and completeness. Sample shipping coolers were received in good condition and at an appropriate temperature. A blind duplicate evaluation performed on soil sample MW-4, 4-6' showed an acceptable correlation for all analytes. No indications of significant matrix interference or other indications of potential negative sample bias were recorded; however, minor data qualification as "estimated" ("J" qualifier) or edit to non-detection was required due to typical processing or matrix effects. The following text summarizes quality issues of concern as presented in the DUSR(s).

- Due to the presence in associated method, trip, and/or holding blanks, results for methylene chloride, acetone, dichlorodifluoromethane, and trichlorofluoromethane in the soils, and for acetone in the aqueous samples were considered external contamination.
- Calibration standards showed an unacceptable response with laboratory requirements and validation guidelines for caprolactum, 2,4-dinitrophenol, and 4,6-dinitro-2-methylphenol. Results for these 3 compounds were qualified as estimated, and may have a low bias.
- Due to the presence in the associated method blank, results for bis(2-ethylhexyl)phthalate in the soil samples are considered external contamination.
- Matrix spikes were performed for TAL Metals on soil sample MW-4 (2-4') and showed outlying recoveries for antimony, arsenic, lead, manganese, and zinc, and an elevated duplicate correlation for arsenic. Results for these 5 elements in the soil samples are therefore qualified as estimated.
- The ICP Serial dilution evaluation of MW-4 (2-4') showed outlying correlations for calcium, copper, lead, iron, magnesium, nickel, vanadium, and zinc. Detected results for these analytes in the soil samples are therefore qualified as estimated.
- Results for analytes flagged as "E" by the Laboratory are derived from the dilution analysis of the samples.
- Due to its presence in associated holding blank, the detected result for TCE in MW-19 (12/06) is considered external contamination, and is edited to reflect non-detection.

## 5.0 FATE AND TRANSPORT OF COPCS

The analytical results presented above in Section 4.0 as well as the results of the IRM (discussed in Section 8) were incorporated with the physical characterization of the Site to evaluate the fate and transport of COPCs in Site media. The mechanisms by which the COPCs can migrate to other areas or media are briefly outlined below.

### 5.1 Airborne Pathways

Potential migration pathways involving airborne transport of non-volatile COPCs include erosion and transport of surficial soil particles and sorbed chemical constituents in fugitive dust emissions. Volatilization of chemicals present in groundwater and/or soil gas is another potential migration pathway for airborne transport of COPCs. These potential migration pathways are discussed in greater detail below.

#### 5.1.1 *Fugitive Dust*

The chemicals in soil/fill are present at concentrations below restricted commercial SCOs. This potential migration pathway is not considered relevant.

#### 5.1.2 *Volatilization*

Volatile chemicals are present in on-Site groundwater and soil gas and may be released to ambient air or indoor air through volatilization through the soil/fill into overlying building structures. Reduction of VOCs in groundwater has occurred since the IRM (i.e., in-situ enhanced bioremediation of groundwater); VOCs will continue to degrade over time as a result of the enhanced bioremediation, as well through natural biodegradation.

Volatile chemicals typically have a low organic-carbon partition coefficient ( $K_{oc}$ ), low molecular weight, and a high Henry's Law constant. Since residual VOCs are present in groundwater in two discrete areas of the Site and in on-Site soil gas, this pathway is potentially relevant.

### 5.2 Waterborne Pathways

Chemicals in surface soils could be potentially transported via storm water runoff or via leaching to groundwater. The chemicals in soil/fill are present at concentrations below restricted commercial SCOs. This potential migration pathway is not considered relevant.



### ***5.2.1 Surface Water Runoff***

Erosion and transport of surface soils and associated sorbed chemicals in surface water runoff is not considered a potential migration pathway. The potential for soil particle transport with surface water runoff is low, as the Site is mostly flat lying and covered by asphalt. Uncontrolled off-site transport is further limited because the Site is outside the 500-year floodplain. The Site is surrounded by a storm water sewer collection system that provides a mechanism for controlled surface water transport.

### ***5.2.2 Leaching***

Chemicals present in soil may migrate downward to groundwater as a result of infiltration of precipitation. The chemicals in soil/fill are present at concentrations below restricted commercial SCOs and this potential migration pathway is not considered relevant. The proposed future land use of the Site (predominately covered by building and asphalt) also reduces leaching provided the integrity of the surface cover is maintained.

## **5.3 Exposure Pathways**

Based on the analysis of chemical fate and transport provided above, the pathways through which Site COPCs could reach on-Site receptors at significant exposure point concentrations are limited to volatilization of contaminants in groundwater and soil gas through the soil/fill to the overlying planned building structure. These exposure pathways may be reduced, but would not necessarily be fully addressed, under the future unremediated commercial land use scenario discussed in Section 6.0. Based on future land use, which includes the Site predominately covered by the planned building and asphalt parking, there were no migration pathways identified that would affect off-site receptors. The potential for off-site groundwater contaminant migration is sufficiently mitigated/reduced by the following: Site groundwater is present in discontinuous layers (perched) in the overburden; overburden soil types have low hydraulic conductivity; and groundwater contaminant concentrations are low and are expected to attenuate in a reasonable time frame. To further substantiate this conclusion, VOCs have not historically been detected in downgradient groundwater monitoring wells MW-1 and MW-2.



## 6.0 QUALITATIVE RISK ASSESSMENT

### 6.1 Potential Human Health Risks

The identification of potential human receptors is based on the characteristics of the Site, the surrounding land uses, and the probable future land uses. In terms of future use, the current Site owner (GLR Holdings, LLC) intends to redevelop the Site as a restaurant with asphalt parking areas. Small areas of the Site would be covered with grass and ornamental landscaping. This future use is consistent with surrounding property use and site zoning. Accordingly, the reasonably anticipated future use of the Site is for commercial purposes, with potential exposed receptors comprised of the commercial worker potentially exposed to VOC-impacted indoor air and the construction worker during site redevelopment.

Historic soil/fill data was reviewed to determine the highest exposure point concentration for chlorinated VOCs within the “source areas” identified on Figure 5. Table 6 presents the highest concentrations observed during the May 2005 Phase II Environmental Investigation completed by others (Ref. 3). These results are compared to the health-based cleanup objectives on Table 6. In addition to the commercial health-based SCO, Table 6 also includes USEPA health-based recommended soil cleanup objectives as published in NYSDEC TAGM HWR-94-4046. These values are considered protective of human health under a residential use scenario, and are thus conservative comparative criteria for the reasonably anticipated commercial future use scenario. As shown on Table 6, no compounds were detected in the soil/fill above any of the comparative criteria. Accordingly, no unacceptable health risks are indicated under the current and future use scenario. The health-based criteria described above are for individual constituents; cumulative or synergistic effects among chemicals may yield greater risks.

As discussed in Section 4.3.1, and upon evaluation of IRM groundwater monitoring data, residual VOCs are present in MW-14 and to a lesser extent, in MW-19 above the NYSDEC Class GA GWQS, indicating a potential unacceptable human health risk if ingested. Potable water for the Site and surrounding area is provided by municipal water supply. The Class GA GWQS for these constituents are health (water source) based standards.

The IRM was completed to reduce/eliminate VOCs; however, residual VOCs remain in Site groundwater and soil gas. Under the future (commercial) use conditions, potential exposure routes are incidental ingestion, dermal contact and inhalation of re-suspended particulates in air; inhalation of volatile compounds in ambient or indoor air; and dermal contact with compounds in groundwater. As discussed with the NYSDEC and the NYSDOH, there will be institutional and engineering controls utilized at the Site as part of the final remedy. Specifically, one of the engineering controls will be an active sub-slab depressurization (ASD) system in the planned building to address potential indoor air quality concerns. The preliminary ASD system design was provided to the NYSDEC and NYSDOH with no significant concerns identified. The details of the installation and testing of the ASD system will be included in the Final Engineering Report. The AAR (Section 8) includes a discussion of the institutional and engineering controls that may be used at the Site. The institutional and engineering controls will serve to eliminate potential human health risks at the Site.

For the trespasser and construction worker scenarios, health-risk based lookup values specifically addressing these types of receptors are not widely published, as estimates of exposure frequency and duration tend to be site-specific in nature. However, the NYSDEC has published health risk-based lookup values for several chemicals under various exposure scenarios in the June 2006 document entitled “New York State Brownfield Cleanup Program Development of Soil Cleanup Objectives Technical Support Document” (a.k.a., “Technical Support Document”). The Technical Support Document forms the basis for the health-based SCOs presented in 6NYCRR Part 375-6. Based on incorporation of these types of receptors and exposures, the commercial health-based SCOs presented in the Technical Support Document are considered protective of human health under both the current and future site use condition.

## 6.2 Potential Ecological Risks

The 7503 Niagara Falls Boulevard Site is the site of various former commercial establishments located within a developed, urban area of Niagara Falls. A concrete slab remnant from a former building foundation is present across the majority of the western portion of the Site with the remainder generally covered by asphalt, providing little or no wildlife habitat or food value. No natural waterways are present on or adjacent to the Site.

The reasonably anticipated future use is commercial with the majority of the Site covered by structures and asphalt. As such, no unacceptable ecological risks are anticipated under the current or reasonably anticipated future use scenario.

## 7.0 RI SUMMARY AND CONCLUSIONS

Based on the RI findings and historical data, there were no exceedances of COPCs or other analytes in soil above NYSDEC Part 375 restricted-commercial SCOs on-Site.

Groundwater data indicated that COPCs were detected in groundwater above Class GA GWQS in MW-14 and MW-19 on-Site. Upon evaluation of the RI data and subsequent meetings with the NYSDEC, it was determined that an IRM would be implemented to address chlorinated VOCs present in groundwater in two discrete locations on-Site. An IRM Work Plan, which called for in-situ enhanced bioremediation of VOC-impacted groundwater, was submitted and approved by the NYSDEC in November 2006. A discussion of the IRM activities is presented in Section 8.0. An evaluation of remedial alternatives (i.e., AAR) is included in Section 9.0.

On-site soil gas samples indicated that elevated concentrations of VOCs are present in soil gas. Although the NYSDEC and NYSDOH do not currently have standards, criteria or guidance values for concentrations of compounds in soil gas, NYSDOH suggests that soil vapor sampling results be reviewed “as a whole,” in conjunction with the results of other environmental sampling. To put some perspective on the data, NYSDOH indicates that soil vapor results might be compared to the NYSDOH’s guidelines for volatile chemicals in air. PCE and TCE were detected in on-site soil gas samples above the NYSDOH indoor air guidelines. PCE was detected in 2 of the 4 off-site soil gas samples but at concentrations below NYSDOH’s air guideline value; TCE was not detected in any off-site soil gas sample. PCE concentrations in soil gas decrease with distance from the Site.

Therefore, an ASD system will be installed within the planned building to mitigate potential vapor intrusion and indoor air quality concerns related to residual VOCs in groundwater. As PCE and its daughter products continue to degrade following injection of the hydrogen releasing compound (described in Section 8.0), so will the VOC concentrations in the soil gas both on-site and off-site.

## 8.0 INTERIM REMEDIAL MEASURES (IRM)

An IRM was implemented at the Site in accordance with the IRM Work Plan (Ref. 10), as approved by the NYSDEC on November 1, 2006.

Based on the nature and extent of impacted media, which included VOC-impacted groundwater, the selected remedial measure was in-situ enhanced bioremediation of impacted groundwater and saturated soils via direct injection of hydrogen releasing compounds (HRC®) into the impacted zones. HRC® is a specially formulated lactic acid-based compound developed by Regenesys Corporation for in-situ treatment of chlorinated VOC contamination in groundwater. HRC® is a viscous liquid that is pressure injected into the subsurface using small diameter probe rods and a high-pressure injection pump to facilitate anaerobic bioremediation by prolonged release of hydrogen into the impacted aquifer. The process enhances natural anaerobic biodegradation reducing chlorinated VOCs in groundwater.

The IRM involved directly injecting approximately 1,200 lbs of HRC® into the contaminated groundwater at the two discrete VOC-impacted areas (see Figure 6). Using 10-foot by 10-foot grid treatment spacing, 18 delivery points were used to treat each area with approximately 600 lbs. of HRC®. Direct-push delivery probes were advanced to approximately 12 fbgs and HRC® material was injected continuously at a rate of approximately 4lbs/ft. until the delivery probe was retracted to approximately 4 fbgs.

A groundwater sampling program was implemented to evaluate the effectiveness of the in-situ groundwater treatment program. The groundwater sampling program included post-treatment monitoring for COPCs in MW-14 and MW-19. As shown in Table 7, the chlorinated VOCs in MW-19 were reduced from the June 2006 baseline concentration of approximately 91 ug/L total chlorinated VOCs to approximately 53 ug/L total chlorinated VOCs in June 2007. At MW-14, total chlorinated VOCs were reduced from the June 2006 baseline concentration of approximately 4,575 ug/L total chlorinated VOCs to approximately 3,315 ug/L total chlorinated VOCs in June 2007. Although the concentrations of VOCs have indicated a rebound effect since the January 2007 sampling event, it should be noted that the PCE, the parent compound of TCE, cis-1,2-DCE, trans-1,2-DCE and VC, continues to degrade. As PCE degrades (i.e. undergoes reductive

dechlorination) its daughter product are formed, resulting in an increase in their respective concentrations. Over time, the daughter products also degrade.

The continued degradation and of PCE and its daughter products will continue to be monitored subsequent to Site redevelopment. A long-term groundwater monitoring plan will be included as a component of the selected site remedy, which is discussed in the remedial alternatives analysis in Section 9. Furthermore, the selected remedy includes provisions for an ASD system in the planned building to mitigate indoor air quality concerns related to residual VOCs in groundwater.

## 9.0 ALTERNATIVES ANALYSIS

### 9.1 Purpose

This Alternative Analysis Report (AAR) section identifies the goals of the remedial program and provides Remedial Action Objectives (RAOs) for the Site. The AAR provides the sufficient detail to support the decision making process required to select appropriate remedial actions for the Site and will provide the basis for the Remedial Action Work Plan.

### 9.2 Remedial Action Objectives

The remedial goal for the Site is for the remedy to be protective of public health and the environment, given the intended use of the Site as a fast-food restaurant and associated surface parking. Remedial Action Objectives are site-specific statements that convey the goals for minimizing or eliminating substantial risks to public health and the environment.

RAOs for this Site have been developed based on the findings of the RI and previous investigations, which identified contaminated groundwater and associated saturated soils as the primary concerns. Therefore, the RAOs for the Site are to:

- Prevent direct contact or ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatile organic compounds from contaminated groundwater.
- Prevent ingestion/direct contact with contaminated soil.

In addition to achieving RAOs, NYSDEC's Brownfield Cleanup Program calls for remedy evaluation in accordance with DER-10 Technical Guidance for Site Investigation and Remediation. Specifically, the guidance states "When proposing an appropriate remedy, the person responsible for conducting the investigation and/or remediation should identify and develop a remedial action that is based on the following criteria..."

- **Overall Protection of Public Health and the Environment.** This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are

eliminated, reduced, or controlled through removal, treatment, engineering controls, or institutional controls.

- **Compliance with Standards, Criteria, and Guidance (SCGs).** Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.
- **Long-Term Effectiveness and Permanence.** This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: (i) the magnitude of the remaining risks (i.e., will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals), (ii) the adequacy of the engineering and institutional controls intended to limit the risk, (iii) the reliability of these controls, and (iv) the ability of the remedy to continue to meet RAOs in the future.
- **Reduction of Toxicity, Mobility or Volume with Treatment.** This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Site.
- **Short-Term Effectiveness.** Short-term effectiveness is an evaluation of the potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during construction and/or implementation. This includes a discussion of how the identified adverse impacts and health risks to the community or workers at the Site will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives.
- **Implementability.** The implementability criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.
- **Cost.** Capital, operation, maintenance, and monitoring costs are estimated for the remedy and presented on a present worth basis.



- **Community Acceptance.** This criterion evaluates the public's comments, concerns, and overall perception of the remedy.
- **Land Use**

The Community Acceptance criterion incorporates public concerns into the evaluation of the remedial alternatives. Therefore, Community Acceptance of the remedy is evaluated after the public comment period.

The intended future land use was initially approved by the NYSDEC by approval of the BCP application. As the future plans include development of a fast-food restaurant and asphalt parking, all evaluated technologies will accommodate the anticipated future development. As such, a relative comparison of the technologies being considered related to land use has not been performed.

### 9.3 Standards, Criteria and Guidance (SCGs)

The cleanup objectives for Site groundwater are the NYSDEC Class GA Groundwater Quality Standards/Guidance Values (GWQS/GV) as listed in 6 NYCRR part 703 (NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. The cleanup objectives for Site soil are the Soil Cleanup Objectives (SCOs) for protection of public health on commercial properties per 6NYCRR Part 375-6 (June 2006).

### 9.4 General Response Actions

General Response Actions are broad classes of actions that may satisfy the RAOs. General response actions form the foundation for the identification and screening of remedial technologies and alternatives. General Response Actions considered for the Site include:

- In-situ treatment of groundwater
- Extraction and ex-situ treatment of groundwater
- Excavation of impacted saturated soil
- Institutional and engineering controls
- Groundwater monitoring

Specific remedial alternatives evaluated for the Site include the following technologies:

- Groundwater pump and treat
- Air-sparge/soil-vapor extraction (AS/SVE)
- Multi-phase (i.e., soil gas and groundwater) extraction (MPE)
- Excavation of saturated soils with extraction/treatment of groundwater
- In-situ enhanced bioremediation of groundwater

Groundwater pump and treat was eliminated from consideration due to Site hydrogeology. Specifically, shallow groundwater appears perched within soil/fill materials above low-permeability native soils. Groundwater recharge within certain monitoring wells was on the order of inches per day during groundwater sampling. Monitoring well MW-3, which is constructed of similar materials and to similar depths as other monitoring wells on-site, did not produce water following installation. Therefore, it did not appear that there would be sufficient groundwater recharge to support groundwater extraction wells on-site.

Multi-phase (i.e., soil gas and groundwater) extraction (MPE), which includes a groundwater extraction component, was also eliminated from consideration due to Site hydrogeology as discussed above.

Air-sparge/soil-vapor extraction (AS/SVE) was eliminated from consideration as the impacted zone is within the groundwater table. AS/SVE is generally used to remediate VOCs within unsaturated soils, or soils within the smear zone (i.e., the soil interval in the area of seasonal groundwater fluctuation). In some cases, groundwater is pumped to decrease the groundwater table, exposing impacted soil in the smear zone. This technology would not be effective due to contamination within the groundwater table and for the reasons discussed above that eliminated groundwater pump and treat from further consideration.

Excavation was eliminated from consideration as concentrations of COPCs in soil did not exceed Part 375 restricted-commercial SCOs and the impacted zone is within the groundwater table. Groundwater ranges from approximately 3 to 8 feet across the Site. Materials removed from the subsurface would require pre-treatment prior to transportation and/or disposal due to removal of saturated soils or the excavation would require dewatering and treatment of impacted groundwater prior to and/or during excavation. Furthermore, additional groundwater treatment/remediation would likely be necessary subsequent to excavation activities.

## 9.5 Interim Remedial Measure for Groundwater

In-situ enhanced bioremediation of groundwater via injection of a Hydrogen Release Compound (HRC®) was selected as an Interim Remedial Measure for Site groundwater. As detailed in Section 8.0, the IRM was completed in November 2006 and consisted of HRC® injection within two areas of the Site (i.e., vicinity of MW-14 and MW-19). Approximately 600 lbs of HRC® product was directly injected into the contaminated groundwater at each plume location using small diameter probe rods and a high-capacity injection pump. Using 10-foot by 10-foot grid treatment spacing, a total of 36 delivery points were used to treat the areas surrounding monitoring wells MW-14 and MW-19.

Subsequent to HRC injection, groundwater monitoring was conducted to monitor the concentrations of chlorinated VOCs. The concentrations of cVOCs decreased at both monitoring locations subsequent to HRC injection; however residual VOC concentrations in groundwater remain. This evaluation was based on baseline VOCs concentrations and four subsequent groundwater monitoring events over an approximate 7 month period. Long-term groundwater monitoring will be included as an institutional control.

## 9.6 Alternatives Evaluation

The two alternatives evaluated below that assume use of the Site for commercial purposes are: Alternative 1 – No Further Action and Alternative 2 – Institutional and Engineering Controls. In addition, Alternative 3 – Unrestricted Use – has been evaluated to provide a basis for comparison to commercial use alternatives.

### ***9.6.1 Alternative 1: No Further Action***

“No further action” is defined as performing no additional cleanup activities at the Site beyond that which was already performed at the Site as an IRM (i.e., approximately 32 pounds of HRC® was injected at 36 boring locations at a depth of 4 to 12 fbs). The efficacy of the No Further Action alternative will continue to be monitored via the Long-Term Groundwater Monitoring Plan.

***Overall Protection of Public Health and the Environment*** – The IRM achieved a reduction in the concentration of some of the VOCs in groundwater; however, groundwater concentrations remain above GWQS/GV. Therefore, the No Further Action alternative is currently not protective of human health and the environment and does not achieve the

RAOs for the Site; however, concentrations will likely continue to decrease with time. Groundwater monitoring will continue until VOC concentrations are below GWQS/GV.

**Compliance with SCGs** – The IRM was performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria (SCGs). Since groundwater concentrations remain above GWQS/GV, the No Further Action alternative does not satisfy this criterion.

***Long-Term Effectiveness and Permanence*** – The IRM did not achieve reduction in VOC groundwater concentrations below GWQS/GV. Continued groundwater monitoring will be used to assess whether the No Further Action alternative provides long-term effectiveness and permanence.

***Reduction of Toxicity, Mobility, or Volume with Treatment*** – The IRM reduced the toxicity, mobility, and volume of Site groundwater contamination; however, VOC concentrations remain above GWQS/GV.

***Short-Term Effectiveness*** – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the IRM were effectively controlled. The potential for chemical exposures and physical injuries were reduced through safe work practices; proper personal protection; environmental monitoring; establishment of work zones and Site control; and appropriate decontamination procedures.

***Implementability*** – No technical or action-specific administrative implementability issues were associated with implementation of the IRM.

***Cost*** – The capital cost of the completed IRM was approximately \$65,000. The annual groundwater monitoring costs are presented with the institutional and engineering controls in Section 9.6.2.

**Community Acceptance** – A fact sheet describing the work proposed in IRM Work Plan was sent to those on the Brownfield Site Contact List and made available for comment. No comments opposing the work were received.

### ***9.6.2 Alternative 2: Institutional and Engineering Controls***

An institutional control is a non-physical restriction on the use of real property with the objective of limiting human or environmental exposure to impacted media. Institutional controls would involve use restrictions on all or portions of the Site to restrict or prevent groundwater use and to dictate future use (e.g., to prevent land use in a residential capacity).

Engineering controls would include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Engineering controls include pavement, caps, covers, subsurface barriers, slurry walls, building ventilation systems, fences, and access controls.

As required by the BCP, maintenance of existing institutional controls (e.g., environmental easements to prevent groundwater use) and any engineering controls (e.g., vapor barriers) must be certified annually. The annual certification would include assurance that the institutional and engineering controls have not been altered and remain effective. The institutional and engineering controls for this Site would include:

- An Environmental Easement to preclude the use of Site groundwater for potable purposes.
- An Environmental Easement that limits use of the Site for commercial or industrial purposes (restricted use).
- A Soil/Fill Management Plan (SFMP) to assure soil/fill removed from the Site is handled in a safe and environmentally responsible manner and provides methods for addressing unknown areas of impact, if discovered.
- An active sub-slab depressurization (ASD) system and foundation vapor barrier for new buildings and structures designed for regular occupancy.
- A Long-Term Groundwater Monitoring Plan (LTGMP) to monitor the effectiveness of the HRC® injections in reducing VOC concentrations below GWQS/GV.

***Protection of Human Health and the Environment*** – Groundwater use restrictions would be protective of future human health risk due to groundwater ingestion, as it would not allow groundwater use for potable purposes. The vapor barrier and ASD

system would protect the health of future building occupants. The SFMP would protect future Site workers from potential exposure to Site contaminants in the soil. The LTGMP would provide a means for determining the efficacy of the in-situ groundwater treatment.

***Compliance with SCGs*** – This alternative may or may not result in on-site groundwater obtaining cleanup objectives. VOC concentrations decreased following HRC® injections and will likely continue to decrease over time; however, the timeframe for this alternative to meet SCGs for groundwater cannot be determined at this time. This alternative will satisfy the RAOs for the Site through enforcement of the Environmental Easement and operation of the ASD system.

***Long-Term Effectiveness and Permanence*** – The institutional and engineering controls would reduce the potential for exposure to impacted groundwater and vapor on the Site. Groundwater monitoring would determine whether the HRC® injections reduced the concentrations of VOC-impacted groundwater below GWQS/GV. The Environmental Easements restricting groundwater use for potable purposes and land use would be binding for the current property owner and all subsequent property owners and occupants.

***Reduction of Toxicity, Mobility, or Volume*** – This alternative provides no reduction in toxicity, mobility, or volume of constituents of concern in soil/fill or groundwater except for that which was accomplished with the HRC® injections.

***Short-Term Effectiveness and Impacts*** – There would be no additional risks posed to the community, Site workers, or the environment with implementation of this alternative. The alternative would become effective once the environment easement restricting groundwater and land use have been obtained and the ASD system and vapor barrier have been installed during Site redevelopment.

***Implementability*** – No significant technical implementability issues are associated with this alternative. The ASD system would be designed by a licensed professional engineer. With respect to administrative tasks, the Environmental Easements: must be created by the

property owner in writing and filed in the appropriate county; must be granted to New York State; and can only be extinguished or amended in writing by the NYSDEC Commissioner.

**Cost** – The estimated capital cost for the institutional and engineering controls is \$40,200. Annual OM&M costs for groundwater monitoring, easement certification, and ASD operation are estimated to be \$3,500 for an estimated 30-year present worth cost of \$94,000 (see Table 8).

### ***9.6.3 Alternative 3: Unrestricted Use***

An Unrestricted Use alternative would necessitate remediation of all soil where concentrations exceed the unrestricted use SCO per 6NYCRR Part 375. At a minimum, this would involve additional remedial work in two areas (see Figure 6). For Unrestricted Use scenarios, excavation and off-site disposal of impacted soil is generally regarded as the most applicable remedial measure, because institutional controls cannot be used to supplement the remedy. As such, the Unrestricted Use alternative assumes that Area 1 would be excavated to approximately 12 fbgs and Area 2 would be excavated to approximately 10 fbgs for disposal at an off-site commercial solid waste landfill. The estimated total volume of impacted soil that would be removed from these areas is approximately 5,000 cubic yards. Since removing the VOC-impacted saturated soil would eliminate the source of groundwater contamination, it is assumed that no groundwater remediation or long-term monitoring would be required. Groundwater infiltration and surface water runoff into the excavation would require treatment prior to discharge to the sanitary sewer.

***Overall Protection of Public Health and the Environment*** – The Unrestricted Use alternative would achieve the corresponding Part 375 SCOs, which are designed to be protective of human health under any reuse scenario.

**Compliance with SCGs** – The Unrestricted Use alternative would need to be performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria. All soil with VOC concentrations above Part 375 Unrestricted SCOs would be removed; therefore, this alternative complies with the SCGs. Groundwater monitoring following soil excavation would be required to determine if GWQS/GV have been met.



***Long-Term Effectiveness and Permanence*** – The Unrestricted Use alternative would achieve removal of all residual impacted soil; therefore, no soil exceeding the unrestricted use SCO's would remain on the Site and groundwater concentrations would likely be reduced below GWQS/GV. As such, the Unrestricted Use alternative would provide long-term effectiveness and permanence. Post-remedial monitoring and certifications would not be required.

***Reduction of Toxicity, Mobility, or Volume with Treatment*** – Through removal of all impacted soil, the Unrestricted Use alternative would permanently and significantly reduce the toxicity, mobility, and volume of Site contamination.

***Short-Term Effectiveness*** – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the Unrestricted Use alternative are not considered significant and are controllable. The potential for chemical exposures and physical injuries would be reduced through: safe work practices; proper personal protective equipment (PPE); environmental monitoring; establishment of work zones and Site control; and appropriate decontamination procedures.

***Implementability*** – No technical implementability issues would be encountered in construction of the Unrestricted Use alternative, with the exception of excavation dewatering. Administrative implementability issues may include the need for rezoning of the area, since residential, agricultural, and other unrestricted uses are not consistent with current zoning or the reasonably anticipated future use of the Site as a commercial establishment.

***Cost*** – The capital cost of implementing an Unrestricted Use alternative (post-IRM) is estimated at \$722,000 (see Table 9). Post-remedial groundwater monitoring and annual certification costs would not be incurred.

***Community Acceptance*** – Community acceptance will be evaluated based on comments received from the public in response to Fact Sheets and other planned Citizen Participation activities.



## 9.7 Recommended Remedial Measure

Based on the above screening and the conclusions of the remedial investigation and interim remedial measures, the Institutional and Engineering Controls alternative fully satisfies the remedial action objectives and is fully protective of human health and the environment. Accordingly, the completed IRM with implementation of the institutional and engineering controls is the recommended final remedial approach for the Site.

## 10.0 REFERENCES

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2. Nature's Way Environmental Consultants & Contractors, Inc. 2004. *Subsurface Phase II Environmental Assessment at Vacant Property located at 7503 Niagara Falls Boulevard, Niagara Falls, New York*. September 20.
3. Nature's Way Environmental Consultants & Contractors, Inc. 2005. *Focused Phase II Type Environmental Investigation of Vacant Property located at 7503-75555 Niagara Falls Boulevard, Niagara Falls, New York*. May 18.
4. Benchmark Environmental Engineering & Science, PLLC. 2005. *Downgradient Groundwater Characterization Letter Report at 7503 Niagara Falls Boulevard, Niagara Falls, New York*. August 11.
5. Benchmark Environmental Engineering & Science, PLLC. 2005. *Supplemental Site Characterization Adjacent to Site Study, Niagara Falls, New York*. October.
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9. Benchmark Environmental Engineering & Science, PLLC. 2007. *Off-Site Soil Gas Sampling Work Plan, 7503 Niagara Falls Boulevard Site, Niagara Falls, New York*. June.
10. Benchmark Environmental Engineering & Science, PLLC. 2006. *Interim Remedial Measures Work Plan, 7503 Niagara Falls Boulevard Site, Niagara Falls, New York*. October.
11. New York State Department of Health. 2006. *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York*. October.

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# TABLES

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**TABLE 1**
**GROUNDWATER ELEVATION DATA SUMMARY**

**RI/AAR/IRM Report**  
**7503 Niagara Falls Boulevard Site**  
**GLR Holdings**

Monitoring Well Designation	Top of Casing Elevation <sup>1</sup>	Top of Riser Elevation <sup>1</sup> (Reference Point)	Water Level from TOR, ft below Ref Pt. <sup>2</sup>	Groundwater Surface Elevation, ft
MW - 1	495.69	495.35	6.04	489.31
MW - 2	496.61	495.96	6.62	489.34
MW - 3	495.80	495.26	Dry	Dry
MW - 4	495.86	495.27	5.63	489.64
MW - 5	497.23	496.68	7.84	488.84
MW - 14	497.02	496.64	3.46	493.18
MW - 17	497.19	496.75	2.57	494.18
MW - 19	496.24	495.87	4.68	491.19

**Notes:**

1. Top of casing and riser elevations based upon an assumed datum of 500.00 fmsl.
2. Water levels measured and recorded on June 23, 2006

**TABLE 2**  
**SOIL ANALYTICAL DATA SUMMARY**

RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings

Parameter <sup>1</sup>	Sampling Location				SCO UNRESTRICTED USE <sup>3</sup>	SCO RESTRICTED-COMMERCIAL <sup>3</sup>
	MW - 3 (2.0-4.0 ft)	MW-4 (2.0-4.0 ft)	MW-4 (2.0-4.0 ft) <sup>2</sup>	MW-5 (4.0-6.0 ft)		
TCL VOCs (ug/kg)						
2- Butanone	9 J	7 J	6 J	ND	NS	500,000**
TCL SVOCs (ug/kg)						
Phenol	ND	ND	24 J	ND	330	500,000**
Phenanthrene	ND	52 J	110 J	ND	100,000	500,000**
Anthracene	ND	ND	19 J	ND	100,000	500,000**
Carbazole	ND	ND	22 J	ND	NS	NS
Di-n-butyl phthalate	ND	ND	15 J	ND	NS	NS
Fluoranthene	ND	97 J	210 J	ND	100,000	500,000**
Pyrene	ND	100 J	220 J	ND	100,000	500,000**
Benzo(a)anthracene	ND	48 J	120 J	ND	1,000	11,000
Chrysene	ND	56 J	150 J	ND	1,000	56,000
Bis(2-ethylhexyl) phthalate	ND	ND	ND	110 BJ	NS	NS
Di-n-octyl phthalate	ND	ND	24 J	ND	NS	NS
Benzo(b)fluoranthene	ND	100 J	240 J	ND	1,000	5,600
Benzo(k)fluoranthene	ND	110 J	270 J	ND	800	56,000
Benzo(a)pyrene	ND	52 J	130 J	ND	1,000	1,000
Indeno(1,2,3-cd)pyrene	ND	49 J	120 J	ND	500	5,600
Dibenzo(a,h)anthracene	ND	16 J	43 J	ND	330	560
Benzo(ghi)perylene	ND	23 J	49 J	ND	100,000	500,000**
TAL METALS (mg/kg)						
Aluminum - Total	12600	11500	9950	9400	NS	NS
Arsenic - Total	10.8 N*J	3.7 N*J	2.1 N*J	4.1 N*J	13,000	16
Barium - Total	76.6 *	82.4 *	75.5 *	49.4 *	350,000	400
Beryllium -Total	1 *	0.63 *	0.48 B*	0.47 B*	7,200	590
Cadmium - Total	0.24 B	0.21 B	0.26 B	0.16 B	2,500	9.3
Calcium - Total	3180 E*J	5300 E*J	6890 E*J	17600 E*J	NS	NS
Chromium - Total	18.5	16.2	15.8	14.6	30,000	1,500
Cobalt - Total	9.5 E*J	7.2 E*J	5.4 BE*J	6.9 E*J	NS	NS
Copper - Total	28.1 *	17.2 *	13 *	19.5 *	50,000	270
Iron - Total	28800 E*J	18100 E*J	11500 E*J	15900 E*J	NS	NS
Lead - Total	17.6 N*J	14.7 N*J	16.3 N*J	8.2 N*J	63,000	1000
Magnesium - Total	3910 E*J	3920 E*J	3710 E*J	5390 E*J	NS	NS
Manganese - Total	150 ENJ	111 ENJ	102 ENJ	176 ENJ	1,600,000	10,000
Nickel - Total	23.7 EJ	18.1 EJ	15.4 EJ	18.3 EJ	30,000	310
Potassium - Total	1410 *	796 *	572 B*	1560 *	NS	NS
Sodium - Total	337 B	75.8 B	44.8 B	144 B	NS	NS
Vanadium - Total	59 E*J	21.9 E*J	15.6 E*J	20.6 E*J	NS	NS
Zinc - Total	59.7 EN*J	62 EN*J	64.9 EN*J	46.2 EN*J	109,000	10,000

**Notes:**

- Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
- Blind Duplicate and MS/MSD collected at monitoring well MW-4 (2.0-4.0 ft).
- Values per NYSDEC draft Part 375 Soil Cleanup Objectives.

**Definitions:**

- J = Indicates a value greater than or equal to the instrument detection limit but less than the sample quantitation limit.
- B = Analyte was detected in the associated blank as well as in the sample.
- E = For inorganic data, indicates a value estimated or not reported due to the presence of interferences.
- N = For inorganic data, indicates spike sample recovery is not within the quality control limits.
- ND = parameter not detected above laboratory detection limit.
- NJ = parameter has been 'tentatively identified' with its approximate concentration.
- NA = Not Applicable.
- SB= Site Background.
- NS = No soil cleanup objective listed in NYSDEC draft part 375 Restricted Use Soil Cleanup Objectives.
- \* = For inorganic data, indicates the spike or duplicate analysis is not within the quality control limits.
- \*\* = The SCOs for commercial use are capped at a maximum value of 500 ppm.

Shaded cells indicate exceedances of unrestricted SCOs (none).



TABLE 3  
SUMMARY OF GROUNDWATER ANALYTICAL DATA

RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings

Parameter <sup>1</sup>	Sampling Event/Location																GWQS/GV <sup>4</sup>	
	Subsurface Phase II Environmental Assessment (August 2004)	Focused Phase II Type Environmental Investigation (May 2005)			Downgradient Groundwater Characterization		Remedial Investigation (June 2006)											
		EP/PZ 8	MW 14	MW 17	MW 19	MW-1 (8/23/05)	MW-2 (8/23/05)	MW - 1 (6/23/06)	MW-2 (6/23/06)	MW-4 (6/23/06)	MW-5 (6/23/06)	MW - 14 <sup>2</sup> (6/23/06)	MW-17 (6/23/06) <sup>6</sup>	MW-17 (7/13/06) <sup>6</sup>	MW-19 (6/23/06) <sup>6</sup>	MW-19 (7/13/06) <sup>6</sup>		MW-19 (6/23/06) <sup>3</sup>
VOCs (ug/L)																		
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	7 J	7 J	7 J	ND	ND	NA	ND	NA	ND	5	
Carbon Disulfide	16.3	ND	ND	ND	0.96 J	0.86 J	ND	ND	ND	17 J	ND	ND	NA	ND	NA	ND	NS	
Vinyl chloride	ND	192	ND	12.2	ND	ND	ND	ND	ND	ND	910 D	ND	NA	58	NA	54	2	
Acetone	ND	ND	ND	ND	4.4 J	6.3 J	ND	ND	ND	ND	ND	ND	NA	ND	NA	ND	50*	
1,1-Dichloroethene	ND	32	ND	ND	ND	ND	ND	ND	ND	ND	83	ND	NA	1 J	NA	1 J	5	
Trichloroethene	31	411	ND	ND	ND	ND	ND	ND	ND	ND	540 D	2 J	NA	1 J	NA	ND	5	
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9 J	ND	NA	ND	NA	ND	1	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1J	ND	NA	ND	NA	ND	1	
Tetrachloroethene	10.1	760	5.09	ND	ND	ND	ND	ND	ND	ND	640 D	4 J	NA	1 J	NA	ND	5	
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND	NA	ND	NA	ND	5	
trans-1,2-Dichloroethene	4.1	351	ND	ND	ND	ND	ND	ND	ND	ND	1300 D	2 J	NA	ND	NA	ND	5	
cis-1,2-Dichloroethene	20.5	316	ND	10	ND	ND	ND	ND	ND	ND	1100 D	1 J	NA	30	NA	30	5	
Total and Soluble Metals <sup>4,6</sup> (ug/L)																		
Iron, Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56300	NA	12600	NA	28600	NA	300	
Iron, Soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	351	NA	21.2 B	NA	584	NA	300	
Manganese, Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2420	NA	318	NA	704	NA	300	
Manganese, Soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29.1	NA	1.2 B	NA	199	NA	300	
Wet Chemistry (units as indicated)																		
Chemical Oxygen Demand (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA	NS	
Nitrate (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.49	NA	3.6	NA	ND	NA	10	
Sulfate (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	888	NA	75.1	NA	157	NA	250	
Field Measurements (units as indicated)																		
pH (units)	NA	NA	NA	NA	NA	NA	6.83	6.75	7.06	7.03	7.09	7.08	6.71	6.74	9.36	9.48	6.5 - 8.5	
Temperature (°C)	NA	NA	NA	NA	NA	NA	17.2	17.2	18.1	17.6	21.2	22.7	20.1	20.2	17.8	18.5	NA	
Specific Conductance (uS)	NA	NA	NA	NA	NA	NA	1442	1411	1136	914.1	665.3	671.1	1020	1021	1255	1252	NA	
Turbidity (NTU)	NA	NA	NA	NA	NA	NA	240	169	169	30.7	49.4	38.6	35.1	63.1	>1000	>1000	50**	
ORP (mV)	NA	NA	NA	NA	NA	NA	-76	-68	-94	-83	10	20	42	43	-84	-72	NA	

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. MS/MSD collected at monitoring well MW-14.
3. Blind Duplicate collected at monitoring well MW-19 (6/23/06).
4. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.
5. Groundwater collected from well MW-14, MW-17 (7/13/06), and MW-19 (7/13/06) were analyzed for soluble iron and manganese, in addition to TAL Metals.
6. MW-17 and MW-19 had insufficient volumes to collect the volume for the full parameter list. VOCs and field measurement volumes were collected on 6/23/06. Metals and wet chemistry volumes were collected on 7/13/06.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.  
D = Diluted sample result.  
ND = parameter not detected above laboratory detection limit.  
J = parameter has been identified with its approximate concentration.  
" " " = Groundwater Quality Guidance Value  
" \* " = field threshold value; when exceeded, field filtered metals sample is collected (i.e., dissolved metals).  
NA = Not Applicable  
NS = No GWQS/GV listed in 6 NYCRR Part 703.

**BOLD** = Analytical result exceeds individual GWQS/GV.



**TABLE 4**  
**SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS**

**RI/AAR/IRM Report**  
**7503 Niagara Falls Boulevard Site**  
**GLR Holdings**

Parameter <sup>1</sup>	Sample Location			
	SG-MW-14 (1)	SG-MW-14 (2)	SG-MW-19 (1)	SG-MW-19 (2)
<b><i>TCL Volatile Organic Compounds (VOCs) - ug/m<sup>3</sup></i></b>				
1,3-Butadiene	ND	24	ND	7.3
Acetone	23	19	ND	64
Carbon Disulfide	ND	3.1	40	97
Dichlorodifluoromethane	4.6	3.7	ND	ND
1,1-Dichloroethene	1.2	ND	52	20
trans 1,2-Dichloroethene	7.9	ND	110	44
cis 1,2-Dichloroethene	12	ND	230	110
n-Hexane	22	130	270	35
Methyl Ethyl Ketone	1.8	ND	ND	ND
Cyclohexane	6.9	55	24	7.6
Benzene	3.5	28	8.9	5.1
n-Heptane	16	70	82	12
Toluene	9.8	31	6.8	2.6
Tetrachloroethene	2.2	ND	240	53
Trichloroethene	8.1	ND	520	170
Trichlorofluoromethane	2.4	2.1	ND	ND
Ethylbenzene	1.7	6.9	ND	ND
Xylene (m,p)	6.1	27	13	ND
Xylene (o)	2	8.3	4.8	ND
Xylene (total)	8.3	35	17	ND
Styrene	0.85	ND	ND	ND
Vinyl Chloride	5.6	ND	380	140

**Notes:**

1. Only those compounds detected above the laboratory reporting limit are presented in this table.

**Definitions:**

ND= Not detected above laboratory detection limits.

**TABLE 5**  
**SUMMARY OF OFF-SITE SOIL VAPOR ANALYTICAL RESULTS**

**RI/AAR/IRM Report**  
**7503 Niagara Falls Boulevard Site**  
**GLR Holdings**

Parameter <sup>1</sup>	Sample Location			
	GLR - SV - 658A	GLR - SV - 658B	GLR - SV - 668A	GLR - SV - 668B
<b><i>TCL Volatile Organic Compounds (VOCs) - ug/m<sup>3</sup></i></b>				
Acetone	160	ND	4800	3300
Methyl Ethyl Ketone	ND	ND	830	530
Methyl Butyl Ketone	ND	ND	ND	82
Toluene	7.9	ND	ND	ND
Tetrachloroethene	22	14	ND	ND

**Notes:**

1. Only those compounds detected above the laboratory reporting limit are presented in this table.

**Definitions:**

ND= Not detected above laboratory detection limits.





**TABLE 6**

**COMPARISON OF CHLORINATED VOC CONCENTRATIONS  
TO HEALTH-BASED SOIL CLEANUP OBJECTIVES**

**RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings**

<b>Parameter</b>	<b>Highest Exposure Point Concentration<sup>1</sup></b>	<b>USEPA Health Based RSCO</b>	<b>Part 375 Commercial SCO (ppm)<sup>3</sup></b>
<b>Chlorinated VOCs (ppm)</b>			
Tetrachloroethene	1.43	14	150
Trichloroethene	1.3	64	200
cis-1,2-Dichloroethene	3.45	--	970
trans-1,2-Dichloroethene	2.75	2000	1700
Vinyl chloride	4.17	N/A	13
1,1-Dichloroethene	0.0216	12	5500
1,1,2-Trichloroethane	0.16	--	--

**Notes:**

1. Concentrations observed during Phase II Environmental Investigation, May 2005.
2. USEPA Health Based RSCO are per NYSDEC TAGM 4046 "Determination of Soil Cleanup Objectives and Cleanup Levels."
3. NYSDEC Brownfield Cleanup Program Development of Soil Cleanup Objectives, June 2004 Technical Support Document, Table 5.3.6-2 Chronic Human Health-Based Soil Cleanup Objectives.

N/A = USEPA Health-Based value not available.

-- = Constituent not included in table.

TABLE 7

SUMMARY OF IRM GROUNDWATER ANALYTICAL DATA

RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings

Parameter <sup>1</sup>	MW-14					MW-19					GWQS/GV <sup>3</sup>
	Baseline	Dec-06	Jan-07	Mar-07	Jun-07	Baseline	Dec-06	Jan-07	Mar-07	Jun-07	
Vinyl chloride	910 D	380	150	320	540 E	58	24	22	24	15	2
1,1-Dichloroethene	85 D	140 J	21 J	21 J	60 J	1 J	ND	ND	ND	ND	5
Trichloroethene	540 D	1500 J	300	150	330	1 J	ND	2 J	ND	ND	5
Tetrachloroethene	640	480	120	98	35	1 J	ND	ND	ND	ND	5
trans-1,2-Dichloroethene	1300 D	520	240	500	1500 E	ND	ND	ND	ND	ND	5
cis-1,2-Dichloroethene	1100 D	570	220	370	850 E	30	28	26	12	38	5
Total cVOCs	4575	3590	1051	1459	3315	91	52	50	36	53	NA

Notes:

1. Chlorinated volatile organics only are shown.
2. Baseline concentrations were collected in June 2006. Hydrogen Release Compound (HRC) injection was completed in November 2006.
3. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.  
D = Diluted sample result.  
E = Estimated value; result exceeds the upper concentration of the calibration range.  
ND = parameter not detected above laboratory detection limit.  
NA = Not Applicable

TABLE 8

**COST ESTIMATE FOR REMEDIAL ALTERNATIVE 2  
INSTITUTIONAL AND ENGINEERING CONTROLS**

RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings

Item	Quantity	Units	Unit Cost	Total Cost
<b><u>Institutional Controls</u></b>				
Soil/Fill Management Plan	1	LS	\$ 4,500	\$ 4,500
Environmental Easements <sup>1</sup>	1	LS	\$ 10,000	\$ 10,000
Long-Term Groundwater Monitoring Plan <sup>2</sup>	1	LS	\$ 3,000	\$ 3,000
1st Year Groundwater Sampling/Reporting	2	Event	\$ 1,500	\$ 3,000
<b>Subtotal:</b>				<b>\$ 20,500</b>
<b><u>Engineering Controls</u> <sup>3</sup></b>				
6 mil Vapor Barrier (installed)	3800	SF	\$ 0.50	\$ 1,900
Subslab Depressurization System (installed)	1	LS	\$ 10,000	\$ 10,000
<b>Subtotal:</b>				<b>\$ 11,900</b>
<b>Subtotal Capital Cost</b>				<b>\$ 32,400</b>
Contractor Mobilization/Demobilization				\$ 2,000
Health and Safety				\$ 1,000
Engineering/Contingency (35%)				\$ 7,840
<b>Total Capital Cost</b>				<b>\$ 40,240</b>
<b><u>Annual Operation Maintenance &amp; Monitoring (OM&amp;M):</u></b>				
Groundwater Sampling <sup>3</sup> / Reporting	1	Event	\$ 1,500	\$ 1,500
Institutional and Engineering Controls Certification	1	Yr	\$ 2,000	\$ 2,000
<b>Total Annual OM&amp;M Cost</b>				<b>\$ 3,500</b>
Number of Years ( n ):				30
Interest Rate ( i ):				5%
p/A value:				15.3725
<b>OM&amp;M Present Worth (PW):</b>				<b>\$ 53,804</b>

**Total Present Worth (PW): Capital Cost + OM&M PW**

**\$ 94,044**

**Notes:**

1. Environmental easements for groundwater and soil use restrictions not included in Engineering/Contingency costs.
2. Assumes building will incorporate slab-on-grade construction with gravel sub-base to facilitate vapor extraction.
3. Annual sampling of new well at former location of MW-14 for analysis of VOCs.





TABLE 9

**COST ESTIMATE FOR REMEDIAL ALTERNATIVE 3  
UNRESTRICTED USE**

**RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings**

Item	Quantity	Units	Unit Cost	Total Cost
<b><u>Soil Removal</u><sup>1,2</sup></b>				
Soil Excavating & Hauling	4500	CY	\$ 10	\$ 45,000
Trans/Disposal (with non-haz/ contained-in desig.)	7200	TON	\$ 40	\$ 288,000
Verification Sampling	1	LS	\$ 1,500	\$ 1,500
Backfill (place/compact)	4500	CY	\$ 15	\$ 67,500
Groundwater Verification Sampling	1	LS	\$ 1,000	\$ 1,000
<b>Subtotal:</b>				<b>\$ 403,000</b>
<b><u>Groundwater Extraction During Excavation</u></b>				
Frac Tank Delivery/Rental/Removal	1	MO	\$ 2,000	\$ 2,000
Dual Bag Filter Unit Rental	1	MO	\$ 1,000	\$ 1,000
Disposable Bag Filters	30	EA	\$ 10	\$ 300
Misc. Pipe, Hose, poly sheeting	1	LS	\$ 1,500	\$ 1,500
<b>Subtotal:</b>				<b>\$ 4,800</b>
<b><u>Air Stripping Treatment</u></b>				
Basic System Model 1321-P <sup>3</sup>	1	EA	\$ 12,500	\$ 12,500
Installation	1	LS	\$ 3,500	\$ 3,500
Air Stripper Maintenance/Cleaning	1	LS	\$ 1,500	\$ 1,500
Air Stripper Performance Sampling	1	MO	\$ 500	\$ 500
Air Stripper Electrical	1	MO	\$ 300	\$ 300
<b>Subtotal:</b>				<b>\$ 18,300</b>
<b><u>Emissions Treatment</u></b>				
Thermal Oxidizer	1	LS	\$ 60,000	\$ 60,000
Oxidizer Installation	1	LS	\$ 10,000	\$ 10,000
Oxidizer Natural Gas	1	MO	\$ 1,800	\$ 1,800
<b>Subtotal:</b>				<b>\$ 71,800</b>
<b><u>Discharge to Sewer</u></b>				
Sewer Permit Fee	1	LS	\$ 500	\$ 500
Sewer User Fee (5 gpm)	100000	GAL	\$ 0.10	\$ 10,000
<b>Subtotal:</b>				<b>\$ 10,500</b>
<b>Subtotal Capital Cost</b>				<b>\$ 508,400</b>
Contractor Mobilization/Demobilization (5%)				\$ 25,420
Health and Safety (2%)				\$ 10,168
Engineering/Contingency (35%)				\$ 177,940
<b>Total Capital Cost</b>				<b>\$ 721,928</b>
<b><u>Annual Operation Maintenance &amp; Monitoring (OM&amp;M):</u></b>				
N/A				\$ -
<b>Total Annual OM&amp;M Cost</b>				<b>\$ -</b>
Number of Years ( n ):				30
Interest Rate ( i ):				5%
p/A value:				15.3725
<b>OM&amp;M Present Worth (PW):</b>				<b>\$ -</b>
<b>Total Present Worth (PW): Capital Cost + OM&amp;M PW</b>				<b>\$ 721,928</b>

**Notes:**

1. Assumes material is acceptable for disposal at a sanitary landfill based on conformance with NYSDEC "contained-in" criteria
2. Based on 1.6 Tons/CY
3. Includes controls, skid, and 2HP 150 scfm blower.

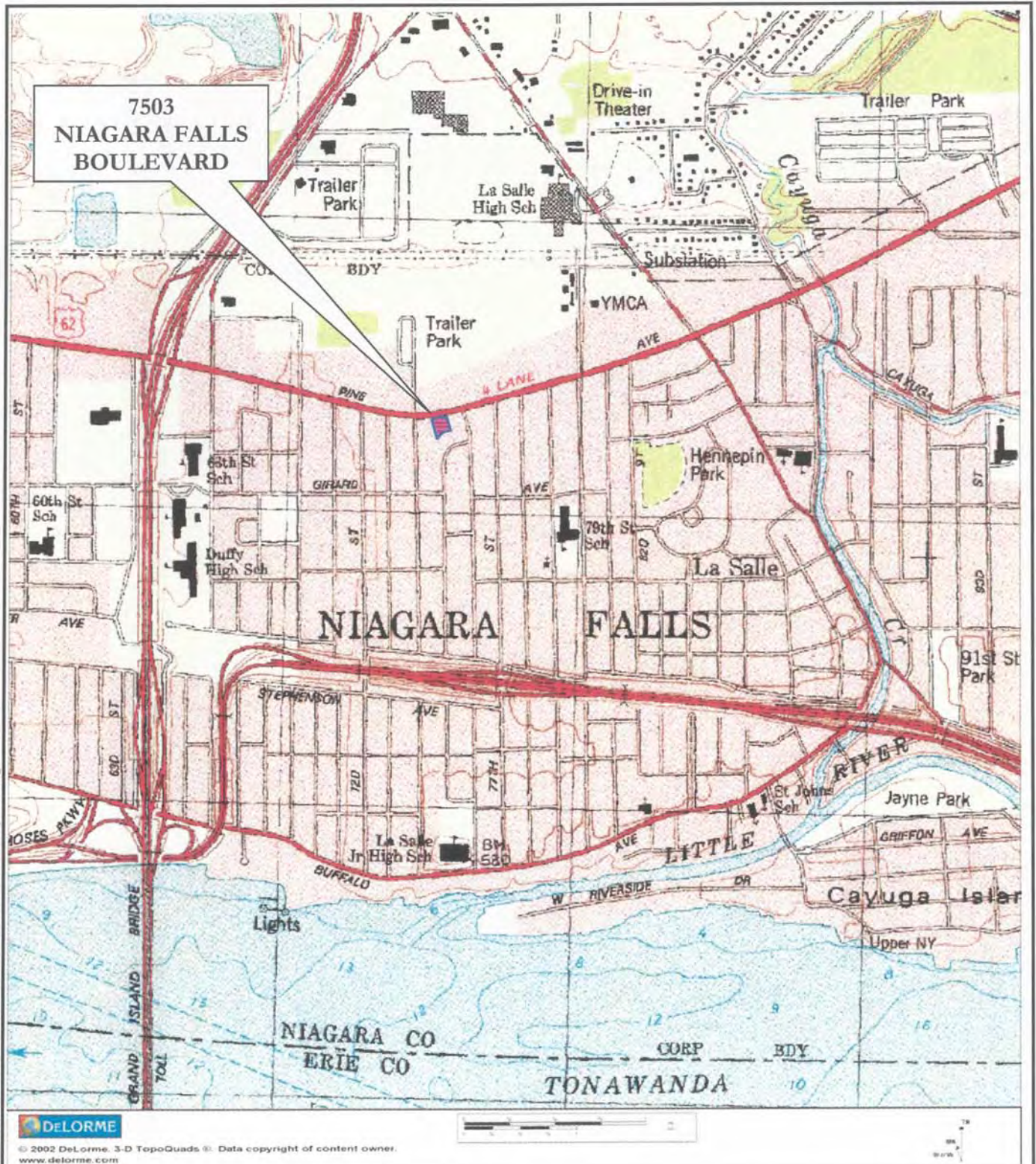
---

# FIGURES

---



**FIGURE 1**



726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH/NTM

## SITE LOCATION AND VICINITY MAP

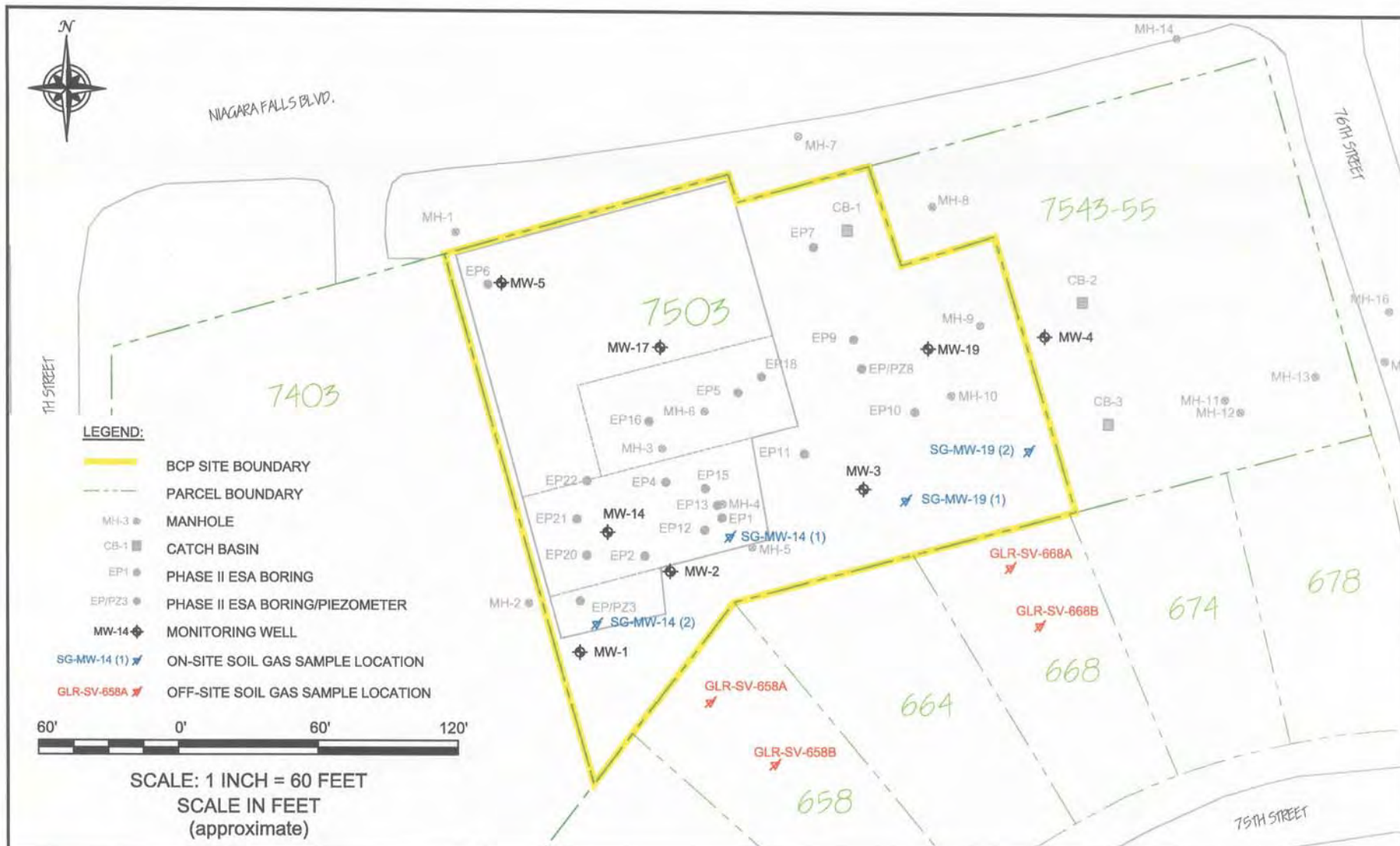
REMEDIAL INVESTIGATION REPORT

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

PREPARED FOR  
GLR HOLDINGS, LLC

FILEPATH: \\c:\data\benchmark\glr\_holdings\werry\svi\_report\Figure 1\ site location and vicinity map.dwg





726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH/NTM

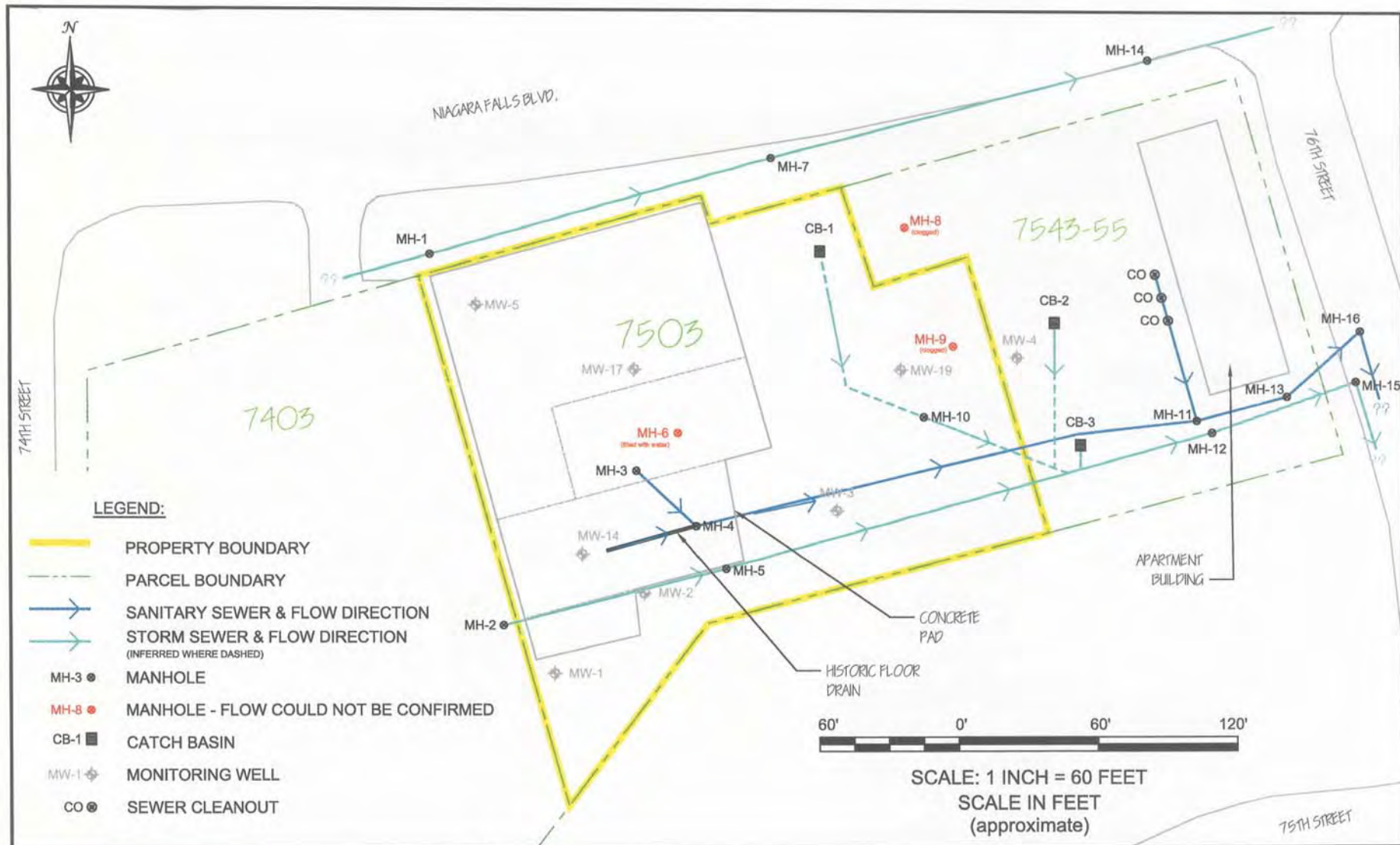
## SITE PLAN

### REMEDIAL INVESTIGATION REPORT

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

PREPARED FOR  
GLR HOLDINGS, LLC

FIGURE 2



726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 858-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH

## SEWER LAYOUT

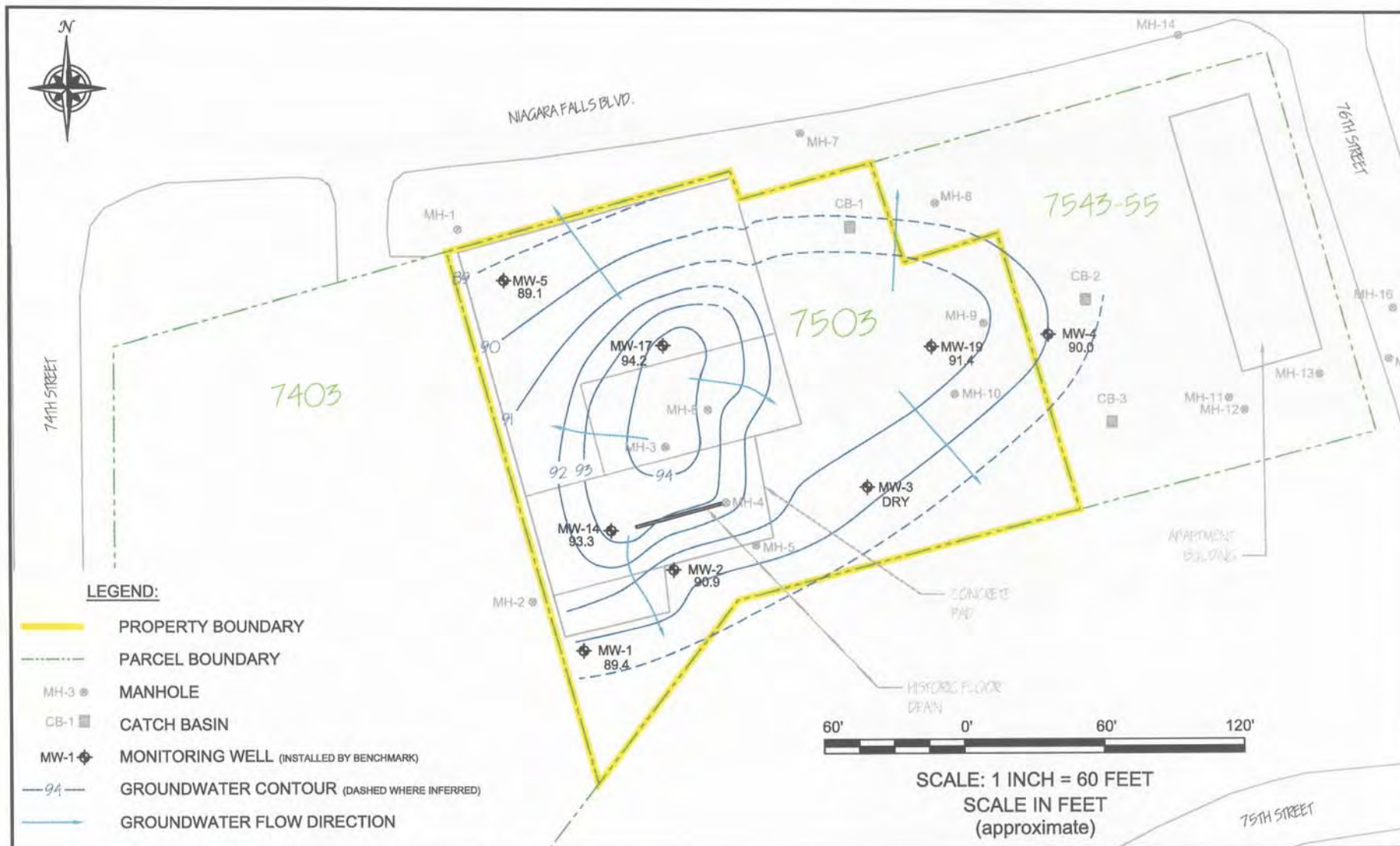
### REMEDIAL INVESTIGATION REPORT

NIAGARA FALLS, NEW YORK  
7503 NIAGARA FALLS BOULEVARD SITE

PREPARED FOR  
GLR HOLDINGS, LLC

FIGURE 3





726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH/NTM

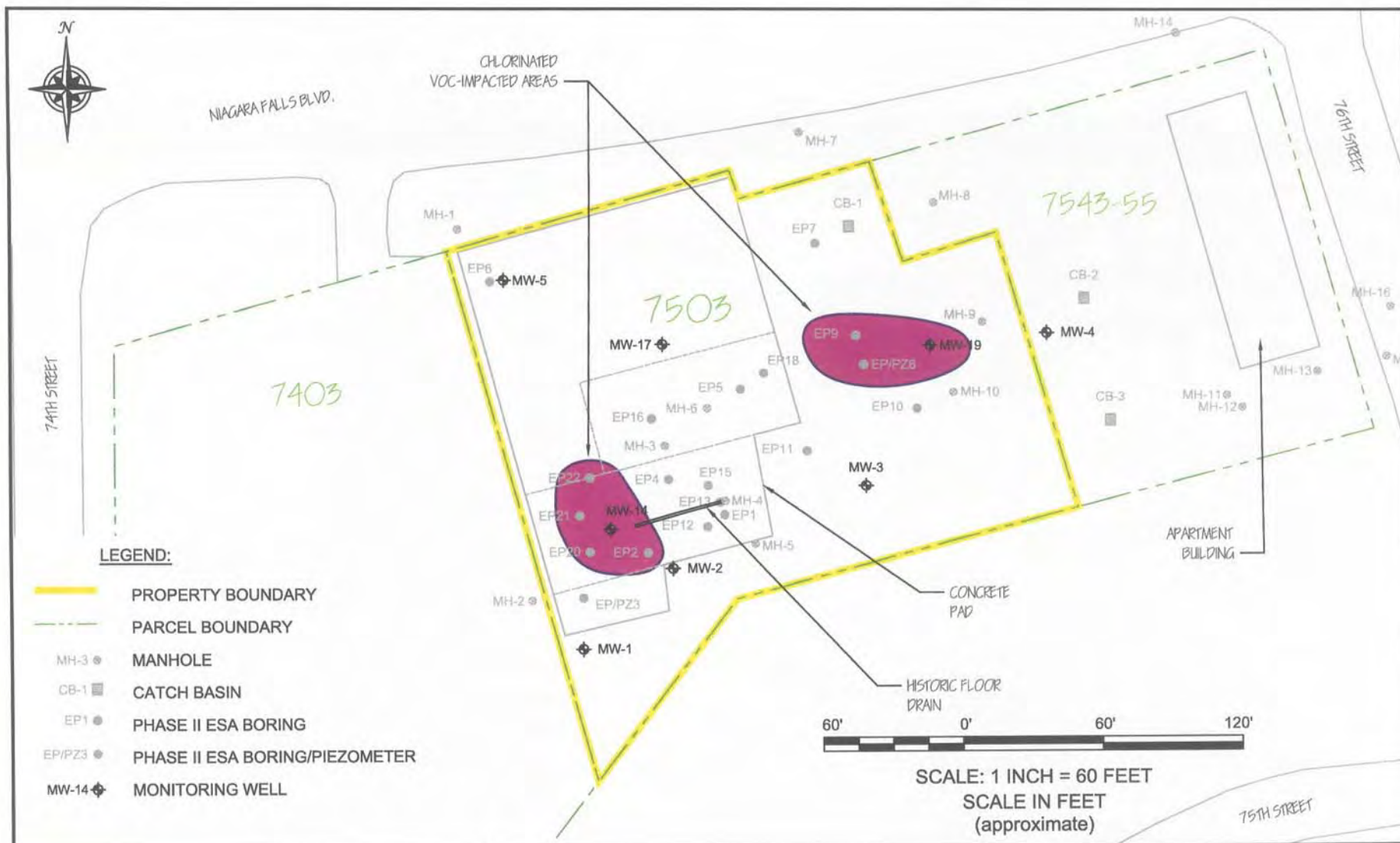
## GROUNDWATER ISOPOTENTIAL MAP

REMEDIAL INVESTIGATION REPORT

NIAGARA FALLS, NEW YORK  
7503 NIAGARA FALLS BOULEVARD SITE

PREPARED FOR  
GLR HOLDINGS, LLC

FIGURE 4



726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH

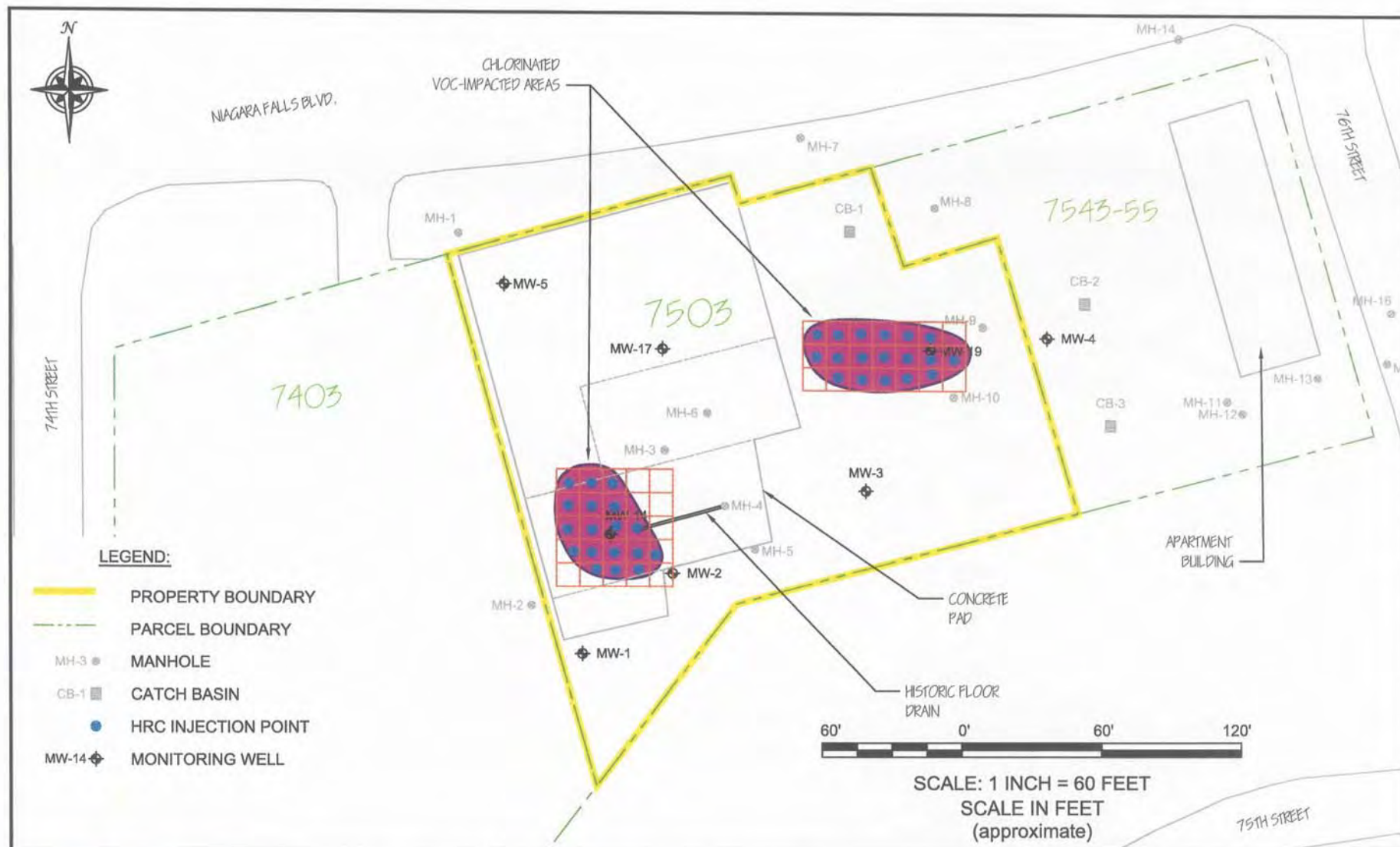
## CHLORINATED VOC-IMPACTED AREAS REMEDIAL INVESTIGATION REPORT

NIAGARA FALLS, NEW YORK  
7503 NIAGARA FALLS BOULEVARD SITE

PREPARED FOR  
GLR HOLDINGS, LLC

**FIGURE 5**





728 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH

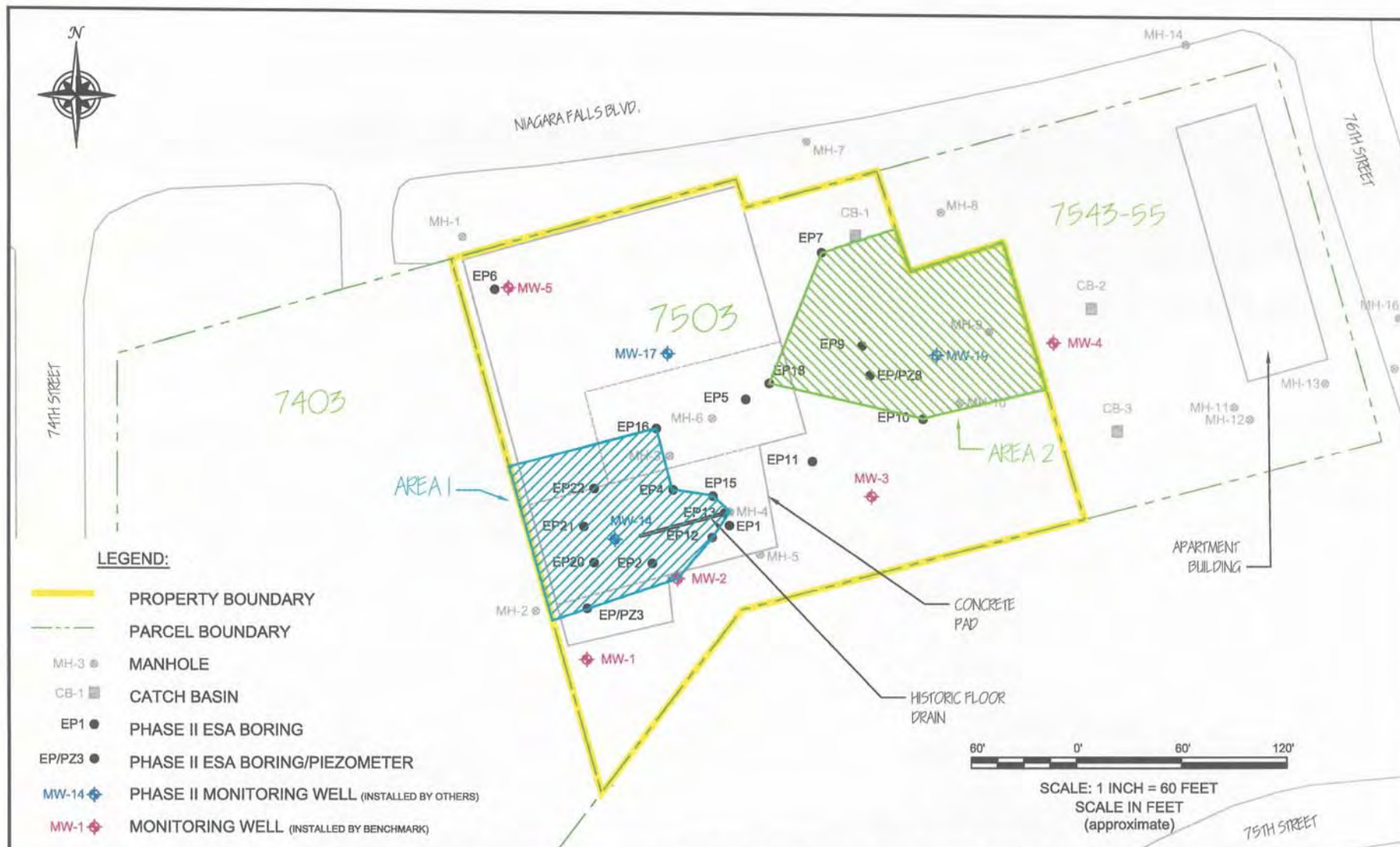
## IN-SITU HRC INJECTION MAP

### REMEDIAL INVESTIGATION REPORT

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

PREPARED FOR  
GLR HOLDINGS, LLC

**FIGURE 6**



726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 866-0599

PROJECT NO.: 0101-002-400

DATE: OCTOBER 2007

DRAFTED BY: BCH/NTM

## UNRESTRICTED USE ALTERNATIVE PROPOSED EXCAVATION AREAS

REMEDIAL INVESTIGATION REPORT

NIAGARA FALLS, NEW YORK  
7503 NIAGARA FALLS BOULEVARD SITE

PREPARED FOR  
GLR HOLDINGS, LLC

FIGURE 7

---

# APPENDIX A

---

## PREVIOUS INVESTIGATION SAMPLE RESULTS

**TABLE A-1**

**MAXIMUM CONCENTRATIONS OF COPCs BY MEDIA**

**Summary of Historical Data for Remedial Investigation Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings**

<b>Parameter</b>	<b>Soil<sup>1</sup> (ug/kg)</b>	<b>Groundwater<sup>2</sup> (ug/L)</b>
Tetrachloroethene	ND - 1,430 (EP-9)	ND - 760
Trichloroethene	ND - 1,300 (EP-14)	ND - 411
cis-1,2-Dichloroethene	ND - 3,450 (EP-21)	ND - 316
trans-1,2-Dichloroethene	ND - 2,750 (EP-21)	ND - 351
Vinyl chloride	ND - 4,170 (EP-21)	ND - 192
1,1-Dichloroethene	ND - 21.6 (EP-14)	ND - 32.0
1,1,2-Trichloroethane	ND - 160 (EP-14)	ND

**Notes:**

1. Concentrations observed in soil borings indicated, per Phase II Environmental Inv., May 18, 2005.
  2. All concentrations observed in MW-14, per Phase II Environmental Inv., May 18, 2005.
- ND = Not detected.



TABLE A-2

HISTORICAL SOIL ANALYTICAL DATA SUMMARY

RI/AAR/IRM Report  
7503 Niagara Falls Boulevard Site  
GLR Holdings

Sampling Event	Sampling Location									SCO UNRESTRICTED USE <sup>2</sup>	SCO RESTRICTED- COMMERCIAL <sup>2</sup>
	Subsurface Phase II Environmental Assessment (August 2004)		Focused Phase II Type Environmental Investigation (May 2005)								
Parameters	EP 2 (6.0- 8.0 fbgs)	EP 8 (8.0- 10.0 fbgs)	EP 9 (8.0- 10.0 fbgs)	EP 10 (8.0- 10.0 fbgs)	EP 14 (10.0- 12.0 fbgs)	EP 17 (6.0- 8.0 fbgs)	EP 20 (6.0- 8.0 fbgs)	EP 21 (4.0- 6.0 fbgs)	EP 22 (6.0- 8.0 fbgs)		
TCL VOCs (ug/kg)											
cis-1,2-Dichloroethene	257	148	149	83.7	539	ND	128	3450	249	250	500,000
1,1-Dichloroethene	ND	ND	ND	ND	21.6	ND	ND	ND	ND	330	500,000
trans-1,2-Dichloroethene	266	69.8	34.5	ND	224	ND	130	2750	187	190	500,000
Tetrachloroethene	ND	190	1430	ND	1210	ND	ND	ND	375	1300	150,000
1,1,2-Trichloroethane	ND	ND	ND	ND	160	ND	ND	ND	ND	--	--
Trichloroethene	9.96	154	760	31.3	1300	8.29	ND	ND	188	470	200,000
Vinyl Chloride	51.1	50.5	ND	ND	ND	ND	891	4170	71.2	20	13,000

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Soil Cleanup Objectives (SCOs) per June 2006 NYSDEC draft Part 375

Yellow shaded cells indicate exceedances of unrestricted SCOs.  
Red shaded cells indicate exceedances of restricted-commercial SCOs (none).

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## APPENDIX B

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### FIELD BOREHOLE AND MONITORING WELL LOGS



# FIELD BOREHOLE/MONITORING INSTALLATION LOG

<b>Project Name:</b>	7503 Niagara Falls Blvd.	<b>BORING NUMBER:</b>	<b>MW-3</b>
<b>Project Number:</b>	0101-002-400	<b>Location:</b>	7503 Niagara Falls Blvd.
<b>Client:</b>	GLR Holdings	<b>Start Date/Time:</b>	06/12/06 13:45
<b>Drilling Company:</b>	Earth Dimensions, Inc.	<b>End Date/Time:</b>	06/12/06 15:10
<b>Driller:</b>	Phil	<b>Logged By:</b>	TAB
<b>Helper:</b>	Harold Kleeveer	<b>Drilling Method:</b>	4.25" HSA
<b>Rig Type:</b>	CME 550	<b>Weather:</b>	Partly cloudy, low 50's wind 0-5 mph NW

Elevation (msl)	Depth (fbgs)	Sample No.	Blows (per 6")	SPT N-Value	Recovery	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, Percentage of Soil Type, Texture, Plasticity, Fabric, Bedding, Weathering/Fracturing, Odor, Other	PID Scan (ppm)	PID HDSP (ppm)	Well Construction Details
0.00	0	2							
		S1	3	7	0.9	<u>0.0 - 0.5</u> : Black, moist, asphalt from surface to 0.2', bedding below, angular gravel with little sand & silt, loose, FILL. <u>0.5 - 0.9</u> : Brown/ black moist sandy silt size material with trace slag, dense, loose, w/ white, black and gray mottling, over clayey silt, FILL.	0.0	0.0	
-2.00	2	4	5						
		S2	4	5	1.0	<u>2.0 - 3.0</u> : Gray, moist silty clay with little fine sand, firm, w/iron staining, reworked native soil, FILL.	0.0	0.0	
			6						
-4.00	4	6	2						
		S3	4	11	1.7	<u>4.0 - 4.2</u> : Same as S2 <u>4.2 - 4.6</u> : Gray, wet clayey silt with some fine sand and iron staining, CL. <u>4.6 - 5.7</u> : Reddish brown, moist silty clay with little fine sand, stiff to firm, w/gray sand lenses and veins, CL.	0.0	0.0	
			7						
-6.00	6	10	8						
		S4	12	30	1.7	<u>6.0 - 7.7</u> : Same as S3 4.6 - 5.7	0.0	0.0	
			18						
			28						
-8.00	8					EOB 8.0 fbgs.			
		S5		0					
-10.00	10								
		S6		0					
-12.00	12								
		S7		0					
-14.00	14								
		S8		0					
-16.00	16								
		S9		0					
-18.00	18								

<b>ABBREVIATIONS:</b>				MS = medium sand
C = coarse	fbgs = feet below ground surface	HSA = hollow stem auger	NA = not applicable	
CG = coarse gravel	FG = fine gravel	LP = low plasticity	NPF = not plastic fines	
CS = coarse sand	fmsl = feet above mean sea level	LWD = loose when disturbed	SA = sub-angular	
EOB = end of boring	FS = fine sand	M = medium	SR = sub-rounded	
F = fines or fine	HP = high plasticity	MP = medium plasticity	SS = split spoon	

# FIELD BOREHOLE/MONITORING INSTALLATION LOG

**Project Name:** 7503 Niagara Falls Blvd.

**BORING NUMBER:** MW-4

**Project Number:** 0101-002-400

**Location:** 7503 Niagara Falls Blvd.

**Client:** GLR Holdings

**Start Date/Time:** 06/14/06 8:05

**Drilling Company:** Earth Dimensions, Inc.

**End Date/Time:** 06/14/06 15:10

**Driller:** Phil

**Logged By:** TAB

**Helper:** Harold Kleeveer

**Drilling Method:** 4.25" HSA

**Rig Type:** CME 550

**Weather:** Sunny low 60's wind 0 - 5 mph west

Elevation (fmsl)	Depth (fbgs)	Sample No.	Blows (per 6")	SPT N-Value	Recovery	SAMPLE DESCRIPTION  USCS Classification: Color, Moisture Condition, Percentage of Soil Type, Texture, Plasticity, Fabric, Bedding, Weathering/Fracturing, Odor, Other	PID Scan (ppm)	PID HDSP (ppm)	Well Construction Details
0.00	0	S1	5 10 5 8	15	0.5	At grade asphalt ~ 0.2 inches thick. <u>0.2 - 0.4:</u> Dark Brown/Black, moist, loose, 80% NPF, 20% gravel, w/ cinders and pieces of concrete, FILL. <u>0.4 - 0.7:</u> Dark Brown, moist, reworked clay, 60% MPF, 40% sand, w/ trace coarse grained sand and iron staining, FILL.	0.0	0.0	<div> <div>2" Sch. 40 PVC riser</div> <div>2" Sch. 40 PVC riser</div> <div>2" Sch. 40 PVC riser</div> <div>2" Sch. 40 PVC riser</div> <div>2" Sch. 40 PVC riser</div> </div>
-2.00	2	S2	7 8 10 10	18	1.6	<u>2.0 - 2.3:</u> Same as S1 0.4 - 0.7 <u>2.3 - 3.6:</u> Moist medium gray to dark gray clayey silt with little sand, grading to sandy silt at 3.5' bg, firm, w/ organic layers, FILL, CL-SM	0.1	0.0	
-4.00	4	S3	5 4 10 12	14	1.7	<u>4.0 - 4.2:</u> same as S2 2.3 - 3.6, FILL. <u>4.2 - 4.6:</u> Wet medium w/orange mottling, gray silty sand, trace clay, loose when disturbed, with rootlets, SM <u>4.6 - 5.7:</u> Reddish brown, moist, silty clay with little fine sand, firm, w/ rootlets and gray sand lenses and partings, CL	0.0	0.0	
-6.00	2	S4	8 14 18 20	32	1.8	<u>6.0 - 7.7:</u> Same as S3 4.6 - 5.7 w/ yellowish brown moist sand lens in bottom of split spoon	0	0.0	
-8.00	4	S5		0		EOB 8.0 fbgs.			
-10.00	6	S6		0					<div> <div>MS = medium sand</div> <div>NA = not applicable</div> <div>NPF = not plastic fines</div> <div>SA = sub-angular</div> <div>SR = sub-rounded</div> <div>SS = split spoon</div> </div>
-12.00	8	S7		0					
-14.00	10	S8		0					
-16.00	12	S9							

**ABREVIATIONS:**

C = coarse  
CG = coarse gravel  
CS = coarse sand  
EOB = end of boring  
F = fines or fine  
fbgs = feet below ground surface  
FG = fine gravel  
fmsl = feet above mean sea level  
FS = fine sand  
HP = high plasticity

HSA = hollow stem auger  
LP = low plasticity  
LWD = loose when disturbed  
M = medium  
MP = medium plasticity

MS = medium sand  
NA = not applicable  
NPF = not plastic fines  
SA = sub-angular  
SR = sub-rounded  
SS = split spoon



# FIELD BOREHOLE/MONITORING INSTALLATION LOG

<b>Project Name:</b>	7503 Niagara Falls Blvd.	<b>BORING NUMBER:</b>	<b>MW-5</b>
<b>Project Number:</b>	0101-002-400	<b>Location:</b>	7503 Niagara Falls Blvd.
<b>Client:</b>	GLR Holdings	<b>Start Date/Time:</b>	06/12/06 10:55 AM
<b>Drilling Company:</b>	Earth Dimensions, Inc.	<b>End Date/Time:</b>	06/12/06 12:20 PM
<b>Driller:</b>	Phil	<b>Logged By:</b>	TAB
<b>Helper:</b>	Harold Kleeveer	<b>Drilling Method:</b>	4.25" HSA
<b>Rig Type:</b>	CME 550	<b>Weather:</b>	Partly cloudy, low 50's wind 0-5 mph NW

Elevation (fmsl)	Depth (fbgs)	Sample No.	Blows (per 6")	SPT N-Value	Recovery	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, Percentage of Soil Type, Texture, Plasticity, Fabric, Bedding, Weathering/Fracturing, Odor, Other	PID Scan (ppm)	PID HDSP (ppm)	Well Construction Details
0.00	0	S1	4 21 7	28	0.7	At grade concrete slab ~ 0.4 inches thick. <u>0.0 - 0.3:</u> Gray moist, sandy gravel, loose, base material below slab, FILL <u>0.3 - 0.4:</u> Brown, moist, loose sand with little silt, FILL <u>0.4 - 0.7:</u> Reddish brown, moist, silty clay, w/gray sand lenses & fracturing	0.0	0.0	Bentonite Chips 2" Sch. 40 PVC riser
-2.00	2	S2	5 4 5	9	0.0	<u>NO RECOVERY</u>	0.0	0.0	
-4.00	4	S3	3 3 3	6	1.5	<u>4.0 - 5.5:</u> Grey, moist to wet clayey silt with little sand, grading to sandy silt at 5.4' bg, medium soft to firm, w/some iron staining, CL	0.0	0.0	
-6.00	6	S4	8 11 12 21	23	2.0	<u>6.0 - 8.0:</u> Reddish brown, moist silty clay with little fine sand, stiff, w/ some medium gray clay lenses and grey sand partings, CL	0.0	0.0	
-8.00	8	S5	8 17 19 26	36	2.0	<u>8.0 - 10.0:</u> Same as S4	0.0	0.0	
-10.00	10	S6		0		EOB 10.0 fbgs.			sand pack - #00N (10.0 - 3.0 fbgs) 2" Sch. 40 PVC screen, 0.010" slot
-12.00	12	S7		0					
-14.00	14	S8		0					
-16.00	16	S9		0					
-18.00	18								

## ABBREVIATIONS:

C = coarse	fbgs = feet below ground surface	HSA = hollow stem auger	MS = medium sand
CG = coarse gravel	FG = fine gravel	LP = low plasticity	NA = not applicable
CS = coarse sand	fmsl = feet above mean sea level	LWD = loose when disturbed	NPF = not plastic fines
EOB = end of boring	FS = fine sand	M = medium	SA = sub-angular
F = fines or fine	HP = high plasticity	MP = medium plasticity	SR = sub-rounded
			SS = split spoon

---

# APPENDIX C

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## RI ANALYTICAL DATA

Date: 08/01/2006  
Time: 12:10:33

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site  
BENCHMARK - SOIL-ASPOO (CLP) VOLATILES

Rept: AN0326

Client ID	Lab ID	Units	BLIND DUP A06-6735 06/12/2006	A6673504	MW-3 (2-4) A06-6735 06/12/2006	A6673502	MW-4 (2-4) A06-6735 06/12/2006	A6673503	MW-5 (4-6) A06-6735 06/12/2006	A6673501
Analyte			Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Bromomethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Vinyl chloride		UG/KG	ND	13	ND	12	ND	13	ND	12
Chloroethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Methylene chloride		UG/KG	10 BJ	13	10 BJ	12	12 BJ	13	16 B	12
Acetone		UG/KG	29	13	18	12	33	13	12	12
Carbon Disulfide		UG/KG	ND	13	ND	12	ND	13	ND	12
1,1-Dichloroethene		UG/KG	ND	13	ND	12	ND	13	ND	12
1,1-Dichloroethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Chloroform		UG/KG	ND	13	ND	12	ND	13	ND	12
1,2-Dichloroethane		UG/KG	ND	13	ND	12	ND	13	ND	12
2-Butanone		UG/KG	6 J	13	9 J	12	7 J	13	ND	12
1,1,1-Trichloroethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Carbon Tetrachloride		UG/KG	ND	13	ND	12	ND	13	ND	12
Bromodichloromethane		UG/KG	ND	13	ND	12	ND	13	ND	12
1,2-Dichloropropane		UG/KG	ND	13	ND	12	ND	13	ND	12
cis-1,3-Dichloropropene		UG/KG	ND	13	ND	12	ND	13	ND	12
Trichloroethene		UG/KG	ND	13	ND	12	ND	13	ND	12
Dibromochloromethane		UG/KG	ND	13	ND	12	ND	13	ND	12
1,1,2-Trichloroethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Benzene		UG/KG	ND	13	ND	12	ND	13	ND	12
trans-1,3-Dichloropropene		UG/KG	ND	13	ND	12	ND	13	ND	12
Bromoform		UG/KG	ND	13	ND	12	ND	13	ND	12
4-Methyl-2-pentanone		UG/KG	ND	13	ND	12	ND	13	ND	12
2-Hexanone		UG/KG	ND	13	ND	12	ND	13	ND	12
Tetrachloroethene		UG/KG	ND	13	ND	12	ND	13	ND	12
Toluene		UG/KG	ND	13	ND	12	ND	13	ND	12
1,1,2,2-Tetrachloroethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Chlorobenzene		UG/KG	ND	13	ND	12	ND	13	ND	12
Ethylbenzene		UG/KG	ND	13	ND	12	ND	13	ND	12
Styrene		UG/KG	ND	13	ND	12	ND	13	ND	12
Total Xylenes		UG/KG	ND	13	ND	12	ND	13	ND	12
1,1,2-Trichloro-1,2,2-trifluor		UG/KG	ND	13	ND	12	ND	13	ND	12
cis-1,2-Dichloroethene		UG/KG	ND	13	ND	12	ND	13	ND	12
trans-1,2-Dichloroethene		UG/KG	ND	13	ND	12	ND	13	ND	12
Dichlorodifluoromethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Trichlorofluoromethane		UG/KG	2 BJ	13	2 BJ	12	2 BJ	13	2 BJ	12
Methyl acetate		UG/KG	6 BJ	13	5 BJ	12	5 BJ	13	5 BJ	12
Methyl-t-Butyl Ether (MTBE)		UG/KG	ND	13	ND	12	ND	13	ND	12
Cyclohexane		UG/KG	ND	13	ND	12	ND	13	ND	12
Methylcyclohexane		UG/KG	ND	13	ND	12	ND	13	ND	12
1,2-Dibromoethane		UG/KG	ND	13	ND	12	ND	13	ND	12
Isopropylbenzene		UG/KG	ND	13	ND	12	ND	13	ND	12

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:10:33

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site  
BENCHMARK - SOIL-ASP00 (CLP) VOLATILES

Rept: AN0326

Client ID Job No Sample Date	Lab ID	Units	BLIND DUP A06-6735 06/12/2006	A6673504	MW-3 (2-4) A06-6735 06/12/2006	A6673502	MW-4 (2-4) A06-6735 06/12/2006	A6673503	MW-5 (4-6) A06-6735 06/12/2006	A6673501
Analyte			Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,3-Dichlorobenzene		UG/KG	ND	13	ND	12	ND	13	ND	12
1,4-Dichlorobenzene		UG/KG	ND	13	ND	12	ND	13	ND	12
1,2-Dichlorobenzene		UG/KG	ND	13	ND	12	ND	13	ND	12
1,2-Dibromo-3-chloropropane		UG/KG	ND	13	ND	12	ND	13	ND	12
1,2,4-Trichlorobenzene		UG/KG	ND	13	ND	12	ND	13	ND	12
IS/SURROGATE(S)										
Bromochloromethane		%	91	50-200	95	50-200	94	50-200	89	50-200
1,4-Difluorobenzene		%	89	50-200	92	50-200	91	50-200	88	50-200
Chlorobenzene-D5		%	88	50-200	91	50-200	90	50-200	87	50-200
p-Bromofluorobenzene		%	97	59-113	96	59-113	96	59-113	101	59-113
1,2-Dichloroethane-D4		%	106	70-121	102	70-121	102	70-121	108	70-121
Toluene-D8		%	101	84-138	100	84-138	100	84-138	105	84-138

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:10:33

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site  
BENCHMARK - SOIL - ASP00 (CLP) SEMIVOLATILES

Rept: AN0326

Client ID Job No Sample Date		BLIND DUP A06-6735 06/12/2006		MW-3 (2-4) A06-6735 06/12/2006		MW-4 (2-4) A06-6735 06/12/2006		MW-5 (4-6) A06-6735 06/12/2006	
Lab ID		A6673504		A6673502		A6673503		A6673501	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Benzaldehyde	UG/KG	ND	860	ND	820	ND	870	ND	800
Phenol	UG/KG	24 J	430	ND	410	ND	440	ND	400
Bis(2-chloroethyl) ether	UG/KG	ND	430	ND	410	ND	440	ND	400
2-Chlorophenol	UG/KG	ND	430	ND	410	ND	440	ND	400
2-Methylphenol	UG/KG	ND	430	ND	410	ND	440	ND	400
2,2'-Oxybis(1-Chloropropane)	UG/KG	ND	430	ND	410	ND	440	ND	400
Acetophenone	UG/KG	ND	860	ND	820	ND	870	ND	800
4-Methylphenol	UG/KG	ND	430	ND	410	ND	440	ND	400
N-Nitroso-Di-n-propylamine	UG/KG	ND	430	ND	410	ND	440	ND	400
Hexachloroethane	UG/KG	ND	430	ND	410	ND	440	ND	400
Nitrobenzene	UG/KG	ND	430	ND	410	ND	440	ND	400
Isophorone	UG/KG	ND	430	ND	410	ND	440	ND	400
2-Nitrophenol	UG/KG	ND	430	ND	410	ND	440	ND	400
2,4-Dimethylphenol	UG/KG	ND	430	ND	410	ND	440	ND	400
Bis(2-chloroethoxy) methane	UG/KG	ND	430	ND	410	ND	440	ND	400
2,4-Dichlorophenol	UG/KG	ND	430	ND	410	ND	440	ND	400
Naphthalene	UG/KG	ND	430	ND	410	ND	440	ND	400
4-Chloroaniline	UG/KG	ND	430	ND	410	ND	440	ND	400
Hexachlorobutadiene	UG/KG	ND	430	ND	410	ND	440	ND	400
Caprolactam	UG/KG	ND	860	ND	820	ND	870	ND	800
4-Chloro-3-methylphenol	UG/KG	ND	430	ND	410	ND	440	ND	400
2-Methylnaphthalene	UG/KG	ND	430	ND	410	ND	440	ND	400
Hexachlorocyclopentadiene	UG/KG	ND	430	ND	410	ND	440	ND	400
2,4,6-Trichlorophenol	UG/KG	ND	430	ND	410	ND	440	ND	400
2,4,5-Trichlorophenol	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
Biphenyl	UG/KG	ND	860	ND	820	ND	870	ND	800
2-Chloronaphthalene	UG/KG	ND	430	ND	410	ND	440	ND	400
2-Nitroaniline	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
Dimethyl phthalate	UG/KG	ND	430	ND	410	ND	440	ND	400
2,6-Dinitrotoluene	UG/KG	ND	430	ND	410	ND	440	ND	400
Acenaphthylene	UG/KG	ND	430	ND	410	ND	440	ND	400
3-Nitroaniline	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
Acenaphthene	UG/KG	ND	430	ND	410	ND	440	ND	400
2,4-Dinitrophenol	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
4-Nitrophenol	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
Dibenzofuran	UG/KG	ND	430	ND	410	ND	440	ND	400
2,4-Dinitrotoluene	UG/KG	ND	430	ND	410	ND	440	ND	400
Diethyl phthalate	UG/KG	ND	430	ND	410	ND	440	ND	400
Fluorene	UG/KG	ND	430	ND	410	ND	440	ND	400
4-Chlorophenyl phenyl ether	UG/KG	ND	430	ND	410	ND	440	ND	400
4-Nitroaniline	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
4,6-Dinitro-2-methylphenol	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
N-nitrosodiphenylamine	UG/KG	ND	430	ND	410	ND	440	ND	400

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:10:33

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site  
BENCHMARK - SOIL - ASP00 (CLP) SEMIVOLATILES

Rept: AN0326

Client ID Job No Sample Date		BLIND DUP A06-6735 06/12/2006		MW-3 (2-4) A06-6735 06/12/2006		MW-4 (2-4) A06-6735 06/12/2006		MW-5 (4-6) A06-6735 06/12/2006	
Lab ID		A6673504		A6673502		A6673503		A6673501	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
4-Bromophenyl phenyl ether	UG/KG	ND	430	ND	410	ND	440	ND	400
Hexachlorobenzene	UG/KG	ND	430	ND	410	ND	440	ND	400
Atrazine	UG/KG	ND	860	ND	820	ND	870	ND	800
Pentachlorophenol	UG/KG	ND	1000	ND	1000	ND	1000	ND	960
Phenanthrene	UG/KG	110 J	430	ND	410	52 J	440	ND	400
Anthracene	UG/KG	19 J	430	ND	410	ND	440	ND	400
Carbazole	UG/KG	22 J	430	ND	410	ND	440	ND	400
Di-n-butyl phthalate	UG/KG	15 J	430	ND	410	ND	440	ND	400
Fluoranthene	UG/KG	210 J	430	ND	410	97 J	440	ND	400
Pyrene	UG/KG	220 J	430	ND	410	100 J	440	ND	400
Butyl benzyl phthalate	UG/KG	ND	430	ND	410	ND	440	ND	400
3,3'-Dichlorobenzidine	UG/KG	ND	430	ND	410	ND	440	ND	400
Benzo(a)anthracene	UG/KG	120 J	430	ND	410	48 J	440	ND	400
Chrysene	UG/KG	150 J	430	ND	410	56 J	440	ND	400
Bis(2-ethylhexyl) phthalate	UG/KG	610 B	430	280 BJ	410	890 B	440	110 BJ	400
Di-n-octyl phthalate	UG/KG	24 J	430	ND	410	ND	440	ND	400
Benzo(b)fluoranthene	UG/KG	240 J	430	ND	410	100 J	440	ND	400
Benzo(k)fluoranthene	UG/KG	270 J	430	ND	410	110 J	440	ND	400
Benzo(a)pyrene	UG/KG	130 J	430	ND	410	52 J	440	ND	400
Indeno(1,2,3-cd)pyrene	UG/KG	120 J	430	ND	410	49 J	440	ND	400
Dibenzo(a,h)anthracene	UG/KG	43 J	430	ND	410	16 J	440	ND	400
Benzo(ghi)perylene	UG/KG	49 J	430	ND	410	23 J	440	ND	400
IS/SURROGATE(S)									
1,4-Dichlorobenzene-D4	%	79	50-200	116	50-200	100	50-200	89	50-200
Naphthalene-D8	%	82	50-200	120	50-200	104	50-200	92	50-200
Acenaphthene-D10	%	82	50-200	122	50-200	103	50-200	91	50-200
Phenanthrene-D10	%	83	50-200	130	50-200	109	50-200	100	50-200
Chrysene-D12	%	66	50-200	91	50-200	82	50-200	79	50-200
Perylene-D12	%	79	50-200	93	50-200	90	50-200	60	50-200
Nitrobenzene-D5	%	84	23-120	61	23-120	57	23-120	106	23-120
2-Fluorobiphenyl	%	84	30-115	61	30-115	60	30-115	100	30-115
p-Terphenyl-d14	%	132	18-137	99	18-137	90	18-137	153 *	18-137
Phenol-D5	%	93	24-113	64	24-113	70	24-113	116 *	24-113
2-Fluorophenol	%	80	25-121	56	25-121	58	25-121	101	25-121
2,4,6-Tribromophenol	%	109	19-122	69	19-122	74	19-122	101	19-122
2-Chlorophenol-d4	%	86	20-130	59	20-130	62	20-130	107	20-130
1,2-Dichlorobenzene-d4	%	57	20-130	47	20-130	39	20-130	75	20-130

NA = Not Applicable ND = Not Detected

STL Buffalo



Date: 08/01/2006  
Time: 12:10:33

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site  
STEELFIELDS - ASP00 8082 - PCBS - S

Rept: AN0326

Client ID Job No Sample Date		BLIND DUP A06-6735 06/12/2006		MW-3 (2-4) A06-6735 06/12/2006		MW-4 (2-4) A06-6735 06/12/2006		MW-5 (4-6) A06-6735 06/12/2006	
Lab ID		A6673504		A6673502		A6673503		A6673501	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aroclor 1016	UG/KG	ND	100	ND	100	ND	110	ND	97
Aroclor 1221	UG/KG	ND	100	ND	100	ND	110	ND	97
Aroclor 1232	UG/KG	ND	100	ND	100	ND	110	ND	97
Aroclor 1242	UG/KG	ND	100	ND	100	ND	110	ND	97
Aroclor 1248	UG/KG	ND	100	ND	100	ND	110	ND	97
Aroclor 1254	UG/KG	ND	100	ND	100	ND	110	ND	97
Aroclor 1260	UG/KG	ND	100	ND	100	ND	110	ND	97
SURROGATE(S)									
Tetrachloro-m-xylene	%	68	32-148	78	32-148	61	32-148	58	32-148
Decachlorobiphenyl	%	92	30-150	107	30-150	98	30-150	100	30-150

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:43

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site  
BENCHMARK - SOIL-ASPOO CLP-M TOTAL TAL METALS

Rept: AN0326

Client ID Job No Sample Date		BLIND DUP A06-6735 06/12/2006		MW-3 (2-4) A06-6735 06/12/2006		MW-4 (2-4) A06-6735 06/12/2006		MW-5 (4-6) A06-6735 06/12/2006	
Lab ID		A6673504		A6673502		A6673503		A6673501	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aluminum - Total	MG/KG	9950	3.5	12600	3.4	11500	3.3	9400	3.5
Antimony - Total	MG/KG	ND N	0.46	ND N	0.45	ND N	0.43	ND N	0.46
Arsenic - Total	MG/KG	2.1 N*	0.39	10.8 N*	0.38	3.7 N*	0.36	4.1 N*	0.38
Barium - Total	MG/KG	75.5 *	0.01	76.6 *	0.01	82.4 *	0.01	49.4 *	0.01
Beryllium - Total	MG/KG	0.48 B*	0.03	1.0 *	0.03	0.63 *	0.03	0.47 B*	0.03
Cadmium - Total	MG/KG	0.26 B	0.04	0.24 B	0.04	0.21 B	0.04	0.16 B	0.04
Calcium - Total	MG/KG	6890 E*	2.2	3180 E*	2.1	5300 E*	2.0	17600 E*	2.2
Chromium - Total	MG/KG	15.8	0.05	18.5	0.04	16.2	0.04	14.6	0.05
Cobalt - Total	MG/KG	5.4 BE*	0.06	9.5 E*	0.06	7.2 E*	0.06	6.9 E*	0.06
Copper - Total	MG/KG	13.0 *	0.10	28.1 *	0.10	17.2 *	0.10	19.5 *	0.10
Iron - Total	MG/KG	11500 E*	2.2	28800 E*	2.1	18100 E*	2.0	15900 E*	2.2
Lead - Total	MG/KG	16.3 N*	0.19	17.6 N*	0.19	14.7 N*	0.18	8.2 N*	0.19
Magnesium - Total	MG/KG	3710 E*	2.3	3910 E*	2.2	3920 E*	2.1	5390 E*	2.3
Manganese - Total	MG/KG	102 EN	0.02	150 EN	0.02	111 EN	0.01	176 EN	0.02
Mercury - Total	MG/KG	ND	0.062	ND	0.059	ND	0.060	ND	0.050
Nickel - Total	MG/KG	15.4 E	0.11	23.7 E	0.10	18.1 E	0.10	18.3 E	0.10
Potassium - Total	MG/KG	572 B*	2.8	1410 *	2.7	796 *	2.6	1560 *	2.8
Selenium - Total	MG/KG	ND	0.69	ND	0.67	ND	0.64	ND	0.68
Silver - Total	MG/KG	ND	0.12	ND	0.11	ND	0.11	ND	0.11
Sodium - Total	MG/KG	44.8 B	18.3	337 B	17.7	75.8 B	17.0	144 B	18.0
Thallium - Total	MG/KG	ND	0.56	ND	0.54	ND	0.52	ND	0.55
Vanadium - Total	MG/KG	15.6 E*	0.06	59.0 E*	0.06	21.9 E*	0.06	20.6 E*	0.06
Zinc - Total	MG/KG	64.9 EN*	0.18	59.7 EN*	0.18	62.0 EN*	0.17	46.2 EN*	0.18

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		BLIND DUP A06-7205 06/23/2006		MW-1 A06-7205 06/23/2006		MW-14 A06-7205 06/23/2006		MW-14 DL A06-7205 06/23/2006	
Lab ID		A6720508		A6720501		A6720505		A6720505DL	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	10	ND	50	ND	10	ND	80
Bromomethane	UG/L	ND	10	ND	50	ND	10	ND	80
Vinyl chloride	UG/L	54	10	ND	50	850 E	10	910 D	80
Chloroethane	UG/L	ND	10	ND	50	ND	10	ND	80
Methylene chloride	UG/L	ND	10	ND	50	ND	10	ND	80
Acetone	UG/L	1 J	10	ND	50	2 J	10	8 DJ	80
Carbon Disulfide	UG/L	ND	10	ND	50	ND	10	ND	80
1,1-Dichloroethene	UG/L	1 J	10	ND	50	83	10	85 D	80
1,1-Dichloroethane	UG/L	ND	10	ND	50	ND	10	ND	80
Chloroform	UG/L	ND	10	ND	50	ND	10	ND	80
1,2-Dichloroethane	UG/L	ND	10	ND	50	ND	10	ND	80
2-Butanone	UG/L	ND	10	ND	50	ND	10	ND	80
1,1,1-Trichloroethane	UG/L	ND	10	ND	50	ND	10	ND	80
Carbon Tetrachloride	UG/L	ND	10	ND	50	ND	10	ND	80
Bromodichloromethane	UG/L	ND	10	ND	50	ND	10	ND	80
1,2-Dichloropropane	UG/L	ND	10	ND	50	ND	10	ND	80
cis-1,3-Dichloropropene	UG/L	ND	10	ND	50	ND	10	ND	80
Trichloroethene	UG/L	ND	10	ND	50	510 E	10	540 D	80
Dibromochloromethane	UG/L	ND	10	ND	50	ND	10	ND	80
1,1,2-Trichloroethane	UG/L	ND	10	ND	50	9 J	10	9 DJ	80
Benzene	UG/L	ND	10	ND	50	1 J	10	ND	80
trans-1,3-Dichloropropene	UG/L	ND	10	ND	50	ND	10	ND	80
Bromoform	UG/L	ND	10	ND	50	ND	10	ND	80
4-Methyl-2-pentanone	UG/L	ND	10	ND	50	ND	10	ND	80
2-Hexanone	UG/L	ND	10	ND	50	ND	10	ND	80
Tetrachloroethene	UG/L	ND	10	ND	50	600 E	10	640 D	80
Toluene	UG/L	ND	10	ND	50	1 J	10	ND	80
1,1,2,2-Tetrachloroethane	UG/L	ND	10	ND	50	ND	10	ND	80
Chlorobenzene	UG/L	ND	10	ND	50	ND	10	ND	80
Ethylbenzene	UG/L	ND	10	ND	50	ND	10	ND	80
Styrene	UG/L	ND	10	ND	50	ND	10	ND	80
Total Xylenes	UG/L	ND	10	ND	50	ND	10	ND	80
Dichlorodifluoromethane	UG/L	ND	10	ND	50	ND	10	ND	80
Trichlorofluoromethane	UG/L	ND	10	ND	50	ND	10	ND	80
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	10	ND	50	ND	10	ND	80
trans-1,2-Dichloroethene	UG/L	ND	10	ND	50	960 E	10	1300 D	80
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	10	ND	50	ND	10	1100 D	80
cis-1,2-Dichloroethene	UG/L	30	10	ND	50	860 E	10	ND	80
Cyclohexane	UG/L	ND	10	ND	50	ND	10	ND	80
Methylcyclohexane	UG/L	ND	10	ND	50	ND	10	ND	80
1,2-Dibromoethane	UG/L	ND	10	ND	50	ND	10	ND	80
Isopropylbenzene	UG/L	ND	10	ND	50	ND	10	ND	80
1,3-Dichlorobenzene	UG/L	ND	10	ND	50	ND	10	ND	80

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		BLIND DUP A06-7205 06/23/2006		MW-1 A06-7205 06/23/2006		MW-14 A06-7205 06/23/2006		MW-14 DL A06-7205 06/23/2006	
Lab ID		A6720508		A6720501		A6720505		A6720505DL	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	10	ND	50	ND	10	ND	80
1,2-Dichlorobenzene	UG/L	ND	10	ND	50	ND	10	ND	80
1,2-Dibromo-3-chloropropane	UG/L	ND	10	ND	50	ND	10	ND	80
1,2,4-Trichlorobenzene	UG/L	ND	10	ND	50	ND	10	ND	80
Methyl acetate	UG/L	ND	10	ND	50	ND	10	ND	80
IS/SURROGATE(S)									
Bromochloromethane	%	96	50-200	96	50-200	100	50-200	97	50-200
1,4-Difluorobenzene	%	95	50-200	97	50-200	98	50-200	97	50-200
Chlorobenzene-D5	%	94	50-200	96	50-200	97	50-200	96	50-200
p-Bromofluorobenzene	%	99	86-115	96	86-115	100	86-115	98	86-115
1,2-Dichloroethane-D4	%	103	76-114	104	76-114	101	76-114	104	76-114
Toluene-D8	%	101	88-110	100	88-110	100	88-110	100	88-110

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-17 A06-7205 06/23/2006	A6720506	MW-19 A06-7205 06/23/2006	A6720507	MW-2 A06-7205 06/23/2006	A6720502	MW-4 A06-7205 06/23/2006	A6720503
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	10	ND	10	ND	10	ND	50	ND	50
Bromomethane	UG/L	ND	10	ND	10	ND	10	ND	50	ND	50
Vinyl chloride	UG/L	ND	10	58	10	ND	10	ND	50	ND	50
Chloroethane	UG/L	ND	10	ND	10	ND	10	ND	50	ND	50
Methylene chloride	UG/L	ND	10	ND	10	7 J	10	50	7 J	50	50
Acetone	UG/L	2 J	10	ND	10	ND	10	50	ND	50	50
Carbon Disulfide	UG/L	ND	10	ND	10	6 J	10	50	6 J	50	50
1,1-Dichloroethene	UG/L	ND	10	1 J	10	ND	10	50	ND	50	50
1,1-Dichloroethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Chloroform	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,2-Dichloroethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
2-Butanone	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,1,1-Trichloroethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Carbon Tetrachloride	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Bromodichloromethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,2-Dichloropropane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
cis-1,3-Dichloropropene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Trichloroethene	UG/L	2 J	10	1 J	10	ND	10	50	ND	50	50
Dibromochloromethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,1,2-Trichloroethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Benzene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
trans-1,3-Dichloropropene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Bromoform	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
4-Methyl-2-pentanone	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
2-Hexanone	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Tetrachloroethene	UG/L	4 J	10	1 J	10	ND	10	50	ND	50	50
Toluene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,1,2,2-Tetrachloroethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Chlorobenzene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Ethylbenzene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Styrene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Total Xylenes	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Dichlorodifluoromethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Trichlorofluoromethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
trans-1,2-Dichloroethene	UG/L	2 J	10	ND	10	ND	10	50	ND	50	50
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
cis-1,2-Dichloroethene	UG/L	1 J	10	30	10	ND	10	50	ND	50	50
Cyclohexane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Methylcyclohexane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,2-Dibromoethane	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
Isopropylbenzene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50
1,3-Dichlorobenzene	UG/L	ND	10	ND	10	ND	10	50	ND	50	50

NA = Not Applicable ND = Not Detected

STL Buffalo



Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-17 A06-7205 06/23/2006		A6720506		MW-19 A06-7205 06/23/2006		A6720507		MW-2 A06-7205 06/23/2006		A6720502		MW-4 A06-7205 06/23/2006		A6720503	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	10	ND	10	ND	10	ND	10	ND	10	ND	50	ND	50	ND	50	ND	50
1,2-Dichlorobenzene	UG/L	ND	10	ND	10	ND	10	ND	10	ND	10	ND	50	ND	50	ND	50	ND	50
1,2-Dibromo-3-chloropropane	UG/L	ND	10	ND	10	ND	10	ND	10	ND	10	ND	50	ND	50	ND	50	ND	50
1,2,4-Trichlorobenzene	UG/L	ND	10	ND	10	ND	10	ND	10	ND	10	ND	50	ND	50	ND	50	ND	50
Methyl acetate	UG/L	ND	10	ND	10	ND	10	ND	10	ND	10	ND	50	ND	50	ND	50	ND	50
IS/SURROGATE(S)																			
Bromochloromethane	%	97	50-200	96	50-200	97	50-200	96	50-200	97	50-200	96	50-200	97	50-200	96	50-200	97	50-200
1,4-Difluorobenzene	%	96	50-200	95	50-200	96	50-200	95	50-200	96	50-200	95	50-200	96	50-200	95	50-200	96	50-200
Chlorobenzene-D5	%	96	50-200	94	50-200	96	50-200	95	50-200	96	50-200	95	50-200	96	50-200	95	50-200	96	50-200
p-Bromofluorobenzene	%	99	86-115	99	86-115	98	86-115	99	86-115	98	86-115	99	86-115	98	86-115	99	86-115	98	86-115
1,2-Dichloroethane-D4	%	104	76-114	104	76-114	103	76-114	104	76-114	103	76-114	104	76-114	103	76-114	104	76-114	103	76-114
Toluene-D8	%	100	88-110	101	88-110	101	88-110	101	88-110	101	88-110	101	88-110	100	88-110	100	88-110	100	88-110

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-5 A06-7205 06/23/2006					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	50	NA		NA		NA	
Bromomethane	UG/L	ND	50	NA		NA		NA	
Vinyl chloride	UG/L	ND	50	NA		NA		NA	
Chloroethane	UG/L	ND	50	NA		NA		NA	
Methylene chloride	UG/L	7 J	50	NA		NA		NA	
Acetone	UG/L	11 J	50	NA		NA		NA	
Carbon Disulfide	UG/L	17 J	50	NA		NA		NA	
1,1-Dichloroethene	UG/L	ND	50	NA		NA		NA	
1,1-Dichloroethane	UG/L	ND	50	NA		NA		NA	
Chloroform	UG/L	ND	50	NA		NA		NA	
1,2-Dichloroethane	UG/L	ND	50	NA		NA		NA	
2-Butanone	UG/L	ND	50	NA		NA		NA	
1,1,1-Trichloroethane	UG/L	ND	50	NA		NA		NA	
Carbon Tetrachloride	UG/L	ND	50	NA		NA		NA	
Bromodichloromethane	UG/L	ND	50	NA		NA		NA	
1,2-Dichloropropane	UG/L	ND	50	NA		NA		NA	
cis-1,3-Dichloropropene	UG/L	ND	50	NA		NA		NA	
Trichloroethene	UG/L	ND	50	NA		NA		NA	
Dibromochloromethane	UG/L	ND	50	NA		NA		NA	
1,1,2-Trichloroethane	UG/L	ND	50	NA		NA		NA	
Benzene	UG/L	ND	50	NA		NA		NA	
trans-1,3-Dichloropropene	UG/L	ND	50	NA		NA		NA	
Bromoform	UG/L	ND	50	NA		NA		NA	
4-Methyl-2-pentanone	UG/L	ND	50	NA		NA		NA	
2-Hexanone	UG/L	ND	50	NA		NA		NA	
Tetrachloroethene	UG/L	ND	50	NA		NA		NA	
Toluene	UG/L	ND	50	NA		NA		NA	
1,1,2,2-Tetrachloroethane	UG/L	ND	50	NA		NA		NA	
Chlorobenzene	UG/L	ND	50	NA		NA		NA	
Ethylbenzene	UG/L	ND	50	NA		NA		NA	
Styrene	UG/L	ND	50	NA		NA		NA	
Total Xylenes	UG/L	ND	50	NA		NA		NA	
Dichlorodifluoromethane	UG/L	ND	50	NA		NA		NA	
Trichlorofluoromethane	UG/L	ND	50	NA		NA		NA	
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	50	NA		NA		NA	
trans-1,2-Dichloroethene	UG/L	ND	50	NA		NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	50	NA		NA		NA	
cis-1,2-Dichloroethene	UG/L	ND	50	NA		NA		NA	
Cyclohexane	UG/L	ND	50	NA		NA		NA	
Methylcyclohexane	UG/L	ND	50	NA		NA		NA	
1,2-Dibromoethane	UG/L	ND	50	NA		NA		NA	
Isopropylbenzene	UG/L	ND	50	NA		NA		NA	
1,3-Dichlorobenzene	UG/L	ND	50	NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-5 A06-7205 06/23/2006	A6720504				
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	50	NA		NA		NA	
1,2-Dichlorobenzene	UG/L	ND	50	NA		NA		NA	
1,2-Dibromo-3-chloropropane	UG/L	ND	50	NA		NA		NA	
1,2,4-Trichlorobenzene	UG/L	ND	50	NA		NA		NA	
Methyl acetate	UG/L	ND	50	NA		NA		NA	
IS/SURROGATE(S)									
Bromochloromethane	%	96	50-200	NA		NA		NA	
1,4-Difluorobenzene	%	96	50-200	NA		NA		NA	
Chlorobenzene-D5	%	96	50-200	NA		NA		NA	
p-Bromofluorobenzene	%	98	86-115	NA		NA		NA	
1,2-Dichloroethane-D4	%	103	76-114	NA		NA		NA	
Toluene-D8	%	100	88-110	NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		Trip Blank A06-7205 06/22/2006		A6720509					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	10	NA		NA		NA		NA	
Bromomethane	UG/L	ND	10	NA		NA		NA		NA	
Vinyl chloride	UG/L	ND	10	NA		NA		NA		NA	
Chloroethane	UG/L	ND	10	NA		NA		NA		NA	
Methylene chloride	UG/L	ND	10	NA		NA		NA		NA	
Acetone	UG/L	3 J	10	NA		NA		NA		NA	
Carbon Disulfide	UG/L	ND	10	NA		NA		NA		NA	
1,1-Dichloroethene	UG/L	ND	10	NA		NA		NA		NA	
1,1-Dichloroethane	UG/L	ND	10	NA		NA		NA		NA	
Chloroform	UG/L	ND	10	NA		NA		NA		NA	
1,2-Dichloroethane	UG/L	ND	10	NA		NA		NA		NA	
2-Butanone	UG/L	ND	10	NA		NA		NA		NA	
1,1,1-Trichloroethane	UG/L	ND	10	NA		NA		NA		NA	
Carbon Tetrachloride	UG/L	ND	10	NA		NA		NA		NA	
Bromodichloromethane	UG/L	ND	10	NA		NA		NA		NA	
1,2-Dichloropropane	UG/L	ND	10	NA		NA		NA		NA	
cis-1,3-Dichloropropene	UG/L	ND	10	NA		NA		NA		NA	
Trichloroethene	UG/L	ND	10	NA		NA		NA		NA	
Dibromochloromethane	UG/L	ND	10	NA		NA		NA		NA	
1,1,2-Trichloroethane	UG/L	ND	10	NA		NA		NA		NA	
Benzene	UG/L	ND	10	NA		NA		NA		NA	
trans-1,3-Dichloropropene	UG/L	ND	10	NA		NA		NA		NA	
Bromoform	UG/L	ND	10	NA		NA		NA		NA	
4-Methyl-2-pentanone	UG/L	ND	10	NA		NA		NA		NA	
2-Hexanone	UG/L	ND	10	NA		NA		NA		NA	
Tetrachloroethene	UG/L	ND	10	NA		NA		NA		NA	
Toluene	UG/L	7 J	10	NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	UG/L	ND	10	NA		NA		NA		NA	
Chlorobenzene	UG/L	ND	10	NA		NA		NA		NA	
Ethylbenzene	UG/L	ND	10	NA		NA		NA		NA	
Styrene	UG/L	ND	10	NA		NA		NA		NA	
Total Xylenes	UG/L	ND	10	NA		NA		NA		NA	
Dichlorodifluoromethane	UG/L	ND	10	NA		NA		NA		NA	
Trichlorofluoromethane	UG/L	ND	10	NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	10	NA		NA		NA		NA	
trans-1,2-Dichloroethene	UG/L	ND	10	NA		NA		NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	10	NA		NA		NA		NA	
cis-1,2-Dichloroethene	UG/L	ND	10	NA		NA		NA		NA	
Cyclohexane	UG/L	ND	10	NA		NA		NA		NA	
Methylcyclohexane	UG/L	ND	10	NA		NA		NA		NA	
1,2-Dibromoethane	UG/L	ND	10	NA		NA		NA		NA	
Isopropylbenzene	UG/L	ND	10	NA		NA		NA		NA	
1,3-Dichlorobenzene	UG/L	ND	10	NA		NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:09

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		Trip Blank A06-7205 06/22/2006		A6720509					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	10	NA		NA		NA		NA	
1,2-Dichlorobenzene	UG/L	ND	10	NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	UG/L	ND	10	NA		NA		NA		NA	
1,2,4-Trichlorobenzene	UG/L	ND	10	NA		NA		NA		NA	
Methyl acetate	UG/L	ND	10	NA		NA		NA		NA	
IS/SURROGATE(S)											
Bromochloromethane	%	99	50-200	NA		NA		NA		NA	
1,4-Difluorobenzene	%	97	50-200	NA		NA		NA		NA	
Chlorobenzene-D5	%	96	50-200	NA		NA		NA		NA	
p-Bromofluorobenzene	%	99	86-115	NA		NA		NA		NA	
1,2-Dichloroethane-D4	%	102	76-114	NA		NA		NA		NA	
Toluene-D8	%	102	88-110	NA		NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo



Date: 08/01/2006  
Time: 12:11:56

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
ILM05.2 - TOTAL FE/MN - W

Rept: AN0326

Client ID Job No Sample Date		Lab ID MW-14 A06-7205 06/23/2006		A6720505					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Iron - Total	UG/L	56300	18.0	NA		NA		NA	
Manganese - Total	UG/L	2420	0.13	NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:56

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
BENCHMARK-ILM5.2 SOLUBLE FE/MN-W

Rept: AN0326

Client ID Job No Sample Date		Lab ID MW-14 A06-7205 06/23/2006		A6720505					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Iron - Soluble	UG/L	351	13.0	NA		NA		NA	
Manganese - Soluble	UG/L	29.1	0.09	NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 08/01/2006  
Time: 12:11:56

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
WET CHEMISTRY ANALYSIS

Rept: AN0326

Client ID Job No Sample Date		Lab ID MW-14 A06-7205 06/23/2006		A6720505					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chemical Oxygen Demand	MG/L	ND	10	NA		NA		NA	
Nitrate	MG/L-N	0.49	0.050	NA		NA		NA	
Sulfate	MG/L	888	150	NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 12/28/2006  
Time: 15:39:53

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN1246

Client ID Job No Sample Date		BLIND DUP A06-E857 12/11/2006		BLIND DUP DL A06-E857 12/11/2006		MW-14 A06-E857 12/11/2006		MW-19 A06-E857 12/11/2006	
Lab ID		A6E85703		A6E85703DL		A6E85701		A6E85702	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	10	ND	200	ND	80	ND	10
Bromomethane	UG/L	ND	10	ND	200	ND	80	ND	10
Vinyl chloride	UG/L	420 E	10	390 D	200	380	80	24	10
Chloroethane	UG/L	ND	10	ND	200	ND	80	ND	10
Methylene chloride	UG/L	ND	10	ND	200	ND	80	ND	10
Acetone	UG/L	2 J	10	ND	200	ND	80	10	10
Carbon Disulfide	UG/L	ND	10	ND	200	ND	80	1 J	10
1,1-Dichloroethene	UG/L	170	10	150 DJ	200	140	80	ND	10
1,1-Dichloroethane	UG/L	ND	10	ND	200	ND	80	ND	10
Chloroform	UG/L	ND	10	ND	200	ND	80	ND	10
1,2-Dichloroethane	UG/L	1 J	10	ND	200	ND	80	ND	10
2-Butanone	UG/L	ND	10	ND	200	ND	80	95	10
1,1,1-Trichloroethane	UG/L	ND	10	ND	200	ND	80	ND	10
Carbon Tetrachloride	UG/L	ND	10	ND	200	ND	80	ND	10
Bromodichloromethane	UG/L	ND	10	ND	200	ND	80	ND	10
1,2-Dichloropropane	UG/L	ND	10	ND	200	ND	80	ND	10
cis-1,3-Dichloropropene	UG/L	ND	10	ND	200	ND	80	ND	10
Trichloroethene	UG/L	1900 E	10	1600 D	200	1500	80	2 J	10
Dibromochloromethane	UG/L	ND	10	ND	200	ND	80	ND	10
1,1,2-Trichloroethane	UG/L	5 J	10	ND	200	ND	80	ND	10
Benzene	UG/L	1 J	10	ND	200	ND	80	ND	10
trans-1,3-Dichloropropene	UG/L	ND	10	ND	200	ND	80	ND	10
Bromoform	UG/L	ND	10	ND	200	ND	80	ND	10
4-Methyl-2-pentanone	UG/L	ND	10	ND	200	ND	80	ND	10
2-Hexanone	UG/L	ND	10	ND	200	ND	80	ND	10
Tetrachloroethene	UG/L	570 E	10	500 D	200	480	80	ND	10
Toluene	UG/L	1 J	10	ND	200	ND	80	ND	10
1,1,2,2-Tetrachloroethane	UG/L	ND	10	ND	200	ND	80	ND	10
Chlorobenzene	UG/L	ND	10	ND	200	ND	80	ND	10
Ethylbenzene	UG/L	ND	10	ND	200	ND	80	ND	10
Styrene	UG/L	ND	10	ND	200	ND	80	ND	10
Total Xylenes	UG/L	8 J	10	ND	200	ND	80	ND	10
Dichlorodifluoromethane	UG/L	ND	10	ND	200	ND	80	ND	10
Trichlorofluoromethane	UG/L	ND	10	ND	200	ND	80	ND	10
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	ND	10	ND	200	ND	80	ND	10
trans-1,2-Dichloroethene	UG/L	550 E	10	530 D	200	520	80	ND	10
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	10	ND	200	ND	80	ND	10
cis-1,2-Dichloroethene	UG/L	590 E	10	580 D	200	570	80	28	10
Cyclohexane	UG/L	ND	10	ND	200	ND	80	ND	10
Methylcyclohexane	UG/L	ND	10	ND	200	ND	80	ND	10
1,2-Dibromoethane	UG/L	ND	10	ND	200	ND	80	ND	10
Isopropylbenzene	UG/L	ND	10	ND	200	ND	80	ND	10
1,3-Dichlorobenzene	UG/L	ND	10	ND	200	ND	80	ND	10

3590 TWCs

4585 TWCs (6/06)

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 12/28/2006  
Time: 15:39:53

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN1246

Client ID Job No Sample Date		BLIND DUP A06-E857 12/11/2006		BLIND DUP DL A06-E857 12/11/2006		MW-14 A06-E857 12/11/2006		MW-19 A06-E857 12/11/2006	
Lab ID		A6E85703		A6E85703DL		A6E85701		A6E85702	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	10	ND	200	ND	80	ND	10
1,2-Dichlorobenzene	UG/L	ND	10	ND	200	ND	80	ND	10
1,2-Dibromo-3-chloropropane	UG/L	ND	10	ND	200	ND	80	ND	10
1,2,4-Trichlorobenzene	UG/L	ND	10	ND	200	ND	80	ND	10
Methyl acetate	UG/L	ND	10	ND	200	ND	80	ND	10
IS/SURROGATE(S)									
Bromochloromethane	%	101	50-200	96	50-200	94	50-200	99	50-200
1,4-Difluorobenzene	%	101	50-200	93	50-200	93	50-200	96	50-200
Chlorobenzene-D5	%	100	50-200	90	50-200	91	50-200	99	50-200
p-Bromofluorobenzene	%	97	86-115	96	86-115	94	86-115	97	86-115
1,2-Dichloroethane-D4	%	96	76-114	100	76-114	100	76-114	98	76-114
Toluene-D8	%	98	88-110	101	88-110	99	88-110	96	88-110

NA = Not Applicable ND = Not Detected

STL Buffalo



Date: 02/09/2007  
Time: 16:39:39

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-14 A07-0668 01/22/2007	A7066801	MW-19 A07-0668 01/22/2007	A7066802		
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	80	ND	10	NA		NA	
Bromomethane	UG/L	ND	80	ND	10	NA		NA	
Vinyl chloride	UG/L	150	80	22	10	NA		NA	
Chloroethane	UG/L	ND	80	ND	10	NA		NA	
Methylene chloride	UG/L	ND	80	ND	10	NA		NA	
Acetone	UG/L	ND	80	31	10	NA		NA	
Carbon Disulfide	UG/L	ND	80	2 J	10	NA		NA	
1,1-Dichloroethene	UG/L	21 J	80	ND	10	NA		NA	
1,1-Dichloroethane	UG/L	ND	80	ND	10	NA		NA	
Chloroform	UG/L	ND	80	ND	10	NA		NA	
1,2-Dichloroethane	UG/L	ND	80	ND	10	NA		NA	
2-Butanone	UG/L	ND	80	62	10	NA		NA	
1,1,1-Trichloroethane	UG/L	ND	80	ND	10	NA		NA	
Carbon Tetrachloride	UG/L	ND	80	ND	10	NA		NA	
Bromodichloromethane	UG/L	ND	80	ND	10	NA		NA	
1,2-Dichloropropane	UG/L	ND	80	ND	10	NA		NA	
cis-1,3-Dichloropropene	UG/L	ND	80	ND	10	NA		NA	
Trichloroethene	UG/L	300	80	2 J	10	NA		NA	
Dibromochloromethane	UG/L	ND	80	ND	10	NA		NA	
1,1,2-Trichloroethane	UG/L	ND	80	ND	10	NA		NA	
Benzene	UG/L	ND	80	ND	10	NA		NA	
trans-1,3-Dichloropropene	UG/L	ND	80	ND	10	NA		NA	
Bromoform	UG/L	ND	80	ND	10	NA		NA	
4-Methyl-2-pentanone	UG/L	ND	80	ND	10	NA		NA	
2-Hexanone	UG/L	ND	80	ND	10	NA		NA	
Tetrachloroethene	UG/L	120	80	ND	10	NA		NA	
Toluene	UG/L	ND	80	ND	10	NA		NA	
1,1,2,2-Tetrachloroethane	UG/L	ND	80	ND	10	NA		NA	
Chlorobenzene	UG/L	ND	80	ND	10	NA		NA	
Ethylbenzene	UG/L	ND	80	ND	10	NA		NA	
Styrene	UG/L	ND	80	ND	10	NA		NA	
Total Xylenes	UG/L	ND	80	ND	10	NA		NA	
Dichlorodifluoromethane	UG/L	ND	80	ND	10	NA		NA	
Trichlorofluoromethane	UG/L	ND	80	ND	10	NA		NA	
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	80	ND	10	NA		NA	
trans-1,2-Dichloroethene	UG/L	240	80	ND	10	NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	80	ND	10	NA		NA	
cis-1,2-Dichloroethene	UG/L	220	80	26	10	NA		NA	
Cyclohexane	UG/L	ND	80	ND	10	NA		NA	
Methylcyclohexane	UG/L	ND	80	ND	10	NA		NA	
1,2-Dibromoethane	UG/L	ND	80	ND	10	NA		NA	
Isopropylbenzene	UG/L	ND	80	ND	10	NA		NA	
1,3-Dichlorobenzene	UG/L	ND	80	ND	10	NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 02/09/2007  
Time: 16:39:39

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-14 A07-0668 01/22/2007		A7066801		MW-19 A07-0668 01/22/2007		A7066802					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	80	ND	10	NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	UG/L	ND	80	ND	10	NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	UG/L	ND	80	ND	10	NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	UG/L	ND	80	ND	10	NA		NA		NA		NA		NA	
Methyl acetate	UG/L	ND	80	ND	10	NA		NA		NA		NA		NA	
IS/SURROGATE(S)															
Bromochloromethane	%	91	50-200	91	50-200	NA		NA		NA		NA		NA	
1,4-Difluorobenzene	%	90	50-200	89	50-200	NA		NA		NA		NA		NA	
Chlorobenzene-D5	%	90	50-200	90	50-200	NA		NA		NA		NA		NA	
p-Bromofluorobenzene	%	104	86-115	103	86-115	NA		NA		NA		NA		NA	
1,2-Dichloroethane-D4	%	104	76-114	104	76-114	NA		NA		NA		NA		NA	
Toluene-D8	%	98	88-110	98	88-110	NA		NA		NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 03/09/2007  
Time: 17:05:34

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-14 A07-1926 03/01/2007	A7192601	MW-19 A07-1926 03/01/2007	A7192602		
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Chloromethane	UG/L	ND	50	ND	20	NA		NA	
Bromomethane	UG/L	ND	50	ND	20	NA		NA	
Vinyl chloride	UG/L	320	50	24	20	NA		NA	
Chloroethane	UG/L	ND	50	ND	20	NA		NA	
Methylene chloride	UG/L	ND	50	ND	20	NA		NA	
Acetone	UG/L	16 J	50	10 J	20	NA		NA	
Carbon Disulfide	UG/L	ND	50	ND	20	NA		NA	
1,1-Dichloroethene	UG/L	21 J	50	ND	20	NA		NA	
1,1-Dichloroethane	UG/L	ND	50	ND	20	NA		NA	
Chloroform	UG/L	ND	50	ND	20	NA		NA	
1,2-Dichloroethane	UG/L	ND	50	ND	20	NA		NA	
2-Butanone	UG/L	19 J	50	25	20	NA		NA	
1,1,1-Trichloroethane	UG/L	ND	50	ND	20	NA		NA	
Carbon Tetrachloride	UG/L	ND	50	ND	20	NA		NA	
Bromodichloromethane	UG/L	ND	50	ND	20	NA		NA	
1,2-Dichloropropane	UG/L	ND	50	ND	20	NA		NA	
cis-1,3-Dichloropropene	UG/L	ND	50	ND	20	NA		NA	
Trichloroethene	UG/L	150	50	ND	20	NA		NA	
Dibromochloromethane	UG/L	ND	50	ND	20	NA		NA	
1,1,2-Trichloroethane	UG/L	ND	50	ND	20	NA		NA	
Benzene	UG/L	ND	50	ND	20	NA		NA	
trans-1,3-Dichloropropene	UG/L	ND	50	ND	20	NA		NA	
Bromoform	UG/L	ND	50	ND	20	NA		NA	
4-Methyl-2-pentanone	UG/L	ND	50	ND	20	NA		NA	
2-Hexanone	UG/L	ND	50	ND	20	NA		NA	
Tetrachloroethene	UG/L	98	50	ND	20	NA		NA	
Toluene	UG/L	ND	50	ND	20	NA		NA	
1,1,2,2-Tetrachloroethane	UG/L	ND	50	ND	20	NA		NA	
Chlorobenzene	UG/L	ND	50	ND	20	NA		NA	
Ethylbenzene	UG/L	ND	50	ND	20	NA		NA	
Styrene	UG/L	ND	50	ND	20	NA		NA	
Total Xylenes	UG/L	19 J	50	ND	20	NA		NA	
Dichlorodifluoromethane	UG/L	ND	50	ND	20	NA		NA	
Trichlorofluoromethane	UG/L	ND	50	ND	20	NA		NA	
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	50	ND	20	NA		NA	
trans-1,2-Dichloroethene	UG/L	500	50	ND	20	NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	50	ND	20	NA		NA	
cis-1,2-Dichloroethene	UG/L	370	50	12 J	20	NA		NA	
Cyclohexane	UG/L	ND	50	ND	20	NA		NA	
Methylcyclohexane	UG/L	ND	50	ND	20	NA		NA	
1,2-Dibromoethane	UG/L	ND	50	ND	20	NA		NA	
Isopropylbenzene	UG/L	ND	50	ND	20	NA		NA	
1,3-Dichlorobenzene	UG/L	ND	50	ND	20	NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 03/09/2007  
Time: 17:05:34

Benchmark - 7503 Niagara Falls Blvd. Site  
Benchmark - 7503 Niagara Falls Blvd. site-water  
EPA ASP 2000 - VOLATILES

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-14 A07-1926 03/01/2007		A7192601		MW-19 A07-1926 03/01/2007		A7192602					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,4-Dichlorobenzene	UG/L	ND	50	ND	20	NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	UG/L	ND	50	ND	20	NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	UG/L	ND	50	ND	20	NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	UG/L	ND	50	ND	20	NA		NA		NA		NA		NA	
Methyl acetate	UG/L	ND	50	ND	20	NA		NA		NA		NA		NA	
IS/SURROGATE(S)															
Bromochloromethane	%	90	50-200	92	50-200	NA		NA		NA		NA		NA	
1,4-Difluorobenzene	%	89	50-200	91	50-200	NA		NA		NA		NA		NA	
Chlorobenzene-D5	%	90	50-200	92	50-200	NA		NA		NA		NA		NA	
p-Bromofluorobenzene	%	101	86-115	100	86-115	NA		NA		NA		NA		NA	
1,2-Dichloroethane-D4	%	107	76-114	106	76-114	NA		NA		NA		NA		NA	
Toluene-D8	%	99	88-110	99	88-110	NA		NA		NA		NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

te: 06/28/2007  
me: 10:14:35

Benchmark - 7503 Niagara Falls Blvd. Site  
Level 2 - (GLR) 7503 Niagara Falls Blvd. site  
AQUEOUS-METHOD 8260 - TCL VOLATILE ORGANICS

Rept: AN0326

ient ID b No mple Date		Lab ID		MW-14 A07-7030 06/22/2007		A7703002		MW-14 A07-7030 06/22/2007		A7703002DL		MW-19 A07-7030 06/22/2007		A7703001			
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
stone	UG/L	49	20	41 DJ	100	47	20	NA				NA					
izene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
modichloromethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
moform	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
omethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
utanone	UG/L	85	20	87 DJ	100	170	20	NA				NA					
bon Disulfide	UG/L	1.6 J	4.0	ND	20	2.0 J	4.0	NA				NA					
bon Tetrachloride	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
orobenzene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
oroethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
oroform	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
oromethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
lohexane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
2-Dibromo-3-chloropropane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
romochloromethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
chlorodifluoromethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
2-Dibromoethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
2-Dichlorobenzene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
3-Dichlorobenzene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
4-Dichlorobenzene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
1-Dichloroethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
2-Dichloroethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
1-Dichloroethene	UG/L	44	4.0	60 D	20	ND	4.0	NA				NA					
s-1,2-Dichloroethene	UG/L	850 E	4.0	950 D	20	38	4.0	NA				NA					
ans-1,2-Dichloroethene	UG/L	1500 E	4.0	1900 D	20	ND	4.0	NA				NA					
2-Dichloropropane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
s-1,3-Dichloropropene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
ans-1,3-Dichloropropene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
hylbenzene	UG/L	6.3	4.0	ND	20	ND	4.0	NA				NA					
Hexanone	UG/L	ND	20	ND	100	ND	20	NA				NA					
opropylbenzene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
thyl acetate	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
thylene chloride	UG/L	ND	4.0	21 D	20	ND	4.0	NA				NA					
thyl-t-Butyl Ether (MTBE)	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
Methyl-2-pentanone	UG/L	ND	20	ND	100	ND	20	NA				NA					
thylcyclohexane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
yrene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
1,2,2-Tetrachloroethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
trachloroethene	UG/L	35	4.0	40 D	20	ND	4.0	NA				NA					
luene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
2,4-Trichlorobenzene	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
1,1-Trichloroethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					
1,2-Trichloroethane	UG/L	ND	4.0	ND	20	ND	4.0	NA				NA					

= Not Applicable ND = Not Detected

STL Buffalo

9/21



Date: 06/28/2007  
Time: 10:14:35

Benchmark - 7503 Niagara Falls Blvd. Site  
Level 2 - (GLR) 7503 Niagara Falls Blvd. site  
AQUEOUS-METHOD 8260 - TCL VOLATILE ORGANICS

Rept: AN0326

Client ID Job No Sample Date		Lab ID		MW-14 A07-7030 06/22/2007		A7703002		MW-14 A07-7030 06/22/2007		A7703002DL		MW-19 A07-7030 06/22/2007		A7703001			
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	ND	4.0	ND	20	ND	4.0	ND	20	ND	4.0	ND	4.0	NA		NA	
Trichlorofluoromethane	UG/L	330	4.0	400 D	20	ND	4.0	ND	20	ND	4.0	ND	4.0	NA		NA	
Vinyl chloride	UG/L	ND	4.0	ND	20	ND	4.0	ND	20	ND	4.0	ND	4.0	NA		NA	
o-tol Xylenes	UG/L	540 E	4.0	880 D	20	15	4.0	15	4.0	15	4.0	15	4.0	NA		NA	
IS/SURROGATE(S)	UG/L	ND	12	ND	60	ND	12	ND	60	ND	12	ND	12	NA		NA	
Chlorobenzene-D5	%	102	50-200	85	50-200	102	50-200	102	50-200	102	50-200	102	50-200	NA		NA	
1,4-Difluorobenzene	%	102	50-200	86	50-200	103	50-200	103	50-200	103	50-200	103	50-200	NA		NA	
1,4-Dichlorobenzene-D4	%	100	50-200	74	50-200	99	50-200	99	50-200	99	50-200	99	50-200	NA		NA	
Toluene-D8	%	101	71-126	100	71-126	102	71-126	102	71-126	102	71-126	102	71-126	NA		NA	
1-Bromofluorobenzene	%	95	73-120	95	73-120	96	73-120	96	73-120	96	73-120	96	73-120	NA		NA	
1,2-Dichloroethane-D4	%	90	66-137	110	66-137	91	66-137	91	66-137	91	66-137	91	66-137	NA		NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

10/21

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-19 (1)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699632

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	2.0	U	2.0	9.9	U	9.9
1,2-Dichlorotetrafluoroethane	76-14-2	0.80	U	0.80	5.6	U	5.6
Chloromethane	74-87-3	2.0	U	2.0	4.1	U	4.1
Vinyl Chloride	75-01-4	150		0.80	380		2.0
1,3-Butadiene	106-99-0	2.0	U	2.0	4.4	U	4.4
Bromomethane	74-83-9	0.80	U	0.80	3.1	U	3.1
Chloroethane	75-00-3	2.0	U	2.0	5.3	U	5.3
Bromoethene	593-60-2	0.80	U	0.80	3.5	U	3.5
Trichlorofluoromethane	75-69-4	0.80	U	0.80	4.5	U	4.5
Freon TF	76-13-1	0.80	U	0.80	6.1	U	6.1
1,1-Dichloroethene	75-35-4	13		0.80	52		3.2
Acetone	67-64-1	20	U	20	48	U	48
Isopropyl Alcohol	67-63-0	20	U	20	49	U	49
Carbon Disulfide	75-15-0	13		2.0	40		6.2
3-Chloropropene	107-05-1	2.0	U	2.0	6.3	U	6.3
Methylene Chloride	75-09-2	2.0	U	2.0	6.9	U	6.9
tert-Butyl Alcohol	75-65-0	20	U	20	61	U	61
Methyl tert-Butyl Ether	1634-04-4	2.0	U	2.0	7.2	U	7.2
trans-1,2-Dichloroethene	156-60-5	27		0.80	110		3.2
n-Hexane	110-54-3	78		2.0	270		7.0
1,1-Dichloroethane	75-34-3	0.80	U	0.80	3.2	U	3.2
1,2-Dichloroethane (total)	540-59-0	85		0.80	340		3.2
Methyl Ethyl Ketone	78-93-3	2.0	U	2.0	5.9	U	5.9
cis-1,2-Dichloroethene	156-59-2	58		0.80	230		3.2
Tetrahydrofuran	109-99-9	20	U	20	59	U	59
Chloroform	67-66-3	0.80	U	0.80	3.9	U	3.9
1,1,1-Trichloroethane	71-55-6	0.80	U	0.80	4.4	U	4.4
Cyclohexane	110-82-7	7.1		0.80	24		2.8
Carbon Tetrachloride	56-23-5	0.80	U	0.80	5.0	U	5.0
2,2,4-Trimethylpentane	540-84-1	0.80	U	0.80	3.7	U	3.7
Benzene	71-43-2	2.8		0.80	8.9		2.6
1,2-Dichloroethane	107-06-2	0.80	U	0.80	3.2	U	3.2
n-Heptane	142-82-5	20		0.80	82		3.3

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-19 (1)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699632

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	97		0.80	520		4.3
1,2-Dichloropropane	78-87-5	0.80	U	0.80	3.7	U	3.7
1,4-Dioxane	123-91-1	20	U	20	72	U	72
Bromodichloromethane	75-27-4	0.80	U	0.80	5.4	U	5.4
cis-1,3-Dichloropropene	10061-01-5	0.80	U	0.80	3.6	U	3.6
Methyl Isobutyl Ketone	108-10-1	2.0	U	2.0	8.2	U	8.2
Toluene	108-88-3	1.8		0.80	6.8		3.0
trans-1,3-Dichloropropene	10061-02-6	0.80	U	0.80	3.6	U	3.6
1,1,2-Trichloroethane	79-00-5	0.80	U	0.80	4.4	U	4.4
Tetrachloroethene	127-18-4	36		0.80	240		5.4
Methyl Butyl Ketone	591-78-6	2.0	U	2.0	8.2	U	8.2
Dibromochloromethane	124-48-1	0.80	U	0.80	6.8	U	6.8
1,2-Dibromoethane	106-93-4	0.80	U	0.80	6.1	U	6.1
Chlorobenzene	108-90-7	0.80	U	0.80	3.7	U	3.7
Ethylbenzene	100-41-4	0.80	U	0.80	3.5	U	3.5
Xylene (m,p)	1330-20-7	2.9		2.0	13		8.7
Xylene (o)	95-47-6	1.1		0.80	4.8		3.5
Xylene (total)	1330-20-7	4.0		0.80	17		3.5
Styrene	100-42-5	0.80	U	0.80	3.4	U	3.4
Bromoform	75-25-2	0.80	U	0.80	8.3	U	8.3
1,1,2,2-Tetrachloroethane	79-34-5	0.80	U	0.80	5.5	U	5.5
4-Ethyltoluene	622-96-8	0.80	U	0.80	3.9	U	3.9
1,3,5-Trimethylbenzene	108-67-8	0.80	U	0.80	3.9	U	3.9
2-Chlorotoluene	95-49-8	0.80	U	0.80	4.1	U	4.1
1,2,4-Trimethylbenzene	95-63-6	0.80	U	0.80	3.9	U	3.9
1,3-Dichlorobenzene	541-73-1	0.80	U	0.80	4.8	U	4.8
1,4-Dichlorobenzene	106-46-7	0.80	U	0.80	4.8	U	4.8
1,2-Dichlorobenzene	95-50-1	0.80	U	0.80	4.8	U	4.8
1,2,4-Trichlorobenzene	120-82-1	2.0	U	2.0	15	U	15
Hexachlorobutadiene	87-68-3	0.80	U	0.80	8.5	U	8.5

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-19 (2)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699633

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	1.3	U	1.3	6.4	U	6.4
1,2-Dichlorotetrafluoroethane	76-14-2	0.50	U	0.50	3.5	U	3.5
Chloromethane	74-87-3	1.3	U	1.3	2.7	U	2.7
Vinyl Chloride	75-01-4	54		0.50	140		1.3
1,3-Butadiene	106-99-0	3.3		1.3	7.3		2.9
Bromomethane	74-83-9	0.50	U	0.50	1.9	U	1.9
Chloroethane	75-00-3	1.3	U	1.3	3.4	U	3.4
Bromoethene	593-60-2	0.50	U	0.50	2.2	U	2.2
Trichlorofluoromethane	75-69-4	0.50	U	0.50	2.8	U	2.8
Freon TF	76-13-1	0.50	U	0.50	3.8	U	3.8
1,1-Dichloroethene	75-35-4	5.0		0.50	20		2.0
Acetone	67-64-1	27		13	64		31
Isopropyl Alcohol	67-63-0	13	U	13	32	U	32
Carbon Disulfide	75-15-0	31		1.3	97		4.0
3-Chloropropene	107-05-1	1.3	U	1.3	4.1	U	4.1
Methylene Chloride	75-09-2	1.3	U	1.3	4.5	U	4.5
tert-Butyl Alcohol	75-65-0	13	U	13	39	U	39
Methyl tert-Butyl Ether	1634-04-4	1.3	U	1.3	4.7	U	4.7
trans-1,2-Dichloroethene	156-60-5	11		0.50	44		2.0
n-Hexane	110-54-3	10		1.3	35		4.6
1,1-Dichloroethane	75-34-3	0.50	U	0.50	2.0	U	2.0
1,2-Dichloroethene (total)	540-59-0	39		0.50	150		2.0
Methyl Ethyl Ketone	78-93-3	1.3	U	1.3	3.8	U	3.8
cis-1,2-Dichloroethene	156-59-2	28		0.50	110		2.0
Tetrahydrofuran	109-99-9	13	U	13	38	U	38
Chloroform	67-66-3	0.50	U	0.50	2.4	U	2.4
1,1,1-Trichloroethane	71-55-6	0.50	U	0.50	2.7	U	2.7
Cyclohexane	110-82-7	2.2		0.50	7.6		1.7
Carbon Tetrachloride	56-23-5	0.50	U	0.50	3.1	U	3.1
2,2,4-Trimethylpentane	540-84-1	0.50	U	0.50	2.3	U	2.3
Benzene	71-43-2	1.6		0.50	5.1		1.6
1,2-Dichloroethane	107-06-2	0.50	U	0.50	2.0	U	2.0
n-Heptane	142-82-5	2.9		0.50	12		2.0

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-19 (2)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699633

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	31		0.50	170		2.7
1,2-Dichloropropane	78-87-5	0.50	U	0.50	2.3	U	2.3
1,4-Dioxane	123-91-1	13	U	13	47	U	47
Bromodichloromethane	75-27-4	0.50	U	0.50	3.4	U	3.4
cis-1,3-Dichloropropene	10061-01-5	0.50	U	0.50	2.3	U	2.3
Methyl Isobutyl Ketone	108-10-1	1.3	U	1.3	5.3	U	5.3
Toluene	108-88-3	0.68		0.50	2.6		1.9
trans-1,3-Dichloropropene	10061-02-6	0.50	U	0.50	2.3	U	2.3
1,1,2-Trichloroethane	79-00-5	0.50	U	0.50	2.7	U	2.7
Tetrachloroethene	127-18-4	7.8		0.50	53		3.4
Methyl Butyl Ketone	591-78-6	1.3	U	1.3	5.3	U	5.3
Dibromochloromethane	124-48-1	0.50	U	0.50	4.3	U	4.3
1,2-Dibromoethane	106-93-4	0.50	U	0.50	3.8	U	3.8
Chlorobenzene	108-90-7	0.50	U	0.50	2.3	U	2.3
Ethylbenzene	100-41-4	0.50	U	0.50	2.2	U	2.2
Xylene (m,p)	1330-20-7	1.3	U	1.3	5.6	U	5.6
Xylene (o)	95-47-6	0.50	U	0.50	2.2	U	2.2
Xylene (total)	1330-20-7	0.50	U	0.50	2.2	U	2.2
Styrene	100-42-5	0.50	U	0.50	2.1	U	2.1
Bromoform	75-25-2	0.50	U	0.50	5.2	U	5.2
1,1,2,2-Tetrachloroethane	79-34-5	0.50	U	0.50	3.4	U	3.4
4-Ethyltoluene	622-96-8	0.50	U	0.50	2.5	U	2.5
1,3,5-Trimethylbenzene	108-67-8	0.50	U	0.50	2.5	U	2.5
2-Chlorotoluene	95-49-8	0.50	U	0.50	2.6	U	2.6
1,2,4-Trimethylbenzene	95-63-6	0.50	U	0.50	2.5	U	2.5
1,3-Dichlorobenzene	541-73-1	0.50	U	0.50	3.0	U	3.0
1,4-Dichlorobenzene	106-46-7	0.50	U	0.50	3.0	U	3.0
1,2-Dichlorobenzene	95-50-1	0.50	U	0.50	3.0	U	3.0
1,2,4-Trichlorobenzene	120-82-1	1.3	U	1.3	9.6	U	9.6
Hexachlorobutadiene	87-68-3	0.50	U	0.50	5.3	U	5.3



**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-14 (1)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699634

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	0.93		0.50	4.6		2.5
1,2-Dichlorotetrafluoroethane	76-14-2	0.20	U	0.20	1.4	U	1.4
Chloromethane	74-87-3	0.50	U	0.50	1.0	U	1.0
Vinyl Chloride	75-01-4	2.2		0.20	5.6		0.51
1,3-Butadiene	106-99-0	0.50	U	0.50	1.1	U	1.1
Bromomethane	74-83-9	0.20	U	0.20	0.78	U	0.78
Chloroethane	75-00-3	0.50	U	0.50	1.3	U	1.3
Bromoethene	593-60-2	0.20	U	0.20	0.87	U	0.87
Trichlorofluoromethane	75-69-4	0.42		0.20	2.4		1.1
Freon TF	76-13-1	0.20	U	0.20	1.5	U	1.5
1,1-Dichloroethene	75-35-4	0.30		0.20	1.2		0.79
Acetone	67-64-1	9.8		5.0	23		12
Isopropyl Alcohol	67-63-0	5.0	U	5.0	12	U	12
Carbon Disulfide	75-15-0	0.50	U	0.50	1.6	U	1.6
3-Chloropropene	107-05-1	0.50	U	0.50	1.6	U	1.6
Methylene Chloride	75-09-2	0.50	U	0.50	1.7	U	1.7
tert-Butyl Alcohol	75-65-0	5.0	U	5.0	15	U	15
Methyl tert-Butyl Ether	1634-04-4	0.50	U	0.50	1.8	U	1.8
trans-1,2-Dichloroethene	156-60-5	2.0		0.20	7.9		0.79
n-Hexane	110-54-3	6.3		0.50	22		1.8
1,1-Dichloroethane	75-34-3	0.20	U	0.20	0.81	U	0.81
1,2-Dichloroethene (total)	540-59-0	5.0		0.20	20		0.79
Methyl Ethyl Ketone	78-93-3	0.62		0.50	1.8		1.5
cis-1,2-Dichloroethene	156-59-2	3.0		0.20	12		0.79
Tetrahydrofuran	109-99-9	5.0	U	5.0	15	U	15
Chloroform	67-66-3	0.20	U	0.20	0.98	U	0.98
1,1,1-Trichloroethane	71-55-6	0.20	U	0.20	1.1	U	1.1
Cyclohexane	110-82-7	2.0		0.20	6.9		0.69
Carbon Tetrachloride	56-23-5	0.20	U	0.20	1.3	U	1.3
2,2,4-Trimethylpentane	540-84-1	0.20	U	0.20	0.93	U	0.93
Benzene	71-43-2	1.1		0.20	3.5		0.64
1,2-Dichloroethane	107-06-2	0.20	U	0.20	0.81	U	0.81
n-Heptane	142-82-5	3.9		0.20	16		0.82

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-14 (1)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699634

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results In ppbv	Q	RL In ppbv	Results in ug/m3	Q	RL In ug/m3
Trichloroethene	79-01-6	1.5		0.20	8.1		1.1
1,2-Dichloropropane	78-87-5	0.20	U	0.20	0.92	U	0.92
1,4-Dioxane	123-91-1	5.0	U	5.0	18	U	18
Bromodichloromethane	75-27-4	0.20	U	0.20	1.3	U	1.3
cis-1,3-Dichloropropene	10061-01-5	0.20	U	0.20	0.91	U	0.91
Methyl Isobutyl Ketone	108-10-1	0.50	U	0.50	2.0	U	2.0
Toluene	108-88-3	2.6		0.20	9.8		0.75
trans-1,3-Dichloropropene	10061-02-6	0.20	U	0.20	0.91	U	0.91
1,1,2-Trichloroethane	79-00-5	0.20	U	0.20	1.1	U	1.1
Tetrachloroethene	127-18-4	0.32		0.20	2.2		1.4
Methyl Butyl Ketone	591-78-6	0.50	U	0.50	2.0	U	2.0
Dibromochloromethane	124-48-1	0.20	U	0.20	1.7	U	1.7
1,2-Dibromoethane	106-93-4	0.20	U	0.20	1.5	U	1.5
Chlorobenzene	108-90-7	0.20	U	0.20	0.92	U	0.92
Ethylbenzene	100-41-4	0.40		0.20	1.7		0.87
Xylene (m,p)	1330-20-7	1.4		0.50	6.1		2.2
Xylene (o)	95-47-6	0.47		0.20	2.0		0.87
Xylene (total)	1330-20-7	1.9		0.20	8.3		0.87
Styrene	100-42-5	0.20		0.20	0.85		0.85
Bromoform	75-25-2	0.20	U	0.20	2.1	U	2.1
1,1,2,2-Tetrachloroethane	79-34-5	0.20	U	0.20	1.4	U	1.4
4-Ethyltoluene	622-96-8	0.20	U	0.20	0.98	U	0.98
1,3,5-Trimethylbenzene	108-67-8	0.20	U	0.20	0.98	U	0.98
2-Chlorotoluene	95-49-8	0.20	U	0.20	1.0	U	1.0
1,2,4-Trimethylbenzene	95-63-6	0.20	U	0.20	0.98	U	0.98
1,3-Dichlorobenzene	541-73-1	0.20	U	0.20	1.2	U	1.2
1,4-Dichlorobenzene	106-46-7	0.20	U	0.20	1.2	U	1.2
1,2-Dichlorobenzene	95-50-1	0.20	U	0.20	1.2	U	1.2
1,2,4-Trichlorobenzene	120-82-1	0.50	U	0.50	3.7	U	3.7
Hexachlorobutadiene	87-68-3	0.20	U	0.20	2.1	U	2.1

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-14 (2)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699635

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	0.75		0.75	3.7		3.7
1,2-Dichlorotetrafluoroethane	76-14-2	0.30	U	0.30	2.1	U	2.1
Chloromethane	74-87-3	0.75	U	0.75	1.5	U	1.5
Vinyl Chloride	75-01-4	0.30	U	0.30	0.77	U	0.77
1,3-Butadiene	106-99-0	11		0.75	24		1.7
Bromomethane	74-83-9	0.30	U	0.30	1.2	U	1.2
Chloroethane	75-00-3	0.75	U	0.75	2.0	U	2.0
Bromoethene	593-60-2	0.30	U	0.30	1.3	U	1.3
Trichlorofluoromethane	75-69-4	0.37		0.30	2.1		1.7
Freon TF	76-13-1	0.30	U	0.30	2.3	U	2.3
1,1-Dichloroethene	75-35-4	0.30	U	0.30	1.2	U	1.2
Acetone	67-64-1	7.9		7.5	19		18
Isopropyl Alcohol	67-63-0	7.5	U	7.5	18	U	18
Carbon Disulfide	75-15-0	1.0		0.75	3.1		2.3
3-Chloropropene	107-05-1	0.75	U	0.75	2.3	U	2.3
Methylene Chloride	75-09-2	0.75	U	0.75	2.6	U	2.6
tert-Butyl Alcohol	75-65-0	7.5	U	7.5	23	U	23
Methyl tert-Butyl Ether	1634-04-4	0.75	U	0.75	2.7	U	2.7
trans-1,2-Dichloroethene	156-60-5	0.30	U	0.30	1.2	U	1.2
n-Hexane	110-54-3	37		0.75	130		2.6
1,1-Dichloroethane	75-34-3	0.30	U	0.30	1.2	U	1.2
1,2-Dichloroethane (total)	540-59-0	0.30	U	0.30	1.2	U	1.2
Methyl Ethyl Ketone	78-93-3	0.75	U	0.75	2.2	U	2.2
cis-1,2-Dichloroethene	156-59-2	0.30	U	0.30	1.2	U	1.2
Tetrahydrofuran	109-99-9	7.5	U	7.5	22	U	22
Chloroform	67-66-3	0.30	U	0.30	1.5	U	1.5
1,1,1-Trichloroethane	71-55-6	0.30	U	0.30	1.6	U	1.6
Cyclohexane	110-82-7	16		0.30	55		1.0
Carbon Tetrachloride	56-23-5	0.30	U	0.30	1.9	U	1.9
2,2,4-Trimethylpentane	540-84-1	0.30	U	0.30	1.4	U	1.4
Benzene	71-43-2	8.9		0.30	28		0.96
1,2-Dichloroethane	107-06-2	0.30	U	0.30	1.2	U	1.2
n-Heptane	142-82-5	17		0.30	70		1.2

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

MW-14 (2)

Lab Name: STL Burlington

SDG Number: A07-0956

Case Number:

Sample Matrix: AIR

Lab Sample No.: 699635

Date Analyzed: 2/1/2007

Date Received: 1/30/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	0.30	U	0.30	1.6	U	1.6
1,2-Dichloropropane	78-87-5	0.30	U	0.30	1.4	U	1.4
1,4-Dioxane	123-91-1	7.5	U	7.5	27	U	27
Bromodichloromethane	75-27-4	0.30	U	0.30	2.0	U	2.0
cis-1,3-Dichloropropene	10061-01-5	0.30	U	0.30	1.4	U	1.4
Methyl Isobutyl Ketone	108-10-1	0.75	U	0.75	3.1	U	3.1
Toluene	108-88-3	8.2		0.30	31		1.1
trans-1,3-Dichloropropene	10061-02-6	0.30	U	0.30	1.4	U	1.4
1,1,2-Trichloroethane	79-00-5	0.30	U	0.30	1.6	U	1.6
Tetrachloroethene	127-18-4	0.30	U	0.30	2.0	U	2.0
Methyl Butyl Ketone	591-78-6	0.75	U	0.75	3.1	U	3.1
Dibromochloromethane	124-48-1	0.30	U	0.30	2.6	U	2.6
1,2-Dibromoethane	106-93-4	0.30	U	0.30	2.3	U	2.3
Chlorobenzene	108-90-7	0.30	U	0.30	1.4	U	1.4
Ethylbenzene	100-41-4	1.6		0.30	6.9		1.3
Xylene (m,p)	1330-20-7	6.2		0.75	27		3.3
Xylene (o)	95-47-6	1.9		0.30	8.3		1.3
Xylene (total)	1330-20-7	8.1		0.30	35		1.3
Styrene	100-42-5	0.30	U	0.30	1.3	U	1.3
Bromoform	75-25-2	0.30	U	0.30	3.1	U	3.1
1,1,2,2-Tetrachloroethane	79-34-5	0.30	U	0.30	2.1	U	2.1
4-Ethyltoluene	622-96-8	0.30	U	0.30	1.5	U	1.5
1,3,5-Trimethylbenzene	108-67-8	0.30	U	0.30	1.5	U	1.5
2-Chlorotoluene	95-49-8	0.30	U	0.30	1.6	U	1.6
1,2,4-Trimethylbenzene	95-63-6	0.30	U	0.30	1.5	U	1.5
1,3-Dichlorobenzene	541-73-1	0.30	U	0.30	1.8	U	1.8
1,4-Dichlorobenzene	106-46-7	0.30	U	0.30	1.8	U	1.8
1,2-Dichlorobenzene	95-50-1	0.30	U	0.30	1.8	U	1.8
1,2,4-Trichlorobenzene	120-82-1	0.75	U	0.75	5.6	U	5.6
Hexachlorobutadiene	87-68-3	0.30	U	0.30	3.2	U	3.2

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

6LR-SV-658A

Lab Name: STL Burlington

SDG Number: A077470

Case Number:

Sample Matrix: AIR

Lab Sample No.: 716547

Date Analyzed: 07/12/07

Date Received: 07/03/07

Target Compound	CAS Number	Results In ppbv	Q	RL In ppbv	Results In ug/m3	Q	RL In ug/m3
Dichlorodifluoromethane	75-71-8	5.0	U	5.0	25	U	25
1,2-Dichlorotetrafluoroethane	76-14-2	2.0	U	2.0	14	U	14
Chloromethane	74-87-3	5.0	U	5.0	10	U	10
Vinyl Chloride	75-01-4	2.0	U	2.0	5.1	U	5.1
1,3-Butadiene	106-99-0	5.0	U	5.0	11	U	11
Bromomethane	74-83-9	2.0	U	2.0	7.8	U	7.8
Chloroethane	75-00-3	5.0	U	5.0	13	U	13
Bromoethene	593-60-2	2.0	U	2.0	8.7	U	8.7
Trichlorofluoromethane	75-69-4	2.0	U	2.0	11	U	11
Freon TF	76-13-1	2.0	U	2.0	15	U	15
1,1-Dichloroethene	75-35-4	2.0	U	2.0	7.9	U	7.9
Acetone	67-64-1	67		50	160		120
Isopropyl Alcohol	67-63-0	50	U	50	120	U	120
Carbon Disulfide	75-15-0	5.0	U	5.0	16	U	16
3-Chloropropene	107-05-1	5.0	U	5.0	16	U	16
Methylene Chloride	75-09-2	5.0	U	5.0	17	U	17
tert-Butyl Alcohol	75-65-0	50	U	50	150	U	150
Methyl tert-Butyl Ether	1634-04-4	5.0	U	5.0	18	U	18
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	7.9	U	7.9
n-Hexane	110-54-3	5.0	U	5.0	18	U	18
1,1-Dichloroethane	75-34-3	2.0	U	2.0	8.1	U	8.1
1,2-Dichloroethene (total)	540-59-0	2.0	U	2.0	7.9	U	7.9
Methyl Ethyl Ketone	78-93-3	5.0	U	5.0	15	U	15
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	7.9	U	7.9
Tetrahydrofuran	109-99-9	50	U	50	150	U	150
Chloroform	67-66-3	2.0	U	2.0	9.8	U	9.8
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	11	U	11
Cyclohexane	110-82-7	2.0	U	2.0	6.9	U	6.9
Carbon Tetrachloride	56-23-5	2.0	U	2.0	13	U	13
2,2,4-Trimethylpentane	540-84-1	2.0	U	2.0	9.3	U	9.3
Benzene	71-43-2	2.0	U	2.0	6.4	U	6.4
1,2-Dichloroethane	107-06-2	2.0	U	2.0	8.1	U	8.1
n-Heptane	142-82-5	2.0	U	2.0	8.2	U	8.2

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

6LR-SV-658A

Lab Name: STL Burlington

SDG Number: A077470

Case Number:

Sample Matrix: AIR

Lab Sample No.: 716547

Date Analyzed: 07/12/07

Date Received: 07/03/07

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	2.0	U	2.0	11	U	11
1,2-Dichloropropane	78-87-5	2.0	U	2.0	9.2	U	9.2
1,4-Dioxane	123-91-1	50	U	50	180	U	180
Bromodichloromethane	75-27-4	2.0	U	2.0	13	U	13
cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	9.1	U	9.1
Methyl Isobutyl Ketone	108-10-1	5.0	U	5.0	20	U	20
Toluene	108-88-3	2.1		2.0	7.9		7.5
trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	9.1	U	9.1
1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	11	U	11
Tetrachloroethene	127-18-4	3.2		2.0	22		14
Methyl Butyl Ketone	591-78-6	5.0	U	5.0	20	U	20
Dibromochloromethane	124-48-1	2.0	U	2.0	17	U	17
1,2-Dibromoethane	106-93-4	2.0	U	2.0	15	U	15
Chlorobenzene	108-90-7	2.0	U	2.0	9.2	U	9.2
Ethylbenzene	100-41-4	2.0	U	2.0	8.7	U	8.7
Xylene (m,p)	1330-20-7	5.0	U	5.0	22	U	22
Xylene (o)	95-47-6	2.0	U	2.0	8.7	U	8.7
Xylene (total)	1330-20-7	2.0	U	2.0	8.7	U	8.7
Styrene	100-42-5	2.0	U	2.0	8.5	U	8.5
Bromoform	75-25-2	2.0	U	2.0	21	U	21
1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	14	U	14
4-Ethyltoluene	622-96-8	2.0	U	2.0	9.8	U	9.8
1,3,5-Trimethylbenzene	108-67-8	2.0	U	2.0	9.8	U	9.8
2-Chlorotoluene	95-49-8	2.0	U	2.0	10	U	10
1,2,4-Trimethylbenzene	95-63-6	2.0	U	2.0	9.8	U	9.8
1,3-Dichlorobenzene	541-73-1	2.0	U	2.0	12	U	12
1,4-Dichlorobenzene	106-46-7	2.0	U	2.0	12	U	12
1,2-Dichlorobenzene	95-50-1	2.0	U	2.0	12	U	12
1,2,4-Trichlorobenzene	120-82-1	5.0	U	5.0	37	U	37
Hexachlorobutadiene	87-68-3	2.0	U	2.0	21	U	21



**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

6LR-SV-658B

Lab Name: STL Burlington

SDG Number: A077470

Case Number:

Sample Matrix: AIR

Lab Sample No.: 716546

Date Analyzed: 07/12/07

Date Received: 07/03/07

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	5.0	U	5.0	25	U	25
1,2-Dichlorotetrafluoroethane	76-14-2	2.0	U	2.0	14	U	14
Chloromethane	74-87-3	5.0	U	5.0	10	U	10
Vinyl Chloride	75-01-4	2.0	U	2.0	5.1	U	5.1
1,3-Butadiene	106-99-0	5.0	U	5.0	11	U	11
Bromomethane	74-83-9	2.0	U	2.0	7.8	U	7.8
Chloroethane	75-00-3	5.0	U	5.0	13	U	13
Bromoethene	593-60-2	2.0	U	2.0	8.7	U	8.7
Trichlorofluoromethane	75-69-4	2.0	U	2.0	11	U	11
Freon TF	76-13-1	2.0	U	2.0	15	U	15
1,1-Dichloroethene	75-35-4	2.0	U	2.0	7.9	U	7.9
Acetone	67-64-1	50	U	50	120	U	120
Isopropyl Alcohol	67-63-0	50	U	50	120	U	120
Carbon Disulfide	75-15-0	5.0	U	5.0	16	U	16
3-Chloropropene	107-05-1	5.0	U	5.0	16	U	16
Methylene Chloride	75-09-2	5.0	U	5.0	17	U	17
tert-Butyl Alcohol	75-65-0	50	U	50	150	U	150
Methyl tert-Butyl Ether	1634-04-4	5.0	U	5.0	18	U	18
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	7.9	U	7.9
n-Hexane	110-54-3	5.0	U	5.0	18	U	18
1,1-Dichloroethane	75-34-3	2.0	U	2.0	8.1	U	8.1
1,2-Dichloroethene (total)	540-59-0	2.0	U	2.0	7.9	U	7.9
Methyl Ethyl Ketone	78-93-3	5.0	U	5.0	15	U	15
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	7.9	U	7.9
Tetrahydrofuran	109-99-9	50	U	50	150	U	150
Chloroform	67-66-3	2.0	U	2.0	9.8	U	9.8
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	11	U	11
Cyclohexane	110-82-7	2.0	U	2.0	6.9	U	6.9
Carbon Tetrachloride	56-23-5	2.0	U	2.0	13	U	13
2,2,4-Trimethylpentane	540-84-1	2.0	U	2.0	9.3	U	9.3
Benzene	71-43-2	2.0	U	2.0	6.4	U	6.4
1,2-Dichloroethane	107-06-2	2.0	U	2.0	8.1	U	8.1
n-Heptane	142-82-5	2.0	U	2.0	8.2	U	8.2

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

6LR-SV-658B

Lab Name: STL Burlington

SDG Number: A077470

Case Number:

Sample Matrix: AIR

Lab Sample No.: 716546

Date Analyzed: 07/12/07

Date Received: 07/03/07

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	2.0	U	2.0	11	U	11
1,2-Dichloropropane	78-87-5	2.0	U	2.0	9.2	U	9.2
1,4-Dioxane	123-91-1	50	U	50	180	U	180
Bromodichloromethane	75-27-4	2.0	U	2.0	13	U	13
cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	9.1	U	9.1
Methyl Isobutyl Ketone	108-10-1	5.0	U	5.0	20	U	20
Toluene	108-88-3	2.0	U	2.0	7.5	U	7.5
trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	9.1	U	9.1
1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	11	U	11
Tetrachloroethene	127-18-4	2.0		2.0	14		14
Methyl Butyl Ketone	591-78-6	5.0	U	5.0	20	U	20
Dibromochloromethane	124-48-1	2.0	U	2.0	17	U	17
1,2-Dibromoethane	106-93-4	2.0	U	2.0	15	U	15
Chlorobenzene	108-90-7	2.0	U	2.0	9.2	U	9.2
Ethylbenzene	100-41-4	2.0	U	2.0	8.7	U	8.7
Xylene (m,p)	1330-20-7	5.0	U	5.0	22	U	22
Xylene (o)	95-47-6	2.0	U	2.0	8.7	U	8.7
Xylene (total)	1330-20-7	2.0	U	2.0	8.7	U	8.7
Styrene	100-42-5	2.0	U	2.0	8.5	U	8.5
Bromoform	75-25-2	2.0	U	2.0	21	U	21
1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	14	U	14
4-Ethyltoluene	622-96-8	2.0	U	2.0	9.8	U	9.8
1,3,5-Trimethylbenzene	108-67-8	2.0	U	2.0	9.8	U	9.8
2-Chlorotoluene	95-49-8	2.0	U	2.0	10	U	10
1,2,4-Trimethylbenzene	95-63-6	2.0	U	2.0	9.8	U	9.8
1,3-Dichlorobenzene	541-73-1	2.0	U	2.0	12	U	12
1,4-Dichlorobenzene	106-46-7	2.0	U	2.0	12	U	12
1,2-Dichlorobenzene	95-50-1	2.0	U	2.0	12	U	12
1,2,4-Trichlorobenzene	120-82-1	5.0	U	5.0	37	U	37
Hexachlorobutadiene	87-68-3	2.0	U	2.0	21	U	21

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

GLR-SV-668A

Lab Name: STL Burlington

SDG Number: A07-7157

Case Number:

Sample Matrix: AIR

Lab Sample No.: 715692

Date Analyzed: 7/10/2007

Date Received: 6/26/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	26	U	26	130	U	130
1,2-Dichlorotetrafluoroethane	76-14-2	10	U	10	70	U	70
Chloromethane	74-87-3	26	U	26	54	U	54
Vinyl Chloride	75-01-4	10	U	10	26	U	26
1,3-Butadiene	106-99-0	26	U	26	58	U	58
Bromomethane	74-83-9	10	U	10	39	U	39
Chloroethane	75-00-3	26	U	26	69	U	69
Bromoethene	593-60-2	10	U	10	44	U	44
Trichlorofluoromethane	75-69-4	10	U	10	56	U	56
Freon TF	76-13-1	10	U	10	77	U	77
1,1-Dichloroethene	75-35-4	10	U	10	40	U	40
Acetone	67-64-1	2000		260	4800		620
Isopropyl Alcohol	67-63-0	260	U	260	640	U	640
Carbon Disulfide	75-15-0	26	U	26	81	U	81
3-Chloropropene	107-05-1	26	U	26	81	U	81
Methylene Chloride	75-09-2	26	U	26	90	U	90
tert-Butyl Alcohol	75-65-0	260	U	260	790	U	790
Methyl tert-Butyl Ether	1634-04-4	26	U	26	94	U	94
trans-1,2-Dichloroethene	156-60-5	10	U	10	40	U	40
n-Hexane	110-54-3	26	U	26	92	U	92
1,1-Dichloroethane	75-34-3	10	U	10	40	U	40
1,2-Dichloroethene (total)	540-59-0	10	U	10	40	U	40
Methyl Ethyl Ketone	78-93-3	280		26	830		77
cis-1,2-Dichloroethene	156-59-2	10	U	10	40	U	40
Tetrahydrofuran	109-99-9	260	U	260	770	U	770
Chloroform	67-66-3	10	U	10	49	U	49
1,1,1-Trichloroethane	71-55-6	10	U	10	55	U	55
Cyclohexane	110-82-7	10	U	10	34	U	34
Carbon Tetrachloride	56-23-5	10	U	10	63	U	63
2,2,4-Trimethylpentane	540-84-1	10	U	10	47	U	47
Benzene	71-43-2	10	U	10	32	U	32
1,2-Dichloroethane	107-06-2	10	U	10	40	U	40
n-Heptane	142-82-5	10	U	10	41	U	41

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

GLR-SV-668A

Lab Name: STL Burlington

SDG Number: A07-7157

Case Number:

Sample Matrix: AIR

Lab Sample No.: 715692

Date Analyzed: 7/10/2007

Date Received: 6/26/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	10	U	10	54	U	54
1,2-Dichloropropane	78-87-5	10	U	10	46	U	46
1,4-Dioxane	123-91-1	260	U	260	940	U	940
Bromodichloromethane	75-27-4	10	U	10	67	U	67
cis-1,3-Dichloropropene	10061-01-5	10	U	10	45	U	45
Methyl Isobutyl Ketone	108-10-1	26	U	26	110	U	110
Toluene	108-88-3	10	U	10	38	U	38
trans-1,3-Dichloropropene	10061-02-6	10	U	10	45	U	45
1,1,2-Trichloroethane	79-00-5	10	U	10	55	U	55
Tetrachloroethene	127-18-4	10	U	10	68	U	68
Methyl Butyl Ketone	591-78-6	26	U	26	110	U	110
Dibromochloromethane	124-48-1	10	U	10	85	U	85
1,2-Dibromoethane	106-93-4	10	U	10	77	U	77
Chlorobenzene	108-90-7	10	U	10	46	U	46
Ethylbenzene	100-41-4	10	U	10	43	U	43
Xylene (m,p)	1330-20-7	26	U	26	110	U	110
Xylene (o)	95-47-6	10	U	10	43	U	43
Xylene (total)	1330-20-7	10	U	10	43	U	43
Styrene	100-42-5	10	U	10	43	U	43
Bromoform	75-25-2	10	U	10	100	U	100
1,1,2,2-Tetrachloroethane	79-34-5	10	U	10	69	U	69
4-Ethyltoluene	622-96-8	10	U	10	49	U	49
1,3,5-Trimethylbenzene	108-67-8	10	U	10	49	U	49
2-Chlorotoluene	95-49-8	10	U	10	52	U	52
1,2,4-Trimethylbenzene	95-63-6	10	U	10	49	U	49
1,3-Dichlorobenzene	541-73-1	10	U	10	60	U	60
1,4-Dichlorobenzene	106-46-7	10	U	10	60	U	60
1,2-Dichlorobenzene	95-50-1	10	U	10	60	U	60
1,2,4-Trichlorobenzene	120-82-1	26	U	26	190	U	190
Hexachlorobutadiene	87-68-3	10	U	10	110	U	110

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

GLR-SV-668B

Lab Name: STL Burlington

SDG Number: A07-7157

Case Number:

Sample Matrix: AIR

Lab Sample No.: 715693

Date Analyzed: 7/10/2007

Date Received: 6/26/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Dichlorodifluoromethane	75-71-8	20	U	20	99	U	99
1,2-Dichlorotetrafluoroethane	76-14-2	8.0	U	8.0	56	U	56
Chloromethane	74-87-3	20	U	20	41	U	41
Vinyl Chloride	75-01-4	8.0	U	8.0	20	U	20
1,3-Butadiene	106-99-0	20	U	20	44	U	44
Bromomethane	74-83-9	8.0	U	8.0	31	U	31
Chloroethane	75-00-3	20	U	20	53	U	53
Bromoethene	593-60-2	8.0	U	8.0	35	U	35
Trichlorofluoromethane	75-69-4	8.0	U	8.0	45	U	45
Freon TF	76-13-1	8.0	U	8.0	61	U	61
1,1-Dichloroethene	75-35-4	8.0	U	8.0	32	U	32
Acetone	67-64-1	1400		200	3300		480
Isopropyl Alcohol	67-63-0	200	U	200	490	U	490
Carbon Disulfide	75-15-0	20	U	20	62	U	62
3-Chloropropene	107-05-1	20	U	20	63	U	63
Methylene Chloride	75-09-2	20	U	20	69	U	69
tert-Butyl Alcohol	75-65-0	200	U	200	610	U	610
Methyl tert-Butyl Ether	1634-04-4	20	U	20	72	U	72
trans-1,2-Dichloroethene	156-60-5	8.0	U	8.0	32	U	32
n-Hexane	110-54-3	20	U	20	70	U	70
1,1-Dichloroethane	75-34-3	8.0	U	8.0	32	U	32
1,2-Dichloroethene (total)	540-59-0	8.0	U	8.0	32	U	32
Methyl Ethyl Ketone	78-93-3	180		20	530		59
cis-1,2-Dichloroethene	156-59-2	8.0	U	8.0	32	U	32
Tetrahydrofuran	109-99-9	200	U	200	590	U	590
Chloroform	67-66-3	8.0	U	8.0	39	U	39
1,1,1-Trichloroethane	71-55-6	8.0	U	8.0	44	U	44
Cyclohexane	110-82-7	8.0	U	8.0	28	U	28
Carbon Tetrachloride	56-23-5	8.0	U	8.0	50	U	50
2,2,4-Trimethylpentane	540-84-1	8.0	U	8.0	37	U	37
Benzene	71-43-2	8.0	U	8.0	26	U	26
1,2-Dichloroethane	107-06-2	8.0	U	8.0	32	U	32
n-Heptane	142-82-5	8.0	U	8.0	33	U	33

**TO-14/15  
Result Summary**

CLIENT SAMPLE NO.

GLR-SV-668B

Lab Name: STL Burlington

SDG Number: A07-7157

Case Number:

Sample Matrix: AIR

Lab Sample No.: 715693

Date Analyzed: 7/10/2007

Date Received: 6/26/2007

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Trichloroethene	79-01-6	8.0	U	8.0	43	U	43
1,2-Dichloropropane	78-87-5	8.0	U	8.0	37	U	37
1,4-Dioxane	123-91-1	200	U	200	720	U	720
Bromodichloromethane	75-27-4	8.0	U	8.0	54	U	54
cis-1,3-Dichloropropene	10061-01-5	8.0	U	8.0	36	U	36
Methyl Isobutyl Ketone	108-10-1	20	U	20	82	U	82
Toluene	108-88-3	8.0	U	8.0	30	U	30
trans-1,3-Dichloropropene	10061-02-6	8.0	U	8.0	36	U	36
1,1,2-Trichloroethane	79-00-5	8.0	U	8.0	44	U	44
Tetrachloroethene	127-18-4	8.0	U	8.0	54	U	54
Methyl Butyl Ketone	591-78-6	20		20	82		82
Dibromochloromethane	124-48-1	8.0	U	8.0	68	U	68
1,2-Dibromoethane	106-93-4	8.0	U	8.0	61	U	61
Chlorobenzene	108-90-7	8.0	U	8.0	37	U	37
Ethylbenzene	100-41-4	8.0	U	8.0	35	U	35
Xylene (m,p)	1330-20-7	20	U	20	87	U	87
Xylene (o)	95-47-6	8.0	U	8.0	35	U	35
Xylene (total)	1330-20-7	8.0	U	8.0	35	U	35
Styrene	100-42-5	8.0	U	8.0	34	U	34
Bromoform	75-25-2	8.0	U	8.0	83	U	83
1,1,2,2-Tetrachloroethane	79-34-5	8.0	U	8.0	55	U	55
4-Ethyltoluene	622-96-8	8.0	U	8.0	39	U	39
1,3,5-Trimethylbenzene	108-67-8	8.0	U	8.0	39	U	39
2-Chlorotoluene	95-49-8	8.0	U	8.0	41	U	41
1,2,4-Trimethylbenzene	95-63-6	8.0	U	8.0	39	U	39
1,3-Dichlorobenzene	541-73-1	8.0	U	8.0	48	U	48
1,4-Dichlorobenzene	106-46-7	8.0	U	8.0	48	U	48
1,2-Dichlorobenzene	95-50-1	8.0	U	8.0	48	U	48
1,2,4-Trichlorobenzene	120-82-1	20	U	20	150	U	150
Hexachlorobutadiene	87-68-3	8.0	U	8.0	85	U	85



---

## APPENDIX D

---

### NYSDEC/NYSDOH CORRESPONDENCE

NOV - 2 2006

**New York State Department of Environmental Conservation**

**Division of Environmental Remediation, Region 9**

270 Michigan Avenue, Buffalo, New York, 14203-2999

Phone: (716) 851-7220 • FAX: (716) 851-7226

Website: www.dec.state.ny.us



Denise M. Sheehan  
Commissioner

November 1, 2006

Mr. Gregory Barkstrom  
Director of Real Estate  
Wendy's of Ft. Wayne, Inc.  
20 North Union Street  
Rochester, New York 14607

Dear Mr. Barkstrom:

Brownfield Cleanup Project Site  
Interim Remedial Measure Work Plan  
Site No. C932126  
7503 Niagara Falls Boulevard  
Niagara Falls, Niagara County

The Department has completed its review of the Interim Remedial Measures (IRM) Work Plan for the subject site. The IRM Work Plan is hereby approved by the Department. Please place a copy of the Work Plan in the document repository and mail the Fact Sheet announcing the IRM work to the contact list.

It is the Department's understanding that the IRM will not include any subsequent injection of HRC since it is fully anticipated that a single injection of HRC will be sufficient to adequately address the groundwater contamination on the site and that additional injections will not be necessary. In the case that site groundwater cleanup objectives are not achieved and/or residual VOC contamination remains, it would be required that the building design incorporate a sub-slab vapor mitigation system into the proposed building structure. In addition, the Department requests that the post-IRM sampling effort include soil gas sampling. Such a sampling effort will ensure that there are no potential off-site soil gas exposure pathways.

Please provide this office with timely notice prior to the start of IRM field activities at the site. Should you have any questions, please contact Jeff Konsella, of my staff, at (716) 851-7220.

Sincerely,

Gregory P. Sutton, P.E.

Regional Hazardous Waste Remediation Engineer

cc: Mr. Jeff Konsella, Environmental Remediation  
~~Mr. Michael Lesakowski, Benchmark~~

March 29, 2007

Mr. Jeffrey Konsella  
Project Manager  
NYSDEC Region 9  
Division of Environmental Remediation  
270 Michigan Ave.  
Buffalo, New York 14203-2999

Re: GLR Holdings, LLC  
7503 Niagara Falls Blvd., Niagara Falls, New York

Dear Mr. Konsella:

On behalf of our client, GLR Holdings, LLC, Benchmark Environmental Engineering & Science, PLLC has prepared this letter and associated tables and figures to update you on the status of the interim remedial measures (IRM), implemented at the 7503 Niagara Falls Boulevard site (Site) (see Figures 1 and 2).

The IRM was completed in November 2006 and consisted of injection of Hydrogen Release Compounds (HRC) into the groundwater at two areas of the Site as described in the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) approved IRM Work Plan, dated October 2006 (see Figure 3). Subsequent to HRC injection, groundwater monitoring was completed at sampling locations MW-14 and MW-19 to monitor the concentrations of chlorinated volatile organic compounds (cVOCs). Soil gas samples were also collected at four locations on-site (see Figure 2).

As summarized in Table 1 (attached), concentrations of cVOCs have significantly decreased at both monitoring locations subsequent to HRC injection. This evaluation is based on baseline cVOCs concentrations and three subsequent groundwater monitoring events. Groundwater monitoring will continue until site construction activities commence.

As summarized in Table 2 (attached), cVOCs were detected in soil gas samples on-Site. As such, Benchmark has provided a draft design of an active subslab depressurization (ASD) system, which will be constructed in the planned building. The draft design figures are also attached.

As site construction activities are planned to commence this April, GLR Holdings respectfully requests that the NYSDEC and NYSDOH review the attached documents and provide any comments or concerns prior to site construction.

Please contact us with any questions.

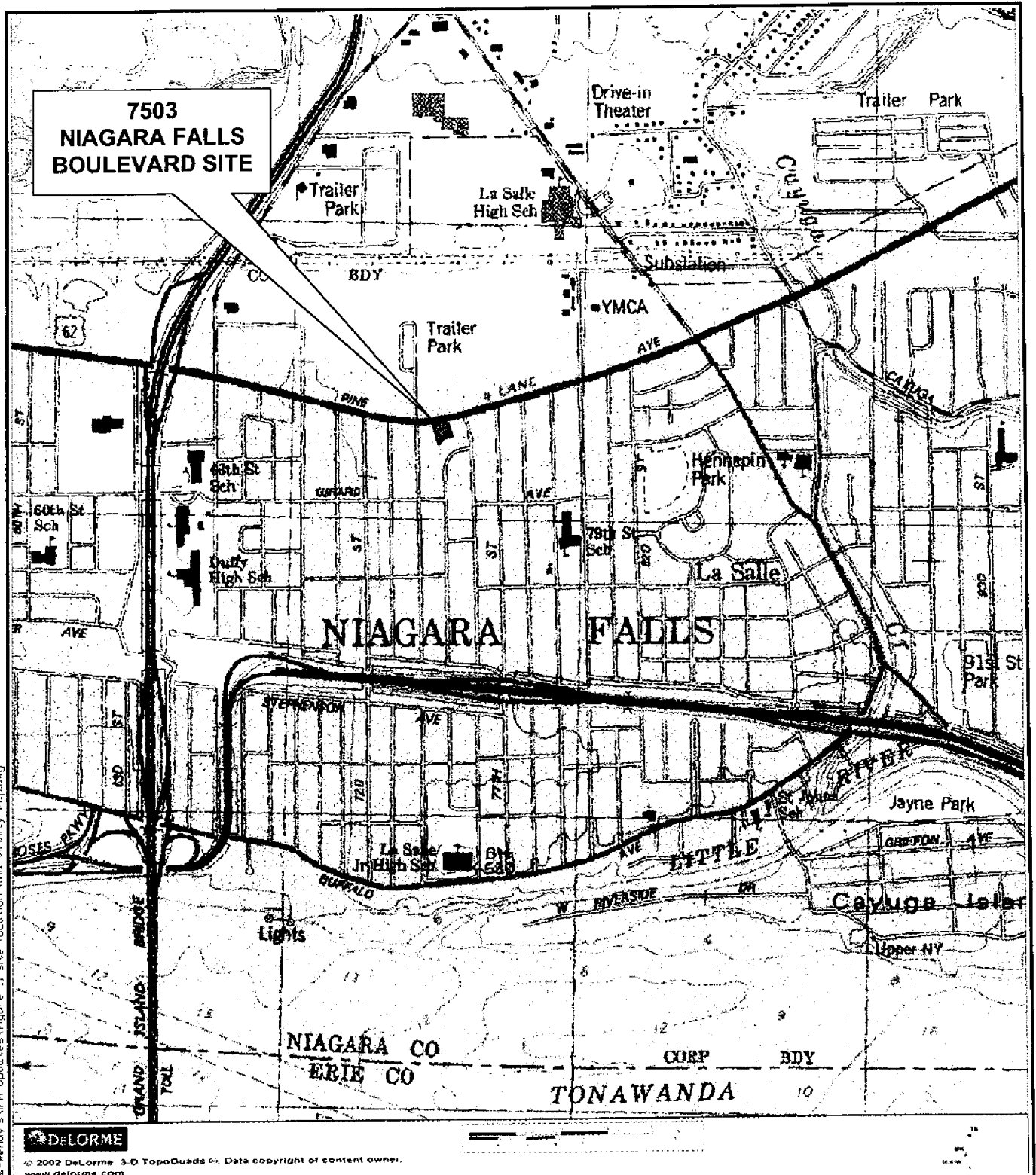
Sincerely,  
Benchmark Environmental Engineering & Science, PLLC



Michael Lesakowski  
Project Manager

- c. Greg Barkstrom, GLR Holdings, LLC  
Matt Forcucci, NYSDOH  
Greg Sutton, NYSDEC  
File: 0101-002-500

**FIGURE 1**



**DE LORME**

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www.delorme.com

**BENCHMARK**  
ENVIRONMENTAL  
ENGINEERING &  
SCIENCE, PLLC

726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0599

## SITE LOCATION AND VICINITY MAP

IRM UPDATE

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

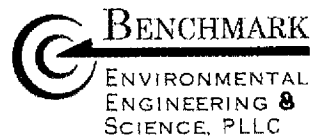
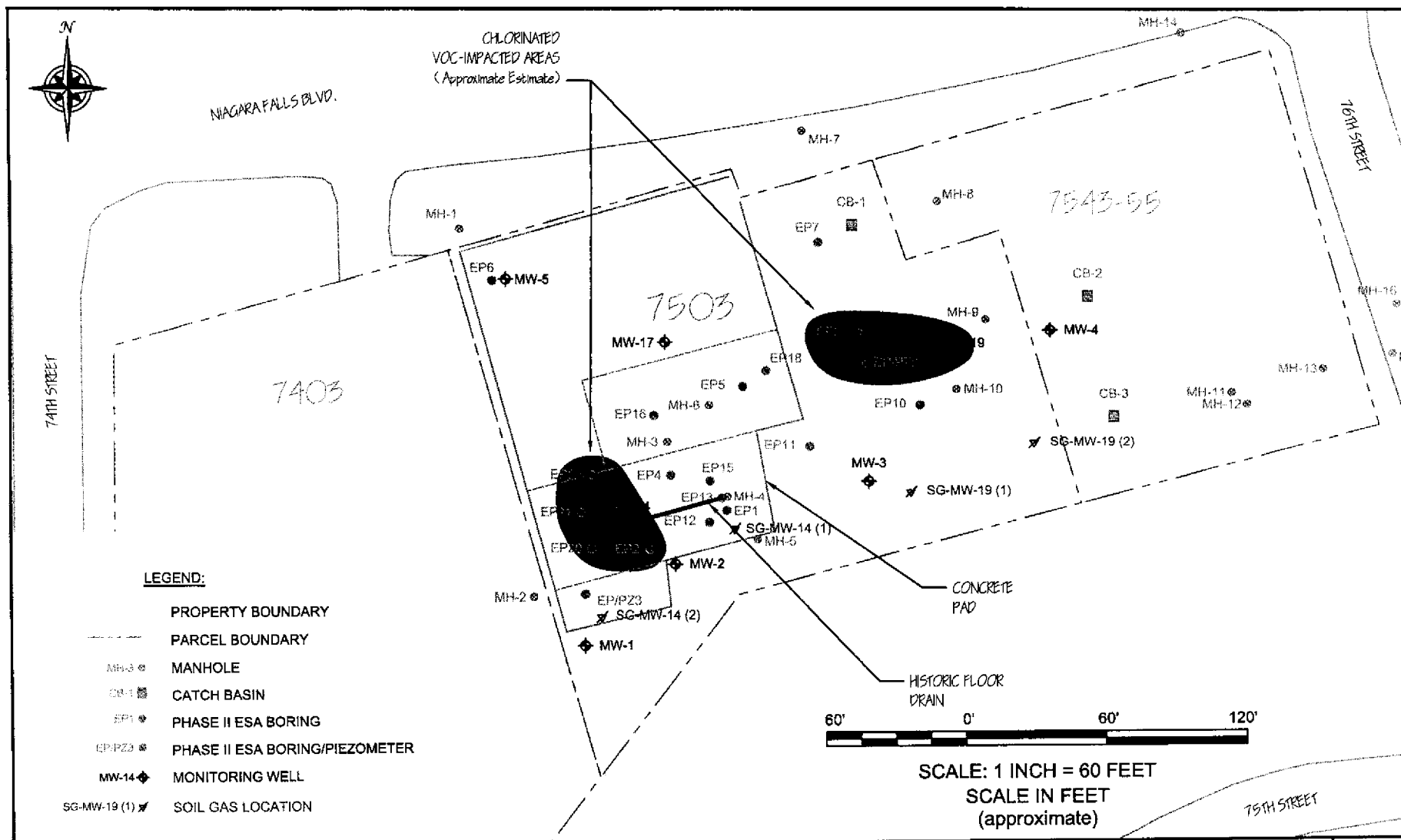
PREPARED FOR  
GLR HOLDINGS, LLC

PROJECT NO.: 0101-002-500

DATE: MARCH 2007

DRAFTED BY: BCH

FILEPATH: \\glr\area\benchmark\glr\_holdings-wendy\env\_updates\figure 1: site location and vicinity map.dwg



726 EXCHANGE STREET  
SUITE 824  
BUFFALO, NEW YORK 14210  
(716) 866-0599

## SOIL-GAS SAMPLING LOCATIONS IRM UPDATE

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

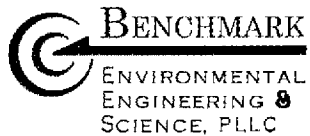
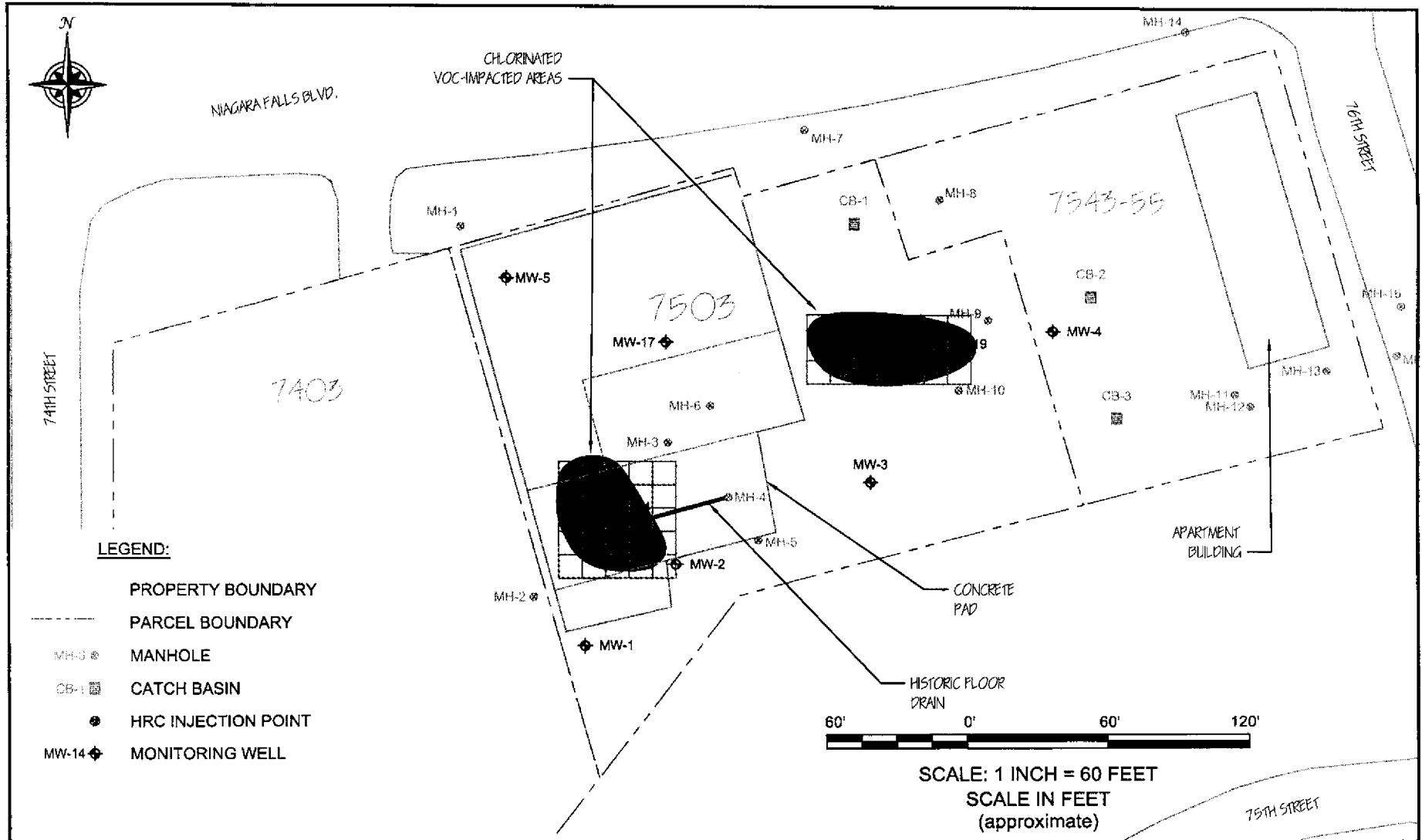
PREPARED FOR  
GLR HOLDINGS, LLC

PROJECT NO.: 0101-002-500

DATE: MARCH 2007

DRAFTED BY: BCH/NTM

**FIGURE 2**



726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0699

PROJECT NO.: 0101-002-500

DATE: MARCH 2007

DRAFTED BY: BCH

## IN-SITU HRC INJECTION PLAN

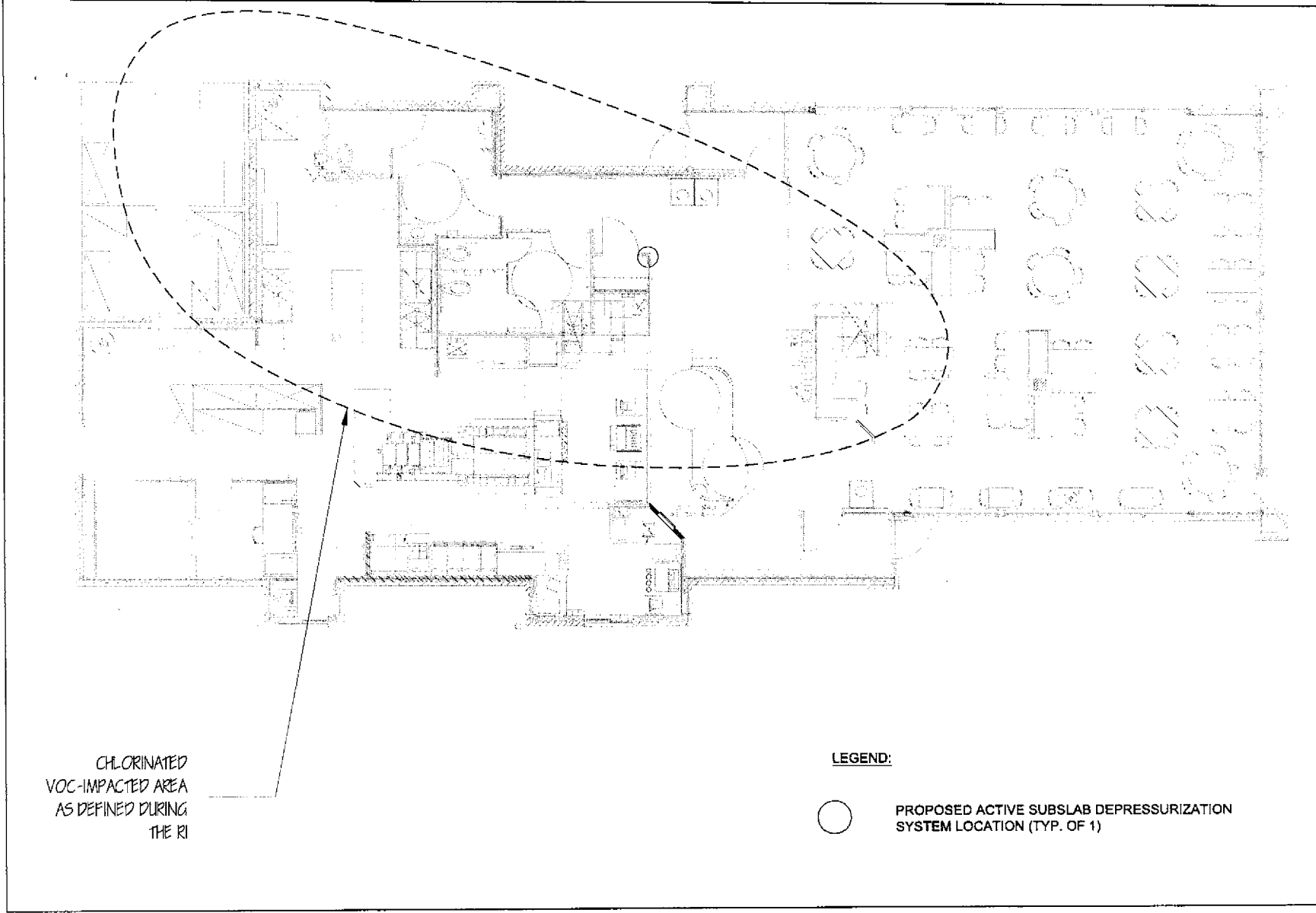
IRM UPDATE

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

PREPARED FOR  
GLR HOLDINGS, LLC

FIGURE 3





**FOUNDATION PLAN**  
RM UPDATE  
7503 NIAGARA FALLS BOULEVARD  
NIAGARA FALLS, NEW YORK

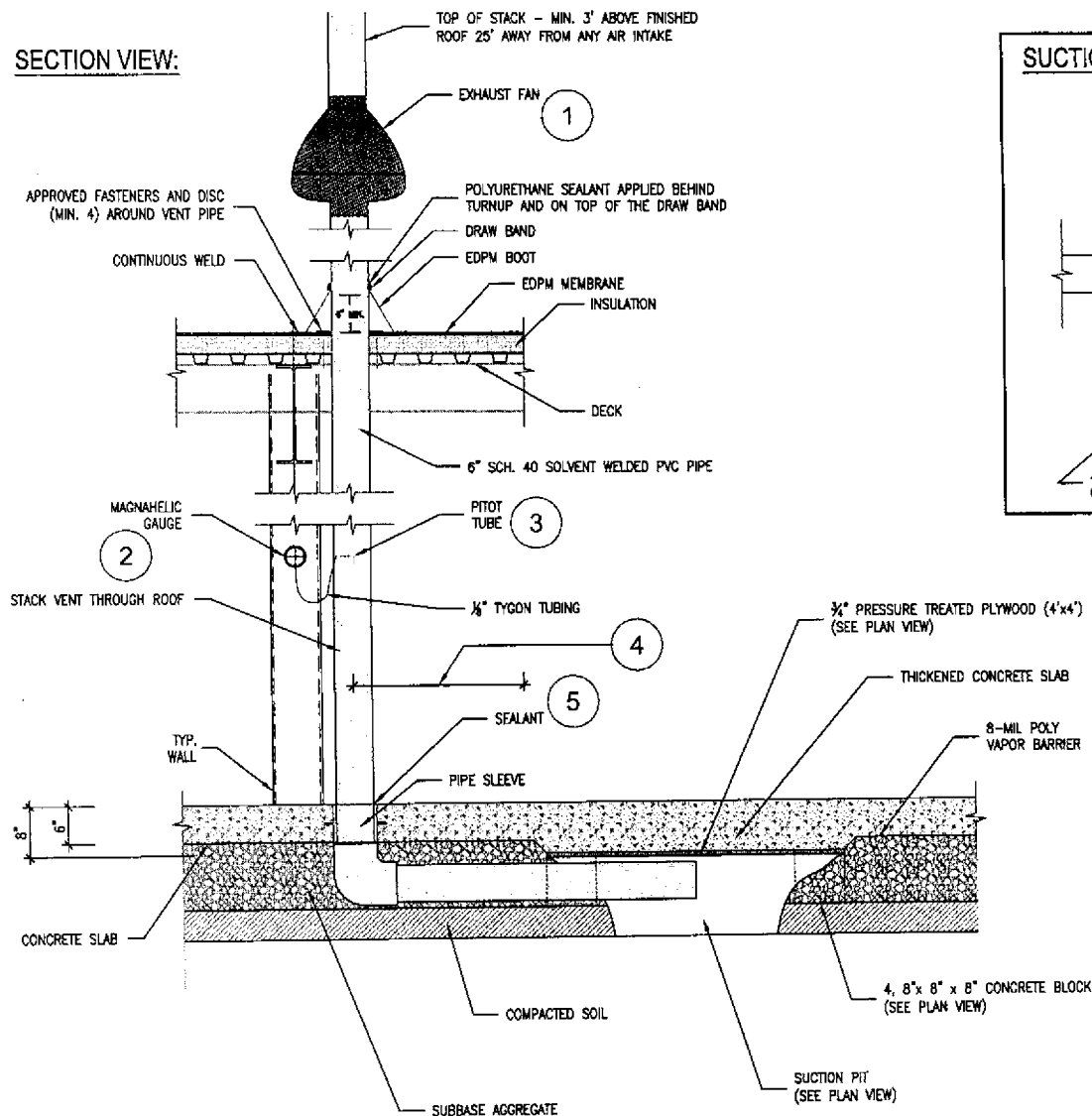
PREPARED FOR  
GLR HOLDINGS, INC.

**BENCHMARK**  
ENVIRONMENTAL  
ENGINEERING &  
SCIENCE, PLLC  
726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NY 14219  
(716) 856 0599

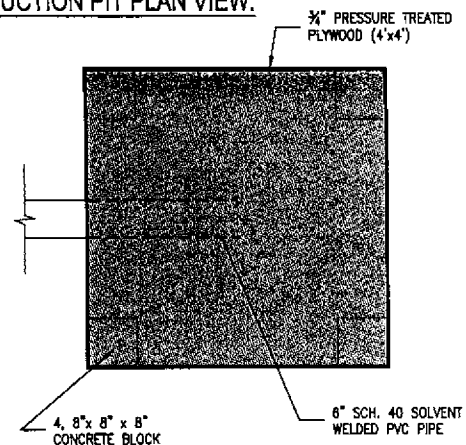
JOB NO.: 0101-002-500

**FIGURE 4**

# SECTION VIEW:



# SUCTION PIT PLAN VIEW:



# NOTES:

- 1 FANTECH MODEL FR 160. 115 VOLT 71 RATED WATTS CONT. DUTY
- 2 DWYER MODEL 2002 - AV MAGNAHELIC GAUGE; DWYER MODEL A-368 SURFACE MOUNT BRACKET. MOUNT ON COLUMN AT 5 FEET ABOVE FINISHED FLOOR.
- 3 DWYER MODEL 166-6CF 1/8" NPT PITOT TUBE WITH COMPRESSION FITTINGS
- 4 MINIMUM 18" AND MAXIMUM 24" FROM CENTERLINE OF WALL TO CENTERLINE OF OUTER ELBOW.
- 5 POLYURETHANE SEALANT APPLIED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS TO SEAL ALL GAPS. USE OF SILICONE SEALANTS IS NOT PERMITTED.

# ACTIVE SUBSLAB DEPRESSURIZATION SYSTEM

IRM UPDATE

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

BENCHMARK  
ENVIRONMENTAL  
ENGINEERING &  
SCIENCE, PLLC  
720 EXCHANGE STREET  
SUITE 404  
BUFFALO, NEW YORK 14210  
(716) 866-0699

PREPARED FOR  
GLR HOLDINGS, INC.

JOB NO.: 0101-002-500

FIGURE 5

**TABLE 1**

**SUMMARY OF GROUNDWATER ANALYTICAL DATA**

**IRM Groundwater Monitoring  
7503 Niagara Falls Boulevard Site**

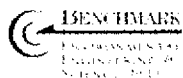
Parameter <sup>1</sup>	MW-14			MW-19			GWQS/GV <sup>3</sup>
	Baseline	Dec-06	Jan-07	Baseline	Dec-06	Jan-07	
Vinyl chloride	910 D	380	150	58	24	22	2
1,1-Dichloroethene	85 D	140	21 J	1 J	ND	ND	5
Trichloroethene	540 D	1500	300	1 J	2 J	2 J	5
1,1,2-Trichloroethane	9 DJ	ND	ND	ND	ND	ND	1
Tetrachloroethene	640	480	120	1 J	ND	ND	5
trans-1,2-Dichloroethene	1300 D	520	240	ND	ND	ND	5
cis-1,2-Dichloroethene	1100 D	570	220	30	28	26	5
Total cVOCs	4584	3590	1051	91	54	50	NA

**Notes:**

1. Chlorinated volatile organics only are shown.
2. Baseline concentrations were collected in June 2006. Hydrogen Release Compound (HRC) injection was completed in November 2006.
3. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.

**Definitions:**

- J = Estimated value; result is less than the sample quantitation limit but greater than zero.  
D = Diluted sample result.  
ND = parameter not detected above laboratory detection limit.  
NA = Not Applicable



**TABLE 2**  
**SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS**

**GLR HOLDINGS, LLC.**  
**NIAGARA FALLS, NEW YORK**

Parameter <sup>1</sup>	Sample Location			
	SG-MW-14 (1)	SG-MW-14 (2)	SG-MW-19 (1)	SG-MW-19 (2)
<b><i>TCL Volatile Organic Compounds (VOCs) - ug/m<sup>3</sup></i></b>				
1,3-Butadiene	ND	24	ND	7.3
Acetone	23	19	ND	64
Carbon Disulfide	ND	3.1	40	97
Dichlorodifluoromethane	4.6	3.7	ND	ND
1,1-Dichloroethene	1.2	ND	52	20
trans 1,2-Dichloroethene	7.9	ND	110	44
cis 1,2-Dichloroethene	12	ND	230	110
n-Hexane	22	130	270	35
Methyl Ethyl Ketone	1.8	ND	ND	ND
Cyclohexane	6.9	55	24	7.6
Benzene	3.5	28	8.9	5.1
n-Heptane	16	70	82	12
Toluene	9.8	31	6.8	2.6
Tetrachloroethene	2.2	ND	240	53
Trichloroethene	8.1	ND	520	170
Trichlorofluoromethane	2.4	2.1	ND	ND
Ethylbenzene	1.7	6.9	ND	ND
Xylene (m,p)	6.1	27	13	ND
Xylene (o)	2	8.3	4.8	ND
Xylene (total)	8.3	35	17	ND
Styrene	0.85	ND	ND	ND
Vinyl Chloride	5.6	ND	380	140

**Notes:**

1. Only those compounds detected above the laboratory reporting limit are presented in this table.

**Definitions:**

ND= Not detected above laboratory detection limits.

**New York State Department of Environmental Conservation**

**Division of Environmental Remediation, Region 9**

270 Michigan Avenue, Buffalo, New York, 14203-2999

Phone: (716) 851-7220 • FAX: (716) 851-7226

Website: [www.dec.state.ny.us](http://www.dec.state.ny.us)



Alexander B. Grannis  
Commissioner

April 11, 2007

Mr. Michael Lesakowski  
Benchmark Environmental Engineering & Science  
726 Exchange Street, Suite 624  
Buffalo, New York 14210

Dear Mr. Lesakowski:

Brownfield Cleanup Project  
Site No. C932126  
7503 Niagara Falls Boulevard  
Niagara Falls, Niagara County

The New York State Departments of Environmental Conservation (DEC) and Health (DOH) have reviewed Benchmark's letter of March 29, 2007 concerning the 7503 Niagara Falls Boulevard BCP site. In that letter, Benchmark requested that the DEC and DOH provide any comments or concerns on the VOC contaminants remaining at the site prior to the start of site development activities.

Benchmark completed an Interim Remedial Measure (IRM) at the site in November 2006. The IRM consisted of the injection of Hydrogen Release Compounds into groundwater within two small areas of the site containing VOC contamination. Your letter of March 29, 2007 includes a summary of groundwater data for monitoring wells MW-14 and MW-19, which are located within the existing two areas of VOC groundwater contamination. It also includes soil gas sampling data from four locations near the southern property line.

From the data presented in Table 1, the IRM appears to have significantly reduced the VOC concentrations in site groundwater at MW-14 and MW-19. However, it also appears that residual VOC groundwater contaminants in the area of MW-14 will persist above DEC Groundwater Quality Standards/Guidance Values. Benchmark should ensure that the Alternatives Analysis Report contains a discussion of any persistent VOCs in site groundwater, and includes institutional and/or engineering controls, as necessary.

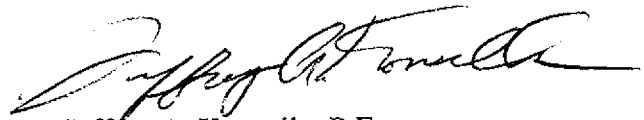
Mr. Michael Lesakowski  
April 11, 2007  
Page 2

From the data presented in Table 2, it appears that there are significant concentrations of VOCs within soil gas in the southeastern portion of the site. While the proposed "active subslab depressurization system" is intended to prevent potential future indoor air impacts to the proposed site building, the soil gas sampling conducted to date has not determined the limits of the VOCs present in soil gas.

Residential homes are located immediately south of the site. It, therefore, will be necessary to collect off-site soil gas samples in order to determine the limits of the VOCs in soil gas. DOH has requested that additional soil gas sampling be performed between the SG-MW-19 (1/2) locations and the nearest home(s). Specifically, DOH recommends locating several soil gas sampling points just south of the site property line, with additional sampling points located further south at approximately one half the distance to the nearest home(s). While this soil gas sampling does not need to be completed before site redevelopment begins, such data must be included in the Remedial Investigation (RI) Report. The RI Report must also include discussions and evaluations of potential impacts resulting from any off-site migration of site contaminants.

Should you have any questions, please contact me at (716) 851-7220.

Sincerely,



Jeffrey A. Konsella, P.E.  
Environmental Engineer II

JAK:sz

cc: Mr. Gregory Sutton, DEC  
Mr. Matthew Forcucci, DOH  
Mr. Gregory Barkstrom, GLR Holdings, LLC  
Mr. James Devald, Niagara County Health Department

June 15, 2007

Mr. Jeff Konsella, P.E.  
New York State Dept. of Environmental Conservation  
Division of Environmental Remediation  
270 Michigan Avenue  
Buffalo, New York 14203-2999

Re: 7503 Niagara Falls Boulevard Site  
Niagara Falls, New York  
Off-Site Soil Gas Sampling Plan

Dear Mr. Konsella:

We have prepared this letter in response to your April 11, 2007 letter requesting off-site soil gas sampling in the residential properties located south of the referenced site (Site) (see Figure 1).

#### **Background**

In accordance with the NYSDEC-approved *Interim Remedial Measures Work Plan* (IRM Work Plan) written by Benchmark Environmental Engineering & Science, PLLC (Benchmark) two areas with volatile organic compound (VOC) impacted groundwater were the subject of an in-situ groundwater treatment program using Hydrogen Release Compounds (HRC) in November 2006. Subsequent groundwater monitoring indicated that in-situ treatment successfully reduced VOC contaminant concentrations in groundwater. However, two soil gas samples collected in January 2007 from beneath the asphalt in the southeastern portion of the Site contained elevated concentrations of VOCs.

Benchmark has prepared this sampling and analysis plan to evaluate whether VOCs in soil gas have migrated off-site toward the adjacent residential homes.

#### **Sampling Locations**

Benchmark has been granted permission to access two of the three properties (i.e., 658 75<sup>th</sup> Street and 668 75<sup>th</sup> Street) that are located directly adjacent to the Site. Benchmark could not gain permission to access 664 75<sup>th</sup> Street. Therefore, sampling will not be conducted at that property.

Proposed off-Site soil gas sampling locations are shown on Figure 2- Off-Site Soil Gas Sampling Plan (attached).



### Soil Gas Sampling Probes

Soil gas sampling probes will be installed at four off-Site locations (see Figure 2). Sampling probes will be installed in general conformance with the New York State Department of Health (NYSDOH) Soil Vapor Intrusion Guidance (October 2006). Figure 3 illustrates soil gas sampling probe construction that will be employed at each location.

Each soil gas sampling probe will be manually installed using specialized four-foot long stainless steel soil probe rods. Sampling equipment includes 6-inch long sampling screens, ¼" inside diameter inert sample tubing and dedicated 6 liter Summa canisters. Soil boreholes will be advanced to approximately three feet below ground surface (fbgs) using ¾" inside diameter steel rods. The steel rod will be equipped with an anchor point at the driving end of the rod. The anchor point will be connected to the sampling screen and tubing on the inside of the steel rod. Once the steel rod is advanced to the target depth (i.e., three fbgs), the steel rod will be retracted, leaving the anchor point, sampling screen and sampling tubing within the borehole annulus. Glass beads will be poured around the sampling screen in a manner to cover the entire length of the sampling screen. Bentonite or bentonite/soil mixture will be placed above the glass beads to the ground surface to create a seal to prohibit infiltration of ambient air into the sampling area.

### Sampling and Analytical Methods

Once the sample probes are installed, the probe and tubing will be purged (three volumes) using a calibrated syringe as required by NYSDOH (2006) guidance and helium tracer gas will be used during the purging phase (in the same manner as recommended for soil vapor probes) to ensure that the probes are well sealed. Samples will be collected over an approximate 8-hour period.

All soil gas samples will be collected and analyzed by EPA Method TO-15. This method employs a 6-liter, passivated (inert), stainless-steel, evacuated sampling sphere for collecting the air samples. The canister is received from the laboratory, certified clean, evacuated, and prepared for sampling. The pressure in the canister is approximately 50 millitorr (compared to 760 torr of pressure in the atmosphere at sea level).

The canisters are then fitted with a sampling valve that uses a critical orifice and mass flow controller to regulate the air flow into the canister. The orifice is selected by size to allow for the selected 8-hour sampling period. The mass flow controller helps maintain relatively constant air flow rates throughout the sampling period. The canisters will then be placed at the soil-gas sampling locations for sampling.

Samples will be shipped to the laboratory within two days of sampling so that no sample will exceed the 30-day holding time (since receipt from the lab) for the TO-15 method. Full chain of custody will be maintained for all canisters from time of shipping from the laboratory to the time of analysis.

Mr. Jeffrey Konsella  
NYSDEC

June 15, 2007  
Page 3 of 3

**Project Scheduling**

Fieldwork is currently scheduled for Thursday June 21, 2007. We anticipate that all of the sampling will be completed within one day.

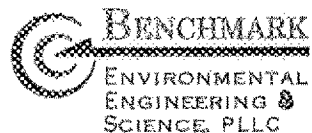
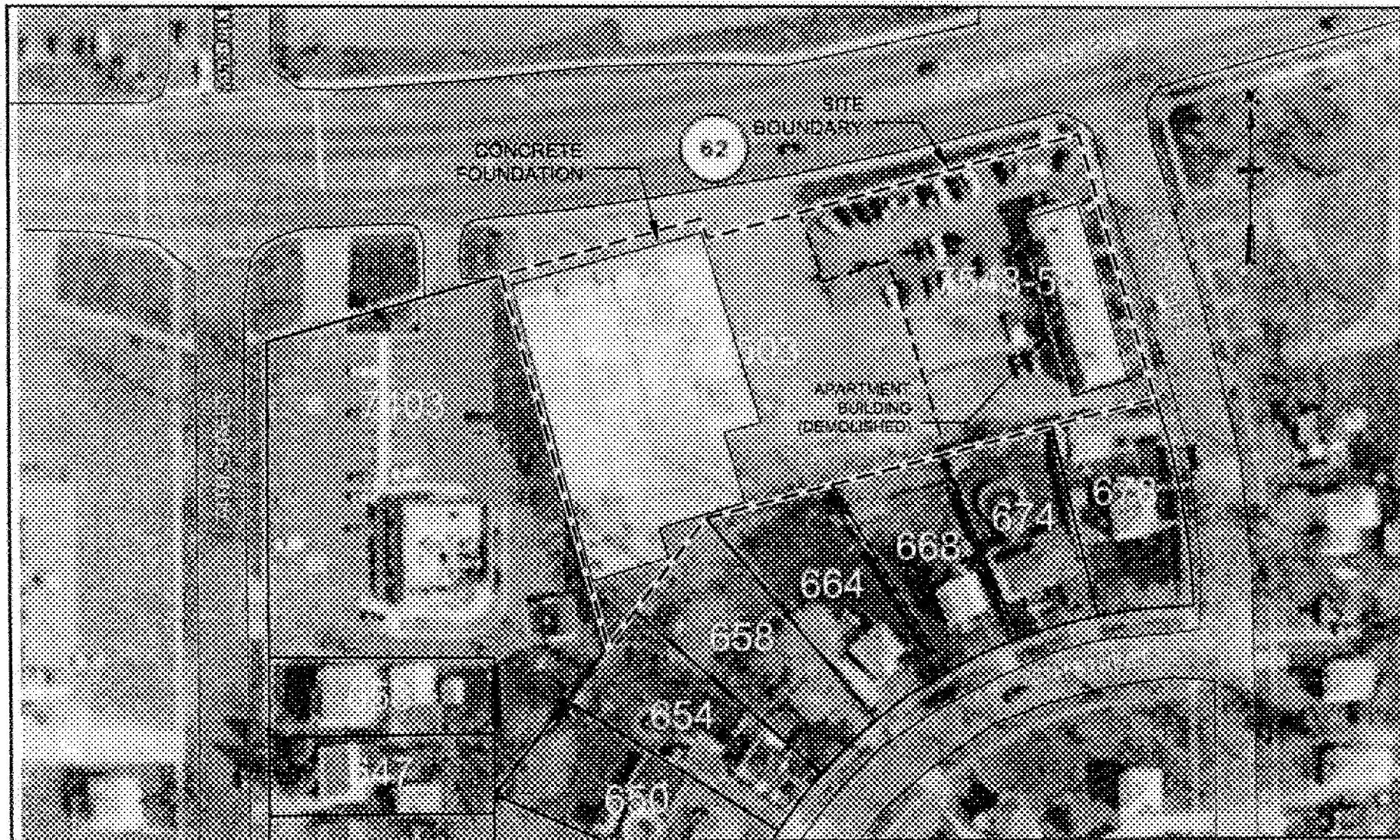
We would appreciate a timely review, comment, and approval of our proposed soil gas sampling and analysis plan. Please contact us if you have any questions or wish to discuss our proposed plan further.

Sincerely,  
Benchmark Environmental Engineering & Science, PLLC



Michael Lesakowski  
Project Manager

c: M. Forcucci, NYSDOH  
Greg Barkstrom, GLR  
File 0101-002-600



720 EXCHANGE STREET  
SUITE 604  
BUFFALO, NEW YORK 14210  
(716) 856-0500

## SITE MAP

7503 - 7555 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

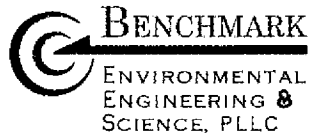
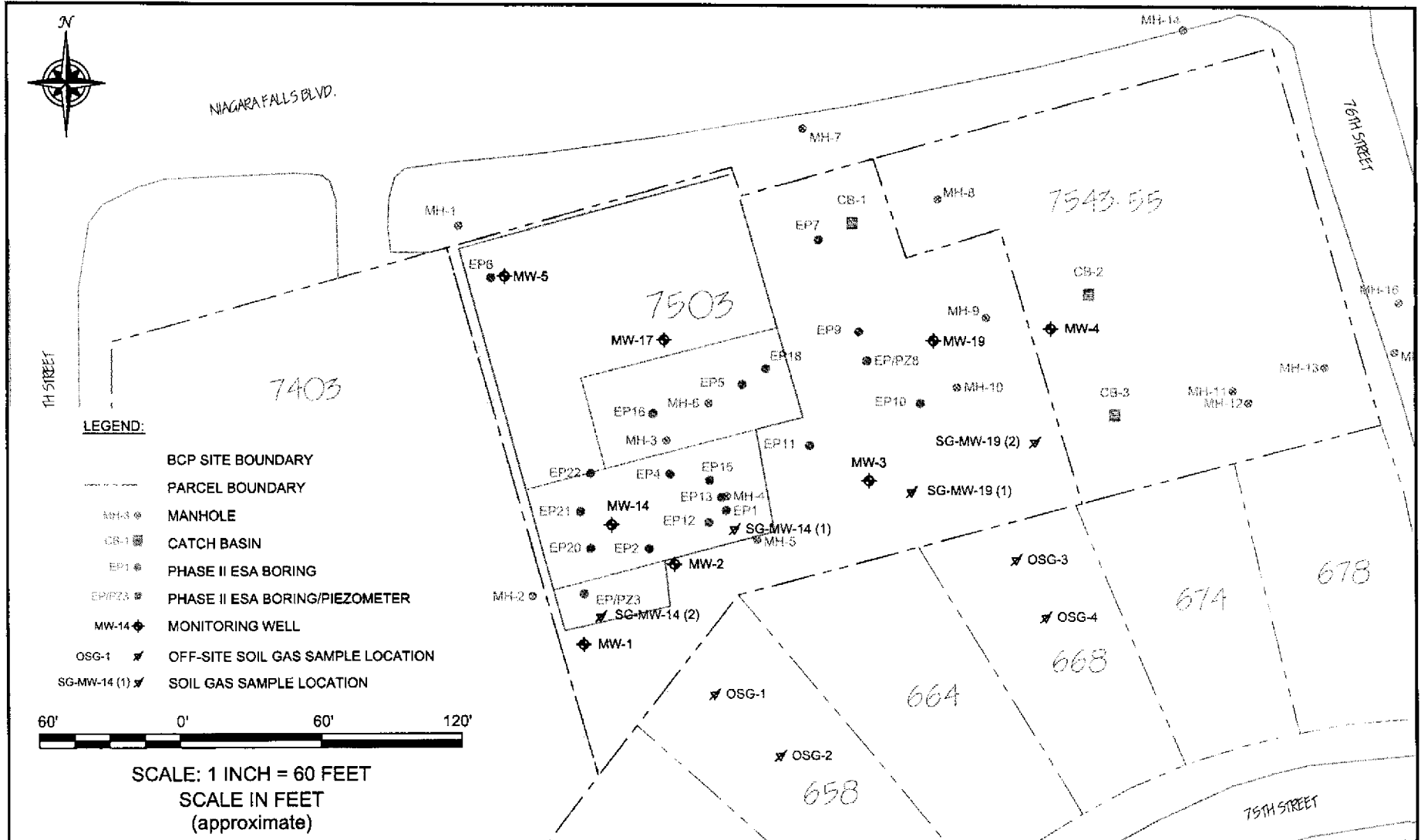
PREPARED FOR  
GLR HOLDINGS, LLC

FIGURE 1

PROJECT NO.: 0101-002-600

DATE: JUNE 2007

DRAFTED BY: AJZ



726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0699

PROJECT NO.: 0101-002-600

DATE: JUNE 2007

DRAFTED BY: BCH/AJZ

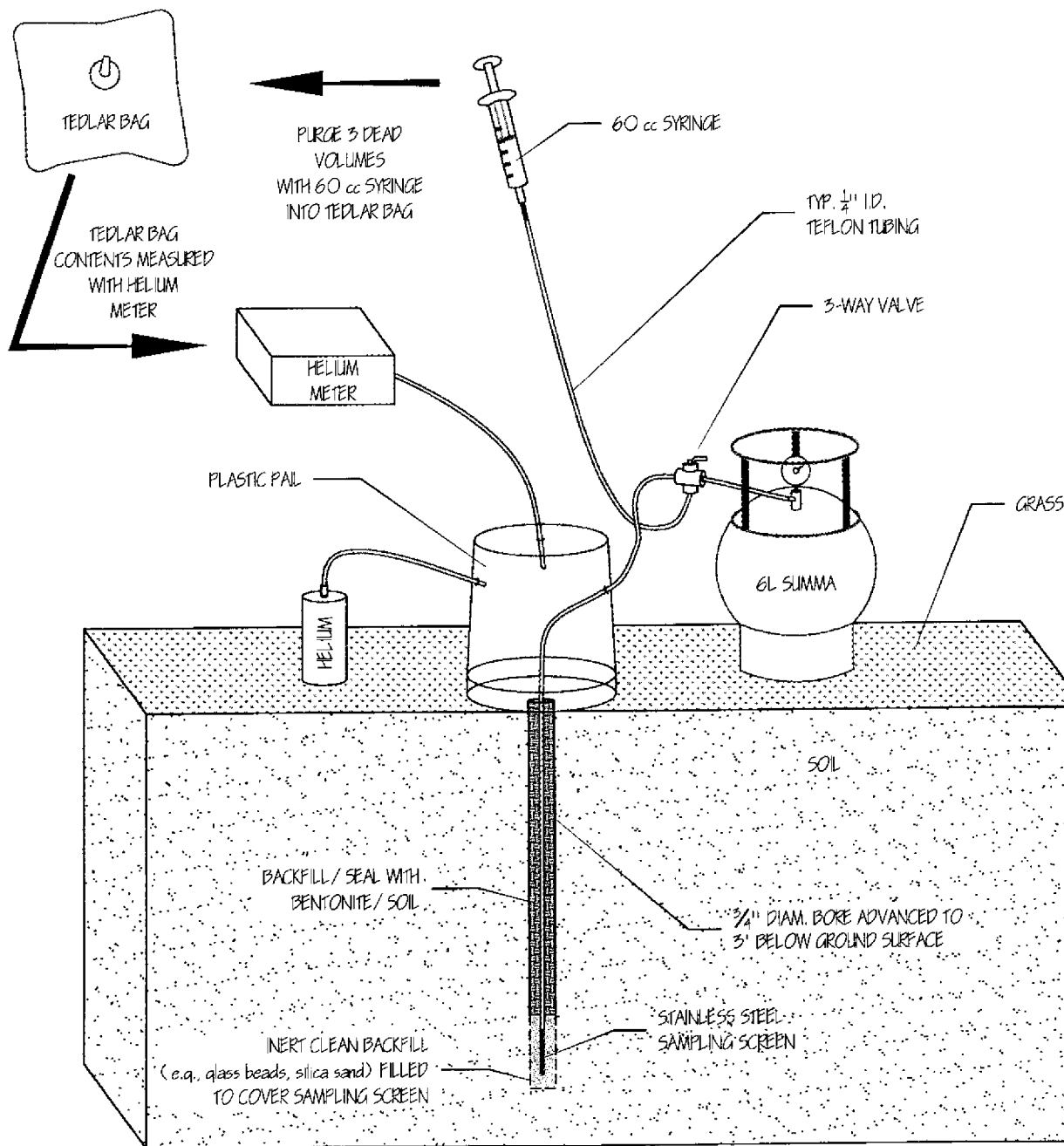
## OFF-SITE SOIL-GAS SAMPLING PLAN

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

PREPARED FOR  
GLR HOLDINGS, LLC

**FIGURE 2**

**FIGURE 3**



**BENCHMARK**  
ENVIRONMENTAL  
ENGINEERING &  
SCIENCE, PLLC

726 EXCHANGE STREET  
SUITE 624  
BUFFALO, NEW YORK 14210  
(716) 856-0669

## VAPOR SAMPLING APPARATUS

VAPOR SAMPLING

7503 NIAGARA FALLS BOULEVARD SITE  
NIAGARA FALLS, NEW YORK

PREPARED FOR  
GLR HOLDINGS, LLC

PROJECT NO.: 0101-002-600

DATE: JUNE 2007

DRAFTED BY: BCH/AJZ

---

# APPENDIX E

---

## DATA USABILITY SUMMARY REPORT (DUSR)

# **Data Validation Services**

120 Cobble Creek Road P.O. Box 208

North Creek, NY 12853

Phone 518-251-4429

Facsimile 518-251-4428

August 24, 2006

Mike Lesakowski  
Benchmark Env. Engineers  
726 Exchange St. Suite 624  
Buffalo, NY 14210

RE: **Data Usability Summary Report for the 7503 Niagara Falls Boulevard site-soil samples  
STL-Buffalo SDG Nos. A06-6735, A06-7205, and A06-8013**

Dear Mr. Lesakowski:

Review has been completed for the data package generated by Severn Trent Laboratories that pertains to water samples collected 6/12/06 through 7/13/06 at the 7503 Niagara Falls Boulevard site. Three soil samples and a field duplicate were processed for TCL Volatiles, TCL Semivolatiles, TCL PCBs, and TAL metals. Six aqueous samples and a field duplicate were analyzed for TCL volatiles; three of these were also analyzed for total and dissolved iron and manganese, and for COD, nitrate, and sulfate. A trip blank was also processed. The wet chemistry data were not validated. The methodologies utilized are those of the 2000 NYSDEC ASP CLP.

The data packages submitted contain full deliverables for validation, but this usability report is generated from review of the summary form information, with review of sample raw data, and limited review of associated QC raw data. Full validation has not been performed. However, the reported summary forms have been reviewed for application of validation qualifiers, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

- \* Laboratory Narrative Discussion
- \* Custody Documentation
- \* Holding Times
- \* Surrogate and Internal Standard Recoveries
- \* Matrix Spike Recoveries/Duplicate Correlations
- \* Field Duplicate Correlations
- \* Preparation/Calibration Blanks
- \* Control Spike/Laboratory Control Samples
- \* Instrumental Tunes
- \* Calibration Standards
- \* ICP Serial Dilution
- \* CRI/CRA Standards
- \* Instrument IDLs



Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for the DUSR level review.

**In summary**, sample analyte values/reporting limits are generally usable as reported, or usable with minor qualification as estimated ("J" qualifier) due to typical processing or matrix effects. No data are rejected. Some of the low level detections are considered external contamination. Results for several metals are qualified as estimated due to an apparent matrix effect.

Copies of the laboratory case narratives and the sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report. Included with this submission are red-ink edited results forms, reflecting final sample results with edits and qualifications recommended within this report.

The following text discusses quality issues of concern.

#### **General**

Blind field duplicate evaluations were performed on soil sample MW-4-4-6 and aqueous sample MW-19, and show good correlations for all analytes.

Per the analytical protocol and deliverables requirements, laboratory raw data should include the client ID.

The collection dates for MW-4(2-4) and Blind Dup should have been shown as 6/13/06 (not 6/12/06) on the laboratory results forms and tracking summary forms. Holding times were met, and there is no effect on reported results.

#### **TCL Volatiles**

Results for analytes reported by the laboratory with the "E" flag are to be derived from the dilution analysis of the sample, thus reflecting responses within linear range of the instrumentation.

Matrix spikes for aqueous sample MW-14 and soil sample MW4(2-4) show acceptable accuracy and precision.

Sample holding time requirements were met, and surrogate and internal standard responses meet protocol requirements.

Results for the holding blank associated with the aqueous samples are qualified as estimated, with a low bias, due to the presence of headspace at analysis.

Results of the trip blank associated with the soil samples are qualified as estimated, with a low bias, due to the fact it was filled ten days before the sample collection, and analyzed beyond the allowable holding time.

The trip blank associated with the aqueous samples was not entered on the custody. Therefore, the date of collection is not known, and the results may have a similar bias.

Due to presence in associated method, trip, and/or holding blanks, results for methylene chloride, acetone, dichlorodifluoromethane, and trichlorofluoromethane in the soils, and for acetone in the aqueous samples are considered external contamination.

Tentatively Identified Compounds (TICs) that are flagged as "B", or identified as silanes, siloxanes, or silanol are considered external contamination, as shown by presence in the associated blanks.

Calibrations standards showed acceptable responses.

Aqueous samples MW-1, MW-2, MW-4, and MW-5 were run at dilution due to a matrix effect of foaming in the undiluted analysis. The resultant reporting limits are therefore elevated fivefold.

#### **TCL Semivolatile Analyses**

Matrix spikes of MW-4(2-4) show accuracy and precision within validation guidelines, or elevated recoveries for analytes not detected in parent sample. No qualification is indicated.

Holding times were met. Surrogate and internal standard recoveries, and the instrumental tunes were acceptable.

Calibrations standards showed acceptable responses with laboratory requirements and validation guidelines, with the exception of those for caprolactum (30%D), 2,4-dinitrophenol (78%D), and 4,6-dinitro-2-methylphenol (39%D). Results for those three compounds in the samples are therefore qualified as estimated, and may have a low bias.

Due to presence in the associated method blank, results for bis(2-ethylhexyl)phthalate in the soil samples are considered external contamination.

Tentatively Identified Compounds (TICs) that are flagged as "B" and/or "A" are considered external contamination, as shown by presence in the associated blanks.

#### **TCL PCB Analyses**

Matrix spikes of Aroclors 1016 and 1260 in MW-4(2-4) show acceptable accuracy and precision.

Surrogate standard recoveries are acceptable. Holding times were met and blanks showed no contamination. Calibration standards meet protocol requirements.

Raw data indicate that the reporting limits for the samples can be one-tenth of those reported.

**TAL Metals**

Matrix spikes were performed for TAL elements on soil sample MW-4(2-4), and show outlying recoveries (-83% to 67%) for antimony, arsenic, lead, manganese, and zinc, and an elevated duplicate correlation for arsenic (109%RPD). Results for those five elements in the soil samples are therefore qualified as estimated.

Matrix spikes were performed for iron and manganese of the total and dissolved fractions of MW-19, and show acceptable accuracy and precision.

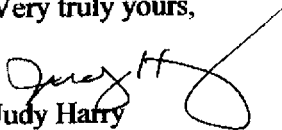
The ICP serial dilution evaluation of MW-4(2-4) shows outlying correlations for calcium, copper, cobalt, lead, iron, magnesium, nickel, vanadium, and zinc (all 11%D to 15%D). Detected results for those analytes in the soil samples are therefore qualified as estimated.

The ICP serial dilution of the total and dissolved fractions of MW-4(2-4) show acceptable correlations.

Holding times were met. Blanks associated with sample analyses show no contamination above the reporting limit. Total and dissolved fractions correlate well.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,

  
Judy Harry

# **Data Validation Services**

120 Cobble Creek Road P.O. Box 208

North Creek, NY 12853

Phone 518-251-4429

Facsimile 518-251-4428

October 4, 2007

Mike Lesakowski  
Benchmark Env. Engineers  
726 Exchange St. Suite 624  
Buffalo, NY 14210

RE: **Data Usability Summary Report for the 7503 Niagara Falls Blvd. site**  
STL-Buffalo SDG Nos. A06-E857, A07-0668, A07-0926, A07-1926, A07-7157, and A07-7470

Dear Mr. Lesakowski:

Review has been completed for the data packages generated by Severn Trent Laboratories (STL) that pertain to samples collected 12/11/06 through 6/29/07 at the 7503 Niagara Falls Blvd. site. Six aqueous samples and a field duplicate were processed for TCL volatiles by method NYSDEC ASP 2000. Eight soil vapor samples were analyzed for volatiles by USEPA method TO-15. Trip blanks and holding blanks were also processed.

The data packages submitted contain full deliverables for validation, but this usability report is generated from review of the summary form information, with review of sample raw data, and limited review of associated QC raw data. Full validation has not been performed. However, the reported summary forms have been reviewed for application of validation qualifiers, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

- \* Laboratory Narrative Discussion
- \* Custody Documentation
- \* Holding Times
- \* Surrogate and Internal Standard Recoveries
- \* Matrix Spike Recoveries/Duplicate Correlations
- \* Field Duplicate Correlations
- \* Preparation/Calibration Blanks
- \* Control Spike/Laboratory Control Samples
- \* Instrumental Tunes
- \* Calibration Standards
- \* Instrument IDLs
- \* Method Compliance
- \* Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for the DUSR level review.

**In summary**, sample analyte values/reporting limits are generally usable as reported, or usable with minor qualification as estimated ("J" qualifier) due to typical processing or matrix effects. One of the low level detections is considered external contamination.

Copies of the laboratory case narratives and the sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report. Included with this submission are client results tables, reflecting the final sample results with edits and qualifications recommended within this report.

#### **Data Package Completeness**

Although required, the client ID is not provided on the STL-Buffalo raw sample data.

#### **TCL Volatiles by NYSDEC ASP 2000**

Results for analytes flagged as "E" by the laboratory are derived from the dilution analyses of the samples.

The matrix spikes (MS and MSD) for MW-14 (12/06). Recoveries of four of the five compounds were below recommended limits. Results for detected values 1,1-dichloroethene and trichloroethene in the parent sample are qualified as estimated due to outlying recoveries. The reporting limits of benzene and toluene are also to be qualified as estimated, with a slightly low bias, due to marginally outlying low recoveries (70% to 75%). For the other sampling events, accuracy and precision determinations involved spiked blank controls. Matrix effects are therefore not further evaluated.

Blind field duplicate correlations are evaluated for MW-14 (12/06), and are acceptable. The analysis of MW-14 was performed at an eightfold dilution due to high concentrations target compounds. Its duplicate was performed both at dilution and undiluted. This duplicate provides lower reporting limits for undetected compounds for that location.

Due to its presence in associated holding blank, the detected result for trichloroethene in MW-19 (12/06) is considered external contamination, and is edited to reflect non-detection.

Calibrations standards showed acceptable responses, with the following exception, results for which are to be qualified as estimated in the indicated samples:

- o chloromethane and cyclohexane (29%D and 24%D) in the samples collected 12/06

Sample holding time requirements were met, and surrogate and internal standard responses meet protocol requirements.

Tentatively Identified Compounds (TICs) that are flagged as "B" are considered external contamination, as shown by presence in the associated blanks.

**Volatiles by USEPA TO-15**

Internal standards responses fall within validation guidelines. Blanks show no contamination.

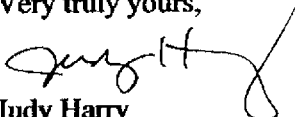
Calibration standards meet protocol and validation requirements.

Accuracy and precision are evaluated with duplicate spiked blank controls. All were acceptable, with the exception of elevated recoveries for an analyte not detected in the project sample.

Reported results are substantiated by the raw data.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,



Judy Harry

---

## **VALIDATION QUALIFIER DEFINITIONS**



## **DATA QUALIFIER DEFINITIONS**

The following definitions provide brief explanations of the national qualifiers assigned to results in the data review process. If the Regions choose to use additional qualifiers, a complete explanation of those qualifiers should accompany the data review.

- U** - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J** - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N** - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ** - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ** - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R** - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

---

## **LABORATORY SAMPLE IDs AND CASE NARRATIVES**

9/247

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION  
AND  
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
BLIND DUP	A6E85703	ASP00	-	-	-	-	-	-
MW-14	A6E85701	ASP00	-	-	-	-	-	-
MW-19	A6E85702	ASP00	-	-	-	-	-	-

NYSDEC-1

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION  
AND  
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
MW-14	A7066801	ASP00	-	-	-	-	-	-
MW-19	A7066802	ASP00	-	-	-	-	-	-

NYSDEC-1

## SAMPLE SUMMARY

<u>IAB SAMPLE ID</u>	<u>CLIENT SAMPLE ID</u>	<u>MATRIX</u>	<u>SAMPLED</u>		<u>RECEIVED</u>	
			<u>DATE</u>	<u>TIME</u>	<u>DATE</u>	<u>TIME</u>
A7192601	MW-14	WATER	03/01/2007	16:18	03/01/2007	17:15
A7192602	MW-19	WATER	03/01/2007	16:10	03/01/2007	17:15

## NON-CONFORMANCE SUMMARY

Job#: A06-E857STL Project#: NY7A9603Site Name: Benchmark - 7503 Niagara Falls Blvd. SiteGeneral Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A06-E857

Sample Cooler(s) were received at the following temperature(s); 2.0 °C  
Strict internal chain of custody required.

GC/MS Volatile Data


The spike recovery of the analytes 1,1-Dichloroethene, Benzene, Toluene, and Trichloroethene in the Matrix Spike and in the Matrix Spike Duplicate of sample MW-14 exceeded quality control limits. The Relative Percent Difference (RPD) between the Matrix Spike and the Matrix Spike Duplicate of sample MW-14 also exceeded quality control limits for the analyte Trichloroethene. The Matrix Spike Blank recoveries were compliant, so no corrective action was performed.

All samples were preserved to a pH less than 2.

\*\*\*\*\*

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

  
\_\_\_\_\_  
Brian J. Fischer  
Project Manager

12-29-06  
\_\_\_\_\_  
Date

NON-CONFORMANCE SUMMARY

Job#: A07-0668

STL Project#: NY7A9603

Site Name: Benchmark - 7503 Niagara Falls Blvd. Site

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-0668

Sample Cooler(s) were received at the following temperature(s); 4.2 °C  
All samples were received in good condition.

GC/MS Volatile Data

The Volatile Holding Blank was analyzed prior to the samples in this job.



All samples were preserved to a pH less than 2.

\*\*\*\*\*

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."



Brian J. Fischer  
Project Manager

2-12-07

Date


**STL**

February 6, 2007

Mr. Brian Fischer  
 Severn Trent Laboratories  
 10 Hazelwood Drive  
 Suite 106  
 Amherst, NY 14228

STL Burlington  
 208 South Park Drive, Suite 1  
 Colchester, VT 05446

Tel: 802 655 1203 Fax: 802 655 1248  
 www.stl-inc.com

Re: Laboratory Project No. 27012  
 Case: BENCHMARK; SDG: A07-0956

Dear Mr. Fischer:

Enclosed are the analytical results for the samples that were received by STL Burlington on January 30<sup>th</sup>, 2007. Laboratory identification numbers were assigned, and designated as follows:

<u>Lab ID</u>	<u>Client Sample ID</u>	<u>Sample Date</u>	<u>Sample Matrix</u>
Received: 01/30/07 ETR No: 118589			
699632	MW-19 (1)	01/22/07	AIR
699633	MW-19 (2)	01/22/07	AIR
699634	MW-14 (1)	01/22/07	AIR
699635	MW-14 (2)	01/22/07	AIR

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The samples consisted of air contained in a 6 L summa canisters, which supplied by STL Knoxville. The samples in this sample set were analyzed by the EPA Compendium Method TO-15 for specific volatile organic constituents.

Manual integration was employed in deriving certain of the analytical results. The values that have been derived from manual integration are qualified on the quantitation reports, and extracted ion current profiles are included in the data package.

The analytical results for the TO-15 analysis are reported both in terms of parts per billion on a volume/volume basis (PPBV) and  $\mu\text{g}/\text{m}^3$ . Based on the results of preliminary screening, sample MW-19 (1), MW-19 (2) and MW-14 (2) were analyzed at dilutions in order to provide quantification within the range of calibrated instrument response. Laboratory control sample was analyzed in duplicate in each analytical sequence. The target analytes were recovered well in these analyses, and there was good correlation of the results in the interanalysis comparison. The analyses of the method blanks associated with the analytical work were free of contamination.



February 6, 2007  
Mr. Brian Fischer  
Page 2 of 2

Each of the analyses associated with the sample set exhibited good internal standard responses. The responses in the initial calibration for each of the target analytes met the 30 percent relative standard deviation criterion. In the calibration check acquisition, the response for each of the target analytes met the 30 percent difference criterion relative to the average response in the initial calibration, with the exception of a high recovery for dichlorodifluoromethane.

The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 655-1203.

Sincerely,

Kristine A. Dusablon  
Project Manager

Enclosure

## NON-CONFORMANCE SUMMARY

Job#: A07-1926STL Project#: NY7A9603Site Name: Benchmark - 7503 Niagara Falls Blvd. SiteGeneral Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-1926

Sample Cooler(s) were received at the following temperature(s); 2.0 °C  
All samples were received in good condition.

GC/MS Volatile Data

All samples were preserved to a pH less than 2.

The analyte Methylene Chloride was detected in the Volatile Holding Blk (VHB) at a level below the project established reporting limit. Methylene Chloride was not detected in any of the associated samples, therefore there is no impact on data usability.

\*\*\*\*\*

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

  
\_\_\_\_\_  
Brian J. Fischer  
Project Manager

3-13-07  
Date

7/295



July 11, 2007

Mr. Brian Fischer  
TestAmerica  
10 Hazelwood Drive  
Suite 106  
Amherst, NY 14228

STL Burlington  
30 Community Drive, Suite 11  
South Burlington, VT 05403

Tel: 802 660 1990 Fax: 802 660 1919  
www.stl-inc.com

Re: Laboratory Project No. 27012  
Case: BENCH; SDG: A07-7157

Dear Mr. Fischer:

Enclosed are the analytical results for the samples that were received by STL Burlington on June 26<sup>th</sup>, 2007. Laboratory identification numbers were assigned, and designated as follows:

<u>Lab ID</u>	<u>Client Sample ID</u>	<u>Sample Date</u>	<u>Sample Matrix</u>
Received: 06/26/07 ETR No: 120669			
715692	GLR-SV-668A	06/25/07	AIR
715693	GLR-SV-668B	06/25/07	AIR

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The samples in this sample set were analyzed by the EPA Compendium Method TO-15 for specific volatile organic constituents.

Manual integration was employed in deriving certain of the analytical results. The values that have been derived from manual integration are qualified on the quantitation reports, and extracted ion current profiles are included in the data package.

Based on the results of preliminary screening, the samples were analyzed at dilutions in order to provide quantification within the range of calibrated instrument response. Laboratory control sample was analyzed in duplicate in each analytical sequence. The target analytes were recovered well in these analyses, and there was good correlation of the results in the interanalysis comparison. The analyses of the method blanks associated with the analytical work were free of contamination.

Each of the analyses associated with the sample set exhibited good internal standard responses. The responses in the initial calibration for each of the target analytes met the 30 percent relative standard deviation criterion. In the calibration check acquisition, the response for each of the target analytes met the 30 percent difference criterion relative to the average response in the initial calibration.



July 11, 2007  
Mr. Brian Fischer  
Page 2 of 2

The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

A handwritten signature in black ink, appearing to read "Kristine Dusablon".

Kristine A. Dusablon  
Project Manager

Enclosure

# STL

July 16, 2007

Mr. Brian Fischer  
TestAmerica  
10 Hazelwood Drive  
Suite 106  
Amherst, NY 14228

STL Burlington  
30 Community Drive, Suite 11  
South Burlington, VT 05403

Tel: 802 660 1990 Fax: 802 660 1919  
www.stl-inc.com

Re: Laboratory Project No. 27012  
Case: BENCH; SDG: A077470

Dear Mr. Fischer:

Enclosed are the analytical results for the samples that were received by STL Burlington on July 3<sup>rd</sup>, 2007. Laboratory identification numbers were assigned, and designated as follows:

<u>Lab ID</u>	<u>Client Sample ID</u>	<u>Sample Date</u>	<u>Sample Matrix</u>
Received: 07/03/07 ETR No: 120766			
716546	6LR-SV-658B	06/29/07	AIR
716547	6LR-SV-658A	06/29/07	AIR

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The samples in this sample set were analyzed by the EPA Compendium Method TO-15 for specific volatile organic constituents.

Manual integration was employed in deriving certain of the analytical results. The values that have been derived from manual integration are qualified on the quantitation reports, and extracted ion current profiles are included in the data package.

Based on the results of preliminary screening, the samples were analyzed at dilutions in order to provide quantification within the range of calibrated instrument response. Laboratory control sample was analyzed in duplicate in each analytical sequence. The target analytes were recovered well in these analyses, and there was good correlation of the results in the interanalysis comparison. The analyses of the method blanks associated with the analytical work were free of contamination.

Each of the analyses associated with the sample set exhibited good internal standard responses. The responses in the initial calibration for each of the target analytes met the 30 percent relative standard deviation criterion. In the calibration check acquisition, the response for each of the target analytes met the 30 percent difference criterion relative to the average response in the initial calibration.





July 16, 2007  
Mr. Brian Fischer  
Page 2 of 2

The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

A handwritten signature in black ink that reads "Kristine Dusablon".

Kristine A. Dusablon  
Project Manager

Enclosure