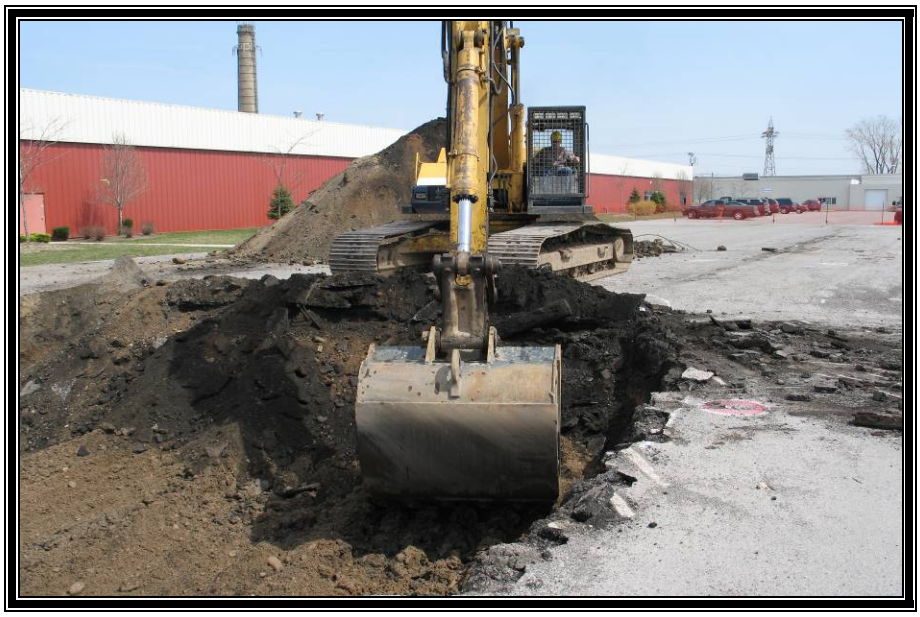
APPENDIX C

REMEDIAL ACTIVITIES AT
OPERABLE UNIT #2

Please note that initial site work and assessment was completed by Golder Associates, Inc. in conjunction with NYSDEC oversight of the project under the V.C.P. program. Golder has provided the documentation of this work in Draft Reports. As such the conclusions of the reports cannot be specifically relied upon; however the data collected during these activities has been used to help develop the conclusions of this certification.

DRAFT REPORT ON
REMEDIAL ACTIVITIES AT OPERATING UNIT #2
BUFFALO BUSINESS PARK
1800 Broadway – Buffalo, New York



Voluntary Cleanup Site No. V00663-9
Voluntary Agreement Index No. B9-0637-03-06

Golder Associates Inc.
2221 Niagara Falls Blvd.
Niagara Falls, New York, 14304
(716) 215-0650 (Phone)
(716) 215-0655 (Fax)
www.golder.com

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

In Order
Following
Page 17

1.0 INTRODUCTION

1.1 General

Buffalo Business Park (BBP) is currently implementing a Voluntary Cleanup at their facility located at 1800 Broadway Avenue in the City of Buffalo, New York (Voluntary Site Cleanup # V00663-9). To accomplish this objective, BBP has entered into a Voluntary Cleanup Agreement with the New York State Department of Environmental Conservation (NYSDEC) for the investigation and/or remediation of two operable units. Operable Unit #1 (OU #1) in the southwest central area of the Site consists of an area where soil contamination has been delineated. OU#1 underwent remedial activities in mid April, 2006 in the form of excavation and removal of contaminated soils. Operable Unit #2 (OU #2) is located along the southwest property boundary (Figure 1), and consists of an area where previous investigations have encountered contaminated groundwater. OU #2 underwent investigation activities in late August, 2007 through the installation of groundwater monitoring wells, groundwater level measurements, and groundwater sampling and analysis. OU #2 underwent additional investigation activities again in early October, 2007 when the vapor intrusion investigation was completed per the request of the NYSDEC.

1.2 Investigation Objectives

The objectives of the supplemental subsurface investigation activities at OU#2 were as follows:

- Further define groundwater flow direction at the Site in the area of OU#1 and the site building;
- Further define groundwater quality in the bedrock zone; and
- Ascertain if vapor intrusion potentially associated with volatile organic compounds in groundwater is a concern within the building located along the southern property boundary is a potential concern.

The following text provides a discussion of Golder Associates Inc's (Golder's) understanding of the site background work already completed, the scope of work, and the technical approach and procedures that were used to further evaluate potential impacts to groundwater and the potential for associated vapor intrusion impacts at the property.

1.3 Project Background

According to historic Sanborn maps, the site has been utilized as the Buffalo Industrial Park since 1961. Prior to 1961, the site was used for railroad transport/tracks associated with the Pullman Car Company from 1900 until at least 1950.

In December 1999, Lender Consulting Services (LCS) conducted a Phase I Environmental Site Assessment (ESA), and subsequently completed a Phase II soil and groundwater study (March, 2003). During 2001 and 2002, several soil and groundwater investigations were completed, consisting of 27 test borings and 27 groundwater monitoring points (3 permanent and 24 temporary). Soil and groundwater samples were collected and analyzed for volatile organic compounds (VOCs) and select samples were also analyzed for RCRA metals and semi – volatile organic compounds (SVOCs). According to LCS, the investigations identified the presence of VOCs. Soils were found to contain tetrachloroethene and groundwater was found to contain tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, methylene chloride and vinyl chloride.

Buffalo Business Park, Inc., acting as an Innocent Owner, agreed to participate in the NYSDEC Voluntary Cleanup Program (VCP) and entered into a Voluntary Cleanup Agreement (VCA) for remedial investigation/remedial action under Voluntary Cleanup Site No. V00663-9 and Index No. B9-0637-03-06. This VCA was initiated upon Buffalo Business Park's submittal of a VCA application dated May 23, 2003.

In October 2003, LCS submitted a work plan for soil remedial activities to the NYSDEC for review and comment: Remedial Action Work Plan, Operable Unit # 1, Buffalo Business Park Site; 1800 Broadway, Buffalo, New York.

In addition, on April 2005, LCS submitted the following document for additional groundwater investigation: Investigation Work Plan, Operable Unit #2; Buffalo Business Park Site, 1800 Broadway, Buffalo, New York.

Subsequent to the submission these documents, BBP contracted LTP Services, Inc. (LTP) to review the documents, and evaluate alternatives to the proposed soil remedy, which was ex-situ soil vapor extraction. LTP, in conjunction with NYSDEC approval, proposed that the soil

removal activity focus on removal with off-site disposal of soils within a certified, engineered solid waste landfill. In April 11th, 2006, contaminated soils were removed from Operable Unit #1 (OU#1) at BBP to a depth of approximately 14 feet below ground surface (BGS). Overburden soils that were not contaminated were stockpiled for re-use as backfill. Confirmation soil samples were collected from the side walls of the excavation to confirm a clean closure. In addition, the overburden materials for six to ten feet were also sampled to evaluate the quality of the overburden materials for backfill purposes. Once "clean" conditions were established on April 17th , 2006 (below NYSDEC TAGM action levels) using the analytical results for side wall samples from the excavation, the excavation was backfilled with overburden materials stockpiled on site (also tested as "clean"), and overlain by crushed concrete, both of which were approved in advance by the NYSDEC.

1.4 Site Geologic and Hydrogeologic Setting

1.4.1 Geology

Several environmental studies have previously been conducted at BBP from which subsurface conditions have been generally characterized. The overburden materials are approximately 14 feet in thickness at BBP and consist of fill materials and overburden soils. The overburden consists of fill materials that are variable in thickness to an average depth of approximately two feet. Fill material is generally described as sands and gravel with some ash, brick, wood and railroad ties which is consistent with its past use as a rail yard. This is underlain by native materials consisting of brown gravelly sands with some silt. This material is laterally variable, but overburden material (fill and native materials) is generally 14 to 16 feet in thickness.

Bedrock is at approximately 14 to 16 feet below ground surface (BGS), and consists of gray, crystalline limestone, thought to be the Onondaga Limestone.

1.4.2 Hydrogeology

Groundwater is reportedly present in the overburden with groundwater flow direction reportedly to the south. Groundwater in bedrock reportedly flows to the southeast; however, the overburden and bedrock hydraulic zones are likely connected given the highly permeable nature of the overburden gravelly sands.

2.0 SCOPE OF WORK GROUNDWATER INVESTIGATION

2.1 General

The following provides an overview of the investigative scope of work that was completed at OU #2:

- Installation of four groundwater monitoring wells (wells) into bedrock;
- Survey all well locations and tie control into four existing site bedrock wells;
- Develop and sample the four newly installed bedrock wells;
- Collect groundwater elevation information from the four newly installed bedrock wells and four existing bedrock wells;
- Analyze groundwater samples from the four newly installed bedrock wells for volatile organic compounds (VOCs) through the use of a subcontract laboratory;
- Investigate the potential soil vapor intrusion pathway into the structure located nearest to existing well MW – 4; and
- Prepare a Site Investigation/Remedial Alternatives Report (SI/RAR) which summarizes the work performed, incorporates a Qualitative Human Health Exposure Assessment, and recommends an appropriate remedial alternative for groundwater (OU#2).

All work was completed in accordance with the Investigative Work Plan, which was approved in advance by the NYSDEC.

2.2 Bedrock Groundwater Investigation

2.2.1 General Conditions

Groundwater analytical data collected as part of this investigation was used to further characterize groundwater conditions in bedrock. Four previously-installed bedrock groundwater wells (VCA-MW-1-BR, VCA-MW-2-BR, VCA-MW-3-BR, and VCA-MW-4-BR) are located within or immediately adjacent to OU #2 and were used as part of this investigation. To further characterize hydrogeologic conditions in bedrock, four new bedrock wells (VCA-MW-5-BR, VCA-MW-6-BR, VCA-MW-7-BR and VCA-MW-8-BR) were installed on BBP property and the

adjacent property immediately to the west. The locations of these wells are depicted on Photos 1 through 4, and Figure 2.

Field work was completed using Golder's standard health and safety plan (HASP) that was adopted for site-specific conditions, using Level D personal protective equipment. Ambient air, and soil samples derived from split barrel sampling during the drilling of overburden, were screened in the field with a photo ionization detector (PID) for VOCs with action levels that are found in Golder's health and safety plan. Additionally, continuous air monitoring of the driller's breathing zone was conducted during all drilling and rock coring activities.

Per the NYSDEC approved Work Plan, no soil or bedrock core samples were submitted to the contract laboratory for analysis as part of this investigation. Only groundwater samples were submitted for laboratory analysis.

2.2.2 Installation of Groundwater Monitoring Wells

The installation of four bedrock groundwater monitoring wells was performed to further characterize groundwater flow direction and groundwater quality at OU#2. This additional geologic and hydrogeologic information in conjunction with information collected from the four existing site bedrock wells was then be used to provide a better understanding of bedrock groundwater conditions, and to provide the most likely soil vapor sampling point(s) within the site building for purposes of completion of the soil vapor investigation.

New well locations were designed to provide a better understanding of groundwater flow direction in OU #2 and under the building, as well as the nature groundwater quality immediately up-gradient of OU #1. In addition, the new bedrock wells provided better understanding of groundwater quality near the building along the southern property boundary.

VCA-MW-5-BR is located on the western adjacent property (Family Dollar Store and Tops) approximately 45 feet north of the sidewalk along Broadway, and approximately 25 feet west of the Buffalo Business Park western property line.

VCA-MW-6-BR is located approximately 210 feet east of the northwest corner of the brick building that is located along the southern BBP property boundary. This well is located approximately 15 feet south into the building in an area with a vaulted ceiling.

VCA-MW-7-BR is located approximately 170 north of the sidewalk along Broadway, and approximately 60 feet west of the BBP property boundary.

VCA-MW-8-BR is located 10 feet south of the southeast corner of the Family Dollar Store approximately 25 feet west of the BBP property boundary.

Site Mark out

Prior to the start of drilling activities, the locations of the four new wells were marked out on the pavement and approved by the NYSDEC. Once the well locations were marked, the drilling subcontractor notified Dig Safely New York for the mark out of underground utilities. The site maintenance engineer was also contacted to review proposed drilling locations.

Prior to the commencement of drilling operations, Dig Safely New York was contacted for the mark out of underground utilities. The drillers were then notified by SJB's Drilling Manager that the site utilities were concentrated to the western side of the Tops/Family Dollar site, and that the utilities were unlikely to run beneath the slab of the building scheduled for drilling on BBP property.

Decontamination of Drilling Equipment

To minimize the potential for contamination/cross contamination of the wells from outside sources and/or the transport of potentially contaminated materials from the Site, the drilling equipment was decontaminated prior to the start of drilling activities, between well installations, and at the completion of drilling activities. In lieu of constructing a temporary decontamination (decon) pad, the drilling contractor was instructed by BBP personnel to use an on-site sewer grate, which was connected to a Buffalo Sewer Authority sewer and was permitted for discharge of investigation-derived liquid waste as part of remedial activities associated with OU#1. To accomplish this objective, the drilling contractor placed the drilling equipment, such as hollow stem augers, drill rods and core barrels, on a racking system attached to the side of the drill rig.

The drill rig was positioned such that this racking system was placed directly over the sewer grate. The drilling equipment was then decontaminated in place, using a steam cleaner.

Investigation-Derived Waste

Solid and liquid material from drilling, equipment decontamination and well development generated as part of this investigation was placed in drums, and left in the custody of Buffalo Business Park. It is not the property of Golder, nor its drilling subcontractor.

Borehole Drilling

The locations of the test borings for the installation of the four new bedrock wells are shown on Figure #2. Borings were advanced through fill and overburden materials to refusal on bedrock (ranging in depth from 13 to 17.5 feet below ground surface (bgs)) using $4^{1/4}$-inch inside diameter (I.D.) hollow stem augers (HSA). At each of the proposed well locations, the overburden was sampled at five-foot intervals (Standard Sampling) with 2-inch diameter by 24 inch long steel split-barrel sampler in general accordance with ASTM D 1586 (Standard Penetration Test).

A Golder geologist observed the drilling operation and recorded pertinent information, such as soil sample information, boring number, sample number, depth, blow counts, lithologic description, color, moisture, and soil headspace organic vapor measurements, in an engineer's bound field notebook or appropriate field logs.

Soil samples were collected from the split-barrel samplers and placed in glass jars. Head space readings were collected from each soil sample using a PID, and the samples were described and classified in the field by visual examination in general accordance with the Unified Soils Classification System (USCS). Field boring logs were prepared for each location, and are attached with this report as Appendix A.

Air monitoring of the drillers' breathing zone was conducted continuously during drilling operations. The air monitoring yielded no significant readings on the PID meter. However, drilling operations were conducted indoors at location VCA-MW6-BR. Although the PID yielded no significant organic vapor readings that would indicate poor air quality, the tenant of the facility (New York Frame) voiced concerns about air quality. Golder and the drilling

contractor employed several institutional controls to mitigate the perceived air quality issue, including venting the drill rig exhaust to the outdoors, and utilizing a large ventilation fan. Air monitoring logs are attached as Appendix B.

Upon encountering the top of bedrock and refusal, the HSAs were extracted from the borehole, and a 4-inch I.D. steel casing (temporary casing) was placed within the borehole and seated (advanced approximately 6") spun into the top of bedrock.

Rock Coring

A municipal water source on site was used to obtain clean, potable water for rock coring purposes. An HQ coring tool (3.7-inch outside diameter) was used to obtain a 2.5-inch diameter core from the upper 15 feet of bedrock. Coring of the bedrock was completed in general accordance with ASTM 2113 (Diamond Core Drilling for Site Investigation). The coring interval was modified at location VCA-MW6-BR due to New York Frame management's request that the coring operations be ceased; thus, only eight feet of rock core was obtained at this location. Rock coring logs are attached to this report as Appendix C.

During all coring activities, the coreholes were flushed with clean potable water that was recirculated. At the completion of drilling activities, water generated during coring activities was drummed as investigation-derived waste and treated as previously discussed.

Continuous core was collected, labeled, and stored for each well. A Golder on-site geologist maintained a record of the coring operations including, core recoveries, Rock Quality Designations (RQDs), and VOC measurements with a PID (Air Monitoring during Drilling Forms are attached as Appendix B). Upon completion of the coring and/or boring activities, detailed Subsurface Boring Logs were prepared for each boring which describe the observed lithologic information, well construction details, and pertinent drilling observations.

Bedrock Monitoring Well Installation

Bedrock monitoring wells were constructed using "certified clean" well materials. The newly drilled bedrock wells were completed by placing a ten-foot length (unless otherwise specified) of 2-inch diameter Schedule 40 polyvinyl chloride (PVC) screen with 0.010-inch machine-cut slots from the bottom of the borehole to approximately five feet below the top of bedrock. A 2-inch diameter Schedule 40 PVC riser completed each well from the top of the screen to the ground surface. Six inches of an appropriately-sized sand pack were placed in the bottom of the corehole, and around the screen from the bottom of the borehole to approximately two feet above the screen to complete a sand pack around the well screen. Bentonite chips were placed from the top of the sand upward for a minimum of 2 feet.

Cement/bentonite grout was tremied from the top of the bentonite to the ground surface. The bedrock monitoring wells were completed at grade with a 9-inch diameter flush mount curb box.

Monitoring well VCA-MW6-BR was modified to accommodate New York Frame's request to cease rock coring operations. Construction of this monitoring well was completed using five foot of well screen within a cored rock interval of eight feet. The well was then completed according to the above specifications.

A well construction diagram was prepared for each new boring that describes actual depth of the well along with construction details. The monitoring well installation logs are attached with this report as Appendix D.

Monitoring Well Development

Following installation, the four newly-installed wells were developed by surging the open interval to remove drill cuttings and water introduced into the formations during installation. Surging was performed using a stainless steel bailer, which was also used to purge the water from the well. Development of the wells continued until groundwater sample parameters achieved stability. Well development data, including the duration of the development process, methods employed, and the volume of water removed, are included on the Well Development Logs, which are attached with this report. Water purged from the wells during the development process was

drummed and stored on site as investigative derived waste and treated as previously described in this report as Appendix E.

2.2.3 Survey

The new and existing monitoring well horizontal coordinates, top-of-casing elevations, and ground surface elevations were surveyed by Wendel-Duchsherer of Amherst, New York, a New York State-licensed surveyor. In addition, the coordinates for these wells were tied into a site reference (a fire hydrant located along the west fence line near monitoring well VCA-MW3-BR). The horizontal coordinates were measured from the northernmost point of the well casing to the closest 0.1-foot, and referenced to the site reference point(s). Elevations of ground surface and top-of-casing were to the closest 0.01 foot. The information obtained was tabulated and used for completion of well logs, schematics, and maps, and is summarized as Table 1.

2.2.4 Groundwater Sampling

Collection of Groundwater Samples for Laboratory Analysis

One round of groundwater samples was collected from the four newly-installed bedrock monitoring wells.

Prior to commencing sampling activities, Golder personnel determined the well's depth and static groundwater elevation and conducted a well-maintenance check. Following completion of these pre-sampling activities, the wells were purged of a minimum three well volumes (or until dry).

Following each removal of a minimum of three well volumes from each well, a sample of the purge water was measured for the following field parameters: pH, temperature, and specific conductivity. Well development was considered complete when these parameters had achieved stability. Groundwater samples were then collected for volatile organic compound (VOC) analysis using dedicated HDPE bailers and placed in clean glass vials supplied by the contract laboratory. Samples were then packed on ice in a cooler and delivered to Severn Trent Laboratories in Amherst for analysis under strict Chain of Custody protocols. Sample collection information for each groundwater sample is summarized in Appendix F.

Groundwater Elevation Measurement

One synoptic round of groundwater elevation measurements was obtained from the eight bedrock monitoring wells (four existing and four newly installed wells) that are part of this investigation on September 13, 2007. The measurements were obtained using an electronic water level meter. These data were used to construct a groundwater potentiometric surface map (Figure #3) for the bedrock flow zone at OU #2. Depth to groundwater and groundwater elevation information is summarized on Table 2.

Laboratory Analysis of Groundwater Samples

Test America Laboratories in Amherst, New York performed all sample analyses for the bedrock investigation. No soil or bedrock core samples were sent to the contract laboratory for analysis. Four groundwater samples, along with the appropriate quality assurance/quality control samples, were analyzed by the contract laboratory as follows:

- VCA-MW-5-BR;
- VCA-MW-6-BR;
- VCA-MW-7-BR;
- VCA-MW-8-BR;
- Duplicate Sample (DUP);
- Matrix spike/ matrix spike duplicate (MS/MSD) ; and
- Trip blank.

Groundwater samples were analyzed for target compound list VOCs by USEPA Method 8260 with NYSDEC ASP Category B Deliverable reporting. Sample results were received using standard turnaround times (10 business days).

Analytical Results

Groundwater sample results were compared to New York State Ambient Water Quality Standards/Guidance Values (TOGS 1.1.1.) and TAGM 3028 Groundwater Action Levels, and are presented in Table 3. Analytical results for the 5 groundwater samples (four wells plus one duplicate sample) indicated six organic parameters were noted as exceeding TOGS 1.1.1. and/or TAGM 3028 values in at least one sample. It should be noted that analyte concentrations

exceeded the instrument calibration ranges in the original samples collected from VCA-MW5-BR and VCA-MW7-BR. Therefore, these samples were diluted and re-analyzed to bring the concentrations within the calibration range of the laboratory instrument.

1,2-dichloroethylene (total), tetrachloroethylene, and trichloroethylene were detected in samples VCA-MW5-BR and VCA-MW7-BR at concentrations in exceedance of both TOGS 1.1.1. and TAGM 3028 guidance values. 1,1-dichloroethylene and vinyl chloride were detected in sample VCA-MW5-BR at concentrations in exceedance of both TOGS 1.1.1. and TAGM 3028 guidance values. Lastly, methylene chloride was detected in sample VCA-MW7-BR sample at concentrations in exceedance of both TOGS 1.1.1. and TAGM 3028 guidance values.

Low-level detections (at values below TOGS1.1.1. and TAGM 3028 values) were found in the groundwater samples as follows: cyclohexane, ethylbenzene, methylcyclohexane, toluene and xylene in sample VCA-MW5-BR; acetone, chloroform, cyclohexane, 1,2-dichloroethylene, and toluene in sample VCA-MW6-BR; and cyclohexane and methylcyclohexane in sample VCA-MW8-BR, and the associated duplicate sample.

3.0 SOIL VAPOR INTRUSION INVESTIGATION

3.1 General Considerations

Per the NYSDEC approved Investigative Work Plan, a soil vapor intrusion study was also completed. Prior to the completion of a soil vapor intrusion study, several steps were taken to assist with the management and investigation of potential soil vapor issues at the site. The first step toward management and mitigation of potential vapor intrusion was source removal, which was completed by removing contaminated soils at OU#1.

The second step in the evaluation and investigation of potential vapor intrusion into the Site structure south of OU#1 was the completion of the bedrock groundwater investigation for OU#2. The groundwater information collected from the bedrock investigation was used to provide additional information on groundwater flow direction, and VOC contaminant concentrations in groundwater under or immediately adjacent to the site structure. This information was then used to select the most likely sampling point for the completion of a soil vapor intrusion investigation within the site structure. The groundwater quality information from the old wells (VCA-MW1-BR through VCA-MW4-BR) was evaluated in conjunction with groundwater quality information from the newly installed groundwater monitoring (VCA-MW5-BR through VCA-MW8-BR). While the groundwater quality information from the old wells is not directly comparable to the groundwater quality information obtained from the new wells (different sampling events), this information is provided in Table 3 to lend understanding of the groundwater quality results from VCA-MW5-BR, which suggests that the best location to collect vapor intrusion information was southeast of VCA-MW4-BR, the most contaminated well. Thus, a vapor intrusion investigation was performed in the New York Frame business on October 4, 2007.

3.2 Vapor Intrusion Study Methods

The New York State Department of Health (NYSDOH) vapor intrusion guidance is applicable for this project. Based upon the groundwater potentiometric surface map and contaminant concentrations map that was generated as part of Task 2, the following samples were collected as part of the Sub-Slab Vapor/Indoor investigation:

- A sub-slab soil vapor sample within the site structure in the area of estimated highest groundwater contaminant concentrations;
- An indoor air sample at a height of approximately three feet above the building floor in proximity to the sub-slab sampling location; and
- An outdoor air sample from a representative upwind location, at a height of approximately four to six feet above ground (breathing zone).

The following provides details of the pre-sampling documentation as well as the sampling methods that were used to collect the referenced samples. Per NYSDEDC direction, vapor and air samples were collected for an eight hour period. Sampling locations are depicted on Photos 5, 6, and 7.

This information is included in Appendix G.

3.2.1 Task 1a. Pre-sampling Documentation

Prior to the start of, and during completion of the Soil Vapor Intrusion Investigation, general site conditions were documented such as:

- Use of volatile chemicals in on-site processes and/or building maintenance;
- Use of heating and cooling systems during sampling;
- Sample locations in relationship to floor layout, chemical storage areas, sumps, drains, parts washers, HVAC system air supply and return registers, and underground utilities;
- General site layout including adjacent streets, driveways, building footings and paved areas;
- Weather conditions (i.e., precipitation, indoor and outdoor temperature and barometric pressure);
- Air flow patterns within the building; and
- Surface spills, stains, odors and PID measurements of the ambient air.

3.2.2 Task 1b. Sub-Slab Vapor Sampling

The sub-slab vapor sampling point was installed at a location within the building where the potential for ambient air infiltration via floor penetrations is minimal and out of the way of general pedestrian and vehicle traffic. Thus, prior to installation of the sub-slab vapor probe, the building floor was inspected and any observed penetrations (cracks, floor drains, underground utility perforations, sumps, etc.) were noted and recorded.

The sub-slab vapor probe installation was drilled with an electric hammer drill and a 5/8" masonry bit. Once the floor slab was penetrated, Teflon tubing was installed through the building slab and did not extend more than two inches into the sub-slab material. A non-VOC emitting sealant (modeling clay) was used to seal around the vapor probe. The sub-slab sample was collected in the following manner:

1. After installation of the probe, one to three volumes (i.e., the volume of the sample probe and tubing) were purged to assure the sample collected was representative of sub-slab conditions.
2. Flow rates for both purging and collecting did not exceed 0.2 liters per minute to minimize outdoor air infiltrations during sampling.
3. The vapor was collected using a Summa Canister or "MiniCan" (certified clean by the laboratory) using a regulator.
4. The sampling interval was for a period of approximately eight hours.

3.2.3 Task 1c. Indoor Air Sample

The indoor air sample was collected as follows:

1. The sample collection rate was consistent with that of the sub-slab sampling.
2. Flow rates for both purging and sampling were the same as for the sub-slab sample (0.2 liters per minute).
3. The indoor air was collected using a Summa Canister or "Mini" Can (certified clean by the laboratory) using a regulator.
4. The sampling interval was for a period of approximately eight hours.

3.2.4 Task 1d. Outdoor Air Sample

The outdoor air sample was collected as follows:

1. The sample collection rate was consistent with that of the sub-slab sampling.
2. Flow rates for both purging and sampling were the same as for the sub-slab sample (0.2 liters per minute).
3. The outdoor air was collected using a Summa Canister or "Mini" Can (certified clean by the laboratory) using a regulator.
4. The sampling interval was for a period of approximately eight hours.

3.3 Task 1e. Laboratory Analysis of Sub-Slab Vapor and Air Samples

Vapor and air samples (three samples) were analyzed by Centek Laboratories in Syracuse, New York for VOCs by USEPA Method TO-15. The sub-slab sample was analyzed with a detection limit of 0.25 micrograms per cubic meter (ug/m^3), and all results were reported in (ug/m^3). Results were evaluated and compared to draft guidance.

4.0 DATA USABILITY SUMMARY REPORT

This report presents the findings of the data quality assessment performed on the analyses of environmental groundwater and air samples collected for the Buffalo Business Park Voluntary Cleanup Program (VCP), Buffalo, New York as part of the OU #2 investigation. Samples for the sampling program were collected on August 31 and October 4, 2007. The chemical data for samples collected were validated to identify potential data quality issues which could affect the use of the data for decision making purposes.

A total of five primary groundwater samples, one duplicate, and one trip blank for quality control (QC) purposes, were collected for chemical analysis during this sampling events. In addition, three air samples were collected also collected as part of this investigation. Severn Trent Laboratories (STL) of Buffalo, New York, (groundwater samples) and Centek Laboratories, LLC of Syracuse, New York (air samples) performed chemical analyses of the respective samples following United States Environmental Protection Agency (USEPA) method guidelines:

- Volatile Organic Compounds (VOCs) following USEPA SW846[1] Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (December, 1996).
- VOCs following USEPA Compendium Method TO-15[2] Determination of Volatile Organic Compounds (VOCs) In Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS). (January 1999).

Information regarding the sample point identifications, analytical parameters, QC samples, sampling dates, and contract laboratory sample delivery group (SDG) designations are summarized in Table 4.

Data were validated following guidelines provided by USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Data Review (October 1999)[3] and NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation[4], where applicable to USEPA SW846 Method 8260B. In general, chemical results for the samples collected at the site were qualified on the basis of outlying precision or accuracy parameters, or on the basis of

Footnotes 1-4 on Pages 27 and 28.

professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data during the data validation process.

J	Analyte is present; however, the reported value may not be accurate or precise.
UJ	The analyte was not detected above the method detection limit. The associated detection limit is considered estimated.
U	The analyte was analyzed for, but was not detected above the method detection limit.

In general, the data generated during the Buffalo Business Park VCP sampling event met the QC criteria established in the respective USEPA methodology and guidelines. The following bulleted items highlight qualifications to specific parameters based on the validation procedures.

Although these qualifications were applied to some of the samples collected, the qualifications may have not been required or applied to all samples collected at the site. Table 2 summarizes all qualifications applied to the data for each sample collected.

- The trip blank was analyzed with head space in the vial. The VOC compound methylene chloride was detected in the trip blank. Methylene chloride was qualified as estimated (J).
- Ethylbenzene, m,p-xylene, o-xylene, styrene, tetrachloroethene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and 1,4-dichlorobenzene were qualified estimated (J) due to outlying laboratory internal standard recoveries.

Based on the data validation, the analytical data for samples collected as part of the Buffalo Business Park VCP were determined to be acceptable (including estimated data) for their intended use. In general, all data collected met acceptable levels of accuracy and precision, based on Laboratory Control Samples, Matrix Spike and Matrix Spike Duplicate samples, field duplicate samples and laboratory surrogate recoveries. In addition, the data completeness goal (i.e. the ratio of the amount of valid data obtained to the amount expected, including estimated data) was 100 percent.

5.0 INVESTIGATION RESULTS

5.1 Groundwater Investigation

Depth to groundwater is somewhat variable, but ranges from 4.9 feet BGS at VCA-MW–5 BR, to 15.73 feet BGS at VCA-MW–6BR. The groundwater table is relatively flat with a low gradient across most of the site and flow from north to south (Figure 3). As groundwater approaches the southernmost portion of the site, groundwater flow direction turns toward the southeast. The groundwater is steeply inclined in the southeast corner of the site with very high gradients, likely in response to the sunken portion of Broadway Avenue, which is approximately 15 to 20 feet lower than the site along the southeastern corner of the site. The groundwater table map (Figure 3) indicates that that the topographically low area of Broadway Avenue underpass is likely acting as a groundwater sink. Thus, contaminated groundwater from OU#2 is not likely to reach residents across Broadway Avenue, since they are also topographically higher than Broadway Avenue, and are likely sidegradient of OU#2 groundwater contamination.

5.2 Groundwater Analytical Results

Groundwater sample results were compared to New York State Ambient Water Quality Standards/Guidance Values (TOGS 1.1.1.) and TAGM 3028 Groundwater Action Levels, and are presented in Table 3. Analytical results for the 5 groundwater samples (four wells plus one duplicate sample) indicated six organic parameters were noted as exceeding TOGS 1.1.1. and/or TAGM 3028 values in at least one sample.

1,2-dichloroethylene (total), tetrachloroethylene, and trichloroethylene were detected in samples VCA-MW5-BR and VCA-MW7-BR at concentrations in exceedance of both TOGS 1.1.1. and TAGM 3028 guidance values. 1,1-dichloroethylene and vinyl chloride were detected in sample VCA-MW5-BR at concentrations in exceedance of both TOGS 1.1.1. and TAGM 3028 guidance values. Lastly, methylene chloride was detected in sample VCA-MW7-BR at concentrations in exceedance of both TOGS 1.1.1. and TAGM 3028 guidance values.

Low-level detections (at values below TOGS1.1.1. and TAGM 3028 values) were found in the groundwater samples as follows: cyclohexane, ethylbenzene, methylcyclohexane, toluene and

xylene in sample VCA-MW5-BR; acetone, chloroform, cyclohexane, 1,2-dichloroethylene, and toluene in sample VCA-MW6-BR; and cyclohexane and methylcyclohexane in sample VCA-MW8-BR, and the associated duplicate sample.

5.3 Results of the Vapor Intrusion Study

Twenty-seven volatile VOCs were detected in the sub-slab sample, 23 VOCs were detected in the indoor air sample, and 15 VOCs were detected in the outdoor sample. At the present time, the NYSDOH vapor intrusion document provides for seven VOCs, as described on two matrices within the 2006 NYSDOH Guidance document (Appendix G). Matrix 1 provides guidance for trichloroethene (TCE), vinyl chloride, and carbon tetrachloride. Matrix 2 provides guidance for 1,1,1–trichloroethane, 1,1–dichloroethane, cis–1,2–dichloroethene, and tetrachloroethylene.

5.3.1 Matrix 1 Results

There are three VOCs that are presently addressed by NYSDOH Vapor Intrusion Matrix #1. Carbon tetrachloride and vinyl chloride were not detected in the sub-slab, indoor air, or outdoor air samples that were collected as part of the vapor intrusion study. Trichloroethene was detected as follows:

- Sub-slab 42.00 ug/m3
- Indoor Air 1.60 ug/m3
- Outdoor air 0.87 ug/m3

These vapor intrusion results for trichloroethene collectively fall into category #7 on Matrix #1, which is, “Monitor”. NYSDOH guidance indicates that monitoring is needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific basis and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

5.3.2 Matrix 2 Results

There are four VOCs that are presently addressed by NYSDOH Vapor Intrusion Matrix #2. 1,1,1–trichloroethane and 1,1–dichloroethane were not detected in the sub-slab, indoor air, or outdoor air samples that were collected as part of the vapor intrusion study. Cis–1,1–dichloroethene was detected in the sub-slab sample, but was not detected in the indoor air or outdoor air samples. Tetrachloroethylene was detected in both the sub-slab and indoor air samples.

These vapor intrusion results for both cis-1,1-dichloroethene and tetrachloroethylene fall into category #2 on matrix #2, which is, “Take reasonable and practical actions to identify source(s) and reduce exposures”.

6.0 QUALITATIVE EXPOSURE ASSESSMENT

6.1 Soils Exposure

In April of 2006, contaminated soils at Buffalo Business Park were excavated and removed from the site as part of remedial activities associated with OU#1. The contaminated soils were excavated, and the side walls of the excavation were sampled. Sample results indicated that the contaminated soils had been removed. The excavation was subsequently backfilled with clean fill, so there should be no potential exposure concerns associated with soils at OU#1.

6.2 Groundwater

Depth to groundwater at its shallowest point is approximately six feet BGS (at MW 5) with an average depth of approximately 8.1 feet BGS across the site (Table 2). Groundwater flow direction is to the southeast toward Broadway Avenue (Figure 3).

Groundwater in this area is not used as a water supply since the City of Buffalo is the source of drinking water. Thus, the potential for the consumption of groundwater in this area is unlikely.

The groundwater table is relatively flat across most of the site. As groundwater approaches the southern property boundary of the site, the groundwater surface is steeply inclined to the southeast, likely in response to sunken portion of Broadway Avenue, which is 15 to 20 feet lower than the site along the southeastern corner of the site. The groundwater potentiometric surface map (Figure 3) indicates that the topographically low area of Broadway Avenue underpass is likely acting as a groundwater sink. In addition, a major underground utility corridor is present along the southern property boundary along the northern side of Broadway Avenue. Because of the topographic low created by the Broadway Avenue underpass, and the bedding associated with the underground utilities corridor, it is unlikely that contaminated groundwater from OU#2 will reach residents across Broadway Avenue, since they are also topographically higher than Broadway Avenue, are sidegradient of OU#2 groundwater contamination, as well as the fact that groundwater is most likely intercepted by bedding associated with the underground utilities corridor. Based on this information, groundwater contamination associated with OU #2 will

likely only impact the westernmost portion of the southernmost building located within the Buffalo Business Park directly south of monitoring well VCA-MW4-BR.

Collectively the groundwater data indicates that the potential for exposure to contaminated groundwater north, west and south of OU#1 and OU#2 is unlikely. In addition, the likelihood of exposure to contaminated groundwater to the east of the site is unlikely, since the underpass area of Broadway Avenue appears to act as a groundwater sink. The downgradient boundaries of the groundwater contaminant plume have not been identified; however, there is potential for exposure for municipal workers when working on buried utilities within the underground utilities corridor that is present along the southern property boundary just north of Broadway Avenue.

6.3 Vapor Intrusion

Based on the results of the vapor intrusion study conducted as part of the OU#2 investigation, there is some evidence that within the westernmost section of the south site building there is potential for exposure to trichloroethene (TCE) through the inhalation of this VOC via the vapor intrusion pathway. This potential exposure is thought to be geographically very limited, since there was no TCE detected in groundwater at newly installed monitoring well VCA-MW6-BR.

7.0 CONCLUSIONS & RECOMMENDATIONS

7.1 Conclusions

Investigation and remedial activities at the Buffalo Business Park have been completed in accordance with NYSDEC approved work plans for both OU#1 and OU#2. As part of this work, the following has been conclusions are made:

- Investigative activities associated with OU#2 have been completed in accordance with the NYSDEC approved Investigative Work Plan;
- The source of contamination on site (contaminated soils at OU #1) has been removed;
- Groundwater contamination downgradient of OU#1 has been determined to be very localized, and was not found in the easternmost groundwater monitoring well that was installed (VCA-MW6-BR);
- Historic groundwater contamination at VCA-MW4-BR is likely from OU#1, the source of which has since been removed;
- The source of the groundwater contamination at VCA-MW5-BR may be from OU#1; however, hydrogeologic information provided from the groundwater potentiometric surface map (Figure 3) indicates that VCA-MW5-BR is likely sidegradient to OU#1;
- Groundwater contamination detected at VCA-MW7-BR is unlikely to be from OU#1, since this groundwater monitoring well is appears to be sidegradient of OU#1;
- The groundwater potentiometric surface map (Figure 3) indicates that the topographically low area of Broadway Avenue underpass is likely acting as a groundwater sink;
- It is unlikely that contaminated groundwater from OU#2 will reach residents across Broadway Avenue because of the topographic low created by the Broadway Avenue underpass;
- While the downgradient edge of the groundwater contaminant plume has not been delineated, there is a potential for exposure to contaminated groundwater when work is performed on underground utilities along the underground utilities corridor just north of Broadway Avenue;
- Exposure associated with work on underground utilities is typically of a short duration and would be regulated under applicable OSHA regulations;
- The results of the vapor intrusion study indicate that there is potential for exposure to TCE from the migration of soil vapors into the westernmost section of the southern site building; and

- This potential exposure is thought to be geographically very limited, since there was no TCE detected in groundwater at newly installed monitoring well VCA-MW6-BR, located approximately 50 feet east of the sub slab vapor sampling point.

7.2 Recommendations

No additional soil or groundwater investigation activities are recommended at this time.

However, Golder does recommend that additional vapor intrusion work is completed during the winter to ascertain the nature and extent of potential impacts to the south site building from TCE in soil gas. Another vapor intrusion sampling event is recommended during the winter heating months consisting of the following:

- One soil vapor sample at the previous location inside of New York Frame;
- One soil vapor sample near VCA-MW6-BR;
- One soil vapor sample within the adjoining business;
- Indoor ambient air samples at New York Frame and the adjoining business; and
- One outdoor air sample for background purposes.

8.0 CLOSURE

This document provides an overview of the field activities and analytical results of the OU#2 groundwater investigation and associated vapor intrusion study. Please contact the undersigned if you have questions or need additional information.

GOLDER ASSOCIATES INC.

Anthony J. Notaro
Staff Geologist

Norman K. Wohlabaugh, P.G., C.P.G.
Senior Consultant/Geologist

F/N: G:\Projects\063-9477 (Buffalo Business Park)\Reports\OU#2\Draft\OU#2 Draft Report (Rev 1).doc

REFERENCES

New York State Department of Environmental Conservation, 1994. HWR-94-4046, Technical and Administrative Guidance Memorandum 4046, Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 1994.

New York State Department of Environmental Conservation, 1997. Technical and Administrative Guidance Memorandum 3028, "Contained-in Criteria for Environmental Media", November 30, 1992, Revised March 14, 1997.

New York State Department of Environmental Conservation, 2000. Division of Water Technical and Operational Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, October 22, 1993, Revised April 2000.

New York State Department of Health, Guidance for Evaluating Soil Vapor Intrusion in the State of New York; April, 2006.

Golder Associates, Inc., Report on Remedial Activities at Operable Unit #1, Buffalo Business Park, 1800 Broadway, Buffalo, New York, July 26, 2006.

Golder Associates, Inc., Revised Investigative Work Plan, Operable Unit #2; Buffalo Business Park, 1800 Broadway; Buffalo, New York; June, 2006.

Lender Consulting Services, Phase II Soil and Groundwater Study, Buffalo Business Park, 1800 Broadway; Buffalo, New York; March, 2003.

Lender Consulting Services, Remedial Action Work Plan, Operable Unit #1, Buffalo Business Park, 1800 Broadway; Buffalo, New York; October 2003.

Lender Consulting Services, Investigative Work Plan, Operable Unit #2, Buffalo Business Park, 1800 Broadway and West Adjacent Commercial Property, 1770 Broadway; Buffalo new York; April 2005

DATA USABILITY SUMMARY REPORT REFERENCES

[1] USEPA, 1996, Test methods for evaluating solid waste, physical/chemical methods (SW-846): 3rd edition, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm.

[2] USEPA, January 1999, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (TO-15):2nd edition, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL http://www.epa.gov/ttn/amtic/files/ambient/airtox/to-15r.pdf

[3] USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA-540/R-99-008 (PB99-963506), October 1999, accessed at URL http://www.epa.gov/superfund/programs/clp/download/fgorg.pdf

[4] NYSDEC (Draft) Department of Environmental Remediation Technical Guidance for Site Investigation and Remediation, December, 2002, accessed at URL http://www.dec.ny.gov/docs/remediation_hudson_pdf/der10dr.pdf

DRAFT

NOVEMBER 2007 TABLE 1 063-9477

MONITORING WELL LOCATION AND ELEVATION SURVEY
BUFFALO BUSINESS PARK, 1700 BROADWAY
BUFFALO, NEW YORK

WELL NUMBER	NORTH COORDINATE	EAST COORDINATE	GROUND ELEV.	TOP OF CASING ELEV.	TOP OF RISER ELEV.	RISER SIZE
MW1	1056088.4	1088090.7	98.9	98.93	98.57	5" STEEL
MW2	1056103.7	1087873.3	99.5	99.51	99.16	5" STEEL
MW3	1056031.5	1087884.1	98.5	98.59	98.08	5" STEEL
MW4	1055985.2	1087914.9	98.1	98.17	97.84	5" STEEL
MW5	1055924.8	1087863.1	97.1	97.11	96.53	2" PVC
MW6	1055978.3	1088137.5	98.0	97.97	97.68	2" PVC
MW7	1056043.0	1087797.6	98.0	98.04	97.45	2" PVC
MW8	1056167.7	1087808.4	100.2	100.28	99.98	2" PVC

CONTROL TIE IN:

NW. BLDG. COR.	1055964.7	1087919.7	
SW. BLDG. COR.	1056141.6	1087888.8	
FIRE HYDRANT	1056010.4	1087874.2	(ELEVATION OF EAST BOLT ASSUMED 100.00')

HORIZONTAL CONTROL REFERENCE: NAD 83, U.S. SURVEY FEET, SUB-METER ACCURACY

VERTICAL CONTROL REFERENCE: ASSUMED

Survey performed bt Wendel Duchscherer on September 13, 2007

DRAFT

TABLE 2

GROUNDWATER ELEVATIONS

BUFFALO BUSINESS PARK, 1700 BROADWAY

BUFFALO, NEW YORK

WELL #	GROUND ELEV.	TOP OF CASING ELEV.	TOP OF RISER ELEV.	RISER SIZE	WATER LEVEL	WATER ELEVATION
MW1	98.89	98.93	98.57	5" Steel	7.4	**91.49**
MW2	99.49	99.51	99.16	5" Steel	7.56	**91.93**
MW3	98.54	98.59	98.08	5" Steel	7.08	**91.46**
MW4	98.10	98.17	97.84	5" Steel	6.73	**91.37**
MW5	97.12	97.11	96.53	2" PVC	5.81	**91.31**
MW6	98.00	97.97	97.68	2" PVC	15.73	**82.27**
MW7	97.98	98.04	97.45	2" PVC	6.36	**91.62**
MW8	100.24	100.28	99.98	2" PVC	8.63	**91.61**

Water Levels collected by Golder Associates, Inc. personnel on September 13, 2007.

CONTROL TIE-IN:

NW. BLDG. CORNER.
SW. BLDG. CORNER.
FIRE HYDRANT (ELEVATION OF EAST BOLT ASSUMED 100.00')

VERTICAL CONTROL REFERENCE: ASSUMED AT 100.0 FEET

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
BUFFALO BUSINESS PARK VCP / OU#2
BUFFALO, NEW YORK

Well ID Lab ID Sample Date	NYS Ambient Water Quality Standards/ Guidance Values (TOGS 1.1.1.) (June 1998)	Groundwater Action Level TAGM 3028 (August 26, 1997)	VCA-MW5-BR A7983601 8/31/07	VCA-MW6-BR A7983604 8/31/07	VCA-MW7-BR A7983602 8/31/07	VCA-MW8-BR A7983603 8/31/07	VCA-MW8-BR (duplicate) A7983605 8/31/07
Volatiles (mg/L)							
Acetone	0.05	0.05		0.007			
Acetonitrile	NV	0.05					
Benzene	0.001	0.0007					
2-Butanone (MEK)	0.05	0.05					
Bromodichloromethane	0.05	0.05					
Carbon Disulfide	NV	0.005					
Carbon Tetrachloride	0.05	0.05					
Chlorobenzene	0.005	0.005					
Chloroethane	0.005	0.005					
Chloroform	0.007	0.007		0.0021			
Cyclohexane	†	†	0.00056 J	0.00072 J		0.0018	0.0016
1,1-Dichloroethane	0.005	0.005					
1,2-Dichloroethane	0.0006	0.005					
1,1-Dichloroethylene	0.0007	0.005	***0.012***				
1,2-Dichloroethylene, Total	0.005	0.005	***1.664***	0.0019	***0.021***		
1,2-Dichloropropane	0.001	0.005					
Ethanol	NV	NV					
Ethylbenzene	0.005	0.005	0.00075 J				
Ethyl Ether	NV	0.05					
Ethylene Glycol	0.05	0.05					
Hexane	NV	0.05					
2-hexanone	0.05	0.05					
Isopropyl Alcohol	NV	NV					
Isopropyl Ether	NV	NV					
Methanol	NV	0.05					
Methyl Acetate	NV	NV					
Methylene Chloride (Dichloromethane)	0.005	0.005			***0.011***		
Methylcyclohexane	†	†	0.00061 J			0.0014	0.0013
4-Methyl-2-pentanone (MIBK)	NV	0.05					
2-Methyl-1,3-dioxolane	0.05	0.05					
N-Butyl Alcohol	NV	0.05					
Tetrachloroethylene	0.005	0.005	***18***		***1.3***		
Tetrahydrofuran	0.05	0.05					
1,1,2-Trichloroethane	0.001	0.005					
Toluene (Methylbenzene)	0.005	0.005	0.0018	0.00065 J			
Trichloroethylene	0.005	0.005	***3.2***		***0.026***		
Vinyl Chloride	0.0003	0.002	***0.052***				
Xylene, Total	0.005	0.005	0.00097 J				
TOTAL VOCs			22.93269	0.01237	1.358	0.0032	0.0029

Notes:
All results are reported in milligrams per liter (mg/L).
Analytical qualifiers and other notes are presented on final page.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
BUFFALO BUSINESS PARK VCP / OU#2
BUFFALO, NEW YORK

Well ID Lab ID Sample Date	NYS Ambient Water Quality Standards/ Guidance Values (TOGS 1.1.1.) (June 1998)	Groundwater Action Level TAGM 3028 (August 26, 1997)	MW-1 BR A6176404 2/15/06	MW-2 BR A6176403 2/15/06	MW-3 BR A6176402 2/15/06	MW-4 BR A6176401 2/15/06	MW-4 BR (duplicate) A6176401FD 2/15/06
Volatiles (mg/L)							
Acetone	0.05	0.05					
Acetonitrile	NV	0.05					
Benzene	0.001	0.0007					
2-Butanone (MEK)	0.05	0.05					
Bromodichloromethane	0.05	0.05					
Carbon Disulfide	NV	0.005					
Carbon Tetrachloride	0.05	0.05					
Chlorobenzene	0.005	0.005					
Chloroethane	0.005	0.005					
Chloroform	0.007	0.007					
Cyclohexane	†	†		***0.33***			
1,1-Dichloroethane	0.005	0.005					
1,2-Dichloroethane	0.0006	0.005					
1,1-Dichloroethylene	0.0007	0.005					
1,2-Dichloroethylene, Total	0.005	0.005			0.28 J	***1.44***	***1.43***
1,2-Dichloropropane	0.001	0.005					
Ethanol	NV	NV					
Ethylbenzene	0.005	0.005					
Ethyl Ether	NV	0.05					
Ethylene Glycol	0.05	0.05					
Hexane	NV	0.05					
2-hexanone	0.05	0.05					
Isopropyl Alcohol	NV	NV					
Isopropyl Ether	NV	NV					
Methanol	NV	0.05					
Methyl Acetate	NV	NV					
Methylene Chloride (Dichloromethane)	0.005	0.005					
Methylcyclohexane	†	†		***0.11*** J			
4-Methyl-2-pentanone (MIBK)	NV	0.05					
2-Methyl-1,3-dioxolane	0.05	0.05					
N-Butyl Alcohol	NV	0.05					
Tetrachloroethylene	0.005	0.005	***0.1***	***2.6***	***8.6***	***30***	***32***
Tetrahydrofuran	0.05	0.05					
1,1,2-Trichloroethane	0.001	0.005					
Toluene (Methylbenzene)	0.005	0.005	***0.006*** J				
Trichloroethylene	0.005	0.005	0.005 J	***0.03*** J	***0.96***	***3.8***	***3.6***
Vinyl Chloride	0.0003	0.002				***0.18*** J	***0.17*** J
Xylene, Total	0.005	0.005					
TOTAL VOCs			0.111	3.07	9.84	35.42	37.2

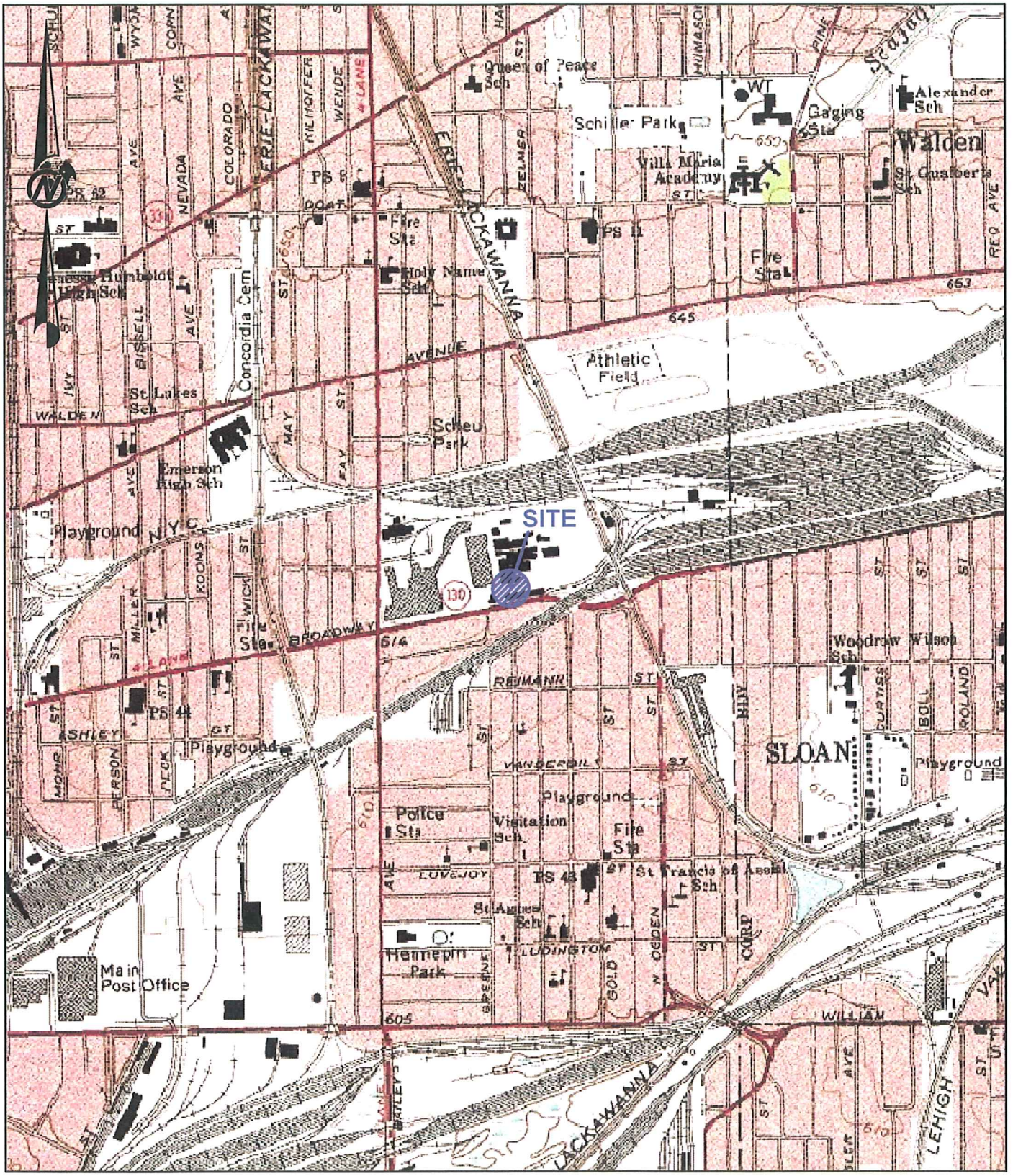
Notes:
All results are reported in milligrams per liter (mg/L).
Analytical qualifiers and other notes are presented on final page.

SOIL VAPOR ANALYTICAL RESULTS
AIR TOXIC TO15 COMPOUNDS
BUFFALO BUSINESS PARK VCP/OU #2
SOIL VAPOR INTRUSION STUDY
BUFFALO, NEW YORK

Official Name	Sub-Slab		Indoor Air		Outdoor Air	
Sample Date	10/4/07		10/4/07		10/4/07	
Sample ID	003A		001A		002A	
	(ug/m3)		(ug/m3)		(ug/m3)	
Air Toxic TO15 (ug/m3)						
1,1,1-Trichloroethane	ND		ND		ND	
1,1-Dichloroethane	ND		ND		ND	
1,4-Dichlorobenzene	0.98	J	0.92	J	ND	
1,2-Dichloroethane	0.91		ND		ND	
1,2,4 - Trimethylbenzene	4.20	J	7.90	J	2.00	J
1,3,5 - Trimethylbenzene	2.40	J	4.30	J	1.10	J
2,2,4 - Trimethylpentane	2.8		7.90		ND	
4 - Ethyltoluene	1.0		1.7		ND	
Acetone	110		76		22.00	
Benzene	4.9	J	7.8	J	0.88	
Bromomethane	1.8		ND		ND	
Carbon Disulfide	1.4		0.82		ND	
Carbon Tetrachloride	ND		ND		ND	
Chloroform	0.60		ND		ND	
Cyclohexane	8.10		4.50		0.42	J
cis-1,2-Dichloroethene	6.9		ND		ND	
Ethylbenzene	7.20	J	7.90	J	0.62	J
Freon 11	1.80		2.10		1.30	
Freon 12	5.80		3.20		2.30	
Heptane	9.20		7.00		ND	
Hexane	16.00		6.80		ND	
Isopropyl Alcohol	69.00		87.00		ND	
m&p-Xylene	14.00	J	13.00	J	1.80	J
Methylene Chloride	5.20		0.74		0.60	
Methyl Ethyl Ketone (MEK)	21.00		5.20		4.20	
o - Xylene	3.80	J	6.10	J	0.62	J
Styrene	5.60	J	3.20	J	0.52	J
Tetrachloroethylene	4.2	J	1.00	J	ND	
Toluene	32.00	J	24.00	J	4.50	J
Trichloroethene	42.00	†	1.60		0.87	
Vinyl Chloride	ND		ND		ND	
Total VOC	*263.69*		*195.18*		*43.73*	

ppb/v=Parts per billion per volume
ppt/v=Parts per trillion per volume
ug/m3=Micrograms per cubic meter

Matrix 1 Compounds
Matrix 2 Compounds
ND = Not Detected
† = Compound is in exceedance of the New York State Department of Health (NYSDOH) Guidance Value of 5.00 µg/m^3.



REFERENCE

1.) DRAWING WAS ADAPTED FROM THE USGS TOPOGRAPHIC QUADRANGLE OF BUFFALO NE, NEW YORK, DATED 1965, OBTAINED FROM www.topozone.com.

500 0 500 1000
scale feet

Golder Associates
Buffalo, New York

FILE No.	0639477A100
PROJECT No.	063-9477
REV.	0

SCALE	AS SHOWN
DATE	7/5/06
DESIGN	AJN
CADD	AJN
CHECK	
REVIEW	

TITLE

SITE LOCATION MAP

BUFFALO BUSINESS PARK / VCP

FIGURE 1

TOPS/FAMILY DOLLAR PLAZA

VCA–MW8–BR

METAL-CLAD BUILDING (UNIMAIL)

VCA–MW2–BR

PL

VCA–MW7–BR

VCA–MW1–BR

VCA–MW3–BR

VCA–MW4–BR

VCA–MW5–BR

BRICK BUILDING (NEW YORK FRAME)

VCA–MW6–BR

LEGEND

- EXISTING GROUNDWATER MONITORING WELL
- OU #2 GROUNDWATER MONITORING WELL
- PL APPROXIMATE PROPERTY LINE
- APPROXIMATE LIMITS OF EXCAVATION OU–1

25 0 25 50
scale feet

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

BUFFALO BUSINESS PARK VCP
OPERABLE UNIT #2
BUFFALO, NEW YORK

TITLE

MONITORING WELL LOCATIONS

Golder Associates
Buffalo, New York

PROJECT No.		063–9477	FILE No.		0639477A194
DESIGN	AJN	5/5/06	SCALE	AS SHOWN	REV. 0
CADD	AJN	5/5/06			
CHECK	NKW	11/6/07			
REVIEW	DCW	11/6/07			

FIGURE 2

TOPS/FAMILY DOLLAR PLAZA

METAL-CLAD BUILDING (UNIMAIL)

BRICK BUILDING (NEW YORK FRAME)

VCA–MW8–BR (91.61)

VCA–MW2–BR (91.93)

VCA–MW7–BR (91.62)

VCA–MW1–BR (91.49)

VCA–MW3–BR (91.46)

HYDRANT

VCA–MW4–BR (91.37)

VCA–MW5–BR (91.31)

VCA–MW6–BR (82.27)

91.60

91.80

91.40

91.20

91.00

90.00

89.00

88.00

87.00

86.00

85.00

84.00

83.00

LEGEND

VCA–MW1–BR	EXISTING GROUNDWATER MONITORING WELL
VCA–MW5–BR	OU #2 GROUNDWATER MONITORING WELL
(91.31)	GROUNDWATER ELEVATION
91.20	GROUNDWATER EVELVATION CONTOUR
PL	APPROXIMATE PROPERTY LINE
	APPROXIMATE LIMITS OF EXCAVATION OU–1

NOTES

1.) HORIZONTAL CONTROL REFERENCE: NAD 83, U.S. SURVEY FEET, SUB–METER ACCURACY;
VERTICAL CONTROL REFERENCE: ASSUMED. ELEVATION OF EAST BOLT OF FIRE HYDRANT ASSUMED TO BE 100.00'.

2.) WATER LEVELS OBTAINED BY GOLDER PERSONNEL ON SEPTEMBER 13, 2007.

3.) SURVEY PERFORMED BY WENDEL DUCHSCHERER PERSONNEL ON SEPTEMBER 13, 2007.

25 0 25 50
scale feet

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

BUFFALO BUSINESS PARK VCP
OPERABLE UNIT #2
BUFFALO, NEW YORK

DRAFT

TITLE

GROUNDWATER POTENTIOMETRIC SURFACE - OPERABLE UNIT #2

Golder Associates
Buffalo, New York

PROJECT No.		063–9477	FILE No.		0639477A195
DESIGN	AJN	9/17/07	SCALE	AS SHOWN	REV. 0
CADD	AJN	9/17/07			
CHECK	NKW	11/6/07			
REVIEW	DCW	11/6/07			

FIGURE 3

LEGEND

- SOIL VAPOR INVESTIGATION SAMPLE LOCATION
- OU #2 GROUNDWATER MONITORING WELL
- APPROXIMATE PROPERTY LINE
- APPROXIMATE LIMITS OF EXCAVATION OU-1

VCA-MW5-BR

VCA-MW4-BR

OUTDOOR AIR

SUBSLAB AIR

INDOOR AIR

BRICK BUILDING (NEW YORK FRAME)

10 0 10
scale feet

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
BUFFALO BUSINESS PARK VCP
OPERABLE UNIT #2
BUFFALO, NEW YORK

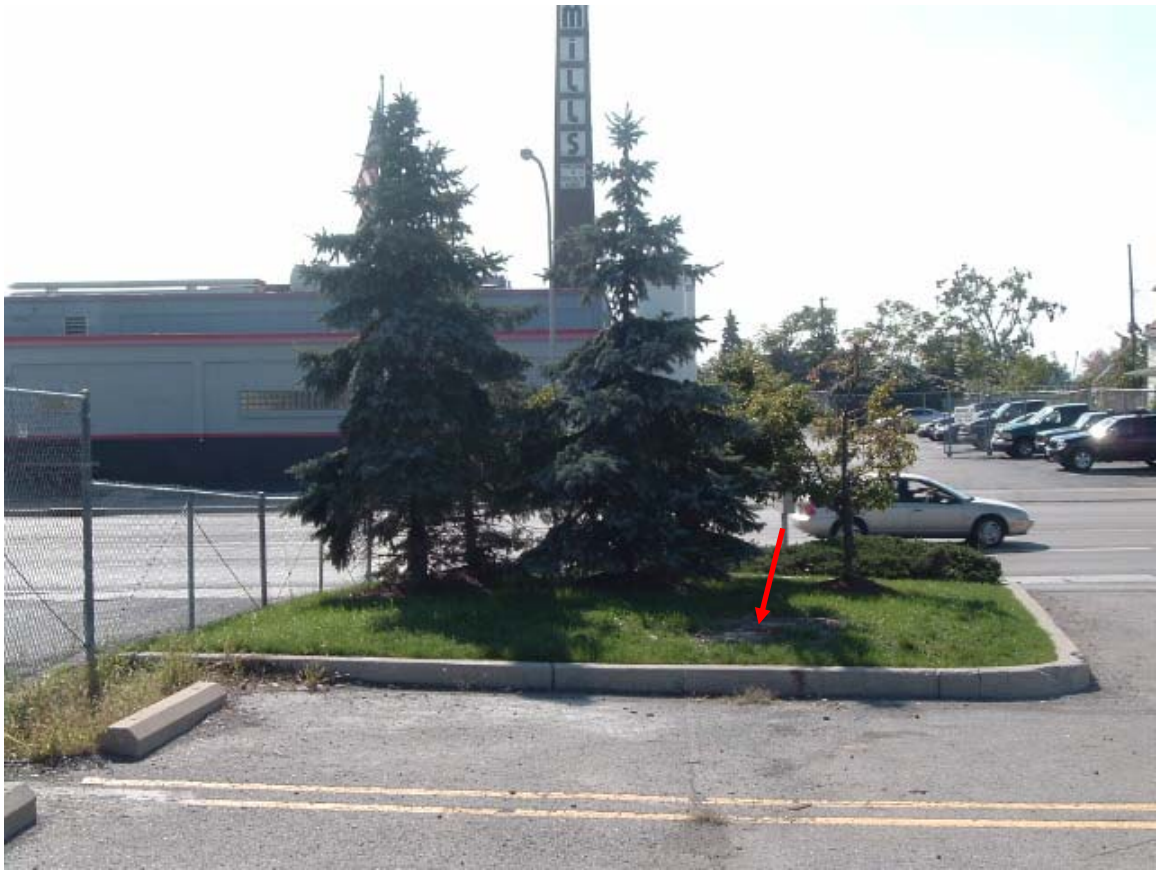
DRAFT

TITLE
SOIL VAPOR INTRUSION INVESTIGATION SAMPLE LOCATIONS

Golder Associates
Buffalo, New York

PROJECT No.		063-9477	FILE No.		0639477A196
DESIGN	AJN	10/5/07	SCALE	AS SHOWN	REV. 0
CADD	AJN	10/5/07			
CHECK					
REVIEW					

FIGURE 4



Photograph 1: Location of groundwater monitoring well VCA-MW5-BR.

Photograph 2: Location of groundwater monitoring VCA-MW6-BR inside of New York Frame. (center of photograph).

Photograph 3: Location of groundwater monitoring well VCA-MW7-BR (center of photograph).

Photograph 4: Location of groundwater monitoring VCA-MW8-BR in front of the Dollar Store.

Photograph 5: Outside air monitoring point for the vapor intrusion study. Cannister on mail box in center of photograph.

Photograph 6. Location of indoor air monitoring point on flat file cabinet in center of photograph.

Photograph 7. Location of sub-slab vapor monitoring point in store room. Cannister is on the floor in the center of the photograph.

APPENDIX A

Field Boring Logs

FIELD BORING LOG

DEPTH HOLE 13'	JOB NO. ~~053~~ 063-9477	PROJECT Buffalo Business Park VCP/OU #2 Invest./NY	BORING NO. VCA-MW5-BR
DEPTH SOIL DRILL 13'	GA INSP. AJN	DRILLING METHOD 4-1/4" ID Hollow Stem Augers	SHEET 1 of 1
DEPTH ROCK CORE 28'	WEATHER N/A	DRILLING CO. SJB Services, Inc.	SURFACE EL. 97.1
NO. DIST. N/A US. N/A	TEMP. N/A	DRILL RIG CME-85 DRILLER R. Brown	DATUM
DEPTH WL. 11.0'	HRS. PROD. N/A	WT. SAMPLER HAMMER 140 LB. DROP 30"	STARTED 8/23 - 945
TIME WL. 1020	HRS. DELAYED N/A	WT. CASING HAMMER N/A DROP N/A	COMPLETED 8/23/ 1015

SAMPLE TYPES

A.S. AUGER SAMPLE
C.S. CHUNK SAMPLE
D.O. DRIVE OPEN
D.S. DENISON SAMPLE
P.S. PITCHER SAMPLE
R.C. ROCK CORE
S.T. SLOTTED TUBE
T.O. THIN-WALLED, OPEN
T.P. THIN-WALLED, PISTON
W.S. WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0-5%
"LITTLE" – 5-12%
"SOME" – 12-30%
"AND" – 30-50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN. (FORCE)	REC/ATT	DEPTH PID	SAMPLE DESCRIPTION AND BORING NOTES
0–2		51.		S-1		10-15-36-26	14/24	0.0	stiff brn SILT some f-c sand + f gravel 18" then 6" broken rx frag. f SAND + gravel some gray to white staining; dry/sl moist, slight odor (ML) 3" slag at bottom
2–4									NOT SAMPLED
5–7		18		S-2		11-7-11-16	18/24	0.0	stiff brn silty CLAY; tr. to little f sand, gray infilling of fractures, sl. moist. (CL)
7–9									NOT SAMPLED
10–12				S-3		7-9-15-24	12/24	0.0	soft brn clayey SILT to silty CLAY some f sand tr. to some f-c gravel moist trace orange mottling around fractures. (CL-ML)
12–13									NOT SAMPLED.
13	auger refusal 13' bgs								
14–24									

FIELD BORING LOG

DEPTH HOLE 17.5' | JOB NO. 053-9477 | PROJECT Buffalo Business Park VCP/OU #2 Invest./NY | BORING NO. VCA-MW16-BR
DEPTH SOIL DRILL 15.5' | GA INSP. AJN | DRILLING METHOD 4-1/4" ID Hollow Stem Augers | SHEET 1 of 1
DEPTH ROCK CORE 23.5' | WEATHER N/A | DRILLING CO. SJB Services, Inc. | SURFACE EL. 98.0
NO. DIST. N/A US. N/A | TEMP. N/A | DRILL RIG CME 45 | DRILLER R. Brown | DATUM
DEPTH WL. 15.5' | HRS. PROD. N/A | WT. SAMPLER HAMMER 140 LB. | DROP 30" | STARTED 3/28 1320
TIME WL. 1100 | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 3/29 1600

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SLY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.		SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN. (FORCE)	SAMPLES REC/ATT	DEPTH PID	SAMPLE DESCRIPTION AND BORING NOTES
									CORED concrete floor
2		29		1		21·19 10·8	12/24	0.0	loose, brn f-c SAND and GRAVEL, tr clay, tr silt, dry (SP) FILL
4									NOT SAMPLED
6		7		2		3·4 3·6	9/24	0.0	compact, lt brn to brn, SILT; f SAND; some f-c gravel, tr clay, moist (SM)
8									NOT SAMPLED
10		>50		3		25/50	11/12		dense, brown-gray, SILT little f sand, tr clay, tr f gravel, moist (ML)
12									
14									NOT SAMPLED
16	auger refusal @ 17.5' bgs.								
18									
20									
22									

FIELD BORING LOG

DEPTH HOLE 14.0 | JOB NO. 053-9477 | PROJECT Buffalo Business Park VCP/OU #2 Invest./NY | BORING NO. VCA-MW1-BR
DEPTH SOIL DRILL 14.0 | GA INSP. AJN | DRILLING METHOD 4-1/4" ID Hollow Stem Augers | SHEET 1 of 1
DEPTH ROCK CORE 29.0 | WEATHER N/A | DRILLING CO. SJB Services, Inc. | SURFACE EL. 98.0
NO. DIST. N/A US. N/A | TEMP. N/A | DRILL RIG CME 85 | DRILLER B. Brown | DATUM
DEPTH WL. N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER 140 LB. | DROP 30" | STARTED 8/24 1235
TIME WL. N/A | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 8/24 1310

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.		SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN. (FORCE)	SAMPLES REC/ATT	DEPTH PID	SAMPLE DESCRIPTION AND BORING NOTES
0		33		1		6-16-17-12	16/18	0.0	6" asphalt/road base loose brn-gray to brn, f-c SAND and GRAVEL, little silt, ∠1 moist (SP)
2									
4									NOT SAMPLED
6		12		2		4-4-8-10	17/24	0.0	stiff brown clayey SILT, little f sand, moist, some organic or gray clay infilling of fractures (ML)
8									NOT SAMPLED
10		20		3		6-8-12-13	24/24		stiff brown CLAYEY SILT to SILTY CLAY, yellow-orange mottling, tr to little f sand, tr f gravel, moist (CL-ML)
12									NOT SAMPLED.
14	auger refusal @ 14.0'								
16									
18									
20									
22									

FIELD BORING LOG

DEPTH HOLE 17.5 | JOB NO. 053-9477 | PROJECT Buffalo Business Park VCP/OU #2 Invest./NY | BORING NO. VCA-MW8-BR
DEPTH SOIL DRILL 17.5 | GA INSP. AJN | DRILLING METHOD 4-1/4" ID Hollow Stem Augers | SHEET 1 of 1
DEPTH ROCK CORE 32.5 | WEATHER N/A | DRILLING CO. SJB Services, Inc. | SURFACE EL. 100.2
NO. DIST. N/A US. N/A | TEMP. N/A | DRILL RIG CME-85 | DRILLER R. Brown | DATUM
DEPTH WL. N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER 140 LB. | DROP 30" | STARTED 8/24 - 1250
TIME WL. N/A | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 8/24 - 1330

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0-5%
"LITTLE" – 5-12%
"SOME" – 12-30%
"AND" – 30-50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN. (FORCE)	SAMPLES REC/ATT	DEPTH PID	SAMPLE DESCRIPTION AND BORING NOTES
0		51	1		- 25 - 26 - 16	10/18	0.0	loose brown and gray mottled c SAND and f-c GRAVEL, little f-m sand, dry (SP)
2								ASPHALT/ROAD BASE
4								NOT SAMPLED
6		12	2		12 - 6 - 6 - 4	13/24	0.0	loose brown m-c SAND and f GRAVEL, little c gravel, little f sand, trace clay, dry moist (SP)
8								NOT SAMPLED
10		14	3		9 - 6 - 8 - 9	22/24	0.0	stiff brown to brown-gray mottled yellow CLAYEY SILT, trace f gravel, trace f sand, some gray clay infilling of fractures, moist (CL-ML)
12								becomes wet @ ~12' bgs
14								NOT SAMPLED
16		10	4		6 - 3 - 7 - 10	20/24	0.0	compact brown-gray SILT; f SAND, little f gravel, trace clay, moist (SM)
								@ 16'4" 2" thick c SAND; GRAVEL lo. lot, wet to saturated
18	REFUSAL @ 17.5' bgs							
20								
22								

APPENDIX B

Air Monitoring Logs

GOLDER ASSOCIATES

AIR MONITORING DURING DRILLING

SHEET 1 OF 1

JOB NAME Buffalo Business Park VCP/OU#2
JOB NUMBER 063-9477
INSTRUMENT USED AND ID NUMBER ION Science PhoCheck +
CALIBRATION NUMBER 06-02124

BORING NUMBER VCA-MW15-BR
AMBIENT TEMPERATURE 78° F
WIND SPEED 10 mph
WIND DIRECTION W→E

DATE	TIME	DEPTH OF AUGERS	INSTRUMENT READING
8/23	0950	3.5'	0.0 ppm.
8/23	1000	8.0'	0.0 ppm
8/23	1010	12.0'	0.0 ppm.

GOLDER ASSOCIATES

AIR MONITORING DURING DRILLING

SHEET 1 OF 1

JOB NAME Buffalo Business Park VCP/OU#2
JOB NUMBER 063-9477
INSTRUMENT USED AND ID NUMBER ION Science PhoCheck+
CALIBRATION NUMBER 06-02124

BORING NUMBER VCA-MW16-BR
AMBIENT TEMPERATURE 84°F
WIND SPEED none
WIND DIRECTION none

DATE	TIME	DEPTH OF AUGERS	INSTRUMENT READING
8/28	1345	2.0'	0.0 ppm
8/28	1410	5.0'	0.0 ppm.
8/28	1420	9.0'	0.0 ppm
8/28	1430	12.0'	0.0 ppm
8/28	1455	17.5'	0.0 ppm

GOLDER ASSOCIATES

AIR MONITORING DURING DRILLING

SHEET 1 OF 1

JOB NAME Buffalo Business Park VCP/OU#2
JOB NUMBER 063-9477
INSTRUMENT USED AND ID NUMBER ION Science PhoCheck +
CALIBRATION NUMBER 06-02124

BORING NUMBER VCA-MW17-BR
AMBIENT TEMPERATURE 85°
WIND SPEED 20
WIND DIRECTION W → E

DATE	TIME	DEPTH OF AUGERS	INSTRUMENT READING
8/24	1240	3'	0.0 ppm
8/24	1250	6'	0.0 ppm
8/24	1300	9.5'	0.0 ppm
8/24	1310	14.0'	0.0 ppm

GOLDER ASSOCIATES

AIR MONITORING DURING DRILLING

SHEET 1 OF 1

JOB NAME Buffalo Business Park VCP/OU#2
JOB NUMBER 063-9477
INSTRUMENT USED AND ID NUMBER ION Science PhoCheck +
CALIBRATION NUMBER 06-02124

BORING NUMBER VCA-MW8-BR
AMBIENT TEMPERATURE 82°F
WIND SPEED >5 mph
WIND DIRECTION —

DATE	TIME	DEPTH OF AUGERS	INSTRUMENT READING
8/27	1255	3.0'	0.0 ppm
8/27	1305	6.0'	0.0 ppm
8/27	1310	9.0'	0.0 ppm
8/27	1315	15.0'	0.0 ppm
8/27	1325	17.0'	0.0 ppm

APPENDIX C

Rock Coring Logs

VCA-MW15-BR

RECORD OF DRILLHOLE

Sheet 1 of 1

PROJECT: Buffalo Business Park
PROJECT NO: 063-4477
LOCATION: Buffalo, NY

DRILLING METHOD: 4¼ HSA; HQ Core
DRILLING DATE: 8/23/07
DRILL RIG: CME-85

DATUM:
COORDINATES N: 1054244.8
AZIMUTH:

COLLAR ELEV: 3'
E: 1087863.1
INCLINATION: 90°

ROCK TYPE

J-Joint, F-Fault, S-Shear, B-Bedding
FO-Foliation, PL-Planar, C-Curved, U-Undulating
ST-Stepped, I-Irregular, P-Polished, K-Slickensided
SM-Smooth, R-Rough, VR-V.Rough, Fr-Fracture, Fe-Iron Oxides
CA-Calcite, CL-Clay

DEPTH SCALE (FEET)	DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: TYPE, SURFACE DESCRIPTION, AND DIP wrt CORE AXIS	GRAPHIC LOG	ISRM WEATHERING INDEX: SW / FR / MW / HW / CW	ISRM STRENGTH INDEX: R6 / R5 / R4 / R3 / R2 / R1	POINT LOAD TESTS (● Axial ■ Diametral)	NOTES WATER LEVELS INSTRUMENTATION
13	13'-18' - fresh to slightly weathered, dark gray, calcitic LIMESTONE, some sedimentation of fractures			1	5'/5'	83% GOOD	3	J, PL, R 85		MW			some sediment
14								J, I, R 85					
							2	J, I, R 85					
								J, PL, R 45					
15							2	J, I, R 85					
								J, C, R 75					
							2	J, C, R 80					
16								J, I, R 80					
							2	J, I, R 85					
17							1	J, U, R 85					
18	18'-23' - slightly weathered dark gray calcitic LIMESTONE, very little sedimentation of fractures			2	5'/5'	69% FAIR	5	J, PL, SM 85					
19								J, I, SM 75					
							7	J, PL, SM 85					
20								J, C, SM 45					
							1	J, I, R 85					
21								J, U, SM 80					
							1	J, U, SM 85					
22							1	J, PL, SM 65					
23	23'-28' - fresh to slightly weathered, dark gray, calcitic LIMESTONE, near-horizontal bedding, no sedimentation of fractures.			3		73% FAIR	2	J, PL, SM 85					
								J, C, R 60					
24							2	J, C, R 60					
								J, U, SM 85					
25							2	J, I, SM 75					
26							1	J, PL, SM 80					
								J, I, R 85					
27							5	J, PL, SM 75					
								J, I, R 85					
28								J, PL, SM 85					
29													
30													

SCALE: As shown
DRILLING CONTRACTOR: SJB Services
DRILLER: Ron Brown

LOGGED: AJN
CHECKED: NKW
DATE: 8/23/07

UCS (psi)
R1: 150
R2: 725
R3: 3,500
R4: 7,500
R5: 15,000
R6: 35,000

Golder Associates

IP3 1024/66691/7-1-96

FIGURE 1
RECORD OF DRILLHOLE
TP-1.2-2

VCA-MW6-BR

RECORD OF DRILLHOLE

Sheet 1 of 1

PROJECT: Buffalo Business Park
PROJECT NO: 063-9477
LOCATION: Buffalo, NY

DRILLING METHOD: 4¼ I.D. HSA/HQ Core
DRILLING DATE: 8/28-8/29/07
DRILL RIG: CME-45

DATUM:
COORDINATES N: 1055478.3
AZIMUTH:

COLLAR ELEV: 3'
E: 1088157.7
INCLINATION: 90°

ROCK TYPE: J-Joint, F-Fault, S-Shear, B-Bedding; FO-Foliation, PL-Planar, C-Curved, U-Undulating; ST-Stepped, I-Irregular, P-Polished, K-Slickensided; SM-Smooth, R-Rough, VR-V.Rough, Fr-Fracture, Fe-Iron Oxides; CA-Calcite, CL-Clay

DEPTH SCALE (FEET)	DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: TYPE, SURFACE DESCRIPTION, AND DIP wrt CORE AXIS	DISCONTINUITY DATA: GRAPHIC LOG	ISRM WEATHERING INDEX: FR / SW / MW / HW / CW	ISRM STRENGTH INDEX: R6 / R5 / R4 / R3 / R2 / R1	POINT LOAD TESTS (● Axial ■ Diametral)	NOTES WATER LEVELS INSTRUMENTATION
15													
16	15.5'-20.5' - slightly weathered, dark gray, calcitic LIMESTONE, slightly fossiliferous, horizontally to massively bedded, slightly stylolitized.			1	97%	70%	3	J, PL, SM 85° J, I, R 75°		60			
17							1	J, PL, SM 90					
18							1	J, U, R 85°					
19							6	J, I, R 85° 85° 85° J, PL, SM					
20							2	J, I, R 80 J, PL, SM 85°					
21	20.5'-23.5' bgs - slightly weathered, dark gray, calcitic LIMESTONE, horizontally to massively bedded, slightly fossiliferous,			2	100%	59%	5	J, I, SM 70 J, I SM 80° J, U, SM 85° 75° 85°					
22							2	J, PL, SM 80 J, C, SM 80					
23							4	J, C, SM 85° J, PL, SM 85° J, PL, SM 85° J, PL, SM 85°					
24	Coring stopped due to dispute with tenant @ 23.5' bgs.												
25													
26													
27													
28													
29													
30													

SCALE: as shown
DRILLING CONTRACTOR: SJB Services
DRILLER: Ron Brown

LOGGED: S AIN
CHECKED: NKW
DATE: 8/28 - 8/29/07

UCS (psi)
R1: 150
R2: 725
R3: 3,500
R4: 7,500
R5: 15,000
R6: 35,000

Golder Associates

FIGURE 1
RECORD OF DRILLHOLE
TP-1.2-2

IP3 1024/66691/7-1-96

VCA-MW7-BR

RECORD OF DRILLHOLE

Sheet 1 of 1

PROJECT: Buffalo Business Park
PROJECT NO: 063-9477
LOCATION: Buffalo, NY

DRILLING METHOD: 4¼ HSA; HQ core
DRILLING DATE: 8/24/07
DRILL RIG: CME-85

DATUM:
COORDINATES N: 105-6048
AZIMUTH:

COLLAR ELEV: 3'
E: 1087797.6
INCLINATION: 90°

ROCK TYPE: J-Joint, F-Fault, S-Shear, B-Bedding; FO-Foliation, PL-Planar, C-Curved, U-Undulating; ST-Stepped, I-Irregular, P-Polished, K-Slickensided; SM-Smooth, R-Rough, VR-V.Rough, Fr-Fracture, Fe-Iron Oxides; CA-Calcite, CL-Clay

DEPTH SCALE (FEET)	DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: TYPE, SURFACE DESCRIPTION, AND DIP wrt CORE AXIS	GRAPHIC LOG	ISRM WEATHERING INDEX: FR, SW, MW, HW, CW	ISRM STRENGTH INDEX: R6, R5, R4, R3, R2, R1	POINT LOAD TESTS (● Axial ■ Diametral)	NOTES WATER LEVELS INSTRUMENTATION
14	14'-19' fresh to slightly weathered, dark gray, calcitic LIMESTONE; horizontally bedded,			1	96%	77%	2	J, PL, SM 88 J, I, R 40					
15							2	J, PL, SM 80 J, I, SM 45					
16							4	J, PL, SM 80 J, PL, R 85 J, PL, SM 85					
17							0						
18							5	J, PL, R					
19	19'-24' slightly weathered, dark gray calcitic LIME-STONE, horizontally bedded, slight sedimentation of fractures			2	100%	74%	2	J, PL, SM 75 J, PL, SM 85					
20							2	J, PL, SM 85 J, PL, SM 75					
21							3	J, PL, SM 85 J, I, R 75 J, U, S 80					
22	becomes fossiliferous at bottom.						1	J, PL, SM 80					
23							3	J, PL, SM 80 J, PL, R 85					core broken to fit in box @ 23.2'
24	24'-29' slightly weathered, dark gray, calcitic LIME-STONE, horizontally to massively bedded, slight fossil traces, slight sedimentation of fractures.			3	100	70%	2 3	J, I, R 80 J, I, R 85					
25							2	J, I, SM 85 J, PL, SM 85					
26							1	J, PL, SM 85					
27							7	J, I, R 80 J, PL, SM 85					
28							1	J, I, R 80 J, PL, SM 85 80					
29													core broken to fit in box @ 28.7'

SCALE: as shown
DRILLING CONTRACTOR: SJB Services, Inc
DRILLER: Ron Brown

LOGGED: AJN
CHECKED: NKW
DATE: 8/24 - 8/27/07

UCS (psi)
R1 - 150
R2 - 725
R3 - 3,500
R4 - 7,500
R5 - 15,000
R6 - 35,000

Golder Associates

FIGURE 1
RECORD OF DRILLHOLE
TP-1.2-2

IP3 1024/66691/7-1-96

VCA-MW8-BR

RECORD OF DRILLHOLE

Sheet 1 of 1

PROJECT: Buffalo Business Park
PROJECT NO: 063-9477
LOCATION: Buffalo, NY

DRILLING METHOD: 4¼ I.D. HSA/HQ core
DRILLING DATE: 8/27/07
DRILL RIG: CME-85

DATUM:
COORDINATES N: 1076167.7
AZIMUTH:

COLLAR ELEV: 3'
E: 1087808.4
INCLINATION: 90°

J-Joint, F-Fault, S-Shear, B-Bedding | FO-Foliation, PL-Planar, C-Curved, U-Undulating | ST-Stepped, I-Irregular, P-Polished, K-Slickensided | SM-Smooth, R-Rough, VR-V.Rough, Fr-Fracture, Fe-Iron Oxides | CA-Calcite, CL-Clay

DEPTH SCALE (FEET)	DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: TYPE, SURFACE DESCRIPTION, AND DIP wrt CORE AXIS	DISCONTINUITY DATA: GRAPHIC LOG	ISRM WEATHERING INDEX (FR, SW, MW, HW, CW)	ISRM STRENGTH INDEX (R6, R5, R4, R3, R2, R1)	POINT LOAD TESTS	NOTES: WATER LEVELS, INSTRUMENTATION
17.5													
18	17.5'-22.5' slightly weathered, dark gray, calcitic LIMESTONE, horizontally to massively bedded, some stylolitization in 20.5'-21.5' interval.						1	J, I, SM 80					
								J, I, SM 85					
19					100		3	J, C, R 75 J, PL, SM 85					
				1		90%	2	J, I, R 80 J, PL, SM 80					drill break @ 20.5"
20													
21							1	J, PL, SM 85					
							1	J, U, R 80					
22.5													
23	22.5'-27.5' slightly to moderately weathered, dark gray, calcitic LIMESTONE, some fossils, some stylolites; slight sedimentation of fractures; horizontally to massively bedded; vertical fracture @ 25-30" and 20.7-22.0".						3	J, PL, SM 85 J, U, SM J, C, R 75					
							4	J, PL, SM 80 J, I, R J, PL, SM 85					
24				2	95%	70%	2	J, I, R 85 J, I, SM 80					
25								J, I, SM 80					
							5	J, PL, SM 85 J, I, R 80					
26								J, PL, SM 85					
							2	J, I, R 60					drill break
27													
27.5													
28	27.5'-32.5' slightly to moderately weathered, dark gray, calcitic, fossiliferous LIMESTONE, horizontally to massively bedded, some stylolites, slight sedimentation of fractures.						3	J, I, R 80 J, I, R 85					
								J, PL, SM 85					
29							2	J, PL, SM 70 J, PL, SM 70					
				3	98%	79%		J, I, R 80					
30							2	J, C, S 85					
							1	J, PL, SM 80					
31													
32							1	J, I, R 80					
32.5													

SCALE: as shown
DRILLING CONTRACTOR: SJB Services, Inc.
DRILLER: R. Brown

LOGGED: AJN
CHECKED: NKW
DATE: 8/27/07

UCS (psi)
R1- 150
R2- 725
R3- 3,500
R4- 7,500
R5- 15,000
R6- 35,000

Golder Associates

FIGURE 1
RECORD OF DRILLHOLE
TP-1.2-2

IP3 1024/66691/7-1-96

APPENDIX D

Monitoring Well Construction Diagrams

MONITORING WELL INSTALLATION LOG

JOB NO. 063-9477 PROJECT BUFFALO BUSINESS PARK VCP/OU#2 INVEST. WELL NO. VCA-MW5-BR SHEET 1 of 1

GA INSP. AJN DRILLING METHOD 4 1/4" I.D. HSA/HQ ROCK CORE GROUND ELEV. 97.1 ft. WATER DEPTH 5.81 ft. bgs

WEATHER MOSTLY CLOUDY DRILLING COMPANY SJB SERVICES, INC COLLAR ELEV. 3.0 ft. DATE/TIME 9/13/07 0830

TEMP. 76° F DRILL RIG CME-85 DRILLER R. BROWN STARTED 8/24/07 0815 (DATE / TIME) COMPLETED 8/24/07 0935 (DATE / TIME)

LOCATION / COORDINATES N1055924.8, E1087863.1

MATERIALS INVENTORY

WELL CASING 2.0 in. dia. 27.0 l.f. WELL SCREEN 2.0 in. dia. 10 l.f. BENTONITE SEAL MEDIUM BENTONITE CHIPS

CASING TYPE SCH. 40 PVC SCREEN TYPE MACHINE SLOT PVC INSTALLATION METHOD POUR THROUGH AUGERS

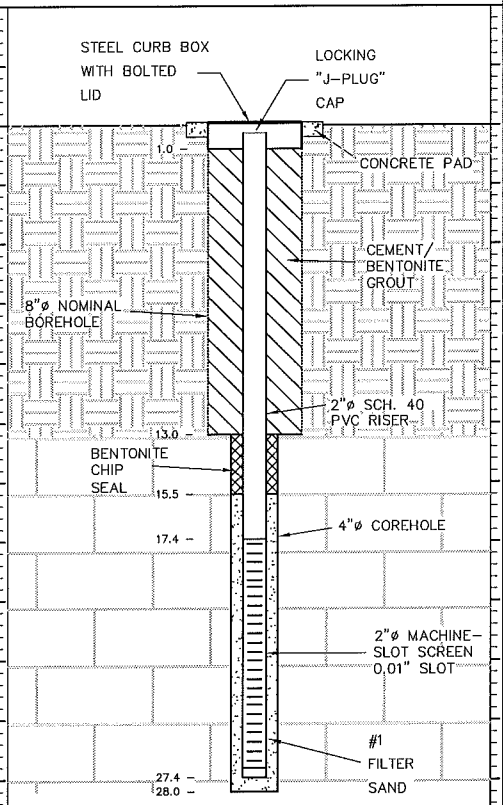
JOINT TYPE FLUSH THREADED SLOT SIZE 0.01" FILTER PACK QTY. 3.0

GROUT QUANTITY ——— CENTRALIZERS NOT USED FILTER PACK TYPE #1-SIZE QUARTZ SAND

GROUT TYPE CEMENT/BENTONITE DRILLING MUD TYPE NOT USED INSTALLATION METHOD POUR THROUGH AUGERS

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
1464.18	GROUND SURFACE
0.0	**OVERBURDEN** **FILL UNIT** **0.0–3.0'** Stiff, brown, SILT, some fine to coarse sand and fine gravel, then broken rock fragments, coarse sand and gravel, some slag, some white staining, dry to slightly moist.
10.0	**SILT TILL UNIT** **3.0'–17.5'** Stiff to soft, brown, CLAYEY SILT to SILTY CLAY, trace to little fine sand, trace to some fine to coarse gravel, little gray clay infilling of fractures, trace yellow-orange mottling, moist.
20.0	**ONONDAGA LIMESTONE** **13.0'–EOC** Fresh to slightly weathered, dark gray, calcitic LIMESTONE, horizontally to massively bedded, slightly fossiliferous, little sedimentation of fractures.
30.0	

WELL SKETCH



END OF COREHOLE 28.0 FT. BGS

INSTALLATION NOTES

AUGERED WITH 4 1/4 I.D. HOLLOW STEM AUGER TO 13.0 FT. BELOW GROUND SURFACE (BGS). SAMPLED IN FIVE-FOOT INTERVALS FROM 0.0 FT TO 12.0 FT BGS. PLACED TEMPORARY STEEL CASING IN BOREHOLE AND ADVANCED IT 6" INTO BEDROCK. AUGERS REMOVED FROM BOREHOLE. CORED BEDROCK WITH HQ WIRELINE CORE TO 28.0 FT BGS. CORE BARRELS REMOVED FROM COREHOLE. SAND POURED INTO STEEL CASING FROM 28.0–27.4 FT BGS. WELL MATERIALS PLACED IN BOREHOLE USING 10 FT. OF WELL SCREEN, END CAP, 17.0 FT. OF WELL RISER AND LOCKING J-PLUG CAP FOR OVERALL LENGTH OF 27.0 FT. WELL MATERIALS PLACED TO 27.4 FT. BGS WITH THE TOP OF THE WELL APPROXIMATELY 0.3 FT BGS. SAND POURED INTO STEEL CASING 27.0–15.5 FT. BGS. BENTONITE CHIP SEAL PLACED 15.5–13.0 FT. BGS. TEMPORARY STEEL CASING REMOVED. CEMENT/BENTONITE GROUT ADDED 13.0–0.5 FT. BGS. 8-INCH DIAMETER STEEL CURB BOX PLACED INTO BOREHOLE TO GROUND SURFACE. 16"X16"X 6" CONCRETE PAD CONSTRUCTED AROUND CURB BOX. STEEL WELL COVER PLACED ON CURB BOX AND BOLTED INTO PLACE.

WELL DEVELOPMENT NOTES

DATE DEVELOPED: 8/30–8/31/07

DEVELOPMENT METHOD: STAINLESS STEEL BAILER

VOLUME PURGED: 42.5 GALS.

FOR FURTHER DETAILS SEE ACCOMPANYING WELL DEVELOPMENT FIELD RECORD.

MONITORING WELL INSTALLATION LOG

JOB NO. 063-9477 PROJECT BUFFALO BUSINESS PARK VCP/OU#2 INVEST. WELL NO. VCA-MW6-BR SHEET 1 of 1

GA INSP. AJN DRILLING METHOD 4 1/4" I.D. HSA/HQ ROCK CORE GROUND ELEV. 98.0 ft. WATER DEPTH 15.73 ft. bgs

WEATHER N/A (INDOORS) DRILLING COMPANY SJB SERVICES, INC COLLAR ELEV. 3.0 ft. DATE/TIME 9/13/07 0845

TEMP. 76° F DRILL RIG CME-45 DRILLER S. WOLKIEWICZ STARTED 8/28/07 1320 (DATE / TIME) COMPLETED 8/28/07 1630 (DATE / TIME)

LOCATION / COORDINATES N1055978.3, E1088137.5

MATERIALS INVENTORY

WELL CASING 2.0 in. dia. 23.3 l.f. WELL SCREEN 2.0 in. dia. 5 l.f. BENTONITE SEAL MEDIUM BENTONITE CHIPS

CASING TYPE SCH. 40 PVC SCREEN TYPE MACHINE SLOT PVC INSTALLATION METHOD POUR THROUGH AUGERS

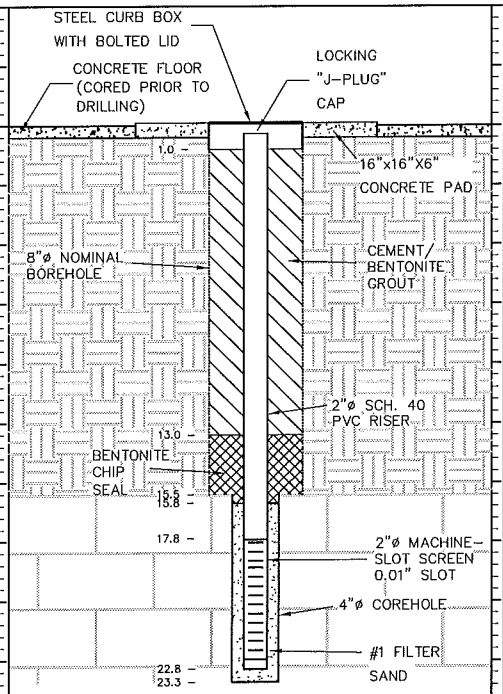
JOINT TYPE FLUSH THREADED SLOT SIZE 0.01" FILTER PACK QTY. 2.0 BAGS

GROUT QUANTITY ——— CENTRALIZERS NOT USED FILTER PACK TYPE #1-SIZE QUARTZ SAND

GROUT TYPE CEMENT/BENTONITE DRILLING MUD TYPE NOT USED INSTALLATION METHOD POUR THROUGH AUGERS

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
1464.18	GROUND SURFACE
0.0	**OVERBURDEN** FILL UNIT 0.6–3.0' Loose, brown, fine to coarse SAND AND GRAVEL, trace clay and silt, dry.
10.0	SILT TILL UNIT 3.0'–15.5' Compact to dense, light brown to brown to brown–gray, SILT and fine SAND to SILT, trace to some fine to coarse gravel, trace clay, moist.
	ONONDAGA LIMESTONE 15.5'–EOC
20.0	Slightly weathered, dark gray, calcitic LIMESTONE, slightly fossiliferous, horizontally to massively bedded, slightly stylolitized.

WELL SKETCH



END OF COREHOLE 23.3 FT. BGS

INSTALLATION NOTES

AUGERED WITH 4 1/4 I.D. HOLLOW STEM AUGER TO 15.5 FT. BELOW GROUND SURFACE (BGS). SAMPLED IN FIVE-FOOT INTERVALS FROM 0.0 FT TO 12.0 FT BGS. PLACED TEMPORARY STEEL CASING IN BOREHOLE AND ADVANCED IT 6" INTO BEDROCK. AUGERS REMOVED FROM BOREHOLE. CORED BEDROCK WITH HQ WIRELINE CORE TO 23.3 FT BGS. CORE BARRELS REMOVED FROM COREHOLE. SAND POURED INTO STEEL CASING FROM 23.3–22.8 FT BGS. WELL MATERIALS PLACED IN BOREHOLE USING 5 FT. OF WELL SCREEN, END CAP, 17.6 FT. OF WELL RISER AND LOCKING J-PLUG CAP FOR OVERALL LENGTH OF 22.9 FT. WELL MATERIALS PLACED TO 23.3 FT. BGS WITH THE TOP OF THE WELL APPROXIMATELY 0.3 FT BGS. SAND POURED INTO STEEL CASING 22.8–15.8 FT. BGS. BENTONITE CHIP SEAL PLACED 15.8–13.0 FT. BGS. TEMPORARY STEEL CASING REMOVED. CEMENT/BENTONITE GROUT ADDED 13.0–0.5 FT. BGS. 8-INCH DIAMETER STEEL CURB BOX PLACED INTO BOREHOLE TO GROUND SURFACE. 16"X16"X 6" CONCRETE PAD CONSTRUCTED AROUND CURB BOX. STEEL WELL COVER PLACED ON CURB BOX AND BOLTED INTO PLACE.

WELL DEVELOPMENT NOTES

DATE DEVELOPED: 8/30/07

DEVELOPMENT METHOD:
STAINLESS STEEL BAILER

VOLUME PURGED: 5.0 GALS.

FOR FURTHER DETAILS SEE ACCOMPANYING WELL DEVELOPMENT FIELD RECORD.

MONITORING WELL INSTALLATION LOG

JOB NO. 063-9477 PROJECT BUFFALO BUSINESS PARK VCP/OU#2 INVEST. WELL NO. VCA-MW7-BR SHEET 1 of 1

GA INSP. AJN DRILLING METHOD 4 1/4" I.D. HSA/HQ ROCK CORE GROUND ELEV. 98.0 ft. WATER DEPTH 6.36 ft. bgs

WEATHER SUNNY, CLEAR DRILLING COMPANY SJB SERVICES, INC COLLAR ELEV. 3.0 ft. DATE/TIME 9/13/07 0835

TEMP. 72° F DRILL RIG CME-85 DRILLER R. BROWN STARTED 8/27/07 1025 (DATE / TIME) COMPLETED 8/27/07 1100 (DATE / TIME)

LOCATION / COORDINATES N1056043, E1087797.6

MATERIALS INVENTORY

WELL CASING 2.0 in. dia. 27.6 l.f. WELL SCREEN 2.0 in. dia. 10 l.f. BENTONITE SEAL MEDIUM BENTONITE CHIPS

CASING TYPE SCH. 40 PVC SCREEN TYPE MACHINE SLOT PVC INSTALLATION METHOD POUR THROUGH AUGERS

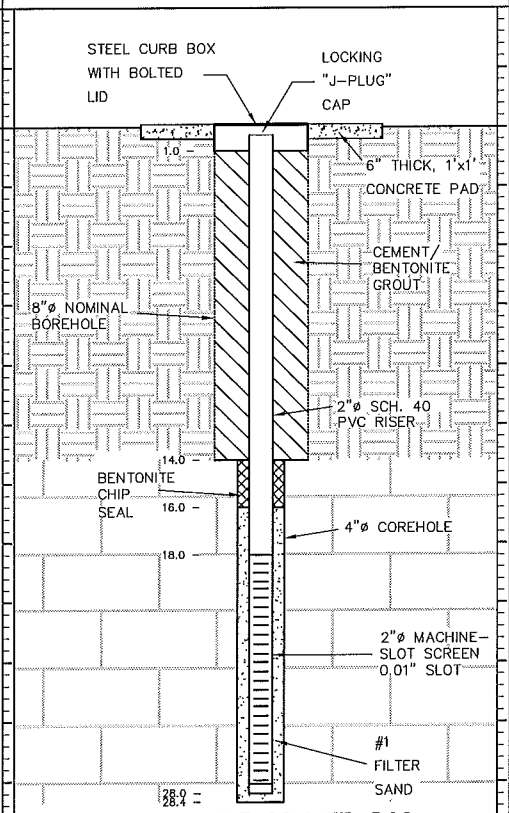
JOINT TYPE FLUSH THREADED SLOT SIZE 0.01" FILTER PACK QTY. 3.0

GROUT QUANTITY ——— CENTRALIZERS NOT USED FILTER PACK TYPE #1-SIZE QUARTZ SAND

GROUT TYPE CEMENT/BENTONITE DRILLING MUD TYPE NOT USED INSTALLATION METHOD POUR THROUGH AUGERS

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
1464.18	GROUND SURFACE
0.0	**OVERBURDEN**
	FILL UNIT 0.0–3.0'
	Loose, brown–gray to brown, fine to coarse SAND and GRAVEL, little silt, slightly moist.
	SILT TILL UNIT 3.0'–17.5'
10.0	Stiff, brown, CLAYEY SILT to SILTY CLAY, trace to little fine to medium sand, trace fine gravel, trace organic clay, trace yellow–orange mottling, moist.
	ONONDAGA LIMESTONE
	14.0'–EOC
20.0	Fresh to slightly weathered, dark gray, calcitic LIMESTONE, slightly fossiliferous, horizontally to massively bedded, slightly fossiliferous, slight sedimentation of fractures.
30.0	

WELL SKETCH



END OF COREHOLE 28.4 FT. BGS

INSTALLATION NOTES

AUGERED WITH 4 1/4 I.D. HOLLOW STEM AUGER TO 14.0 FT. BELOW GROUND SURFACE (BGS). SAMPLED IN FIVE-FOOT INTERVALS FROM 0.0 FT TO 12.0 FT BGS. PLACED TEMPORARY STEEL CASING IN BOREHOLE AND ADVANCED IT 6" INTO BEDROCK. AUGERS REMOVED FROM BOREHOLE. CORED BEDROCK WITH HQ WIRELINE CORE TO 28.4 FT BGS. CORE BARRELS REMOVED FROM COREHOLE. SAND POURED INTO STEEL CASING FROM 28.4–28.0 FT BGS. WELL MATERIALS PLACED IN BOREHOLE USING 10 FT. OF WELL SCREEN, END CAP, 17.3 FT. OF WELL RISER AND LOCKING J-PLUG CAP FOR OVERALL LENGTH OF 27.6 FT. WELL MATERIALS PLACED TO 28.0 FT. BGS WITH THE TOP OF THE WELL APPROXIMATELY 0.3 FT BGS. SAND POURED INTO STEEL CASING 28.0–16.0 FT. BGS. BENTONITE CHIP SEAL PLACED 16.0–14.0 FT. BGS. TEMPORARY STEEL CASING REMOVED. CEMENT/BENTONITE GROUT ADDED 14.0–0.5 FT. BGS. 8-INCH DIAMETER STEEL CURB BOX PLACED INTO BOREHOLE TO GROUND SURFACE. 16"X16"X 6" CONCRETE PAD CONSTRUCTED AROUND CURB BOX. STEEL WELL COVER PLACED ON CURB BOX AND BOLTED INTO PLACE.

WELL DEVELOPMENT NOTES

DATE DEVELOPED: 8/31/07

DEVELOPMENT METHOD: STAINLESS STEEL BAILER

VOLUME PURGED: 30 GALS.

FOR FURTHER DETAILS SEE ACCOMPANYING WELL DEVELOPMENT FIELD RECORD.

MONITORING WELL INSTALLATION LOG

JOB NO. 063-9477 PROJECT BUFFALO BUSINESS PARK VCP/OU#2 INVEST. WELL NO. VCA-MW8-BR SHEET 1 of 1

GA INSP. AJN DRILLING METHOD 4 1/4" I.D. HSA/HQ ROCK CORE GROUND ELEV. 98.0 ft. WATER DEPTH 8.63 ft. bgs

WEATHER SUNNY, CLEAR DRILLING COMPANY SJB SERVICES, INC COLLAR ELEV. 3.0 ft. DATE/TIME 9/13/07 0840

TEMP. 82° F DRILL RIG CME-85 DRILLER R. BROWN STARTED 8/24/07 1250 (DATE / TIME) COMPLETED 8/24/07 1330 (DATE / TIME)

LOCATION / COORDINATES N1056167.7, E1087808.4

MATERIALS INVENTORY

WELL CASING 2.0 in. dia. 21.3 l.f. WELL SCREEN 2.0 in. dia. 10 l.f. BENTONITE SEAL MEDIUM BENTONITE CHIPS

CASING TYPE SCH. 40 PVC SCREEN TYPE MACHINE SLOT PVC INSTALLATION METHOD POUR THROUGH AUGERS

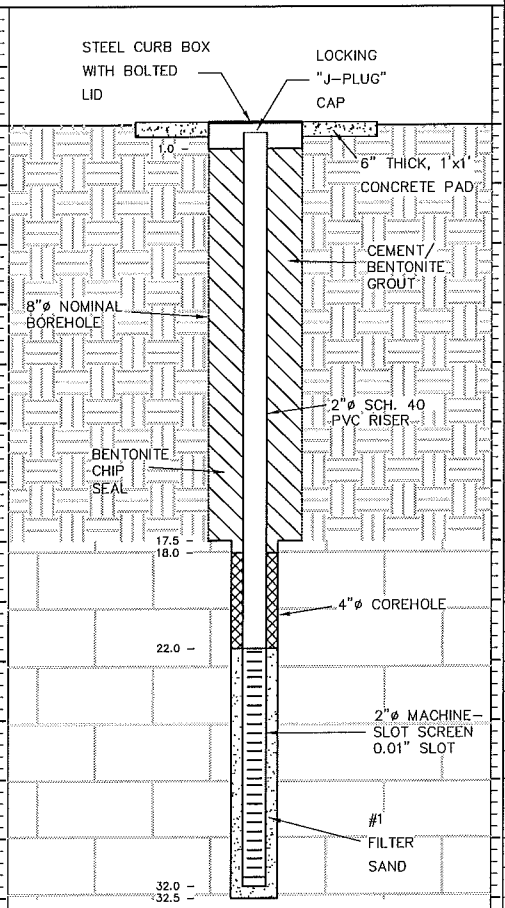
JOINT TYPE FLUSH THREADED SLOT SIZE 0.01" FILTER PACK QTY. 3.0

GROUT QUANTITY ——— CENTRALIZERS NOT USED FILTER PACK TYPE #1-SIZE QUARTZ SAND

GROUT TYPE CEMENT/BENTONITE DRILLING MUD TYPE NOT USED INSTALLATION METHOD POUR THROUGH AUGERS

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
1464.18	GROUND SURFACE
0.0	**OVERBURDEN** FILL UNIT 0.0–8.0' Loose, brown to brown and gray mottled, medium to coarse SAND and fine to coarse GRAVEL, little fine to medium sand, trace clay, dry to slightly moist.
10.0	SILT TILL UNIT 3.0'–17.5' Compact to stiff, brown to brown–gray, CLAYEY SILT to SILT and fine SAND, trace to little fine gravel, trace fine sand, trace to some clay, moist to wet.
20.0	**ONONDAGA LIMESTONE** 17.5'–EOC Slightly to moderately weathered, dark gray, calcitic LIMESTONE, slightly fossiliferous, horizontally to massively bedded, slightly stylolitized, slight sedimentation of fractures..
30.0	

WELL SKETCH



END OF COREHOLE 32.5 FT. BGS

INSTALLATION NOTES

AUGERED WITH 4 1/4 I.D. HOLLOW STEM AUGER TO 17.5 FT. BELOW GROUND SURFACE (BGS). SAMPLED IN FIVE-FOOT INTERVALS FROM 0.0 FT TO 17.0 FT BGS. PLACED TEMPORARY STEEL CASING IN BOREHOLE AND ADVANCED IT 6" INTO BEDROCK. AUGERS REMOVED FROM BOREHOLE. CORED BEDROCK WITH HQ WIRELINE CORE TO 32.5 FT BGS. CORE BARRELS REMOVED FROM COREHOLE. SAND POURED INTO STEEL CASING FROM 32.5–32.0 FT BGS. WELL MATERIALS PLACED IN BOREHOLE USING 10 FT. OF WELL SCREEN, END CAP, 21.3 FT. OF WELL RISER AND LOCKING J-PLUG CAP FOR OVERALL LENGTH OF 31.6 FT. WELL MATERIALS PLACED TO 32.0 FT. BGS WITH THE TOP OF THE WELL APPROXIMATELY 0.3 FT BGS. SAND POURED INTO STEEL CASING 32.0–20.0 FT. BGS. BENTONITE CHIP SEAL PLACED 20.0–18.0 FT. BGS. TEMPORARY STEEL CASING REMOVED. CEMENT/BENTONITE GROUT ADDED 18.0–0.5 FT. BGS. 8-INCH DIAMETER STEEL CURB BOX PLACED INTO BOREHOLE TO GROUND SURFACE. 16"X16"X 6" CONCRETE PAD CONSTRUCTED AROUND CURB BOX. STEEL WELL COVER PLACED ON CURB BOX AND BOLTED INTO PLACE.

WELL DEVELOPMENT NOTES

DATE DEVELOPED: 8/31/07

DEVELOPMENT METHOD:
STAINLESS STEEL BAILER

VOLUME PURGED: 35 GALS.

FOR FURTHER DETAILS SEE ACCOMPANYING WELL DEVELOPMENT FIELD RECORD.

APPENDIX E

Well Development Field Records

WELL DEVELOPMENT FIELD RECORD

JOB NAME: Buffalo Business Park VCP/OU#2
DEVELOPED BY: ADN
STARTED DEVEL.: 8/30/07 (DATE) / 1330 (TIME)
W.L. BEFORE DEVEL.: 4.9 (DEPTH) / 8/30 (DATE) / 1330 (TIME) 0842 — 6.07 / 8/31
WELL DEPTH: BEFORE DEVEL.: 25.3
STANDING WATER COLUMN (FT.): 20.4
SCREEN LENGTH: 10'

JOB NO.: 063-9477 WELL NO.: MW5
DATE OF INSTALL.: 8/24/07 SHEET: 1 OF 1
COMPLETED DEVEL.: 8/31/07 (DATE) / 0930 (TIME)
AFTER DEVEL.: 6.9 (DEPTH) / 8/31/07 (DATE) / 0910 (TIME)
AFTER DEVEL.: 25.3 WELL DIA. (In): 2
STANDING WELL VOLUME: 3.32 / 9.98 gal.
DRILLING WATER LOSS: ~20 gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS: SPEC. COND. (umhos/cm)	TEMP. (°F)	pH (s.u.)	OTHER	REMARKS
8/30 1350	4.0	940	61	*		turbid, grad
8/30 1407	5.0	930	65	*		turbid; grad
8/30 1419	6.0	960	64	*		
8/30 1440	7.0	960	64	*		turbid, lt. grad
8/30 1505	10.0	940	64	*		
8/31 0850	3.5	940	62	7.1		slightly turbid, lt. grad color
8/31 0900	3.5	950	63	7.3		sl. turbid; lt. grad tint
8/31 0910	3.5	960	64	7.3		light grad tint
	42.5	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: stainless steel bailer
purged until parameters stabilized.

NOTES: * pH meter not working on 8/30

WELL DEVELOPMENT FIELD RECORD

JOB NAME Buffalo Business Park
DEVELOPED BY Anthony J. Notaro
STARTED DEVEL. 8/31/07 (DATE) / 1350. (TIME)
W.L. BEFORE DEVEL. 10.09 (DEPTH) / 8/31 (DATE) / 1350 (TIME)
WELL DEPTH: BEFORE DEVEL. 22.603
STANDING WATER COLUMN (FT.) 12.514
SCREEN LENGTH 5'

JOB NO. 063-9777 WELL NO. MW16
DATE OF INSTALL. 8/30/07 SHEET 1 OF 1
COMPLETED DEVEL. 8/31/07 (DATE) / 1630 (TIME)
AFTER DEVEL. 21.89 (DEPTH) / 8/31/07 (DATE) / 1625 (TIME)
AFTER DEVEL. 22.64 WELL DIA. (In) 2
STANDING WELL VOLUME 2.04 / 6.12 (3) gal.
DRILLING WATER LOSS unknown gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS SPEC. COND. (umhos/cm)	TEMP. (°F)	pH (s.u.)	OTHER	REMARKS
8/31 1405	2.7	640	67	7.9		turbid, brown-gray
8/31 1525	1.5	760	59	7.9		" " "
8/31 1625	1.0	820	60	7.7		
	5.0	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD:
well purged dry @ 1405
well purged dry @ 1525
well purged dry @ 1625

NOTES: well installed with only 5' of screen due to conflict with building tenants

Golder Associates

WELL DEVELOPMENT FIELD RECORD

JOB NAME: Buffalo Business Park
JOB NO.: 063-9477 WELL NO.: MW7
DEVELOPED BY: AJN
DATE OF INSTALL.: 8/27/07 SHEET: 1 OF 1
STARTED DEVEL.: 8/31/07 (DATE) / 0935 (TIME)
COMPLETED DEVEL.: 8/31/07 (DATE) / 1145 (TIME)
W.L. BEFORE DEVEL.: 6.609 (DEPTH) / 8/31/07 (DATE) / 0938 (TIME)
AFTER DEVEL.: 7.1 (DEPTH) / 8/31 (DATE) / 1145 (TIME)
WELL DEPTH: BEFORE DEVEL.: 27.48
AFTER DEVEL.: 27.50 WELL DIA. (In): 2
STANDING WATER COLUMN (FT.): 20.79
STANDING WELL VOLUME: 3.39 / 10.17(3) gal.
SCREEN LENGTH: 10'
DRILLING WATER LOSS: ~20 gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS: SPEC. COND. (umhos/cm)	TEMP. (°F)	pH (s.u.)	OTHER	REMARKS
8/31 1010	10.0	1040	66.0	7.4		turbid, lt. gray color
8/31 1030	5.0	1120	71	7.5		turbid; lt. gray color
8/31 1045	5.0	1110	66.0	7.6		sl. turbid, lt. gray color
8/31 1100	5.0	1110	67	7.4		sl. turbid; lt. gray tint
8/31 1115	5.0	1140	67	7.4		sl. turbid; lt. gray tint
	30	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: purged until parameters stabilized.

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME Buffalo Business Park
JOB NO. 063-9477 WELL NO. MW8
DEVELOPED BY Anthony J. Notaro
DATE OF INSTALL. 8/28/07 SHEET 1 OF 1
STARTED DEVEL. 8/31/07 / 1205 (DATE / TIME)
COMPLETED DEVEL. 8/31/07 / 1600 (DATE / TIME)
W.L. BEFORE DEVEL. 10.31 / / 1205 (DEPTH / DATE / TIME)
AFTER DEVEL. 7.11 / / 1612 (DEPTH / DATE / TIME)
WELL DEPTH: BEFORE DEVEL. 31.76
AFTER DEVEL. 31.76 WELL DIA. (In) 2
STANDING WATER COLUMN (FT.) 21.45
STANDING WELL VOLUME 3.50 / 10.50 gal.
SCREEN LENGTH 10'
DRILLING WATER LOSS ~20 gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS SPEC. COND. (umhos/cm)	TEMP. (°F)	pH (s.u.)	OTHER	REMARKS
8/31 1440	15.0	800	69	7.6		turbid; blue-gray color
8/31 1452	5.0	820	66	7.5		
8/31 1507	5.0	820	64	7.4		
8/31 1512	5.0	820	64	7.5		turbid, gray tint
8/31 1527	5.0	810	64	7.5		sl. turbid, gray tint
	37	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: purged until parameters stabilized

NOTES: purge water had strong sulfur odor, and peak PID hit of 2.1 ppm. Water also had some black particulate matter which settled out.

APPENDIX F

Sample Collection Information Forms

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: Buffalo Business Park | GAI PROJECT NO.: 063-9477

SAMPLE ID.: VCA-MW5-BR | SOURCE CODES: RIVER OR STREAM, (WELL), SOIL, OTHER (CIRCLE ONE)

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd)	08/31/07	TIME (24 HR CLOCK)	0850	ELAPSED HRS.	
CASING VOL.(Gal.)	3.14	GAL. PURGED (Gal.)	10.5		
PURGING DEVICE (SEE BELOW)	E	PURGING DEVICE MATERIAL	S.S.	DEDICATED (Y(N)	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd)	08/31/07	TIME (24 HR CLOCK)	0925	MATRIX	GW
SAMPLING DEVICE (SEE BELOW)	E	DEDICATED (Y/N)		FILTERED (Y(N)	
SAMPLING DEVICE MATERIAL	HDPE	SAMPLE TYPE - (GRAB)/COMPOSITE (CIRCLE ONE)			

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT	TOR	LAND ELEVATION (FT./MSL)	97.12
REF. PT. ELEV.(FT. MSL)	96.53	WELL DEPTH (FT.)	25.30
DEPTH TO WATER (REF. PT.)	6.05	STICKUP (FT.)	
GW. ELEV.(FT. MSL.)	91.07	WELL DIAMETER (INCHES)	2.00

FIELD MEASURMENTS (FOUR REPLICATES)

	Purge	Sample		
pH (STD)	7.3	7.4		
SPEC. COND.(UMHOS/CM)	960	960		
TEMPERATURE (C) ° F	64	66		
OTHER (SPECIFY)				

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: Clear & sunny; 70°F

SAMPLE APPEARANCE: clear to slightly turbid; light gray tint

2" DIA. CASING CONTAINS .163 Gal./Ft.
4" DIA. CASING CONTAINS .652 Gal./Ft.

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: Andy Hahn | DATE 8/31/07

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME Buffalo Business Park VCP GAI PROJECT NO. 063-9477

SAMPLE ID. VCA-MW11-BR SOURCE CODES: RIVER OR STREAM, (WELL), SOIL, OTHER (CIRCLE ONE)

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd)	8/31/07	TIME (24 HR CLOCK)	1407	ELAPSED HRS.	2.7
CASING VOL.(Gal.)	2.04	GAL. PURGED (Gal.)	5.0		
PURGING DEVICE (SEE BELOW)	E	PURGING DEVICE MATERIAL	SS	DEDICATED (Y(N)	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd)	8/31/07	TIME (24 HR CLOCK)	1620	MATRIX	GW
SAMPLING DEVICE (SEE BELOW)	E	DEDICATED-(Y/N)		FILTERED (Y(N)	
SAMPLING DEVICE MATERIAL	HDPE	SAMPLE TYPE - (GRAB)/COMPOSITE (CIRCLE ONE)			

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT	TOR	LAND ELEVATION (FT./MSL)	98.00
REF. PT. ELEV.(FT. MSL)	97.68	WELL DEPTH (FT.)	32.64
DEPTH TO WATER (REF. PT.)	15.73	STICKUP (FT.)	---.--
GW. ELEV.(FT. MSL.)	81.95	WELL DIAMETER (INCHES)	2.00

FIELD MEASURMENTS (FOUR REPLICATES)

pH (STD)	7.7	8.0		
SPEC. COND.(UMHOS/CM)	820	860		
TEMPERATURE (C)	60	60		
OTHER (SPECIFY)				

COMMENTS/CALCULATIONS

WEATHER CONDITIONS clear; sunny; ~76°F

SAMPLE APPEARANCE clear; colorless

2" DIA. CASING CONTAINS .163 Gal./Ft.
4" DIA. CASING CONTAINS .652 Gal./Ft.

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE [signature] DATE 8/31/07

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: Buffalo Business Park VCP | GAI PROJECT NO.: 063-9477

SAMPLE ID.: VCA-MW7-BR | SOURCE CODES: RIVER OR STREAM, (WELL), SOIL, OTHER (CIRCLE ONE)

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd)	8/31/07	TIME (24 HR CLOCK)	1010	ELAPSED HRS.	1.0
CASING VOL.(Gal.)	3.39	GAL. PURGED (Gal.)	30		
PURGING DEVICE (SEE BELOW)	E	PURGING DEVICE MATERIAL	SS	DEDICATED (Y/N)	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd)	8/31/07	TIME (24 HR CLOCK)	1130	MATRIX	GW
SAMPLING DEVICE (SEE BELOW)	E	DEDICATED-(Y)/N)		FILTERED (Y/(N))	
SAMPLING DEVICE MATERIAL	HDPE	SAMPLE TYPE - (GRAB)/COMPOSITE (CIRCLE ONE)			

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT	TOR	LAND ELEVATION (FT./MSL)	97.98
REF. PT. ELEV.(FT. MSL)	97.47	WELL DEPTH (FT.)	27.50
DEPTH TO WATER (REF. PT.)	6.36	STICKUP (FT.)	
GW. ELEV.(FT. MSL.)	91.62	WELL DIAMETER (INCHES)	2.00

FIELD MEASURMENTS (FOUR REPLICATES)

	Purge.			
pH (STD)	7.4	7.2		
SPEC. COND.(UMHOS/CM)	1140	1220		
TEMPERATURE (C)	6.7	7.0		
OTHER (SPECIFY)				

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: clear & sunny; ~72°F

SAMPLE APPEARANCE: sl. turbid; lt. gray tint

2" DIA. CASING CONTAINS .163 Gal./Ft.
4" DIA. CASING CONTAINS .652 Gal./Ft.

collect MS/MSD

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: [signature] | DATE: 8/31/07

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME Buffalo Business Park VCP GAI PROJECT NO. 0163-9477

SAMPLE ID. VCA-MW18-BR SOURCE CODES: RIVER OR STREAM, (WELL) SOIL, OTHER (CIRCLE ONE)

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd)	8/31/07	TIME (24 HR CLOCK)	1440	ELAPSED HRS.	1.20
CASING VOL.(Gal.)	3.50	GAL. PURGED (Gal.)	3.50		
PURGING DEVICE (SEE BELOW)	E	PURGING DEVICE MATERIAL	SS	DEDICATED (Y(N)	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd)	8/31/07	TIME (24 HR CLOCK)	1615	MATRIX	GW
SAMPLING DEVICE (SEE BELOW)	E	DEDICATED-(Y)N)		FILTERED (Y(N)	
SAMPLING DEVICE MATERIAL	HDPE	SAMPLE TYPE - (GRAB)/COMPOSITE (CIRCLE ONE)			

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT	TOR	LAND ELEVATION (FT./MSL)	100.24
REF. PT. ELEV.(FT. MSL)	99.98	WELL DEPTH (FT.)	31.76
DEPTH TO WATER (REF. PT.)	8.63	STICKUP (FT.)	———
GW. ELEV.(FT. MSL.)	91.35	WELL DIAMETER (INCHES)	2.00

FIELD MEASURMENTS (FOUR REPLICATES)

pH (STD)	7.5	7.6		
SPEC. COND.(UMHOS/CM)	810	770		
TEMPERATURE (C)	6.4	6.5		
OTHER (SPECIFY)				

COMMENTS/CALCULATIONS

WEATHER CONDITIONS clear & sunny; ~75° F

SAMPLE APPEARANCE sl. turbid; gray tint, strong sulfur odor

2" DIA. CASING CONTAINS .163 Gal./Ft.
4" DIA. CASING CONTAINS .652 Gal./Ft.

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE [signature] DATE AJN 8/31/07

APPENDIX G

Phone Interview with New York Frame

& VI Study Field Notes

TELEPHONE MEMORANDUM

INCOMING ____ OUTGOING ✓

JOB: Buffalo Business Park	ROUTE TO:	JOB NO: 063-9477
PERSON: Gary Crewson		DATE: 10/2/07
FIRM: Buffalo Business Park		TIME: ~ 1735
PHONE NO:		BY: AJN

REMARKS: I called Gary for information on the types of chemicals involved in the process at New York Frame. Gary conferenced me in with Todd from New York Frame. According to Todd:

- all mounting is done off-site; no large quantities of adhesives are used / stored on site
- on-site chemicals are limited to manufacturer's containers of spray adhesives and lubricants
- the front office is far removed from any process work, and would be good for indoor air sampling
- there is an interior storage room adjacent to the front office / showroom that is walled on all four sides and far removed from process work. This would be good for sub-slab sampling.

ACTION REQUIRED:

Golder Associates

10/4/07 063-9477 AJN

70°F; sunny & clear

0815 - Golder on site for soil vapor intrusion study

0835 - Golder begins drilling hole for sub-slab sample point

0845 - hole only advanced ~2" with hand drill - will go to Home Depot to rent hammer drill

0915 - hole advanced with hammer drill through concrete slab to ~8" bgs

- hole was cleared of drill cuttings prior to installing teflon tubing in hole just above sub-base

0920 - teflon tubing purged of ambient air (200 cm³) prior to connecting summa canister

0925 - indoor air sample set and placed on cabinet ~~and placed on cabinet~~ AJN in back right (SW) corner of showroom

- outdoor air sample set and placed on mailbox outside showroom (north side of building).

- Golder now needs to perform hourly ambient air monitoring of sample locations.

1025 - air monitoring ~~off~~ AJN of sample locations yields PID readings of 0.0 ppm at each location.

1125 - PID readings at all locations 0.0 ppm

1225 - PID readings at all locations 0.0 ppm

1235 - check sample at VCA-MW8-BR for presence of NAPL.
- PID readings of 0.0 ppm when opening well and while sampling
- PID reading in sample headspace 2.1 ppm peak
- sample will be brought back to office for examination.

1335 - PID readings at all locations 0.0 ppm

1430

1525

1620 - PID readings at all locations 0.0 ppm
- vacuum at subslab location is at 0 - we'll give it another 30 minutes before removing sample.

APPENDIX H

NYSDOH Vapor Intrusion Matrices 1 and 2

Soil Vapor/Indoor Air Matrix 1

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.25	0.25 to < 1	1 to < 5.0	5.0 and above
< 5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR / MITIGATE	11. MITIGATE	12. MITIGATE
250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX 1

This matrix summarizes the minimum actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, resampling may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Additionally, actions more protective of public health than those specified within the matrix may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action is usually undertaken for reasons other than public health (e.g., seeking community acceptance, reducing excessive costs, etc.).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of vapor contamination, nor does it preclude remediating contaminated soil vapors or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.25 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples, a minimum reporting limit of 5 micrograms per cubic meter is recommended for buildings with full slab foundations, and 1 microgram per cubic meter for buildings with less than a full slab foundation.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion to occur is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions may be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including the identified source of the volatile chemicals, the environmental remediation program, and site-specific and building-specific conditions. For example, to the extent that all site data and site conditions demonstrate that soil vapor intrusion is not occurring and that the potential for soil vapor intrusion to occur is not likely, the soil vapor intrusion investigation would be considered complete. In general, if indoor exposures represent a concern due to indoor sources, then the State will provide guidance to the property owner and/or tenant on ways to reduce their exposure. If indoor exposures represent a concern due to outdoor sources, then the NYSDEC will decide who is responsible for further investigation and any necessary remediation. Depending upon the outdoor source, this responsibility may or may not fall upon the party conducting the soil vapor intrusion investigation.

Soil Vapor/Indoor Air Matrix 2

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
100 to < 1,000	5. MONITOR	6. MONITOR / MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX 2

This matrix summarizes the minimum actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, resampling may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Additionally, actions more protective of public health than those specified within the matrix may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action is usually undertaken for reasons other than public health (e.g., seeking community acceptance, reducing excessive costs, etc.).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of vapor contamination, nor does it preclude remediating contaminated soil vapors or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 3 micrograms per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples, a minimum reporting limit of 5 micrograms per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion to occur is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions may be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including the identified source of the volatile chemicals, the environmental remediation program, and site-specific and building-specific conditions. For example, to the extent that all site data and site conditions demonstrate that soil vapor intrusion is not occurring and that the potential for soil vapor intrusion to occur is not likely, the soil vapor intrusion investigation would be considered complete. In general, if indoor exposures represent a concern due to indoor sources, then the State will provide guidance to the property owner and/or tenant on ways to reduce their exposure. If indoor exposures represent a concern due to outdoor sources, then the NYSDEC will decide who is responsible for further investigation and any necessary remediation. Depending upon the outdoor source, this responsibility may or may not fall upon the party conducting the soil vapor intrusion investigation.

APPENDIX I

Test America Analytical Package (Groundwater)

Date: 09/05/2007
Time: 16:57:12

Golder Associates-PO # 5420013
PO # 540013
GOLDER-SW8463 8260 - TCL VOLATILES - 25 ML- W

Rept: AN1246

Client ID		DUP		TRIP BLANK		VCA-MW5-BR		VCA-MW5-BR	
Job No	Lab ID	A07-9836	A7983605	A07-9836	A7983606	A07-9836	A7983601	A07-9836	A7983601DL
Sample Date		08/31/2007		08/31/2007		08/31/2007		08/31/2007	

Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Acetone	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	1000
Benzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Bromodichloromethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Bromoform	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Bromomethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
2-Butanone	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	1000
Carbon Disulfide	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Carbon Tetrachloride	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Chlorobenzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Chloroethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Chloroform	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Chloromethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Cyclohexane	UG/L	1.6	1.0	ND	1.0	0.56 J	1.0	ND	200
1,2-Dibromoethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Dibromochloromethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,2-Dibromo-3-chloropropane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,2-Dichlorobenzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,3-Dichlorobenzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,4-Dichlorobenzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Dichlorodifluoromethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,1-Dichloroethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,2-Dichloroethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,1-Dichloroethene	UG/L	ND	1.0	ND	1.0	12	1.0	ND	200
cis-1,2-Dichloroethene	UG/L	ND	1.0	ND	1.0	1100 E	1.0	1600 D	200
trans-1,2-Dichloroethene	UG/L	ND	1.0	ND	1.0	64	1.0	ND	200
1,2-Dichloropropane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
cis-1,3-Dichloropropene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
trans-1,3-Dichloropropene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Ethylbenzene	UG/L	ND	1.0	ND	1.0	0.75 J	1.0	ND	200
2-Hexanone	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	1000
Isopropylbenzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Methyl acetate	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Methylcyclohexane	UG/L	1.3	1.0	ND	1.0	0.61 J	1.0	ND	200
Methylene chloride	UG/L	ND	1.0	0.62 BJ	1.0	ND	1.0	220 BD	200
4-Methyl-2-pentanone	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	1000
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Styrene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,1,2,2-Tetrachloroethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Tetrachloroethene	UG/L	ND	1.0	ND	1.0	4400 E	1.0	18000 D	200
Toluene	UG/L	ND	1.0	ND	1.0	1.8	1.0	ND	200
1,2,4-Trichlorobenzene	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,1,1-Trichloroethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
1,1,2-Trichloroethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 09/05/2007
Time: 16:57:12

Golder Associates-PO # 5420013
PO # 540013
GOLDER-SW8463 8260 - TCL VOLATILES - 25 ML- W

Rept: AN1246

Client ID Job No Sample Date	Lab ID	DUP A07-9836 08/31/2007	A7983605	TRIP BLANK A07-9836 08/31/2007	A7983606	VCA-MW5-BR A07-9836 08/31/2007	A7983601	VCA-MW5-BR A07-9836 08/31/2007	A7983601DL
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Trichlorofluoromethane	UG/L	ND	1.0	ND	1.0	ND	1.0	ND	200
Trichloroethene	UG/L	ND	1.0	ND	1.0	1900 E	1.0	3200 D	200
Vinyl acetate	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	1000
Vinyl chloride	UG/L	ND	1.0	ND	1.0	52	1.0	ND	200
Total Xylenes	UG/L	ND	3.0	ND	3.0	0.97 J	3.0	ND	600
IS/SURROGATE(S)									
Chlorobenzene-D5	%	101	50-200	100	50-200	102	50-200	104	50-200
1,4-Difluorobenzene	%	104	50-200	102	50-200	100	50-200	107	50-200
1,4-Dichlorobenzene-D4	%	89	50-200	88	50-200	90	50-200	92	50-200
Toluene-D8	%	94	71-126	96	71-126	100	71-126	97	71-126
p-Bromofluorobenzene	%	93	73-120	92	73-120	99	73-120	95	73-120
1,2-Dichloroethane-D4	%	109	66-137	109	66-137	106	66-137	110	66-137

NA = Not Applicable ND = Not Detected

Date: 09/05/2007
Time: 16:57:12

Golder Associates-PO # 5420013
PO # 540013
GOLDER-SW8463 8260 - TCL VOLATILES - 25 ML- W

Rept: AN1246

Client ID		VCA-MW6-BR		VCA-MW7-BR		VCA-MW7-BR		VCA-MW8-BR	
Job No	Lab ID	A07-9836	A7983604	A07-9836	A7983602	A07-9836	A7983602DL	A07-9836	A7983603
Sample Date		08/31/2007		08/31/2007		08/31/2007		08/31/2007	

Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Acetone	UG/L	7.0	5.0	ND	50	ND	100	ND	5.0
Benzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Bromodichloromethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Bromoform	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Bromomethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
2-Butanone	UG/L	ND	5.0	ND	50	ND	100	ND	5.0
Carbon Disulfide	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Carbon Tetrachloride	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Chlorobenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Chloroethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Chloroform	UG/L	2.1	1.0	ND	10	ND	20	ND	1.0
Chloromethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Cyclohexane	UG/L	0.72 J	1.0	ND	10	ND	20	1.8	1.0
1,2-Dibromoethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Dibromochloromethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,2-Dibromo-3-chloropropane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,2-Dichlorobenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,3-Dichlorobenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,4-Dichlorobenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Dichlorodifluoromethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,1-Dichloroethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,2-Dichloroethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,1-Dichloroethene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
cis-1,2-Dichloroethene	UG/L	1.9	1.0	21	10	24 D	20	ND	1.0
trans-1,2-Dichloroethene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,2-Dichloropropane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
cis-1,3-Dichloropropene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
trans-1,3-Dichloropropene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Ethylbenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
2-Hexanone	UG/L	ND	5.0	ND	50	ND	100	ND	5.0
Isopropylbenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Methyl acetate	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Methylcyclohexane	UG/L	ND	1.0	ND	10	ND	20	1.4	1.0
Methylene chloride	UG/L	ND	1.0	11 B	10	96 BD	20	ND	1.0
4-Methyl-2-pentanone	UG/L	ND	5.0	ND	50	ND	100	ND	5.0
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Styrene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,1,2,2-Tetrachloroethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Tetrachloroethene	UG/L	ND	1.0	1200 E	10	1300 D	20	ND	1.0
Toluene	UG/L	0.65 J	1.0	ND	10	ND	20	ND	1.0
1,2,4-Trichlorobenzene	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,1,1-Trichloroethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
1,1,2-Trichloroethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0

NA = Not Applicable ND = Not Detected

STL Buffalo

Client ID Job No Lab ID Sample Date		VCA-MW6-BR A07-9836 A7983604 08/31/2007		VCA-MW7-BR A07-9836 A7983602 08/31/2007		VCA-MW7-BR A07-9836 A7983602DL 08/31/2007		VCA-MW8-BR A07-9836 A7983603 08/31/2007	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Trichlorofluoromethane	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Trichloroethene	UG/L	ND	1.0	26	10	28 D	20	ND	1.0
Vinyl acetate	UG/L	ND	5.0	ND	50	ND	100	ND	5.0
Vinyl chloride	UG/L	ND	1.0	ND	10	ND	20	ND	1.0
Total Xylenes	UG/L	ND	3.0	ND	30	ND	60	ND	3.0
IS/SURROGATE(S)									
Chlorobenzene-D5	%	96	50-200	99	50-200	87	50-200	96	50-200
1,4-Difluorobenzene	%	99	50-200	102	50-200	88	50-200	100	50-200
1,4-Dichlorobenzene-D4	%	89	50-200	86	50-200	74	50-200	85	50-200
Toluene-D8	%	97	71-126	101	71-126	99	71-126	107	71-126
p-Bromofluorobenzene	%	98	73-120	96	73-120	96	73-120	103	73-120
1,2-Dichloroethane-D4	%	111	66-137	116	66-137	112	66-137	120	66-137

APPENDIX J

Centek Analytical Package (Vapor and Air)

CENTEK LABORATORIES, LLC

143 Midler Park Drive * Syracuse, NY 13206

Phone (315) 431-9730 * Fax (315) 431-9731 * Emergency 24/7 (315) 416-2751

NELAC Certificate No. 11830

www.CentekLabs.com

Thursday, October 11, 2007

Mr. Norm Wohlabaugh
Golder Associates
2221 Niagara Falls Blvd
Suite 9
Niagara Falls, NY 14304

TEL: 716-215-0650
FAX 716-215-0655

RE: BUF Business Park

OCT 17 2007

Dear Mr. Norm Wohlabaugh: Order No.: C0710010

Centek Laboratories, LLC received 3 sample(s) on 10/8/2007 for the analyses presented in the following report.

Analytical results relate to samples as received at laboratory. We do our best to make our reporting format clear and understandable and hope you are thoroughly satisfied with our services.

Centek Laboratories is distinctively qualified to meet your needs for precise and timely volatile organic compound analysis. We perform all analyses according to EPA, NIOSH or OSHA-approved analytical methods. Centek Laboratories is dedicated to providing quality analyses and exceptional customer service.

Please contact your client service representative, Michael Palmer at (315) 431-9730, if you would like any additional information regarding this report.

Thank you for using Centek Laboratories. This report can not be reproduced except in its entirety, without prior written authorization.

Sincerely,

Michael Palmer
Director of Client Services

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT: Golder Associates
Project: BUF Business Park
Lab Order: C0710010

CASE NARRATIVE

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the case narrative. All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination. Samples were analyzed using the methods outlined in the following references:

Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999.

Centek Laboratories, LLC

Chain of Custody

143 Midler Park Drive
Syracuse, NY 13206
Phone: 315-431-9730 Fax: 315-431-9731 Emergency: 315-416-2751 / 416-2752

Site Name: Buff. Business Park
Project: 063-9477
PO#: 063-9477
Other:

Detection Limit	Report Level
☐ 5ppbv	☐ Level I
☐ 1ug/M3	☒ Level II
☐ 1ug/M3 +TCE .25	☐ Cat "B" Like

Turnaround Time:	Check One	Rush TAT Surcharge %	Due Date:
5 Business Days	☑	0%	
4 Business Days	☐	35%	
3 Business Days	☐	50%	
2 Business Days	☐	75%	
Next Day by 5pm	☐	100%	
Next Day by Noon	☐	150%	
Same Day	☐	200%	

Company: Golder Associates, Inc
Report: Anthony J. Notaro
3321 Niagara Falls Blvd. suite 9
Niagara Falls, NY 14304

Phone: (716) 215-0670
Fax: (716) 215-0677
Email: anotaro@golder.com

Company:
Invoice: Norma Wohlebaugh

SAME

Phone:
Fax:
Email:

Sample ID	Date Sampled	Canister Number	Regulator Number	Analysis Request	Comments	Vacuum Start/Stop
Indoor Air	10/4/07	233	295	VOC / TO-15	detection limit:	0925/1505
Outdoor Air	10/4/07	421	395	VOC / TO-15		0925/1520
Sub-Slab Air	10/4/07	474	251	VOC / TO-15	0.25 µg/m³	0925/1630

Chain of Custody	Print Name	Signature	Date/Time	Courier:
Sampled by:	Anthony J. Notaro		10/4/07 1720	Federal Express
Relinquished by:	Anthony J. Notaro		10/4/ 1800	
Received at Lab by:	Jan Scala		10/5/07	

www.CentekLabs.com

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Indoor Air
Lab Order:	C0710010	**Tag Number:**	233,295
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-001A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Vacuum Reading "Hg	-3			"Hg		10/4/2007
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1,2,2-Tetrachloroethane	ND	0.15		ppbV	1	10/8/2007
1,1,2-Trichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1-Dichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
1,2,4-Trichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,2,4-Trimethylbenzene	1.6	0.15		ppbV	1	10/8/2007
1,2-Dibromoethane	ND	0.15		ppbV	1	10/8/2007
1,2-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,2-Dichloroethane	ND	0.15		ppbV	1	10/8/2007
1,2-Dichloropropane	ND	0.15		ppbV	1	10/8/2007
1,3,5-Trimethylbenzene	0.86	0.15		ppbV	1	10/8/2007
1,3-butadiene	ND	0.15		ppbV	1	10/8/2007
1,3-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,4-Dichlorobenzene	0.15	0.15		ppbV	1	10/8/2007
1,4-Dioxane	ND	0.30		ppbV	1	10/8/2007
2,2,4-trimethylpentane	1.7	0.15		ppbV	1	10/8/2007
4-ethyltoluene	0.34	0.15		ppbV	1	10/8/2007
Acetone	31	6.0		ppbV	20	10/9/2007
Allyl chloride	ND	0.15		ppbV	1	10/8/2007
Benzene	2.4	3.0	J	ppbV	20	10/9/2007
Benzyl chloride	ND	0.15		ppbV	1	10/8/2007
Bromodichloromethane	ND	0.15		ppbV	1	10/8/2007
Bromoform	ND	0.15		ppbV	1	10/8/2007
Bromomethane	ND	0.15		ppbV	1	10/8/2007
Carbon disulfide	0.26	0.15		ppbV	1	10/8/2007
Carbon tetrachloride	ND	0.15		ppbV	1	10/8/2007
Chlorobenzene	ND	0.15		ppbV	1	10/8/2007
Chloroethane	ND	0.15		ppbV	1	10/8/2007
Chloroform	ND	0.15		ppbV	1	10/8/2007
Chloromethane	ND	0.15		ppbV	1	10/8/2007
cis-1,2-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
cis-1,3-Dichloropropene	ND	0.15		ppbV	1	10/8/2007
Cyclohexane	1.3	0.15		ppbV	1	10/8/2007
Dibromochloromethane	ND	0.15		ppbV	1	10/8/2007
Ethyl acetate	ND	0.25		ppbV	1	10/8/2007
Ethylbenzene	1.8	0.15		ppbV	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Indoor Air
Lab Order:	C0710010	**Tag Number:**	233,295
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-001A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 11	0.36	0.15		ppbV	1	10/8/2007
Freon 113	ND	0.15		ppbV	1	10/8/2007
Freon 114	ND	0.15		ppbV	1	10/8/2007
Freon 12	0.64	0.15		ppbV	1	10/8/2007
Heptane	1.7	0.15		ppbV	1	10/8/2007
Hexachloro-1,3-butadiene	ND	0.15		ppbV	1	10/8/2007
Hexane	1.9	0.15		ppbV	1	10/8/2007
Isopropyl alcohol	35	3.0		ppbV	20	10/9/2007
m&p-Xylene	3.0	6.0	J	ppbV	20	10/9/2007
Methyl Butyl Ketone	ND	0.30		ppbV	1	10/8/2007
Methyl Ethyl Ketone	1.7	0.30		ppbV	1	10/8/2007
Methyl Isobutyl Ketone	ND	0.30		ppbV	1	10/8/2007
Methyl tert-butyl ether	ND	0.15		ppbV	1	10/8/2007
Methylene chloride	0.21	0.15		ppbV	1	10/8/2007
o-Xylene	1.4	0.15		ppbV	1	10/8/2007
Propylene	ND	0.15		ppbV	1	10/8/2007
Styrene	0.73	0.15		ppbV	1	10/8/2007
Tetrachloroethylene	0.15	0.15		ppbV	1	10/8/2007
Tetrahydrofuran	ND	0.15		ppbV	1	10/8/2007
Toluene	6.2	3.0		ppbV	20	10/9/2007
trans-1,2-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
trans-1,3-Dichloropropene	ND	0.15		ppbV	1	10/8/2007
Trichloroethene	0.29	0.040		ppbV	1	10/8/2007
Vinyl acetate	ND	0.15		ppbV	1	10/8/2007
Vinyl Bromide	ND	0.15		ppbV	1	10/8/2007
Vinyl chloride	ND	0.15		ppbV	1	10/8/2007
Surr: Bromofluorobenzene	111	70-130		%REC	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Outdoor Air
Lab Order:	C0710010	**Tag Number:**	421,395
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-002A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Vacuum Reading "Hg	-4			"Hg		10/4/2007
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1,2,2-Tetrachloroethane	ND	0.15		ppbV	1	10/8/2007
1,1,2-Trichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1-Dichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
1,2,4-Trichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,2,4-Trimethylbenzene	0.40	0.15		ppbV	1	10/8/2007
1,2-Dibromoethane	ND	0.15		ppbV	1	10/8/2007
1,2-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,2-Dichloroethane	ND	0.15		ppbV	1	10/8/2007
1,2-Dichloropropane	ND	0.15		ppbV	1	10/8/2007
1,3,5-Trimethylbenzene	0.22	0.15		ppbV	1	10/8/2007
1,3-butadiene	ND	0.15		ppbV	1	10/8/2007
1,3-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,4-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,4-Dioxane	ND	0.30		ppbV	1	10/8/2007
2,2,4-trimethylpentane	ND	0.15		ppbV	1	10/8/2007
4-ethyltoluene	ND	0.15		ppbV	1	10/8/2007
Acetone	9.0	1.5		ppbV	5	10/9/2007
Allyl chloride	ND	0.15		ppbV	1	10/8/2007
Benzene	0.27	0.15		ppbV	1	10/8/2007
Benzyl chloride	ND	0.15		ppbV	1	10/8/2007
Bromodichloromethane	ND	0.15		ppbV	1	10/8/2007
Bromoform	ND	0.15		ppbV	1	10/8/2007
Bromomethane	ND	0.15		ppbV	1	10/8/2007
Carbon disulfide	ND	0.15		ppbV	1	10/8/2007
Carbon tetrachloride	ND	0.15		ppbV	1	10/8/2007
Chlorobenzene	ND	0.15		ppbV	1	10/8/2007
Chloroethane	ND	0.15		ppbV	1	10/8/2007
Chloroform	ND	0.15		ppbV	1	10/8/2007
Chloromethane	ND	0.15		ppbV	1	10/8/2007
cis-1,2-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
cis-1,3-Dichloropropene	ND	0.15		ppbV	1	10/8/2007
Cyclohexane	0.12	0.15	J	ppbV	1	10/8/2007
Dibromochloromethane	ND	0.15		ppbV	1	10/8/2007
Ethyl acetate	ND	0.25		ppbV	1	10/8/2007
Ethylbenzene	0.14	0.15	J	ppbV	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Outdoor Air
Lab Order:	C0710010	**Tag Number:**	421,395
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-002A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 11	0.22	0.15		ppbV	1	10/8/2007
Freon 113	ND	0.15		ppbV	1	10/8/2007
Freon 114	ND	0.15		ppbV	1	10/8/2007
Freon 12	0.46	0.15		ppbV	1	10/8/2007
Heptane	ND	0.15		ppbV	1	10/8/2007
Hexachloro-1,3-butadiene	ND	0.15		ppbV	1	10/8/2007
Hexane	ND	0.15		ppbV	1	10/8/2007
Isopropyl alcohol	ND	0.15		ppbV	1	10/8/2007
m&p-Xylene	0.40	0.30		ppbV	1	10/8/2007
Methyl Butyl Ketone	ND	0.30		ppbV	1	10/8/2007
Methyl Ethyl Ketone	1.4	0.30		ppbV	1	10/8/2007
Methyl Isobutyl Ketone	ND	0.30		ppbV	1	10/8/2007
Methyl tert-butyl ether	ND	0.15		ppbV	1	10/8/2007
Methylene chloride	0.17	0.15		ppbV	1	10/8/2007
o-Xylene	0.14	0.15	J	ppbV	1	10/8/2007
Propylene	ND	0.15		ppbV	1	10/8/2007
Styrene	0.12	0.15	J	ppbV	1	10/8/2007
Tetrachloroethylene	ND	0.15		ppbV	1	10/8/2007
Tetrahydrofuran	ND	0.15		ppbV	1	10/8/2007
Toluene	1.2	0.15		ppbV	1	10/8/2007
trans-1,2-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
trans-1,3-Dichloropropene	ND	0.15		ppbV	1	10/8/2007
Trichloroethene	0.16	0.040		ppbV	1	10/8/2007
Vinyl acetate	ND	0.15		ppbV	1	10/8/2007
Vinyl Bromide	ND	0.15		ppbV	1	10/8/2007
Vinyl chloride	ND	0.15		ppbV	1	10/8/2007
Surr: Bromofluorobenzene	107	70-130		%REC	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Sub-slab Air
Lab Order:	C0710010	**Tag Number:**	474,251
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-003A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Vacuum Reading "Hg	-3			"Hg		10/4/2007
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1,2,2-Tetrachloroethane	ND	0.15		ppbV	1	10/8/2007
1,1,2-Trichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1-Dichloroethane	ND	0.15		ppbV	1	10/8/2007
1,1-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
1,2,4-Trichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,2,4-Trimethylbenzene	0.84	0.15		ppbV	1	10/8/2007
1,2-Dibromoethane	ND	0.15		ppbV	1	10/8/2007
1,2-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,2-Dichloroethane	0.22	0.15		ppbV	1	10/8/2007
1,2-Dichloropropane	ND	0.15		ppbV	1	10/8/2007
1,3,5-Trimethylbenzene	0.49	0.15		ppbV	1	10/8/2007
1,3-butadiene	ND	0.15		ppbV	1	10/8/2007
1,3-Dichlorobenzene	ND	0.15		ppbV	1	10/8/2007
1,4-Dichlorobenzene	0.16	0.15		ppbV	1	10/8/2007
1,4-Dioxane	ND	0.30		ppbV	1	10/8/2007
2,2,4-trimethylpentane	0.59	0.15		ppbV	1	10/8/2007
4-ethyltoluene	0.20	0.15		ppbV	1	10/8/2007
Acetone	46	6.0		ppbV	20	10/9/2007
Allyl chloride	ND	0.15		ppbV	1	10/8/2007
Benzene	1.5	0.15		ppbV	1	10/8/2007
Benzyl chloride	ND	0.15		ppbV	1	10/8/2007
Bromodichloromethane	ND	0.15		ppbV	1	10/8/2007
Bromoform	ND	0.15		ppbV	1	10/8/2007
Bromomethane	0.46	0.15		ppbV	1	10/8/2007
Carbon disulfide	0.43	0.15		ppbV	1	10/8/2007
Carbon tetrachloride	ND	0.15		ppbV	1	10/8/2007
Chlorobenzene	ND	0.15		ppbV	1	10/8/2007
Chloroethane	ND	0.15		ppbV	1	10/8/2007
Chloroform	0.12	0.15	J	ppbV	1	10/8/2007
Chloromethane	ND	0.15		ppbV	1	10/8/2007
cis-1,2-Dichloroethene	1.7	0.15		ppbV	1	10/8/2007
cis-1,3-Dichloropropene	ND	0.15		ppbV	1	10/8/2007
Cyclohexane	2.3	0.15		ppbV	1	10/8/2007
Dibromochloromethane	ND	0.15		ppbV	1	10/8/2007
Ethyl acetate	ND	0.25		ppbV	1	10/8/2007
Ethylbenzene	1.6	0.15		ppbV	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Sub-slab Air
Lab Order:	C0710010	**Tag Number:**	474,251
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-003A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 11	0.31	0.15		ppbV	1	10/8/2007
Freon 113	ND	0.15		ppbV	1	10/8/2007
Freon 114	ND	0.15		ppbV	1	10/8/2007
Freon 12	1.2	0.15		ppbV	1	10/8/2007
Heptane	2.2	0.15		ppbV	1	10/8/2007
Hexachloro-1,3-butadiene	ND	0.15		ppbV	1	10/8/2007
Hexane	4.4	3.0		ppbV	20	10/9/2007
Isopropyl alcohol	28	3.0		ppbV	20	10/9/2007
m&p-Xylene	3.2	0.30		ppbV	1	10/8/2007
Methyl Butyl Ketone	ND	0.30		ppbV	1	10/8/2007
Methyl Ethyl Ketone	7.0	6.0		ppbV	20	10/9/2007
Methyl Isobutyl Ketone	ND	0.30		ppbV	1	10/8/2007
Methyl tert-butyl ether	ND	0.15		ppbV	1	10/8/2007
Methylene chloride	1.5	0.15		ppbV	1	10/8/2007
o-Xylene	0.87	0.15		ppbV	1	10/8/2007
Propylene	ND	0.15		ppbV	1	10/8/2007
Styrene	1.3	0.15		ppbV	1	10/8/2007
Tetrachloroethylene	0.61	0.15		ppbV	1	10/8/2007
Tetrahydrofuran	ND	0.15		ppbV	1	10/8/2007
Toluene	8.4	3.0		ppbV	20	10/9/2007
trans-1,2-Dichloroethene	ND	0.15		ppbV	1	10/8/2007
trans-1,3-Dichloropropene	ND	0.15		ppbV	1	10/8/2007
Trichloroethene	7.6	0.80		ppbV	20	10/9/2007
Vinyl acetate	ND	0.15		ppbV	1	10/8/2007
Vinyl Bromide	ND	0.15		ppbV	1	10/8/2007
Vinyl chloride	ND	0.15		ppbV	1	10/8/2007
Surr: Bromofluorobenzene	107	70-130		%REC	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Indoor Air
Lab Order:	C0710010	**Tag Number:**	233,295
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-001A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	ND	0.83		ug/m3	1	10/8/2007
1,1,2,2-Tetrachloroethane	ND	1.0		ug/m3	1	10/8/2007
1,1,2-Trichloroethane	ND	0.83		ug/m3	1	10/8/2007
1,1-Dichloroethane	ND	0.62		ug/m3	1	10/8/2007
1,1-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
1,2,4-Trichlorobenzene	ND	1.1		ug/m3	1	10/8/2007
1,2,4-Trimethylbenzene	7.9	0.75		ug/m3	1	10/8/2007
1,2-Dibromoethane	ND	1.2		ug/m3	1	10/8/2007
1,2-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,2-Dichloroethane	ND	0.62		ug/m3	1	10/8/2007
1,2-Dichloropropane	ND	0.70		ug/m3	1	10/8/2007
1,3,5-Trimethylbenzene	4.3	0.75		ug/m3	1	10/8/2007
1,3-butadiene	ND	0.34		ug/m3	1	10/8/2007
1,3-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,4-Dichlorobenzene	0.92	0.92		ug/m3	1	10/8/2007
1,4-Dioxane	ND	1.1		ug/m3	1	10/8/2007
2,2,4-trimethylpentane	7.9	0.71		ug/m3	1	10/8/2007
4-ethyltoluene	1.7	0.75		ug/m3	1	10/8/2007
Acetone	76	14		ug/m3	20	10/9/2007
Allyl chloride	ND	0.48		ug/m3	1	10/8/2007
Benzene	7.8	9.7	J	ug/m3	20	10/9/2007
Benzyl chloride	ND	0.88		ug/m3	1	10/8/2007
Bromodichloromethane	ND	1.0		ug/m3	1	10/8/2007
Bromoform	ND	1.6		ug/m3	1	10/8/2007
Bromomethane	ND	0.59		ug/m3	1	10/8/2007
Carbon disulfide	0.82	0.47		ug/m3	1	10/8/2007
Carbon tetrachloride	ND	0.96		ug/m3	1	10/8/2007
Chlorobenzene	ND	0.70		ug/m3	1	10/8/2007
Chloroethane	ND	0.40		ug/m3	1	10/8/2007
Chloroform	ND	0.74		ug/m3	1	10/8/2007
Chloromethane	ND	0.31		ug/m3	1	10/8/2007
cis-1,2-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
cis-1,3-Dichloropropene	ND	0.69		ug/m3	1	10/8/2007
Cyclohexane	4.5	0.52		ug/m3	1	10/8/2007
Dibromochloromethane	ND	1.3		ug/m3	1	10/8/2007
Ethyl acetate	ND	0.92		ug/m3	1	10/8/2007
Ethylbenzene	7.9	0.66		ug/m3	1	10/8/2007
Freon 11	2.1	0.86		ug/m3	1	10/8/2007
Freon 113	ND	1.2		ug/m3	1	10/8/2007
Freon 114	ND	1.1		ug/m3	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Indoor Air
Lab Order:	C0710010	**Tag Number:**	233,295
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-001A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	3.2	0.75		ug/m3	1	10/8/2007
Heptane	7.0	0.62		ug/m3	1	10/8/2007
Hexachloro-1,3-butadiene	ND	1.6		ug/m3	1	10/8/2007
Hexane	6.8	0.54		ug/m3	1	10/8/2007
Isopropyl alcohol	87	7.5		ug/m3	20	10/9/2007
m&p-Xylene	13	26	J	ug/m3	20	10/9/2007
Methyl Butyl Ketone	ND	1.2		ug/m3	1	10/8/2007
Methyl Ethyl Ketone	5.2	0.90		ug/m3	1	10/8/2007
Methyl Isobutyl Ketone	ND	1.2		ug/m3	1	10/8/2007
Methyl tert-butyl ether	ND	0.55		ug/m3	1	10/8/2007
Methylene chloride	0.74	0.53		ug/m3	1	10/8/2007
o-Xylene	6.1	0.66		ug/m3	1	10/8/2007
Propylene	ND	0.26		ug/m3	1	10/8/2007
Styrene	3.2	0.65		ug/m3	1	10/8/2007
Tetrachloroethylene	1.0	1.0		ug/m3	1	10/8/2007
Tetrahydrofuran	ND	0.45		ug/m3	1	10/8/2007
Toluene	24	11		ug/m3	20	10/9/2007
trans-1,2-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
trans-1,3-Dichloropropene	ND	0.69		ug/m3	1	10/8/2007
Trichloroethene	1.6	0.22		ug/m3	1	10/8/2007
Vinyl acetate	ND	0.54		ug/m3	1	10/8/2007
Vinyl Bromide	ND	0.67		ug/m3	1	10/8/2007
Vinyl chloride	ND	0.39		ug/m3	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Outdoor Air
Lab Order:	C0710010	**Tag Number:**	421,395
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-002A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	ND	0.83		ug/m3	1	10/8/2007
1,1,2,2-Tetrachloroethane	ND	1.0		ug/m3	1	10/8/2007
1,1,2-Trichloroethane	ND	0.83		ug/m3	1	10/8/2007
1,1-Dichloroethane	ND	0.62		ug/m3	1	10/8/2007
1,1-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
1,2,4-Trichlorobenzene	ND	1.1		ug/m3	1	10/8/2007
1,2,4-Trimethylbenzene	2.0	0.75		ug/m3	1	10/8/2007
1,2-Dibromoethane	ND	1.2		ug/m3	1	10/8/2007
1,2-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,2-Dichloroethane	ND	0.62		ug/m3	1	10/8/2007
1,2-Dichloropropane	ND	0.70		ug/m3	1	10/8/2007
1,3,5-Trimethylbenzene	1.1	0.75		ug/m3	1	10/8/2007
1,3-butadiene	ND	0.34		ug/m3	1	10/8/2007
1,3-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,4-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,4-Dioxane	ND	1.1		ug/m3	1	10/8/2007
2,2,4-trimethylpentane	ND	0.71		ug/m3	1	10/8/2007
4-ethyltoluene	ND	0.75		ug/m3	1	10/8/2007
Acetone	22	3.6		ug/m3	5	10/9/2007
Allyl chloride	ND	0.48		ug/m3	1	10/8/2007
Benzene	0.88	0.49		ug/m3	1	10/8/2007
Benzyl chloride	ND	0.88		ug/m3	1	10/8/2007
Bromodichloromethane	ND	1.0		ug/m3	1	10/8/2007
Bromoform	ND	1.6		ug/m3	1	10/8/2007
Bromomethane	ND	0.59		ug/m3	1	10/8/2007
Carbon disulfide	ND	0.47		ug/m3	1	10/8/2007
Carbon tetrachloride	ND	0.96		ug/m3	1	10/8/2007
Chlorobenzene	ND	0.70		ug/m3	1	10/8/2007
Chloroethane	ND	0.40		ug/m3	1	10/8/2007
Chloroform	ND	0.74		ug/m3	1	10/8/2007
Chloromethane	ND	0.31		ug/m3	1	10/8/2007
cis-1,2-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
cis-1,3-Dichloropropene	ND	0.69		ug/m3	1	10/8/2007
Cyclohexane	0.42	0.52	J	ug/m3	1	10/8/2007
Dibromochloromethane	ND	1.3		ug/m3	1	10/8/2007
Ethyl acetate	ND	0.92		ug/m3	1	10/8/2007
Ethylbenzene	0.62	0.66	J	ug/m3	1	10/8/2007
Freon 11	1.3	0.86		ug/m3	1	10/8/2007
Freon 113	ND	1.2		ug/m3	1	10/8/2007
Freon 114	ND	1.1		ug/m3	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Outdoor Air
Lab Order:	C0710010	**Tag Number:**	421,395
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-002A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	2.3	0.75		ug/m3	1	10/8/2007
Heptane	ND	0.62		ug/m3	1	10/8/2007
Hexachloro-1,3-butadiene	ND	1.6		ug/m3	1	10/8/2007
Hexane	ND	0.54		ug/m3	1	10/8/2007
Isopropyl alcohol	ND	0.37		ug/m3	1	10/8/2007
m&p-Xylene	1.8	1.3		ug/m3	1	10/8/2007
Methyl Butyl Ketone	ND	1.2		ug/m3	1	10/8/2007
Methyl Ethyl Ketone	4.2	0.90		ug/m3	1	10/8/2007
Methyl Isobutyl Ketone	ND	1.2		ug/m3	1	10/8/2007
Methyl tert-butyl ether	ND	0.55		ug/m3	1	10/8/2007
Methylene chloride	0.60	0.53		ug/m3	1	10/8/2007
o-Xylene	0.62	0.66	J	ug/m3	1	10/8/2007
Propylene	ND	0.26		ug/m3	1	10/8/2007
Styrene	0.52	0.65	J	ug/m3	1	10/8/2007
Tetrachloroethylene	ND	1.0		ug/m3	1	10/8/2007
Tetrahydrofuran	ND	0.45		ug/m3	1	10/8/2007
Toluene	4.5	0.57		ug/m3	1	10/8/2007
trans-1,2-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
trans-1,3-Dichloropropene	ND	0.69		ug/m3	1	10/8/2007
Trichloroethene	0.87	0.22		ug/m3	1	10/8/2007
Vinyl acetate	ND	0.54		ug/m3	1	10/8/2007
Vinyl Bromide	ND	0.67		ug/m3	1	10/8/2007
Vinyl chloride	ND	0.39		ug/m3	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Sub-slab Air
Lab Order:	C0710010	**Tag Number:**	474,251
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-003A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	ND	0.83		ug/m3	1	10/8/2007
1,1,2,2-Tetrachloroethane	ND	1.0		ug/m3	1	10/8/2007
1,1,2-Trichloroethane	ND	0.83		ug/m3	1	10/8/2007
1,1-Dichloroethane	ND	0.62		ug/m3	1	10/8/2007
1,1-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
1,2,4-Trichlorobenzene	ND	1.1		ug/m3	1	10/8/2007
1,2,4-Trimethylbenzene	4.2	0.75		ug/m3	1	10/8/2007
1,2-Dibromoethane	ND	1.2		ug/m3	1	10/8/2007
1,2-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,2-Dichloroethane	0.91	0.62		ug/m3	1	10/8/2007
1,2-Dichloropropane	ND	0.70		ug/m3	1	10/8/2007
1,3,5-Trimethylbenzene	2.4	0.75		ug/m3	1	10/8/2007
1,3-butadiene	ND	0.34		ug/m3	1	10/8/2007
1,3-Dichlorobenzene	ND	0.92		ug/m3	1	10/8/2007
1,4-Dichlorobenzene	0.98	0.92		ug/m3	1	10/8/2007
1,4-Dioxane	ND	1.1		ug/m3	1	10/8/2007
2,2,4-trimethylpentane	2.8	0.71		ug/m3	1	10/8/2007
4-ethyltoluene	1.0	0.75		ug/m3	1	10/8/2007
Acetone	110	14		ug/m3	20	10/9/2007
Allyl chloride	ND	0.48		ug/m3	1	10/8/2007
Benzene	4.9	0.49		ug/m3	1	10/8/2007
Benzyl chloride	ND	0.88		ug/m3	1	10/8/2007
Bromodichloromethane	ND	1.0		ug/m3	1	10/8/2007
Bromoform	ND	1.6		ug/m3	1	10/8/2007
Bromomethane	1.8	0.59		ug/m3	1	10/8/2007
Carbon disulfide	1.4	0.47		ug/m3	1	10/8/2007
Carbon tetrachloride	ND	0.96		ug/m3	1	10/8/2007
Chlorobenzene	ND	0.70		ug/m3	1	10/8/2007
Chloroethane	ND	0.40		ug/m3	1	10/8/2007
Chloroform	0.60	0.74	J	ug/m3	1	10/8/2007
Chloromethane	ND	0.31		ug/m3	1	10/8/2007
cis-1,2-Dichloroethene	6.9	0.60		ug/m3	1	10/8/2007
cis-1,3-Dichloropropene	ND	0.69		ug/m3	1	10/8/2007
Cyclohexane	8.1	0.52		ug/m3	1	10/8/2007
Dibromochloromethane	ND	1.3		ug/m3	1	10/8/2007
Ethyl acetate	ND	0.92		ug/m3	1	10/8/2007
Ethylbenzene	7.2	0.66		ug/m3	1	10/8/2007
Freon 11	1.8	0.86		ug/m3	1	10/8/2007
Freon 113	ND	1.2		ug/m3	1	10/8/2007
Freon 114	ND	1.1		ug/m3	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *11-Oct-07*

CLIENT:	Golder Associates	**Client Sample ID:**	Sub-slab Air
Lab Order:	C0710010	**Tag Number:**	474,251
Project:	BUF Business Park	**Collection Date:**	10/4/2007
Lab ID:	C0710010-003A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 TCE BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	5.8	0.75		ug/m3	1	10/8/2007
Heptane	9.2	0.62		ug/m3	1	10/8/2007
Hexachloro-1,3-butadiene	ND	1.6		ug/m3	1	10/8/2007
Hexane	16	11		ug/m3	20	10/9/2007
Isopropyl alcohol	69	7.5		ug/m3	20	10/9/2007
m&p-Xylene	14	1.3		ug/m3	1	10/8/2007
Methyl Butyl Ketone	ND	1.2		ug/m3	1	10/8/2007
Methyl Ethyl Ketone	21	18		ug/m3	20	10/9/2007
Methyl Isobutyl Ketone	ND	1.2		ug/m3	1	10/8/2007
Methyl tert-butyl ether	ND	0.55		ug/m3	1	10/8/2007
Methylene chloride	5.2	0.53		ug/m3	1	10/8/2007
o-Xylene	3.8	0.66		ug/m3	1	10/8/2007
Propylene	ND	0.26		ug/m3	1	10/8/2007
Styrene	5.6	0.65		ug/m3	1	10/8/2007
Tetrachloroethylene	4.2	1.0		ug/m3	1	10/8/2007
Tetrahydrofuran	ND	0.45		ug/m3	1	10/8/2007
Toluene	32	11		ug/m3	20	10/9/2007
trans-1,2-Dichloroethene	ND	0.60		ug/m3	1	10/8/2007
trans-1,3-Dichloropropene	ND	0.69		ug/m3	1	10/8/2007
Trichloroethene	42	4.4		ug/m3	20	10/9/2007
Vinyl acetate	ND	0.54		ug/m3	1	10/8/2007
Vinyl Bromide	ND	0.67		ug/m3	1	10/8/2007
Vinyl chloride	ND	0.39		ug/m3	1	10/8/2007

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		