Engineering
Architecture
Environmental

LABELLA Associates, P.C.

300 State Street, Suite 201, Rochester, NY 14614

Phone 585.454.6110
Fax 585.454.3066
www.labellapc.com

January 27, 2009

Bart Putzig, P.E.
Division of Environmental Remediation
NYS Department of Environmental Conservation ~ Region 8
6274 East Avon-Lima Road
Avon, New York 14414

Re: Remedial Investigation Work Plan
300 Commerce Drive, Henrietta, New York
LaBella Project No. 208723

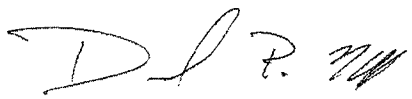
Dear Mr. Putzig:

LaBella Associates P.C. ("LaBella") is pleased to submit this Remedial Investigation Work Plan (RI Work Plan) that describes tasks to evaluate the nature and extent of soil and groundwater impairment at the above referenced site. Three copies are enclosed and one copy will be placed in the document repository.

If you have any questions, please do not hesitate to call me at (585) 295-6611.

Sincerely,

LABELLA ASSOCIATES, P.C.



Daniel P. Noll, P.E.
Project Manager

DPN/lk

Attachment

cc: Tony Kirik – Yaro Enterprises, Inc.
Paul Sylvestri – Harter, Secrest & Emery

Y:\YARO ENTERPRISE INC\208723 BCP 300 COMMERCE\CLERICAL\WORD\RPT\R8L10DN2.DOC

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Remedial Investigation Work Plan

Location:

300 Commerce Drive
Henrietta, New York

Prepared for:

Yaro Enterprises, Inc.
225 Rosemont Drive
Rochester, New York 14617

LaBella Project No. 208723

January 2009

Remedial Investigation Work Plan

Location:

300 Commerce Drive
Henrietta, New York

Prepared for:

Yaro Enterprises, Inc.
225 Rosemont Drive
Rochester, New York 14617

LaBella Project No. 208723

January 2009

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Table of Contents

1.0 Introduction

LaBella Associates, P.C. (LaBella) is pleased to submit this Remedial Investigation (RI) Work Plan (Work Plan) to define the nature and extent of contamination at 300 Commerce Drive, Rochester, Monroe County, New York, herein after referred to as the "Site".

LaBella previously conducted a Phase I Environmental Site Assessment (ESA) and a Limited Phase II ESA at the property. Based on impacts to soil and groundwater identified as part of the Phase II ESA, the New York State Department of Environmental Conservation (NYSDEC) was contacted to discuss entering the Site into the Brownfield Cleanup Program (BCP) for defining the nature and extent of impacts and conducting remedial work at the Site.

2.0 Site Description and History

The Site is a 2.7-acre parcel (Tax Account #161.10-1-18) and is improved with an approximate 18,700 square foot, two story, brick faced, slab on grade building, constructed in 1967 with an addition in 1990. The Site is a commercial/light industrial facility that is currently utilized by a tenant, which operates a small photo developing operation. The Site is located within a suburban area. The property is zoned for industrial use.

The Site is bordered by the following properties.

North:	Consolidated Freightways (Trucking Company) at 15 Transport Drive
Northeast:	Consolidated Freightways (Trucking Company) at 15 Transport Drive
Northwest:	Commerce Drive and railroad tracks beyond
South:	Miller Metal Fabricating, Sandblast Service, and Ron Nannini Auto Service, at 315 Commerce Drive; and Upstate Screen Printing, Rochester Custom Cycle (Motorcycle Dealers), Exact Machining & Manufacturing Inc (Machine Shop), C T H Outdoor Enterprise Incorporated, Kaplan & Schmidt Electric, Op-Tech Environmental Services, MJ Mechanical Services, and Heritage-Crystal Clean LLC (Environmental Services) at 305 Commerce Drive
Southeast:	Undeveloped land at 0 Commerce Drive
Southwest:	Railroad Tracks
East:	Carquest Auto Parts and Signature Nameplate Company at 290 Commerce Drive
West:	Commerce Drive and railroad tracks beyond

Based on the historic information reviewed during the Phase I ESA, the Site was first developed in 1968. Historical occupants or owners of the Site have reportedly included industrial operations such as commercial printing, computer service, and distribution since approximately the late 1960s.

3.0 Previous Environmental Reports

A Phase I ESA completed by LaBella identified the following Recognized Environmental Conditions (RECs) in connection with the:

- **On-Site NYSDEC Spill** – One (1) inactive NYSDEC Spill listing (No. 7880522) was associated with the Site. This Spill reportedly involved the release of an unknown quantity of #2 fuel oil from a tank. The NYSDEC Spill Report Form did not report whether this tank was an aboveground or underground storage tank. In addition, the Spill Report Form noted the following comments: "During cleanup, soil penetration reportedly became evident and supported the belief this 'old' Spill was the reason for several reported Spills. Corrections made to external piping should further reduce the chances for future Spills." No additional information was provided on the Spill Report Form. It should be noted that no additional records were available under the Scope of Work of the Phase I ESA related to the presence of storage tank(s) at the Site. Based on the report of a "tank" associated with this Spill, there is the potential that an underground or aboveground storage tank may have existed or that an underground storage tank exists, has been removed from, or closed-in-place, at the Site.

- **NYSDEC Spill On An Adjoining Property** – Two (2) inactive NYSDEC Spills (Nos. 9102947 and 0370111) were identified associated with the property adjacent to the north of the Site. According to NYSDEC information regarding Spill No. 9102947, a 10,000-gallon diesel underground storage tank (UST) failed tank tightness testing and was reportedly removed. According to NYSDEC information regarding Spill No. 0370111, a Phase II Investigation revealed the presence of low-level residual contamination in the area of a formerly removed 10,000-gallon diesel UST. The apparent flow of groundwater on this northerly adjacent property is to the south/southwest and toward the Site. Based on the location of this facility (i.e., located directly adjacent to the north of the Site) and the apparent groundwater flow direction, there is the potential for contamination to have migrated onto the Site.

Based upon the findings and recommendations in LaBella's Phase I ESA, LaBella was retained to conduct a limited subsurface investigation at the Site in order to determine if the RECs listed above impacted the soil and/or groundwater at the Site. As such, a Limited Phase II ESA and a Supplemental Phase II ESA were conducted at the Site. A summary of the scope of this work and the findings are below:

- Seventeen (17) soil borings (designated TB-1 through TB-9 and SB-1 through SB-8) were advanced and five (5) 1-inch polyvinyl chloride (PVC) groundwater monitoring wells were installed. These testing locations are shown on Figure 2. During the advancement of the soil borings, an environmental geologist evaluated the condition of the soils based on visual and olfactory observations and Photo-ionization Detector (PID) field screening.

- Six (6) soil samples for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260B.

- Three (3) soil samples for NYSDEC Spill Technology and Remediation Series (STARS) List VOCs using USEPA Method 8260B.

- Five (5) soil samples for NYSDEC STARS-List Semi-Volatile Organic Compounds (SVOCs) using USEPA Method 8270C.

- Four (4) groundwater samples for TCL VOCs using USEPA Method 8260B.

- One (1) groundwater sample for NYSDEC STARS-List SVOCs using USEPA Method 8270C.

- One (1) sub-slab soil vapor and one (1) ambient indoor air sample were collected from the building and analyzed for VOCs using USEPA Method TO-15. These testing locations are shown on Figure 2.

- Evidence of impairment was observed in soil collected from soil borings SB-1 (8'-12'), SB-2 (8'-12'), and SB-8 (4'-8'). The solvent-related VOCs trichloroethene (TCE) and tetrachloroethene (PCE) were reported at concentrations that exceeded their respective NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 Recommended Soil Cleanup Objectives (RSCOs) in each of these samples, with the exception of PCE in soil sample SB-2 (8'-12').

- Two (2) SVOCs, benzo(a)anthracene and benzo(a)pyrene were detected at concentrations that exceeded their respective NYSDEC RSCOs in soil sample SB-4 (4'-8').

- Cis-1,2-dichloroethene (cis-1,2-DCE) was reported at concentrations that exceed its NYSDEC Part 703 Groundwater Quality Standard in groundwater samples collected from monitoring wells MW-1, MW-2, MW-4, and MW-5.

- TCE was reported at concentrations that exceed its NYSDEC Part 703 Groundwater Quality Standard in groundwater samples collected from monitoring wells MW-1, MW-2, and MW-5.

- Vinyl chloride (VC) was reported at concentrations that exceed its NYSDEC Part 703 Groundwater Quality Standard in groundwater samples collected from monitoring wells MW-1 and MW-4.

- Three (3) SVOCs [benzo(a)anthracene, benzo(a)pyrene, and chrysene] were reported at concentrations that exceeded their respective NYSDEC Part 703 Groundwater Quality Standards in the groundwater sample collected from monitoring well MW-4.

- The Limited Soil Vapor Intrusion Assessment detected several VOCs in the sub-slab soil gas and the indoor air. One VOC (TCE) was detected in the sub-slab soil vapor at a concentration that exceeds the minimum action level presented in the New York State Department of Health's (NYSDOH's) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006).

[*Note: Site-specific groundwater flow direction was not determined as part of the initial investigation activities.*]

A copy of the Phase I ESA and the Phase II ESA were submitted to NYSDEC previously. However, for the purpose of this work plan, the pertinent soil and groundwater data are included on Figure 2.

4.0 Summary of Geologic and Hydrogeologic Conditions

During investigations at the Site, soil borings were advanced in the overburden. Each soil boring was completed to a depth of 11 to 16-feet BGS. Soils encountered consisted of a topsoil layer that generally consisted of dark brown SILT to SILT & CLAY with trace to little medium to fine-grained Sand, trace fine-grained Gravel, and trace amounts of organic matter (e.g. roots, root traces, humus, etc.). Within soil boring TB-7, the Topsoil layer was underlain by a Fill Material deposit consisting of brown to grayish-brown coarse to fine-grained SAND with some coarse to fine-grained Gravel. A Lacustrine deposit was encountered beneath the Fill Material deposit with soil boring TB-7 and beneath the Topsoil layer within the remaining soil borings. The Lacustrine deposit ranged in texture from a brown varved SILT & CLAY to a brown SILT with little very fine-grained Sand, consistent with the Lakemont Series silt loam described above.

5.0 Objectives, Scope and Rationale

The objective of this Work Plan is to determine the nature and extent of contamination at the Site. Specifically, the Work Plan is tailored to evaluate the nature and extent of chlorinated solvent impacts previously identified at the Site. In addition, the BCP general requirements (e.g., "full suite" testing, perimeter soil gas testing, quality assurance/quality control (QA/QC), etc.) will also be fulfilled.

The Scope of Work will be performed on a phased basis with each Task providing data to guide remaining Tasks. The scope of work is based on previously gathered analytical data; information previously gathered regarding current and historical processes and activities conducted at the Site and the project objectives.

The RI work will be completed in general accordance with NYSDEC Division of Environmental Remediation: *Draft Technical Guidance for Site Investigation and Remediation* dated December 2002 (DER-10).

6.0 Remedial Investigation Work

The proposed remedial investigation fieldwork is provided in this section.

6.1 Field Activities Plan

The field activities to be completed as part of the work plan have been separated into six tasks and are presented below. A list with contact information of the personnel involved with the project is included in Appendix 1. Qualifications for the personnel are also included.

During all ground intrusive work conducted at the Site, air monitoring will be conducted in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP). A copy of this plan is included as Appendix 2.

Task 1 Groundwater Contouring

Prior to initiating the additional ground intrusive subsurface activities included as part of the RI, the existing groundwater monitoring wells will be surveyed for elevation and located using a Global Positioning System (GPS) GeoXT with GeoBeacon. The wells will be placed on the existing mapping for the Site and static water levels (SWLs) will be collected. Based on the survey data and the SWLs, the groundwater elevations will be calculated and a groundwater contour map will be developed. The groundwater flow direction will assist with determining sample locations used in the RI.

Task 2 Surface Soil Sampling

A program requirement of the BCP is the collection and analysis of surface soil samples. The Site is comprised of a building and associated asphalt parking lot with the remaining portions of the property vegetated (~50% or 1.35-acres). Based on the apparent limited size of the known impacted area at the Site, as well as the fact that impacts were detected at depths, it is proposed that three (3) surface soil samples be collected and analyzed for the "full suite" of parameters from the vegetated area of the Site. The "full suite" of testing parameters is defined below:

- TCL VOCs using USEPA Method 8260
- TCL SVOCs using USEPA Method 8270
- PCBs using USEPA Method 8082
- TAL Metals using USEPA Methods 6010 and 7471
- Pesticides using USEPA Method 8081

In addition to the above sampling, Quality Assurance/Quality Control (QA/QC) samples will also be collected and analyzed (e.g., trip blank, duplicate sample, etc.). The specific QA/QC sampling program is detailed in Section 6.2. The soil samples will be delivered under Chain of Custody procedures to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. The laboratory will provide a NYSDEC Analytical Services Protocol (ASP) Category B Deliverables data package.

LaBella will locate all of the surfical soil sampling locations with a GPS GeoXT with GeoBeacon (or equivalent) and add this information to existing Site Mapping.

Task 3 Shallow Overburden Soil Investigation

The shallow overburden soil investigation will be conducted in a phased approach. Initially, the investigation will focus on the area where elevated solvent levels were detected as part of the Phase II ESA investigations (i.e., adjacent to the west and east sides of the existing building). Subsequently, the area will be expanded outward, as necessary, in order to determine the extent of impacts. This portion of the investigation will include the following steps:

1. Initially, an Underground Facilities Protection Organization (UFPO) stakeout will be conducted at the Site to locate any subsurface utilities in the areas where the subsurface assessment and delineation will take place.

2. LaBella Associates will retain the services of Trec Environmental Services, Inc. (TREC) located in Spencerport, New York, a specialized environmental contractor, to implement a direct push "Geoprobe" soil boring and sampling program at the Site. It is anticipated that two (2) days of borings will be conducted at the Site for the implementation of this task. The first day of borings ("Phase I") will be implemented in proximity to the apparent source area (i.e., SB-1, SB-2, and SB-8) in an attempt to delineate the horizontal and vertical extent within this location. The proposed Phase I boring locations are shown on Figure 3. Subsequent to receiving the analytical data from the initial borings, a second day of geoprobe borings ("Phase II") will be conducted. Figure 3 also includes possible locations for the Phase II borings; however, these locations may change based on the results of the Phase I testing. As such, prior to initiating additional fieldwork, a brief data package (mapping, tables and laboratory data) will be provided to the NYSDEC along with proposed additional testing locations. [*Note: Actual locations will vary based on Site constraints (e.g., underground utilities, building equipment, etc.).*]

3. The drilling equipment will be decontaminated prior to use with an alconox wash, followed by a potable water rinse. Between each soil sample, decontamination procedures will be repeated. Based on the nature of the Site, cuttings and decon water will be containerized. All investigation derived waste will be staged on-site for future characterization. Disposal of Investigation Derived Waste that is determined to be contaminated will occur during the remediation phase of the project.

4. Soils from the borings will be continuously assessed in the field by a project team geologist for visible impairment, olfactory indications of impairment, and/or indication of detectable VOCs on a PID. Positive indications from any of these screening methods are collectively referred to as "evidence of impairment." Evidence of impairment that is gathered at the time of the fieldwork is used with observed hydrogeologic conditions to assist in determining the location and depth for soil samples.

5. Soil samples will be collected from the borings based on data from prior investigations, as well as evidence of impairment, in order to define the horizontal and vertical limits of soil impairment. The soil samples will be collected from the apparent 'worst-case' locations within the soil borings advanced in that area. In the event that evidence of impairment is not encountered, the soil samples will be collected from the soil-groundwater interface. In the event that two apparently discrete sources are identified within the same boring, a sample of each 'worst-case' source will be collected/analyzed.

   It is proposed that three (3) soil samples be analyzed for the "full suite" of parameters in order to evaluate/characterize the types of contaminants at the Site. This number of full suite samples is based on the nature of the known impacts at the Site, the limited time the Site has been occupied (i.e., first developed in 1968) and the relatively small size of the Site (i.e., less than 3-acres). In addition, it is LaBella's opinion that the three additional full suite surface soil samples and seven full suite groundwater samples will identify other potential contaminants at the Site, if present. [*Note: It is understood that additional testing beyond what is outlined herein, will be necessary should an alternate contaminant source be*

identified during the RI.] It is proposed that one of the full suite samples be collected/analyzed as part of the Phase I soil borings advanced in the apparent source area. The additional two full suite samples are proposed to be collected/analyzed as part of the Phase II soil borings in order to evaluate for unexpected impacts and/or alternate sources of contamination outside the chlorinated solvent impact area. In addition to the full suite testing, this Work Plan includes analyzing an additional twelve (12) soil samples for halogenated VOCs and three (3) soil samples for NYSDEC STARS-List SVOCs as part of the Phase I geoprobe soil sampling work and an additional nineteen (19) soil samples for halogenated VOCs as part of the Phase II geoprobe soil sampling work. A table that identifies the anticipated sampling effort is included in Section 6.2. [*Note: It is understood that the actual number of samples warranted will be based on the field conditions encountered and the previous work results.*]

In addition to the above sampling, QA/QC samples will also be collected and analyzed (e.g., trip blank, duplicate sample, etc.). The specific QA/QC sampling program is detailed in Section 6.2. The soil samples will be delivered under Chain of Custody procedures to a NYSDOH ELAP-certified laboratory. The laboratory will provide a NYSDEC ASP Category B Deliverables data package.

6. It is anticipated that up to 4 exterior borings will be completed as overburden groundwater monitoring wells for additional groundwater characterization, as described in Task 4 below.
7. LaBella will locate all of the borings with a hand-held GPS GeoXT with GeoBeacon so that this information can be added to existing Site Mapping.

Task 4 Monitoring Well Installation and Groundwater Investigation

Prior investigations as part of the Phase II ESA included the installation of five shallow overburden groundwater monitoring wells, and associated groundwater sampling and analysis. It is anticipated that additional shallow overburden wells and several deeper monitoring wells will be required in order to characterize the nature and extent of impacts to groundwater at the Site. This task will include the following actions:

1. It is anticipated that four (4) of the geoprobe borings described in Task 3 above will be completed as overburden groundwater monitoring wells by TREC, in order to further define the extent of impacted groundwater. The potential locations of these are shown on Figure 3. However, the actual locations will depend on the previous work (i.e., Tasks 1, 2, and 3).
2. The overburden wells will be set to intersect the shallow groundwater table. Each well will be completed with 5 to 10-feet of 1-inch Schedule 40 0.010-slot well screen connected to an appropriate length of schedule 40 PVC well riser to complete the well. The well screen will extend across the contaminated zone, if possible. The annulus will be sand packed with quartz sand to approximately 1 to 2-feet above the screen section. The remaining annulus will be bentonite sealed to approximately 1 to 2-feet below ground surface, and then grouted to ground surface. Each well will be completed with a flush mount well cover.
3. Additionally, LaBella will retain the services of Nothnagle Drilling, Inc. (Nothnagle) located in Scottsville, New York, a specialty drilling contractor, to install deeper, rotary drill rig groundwater monitoring well installations at the Site. It is anticipated that three (3) such wells will be installed. The potential locations of these monitoring wells are shown on Figure 3. However, the actual locations will be based on information obtained as part of the

previous work (i.e., Tasks 1, 2, and 3). Drilling at these well locations will be advanced to a depth of either: (a) at least 5 feet into competent bedrock or an apparent competent confining layer (e.g., homogeneous clay layer), if encountered, (b) where PID readings are shown to be 0.0 parts per million (ppm) for two successive 5-ft. intervals, or (c) 40 feet; whichever comes first. If bedrock is encountered, either interface or dedicated rock wells will be installed, depending on subsurface Site conditions. During advancement of the rotary borings, continuous split spoon soil sampling will be conducted.

4. The drilling equipment for all well locations will be required to be decontaminated prior to use with an alconox wash, followed by a potable water rinse, and decontamination procedures will be repeated throughout the drilling process. Based on the nature of the Site, cuttings and decon water will be containerized. All investigation derived waste will be staged on-site for future characterization. Disposal of any Investigation Derived Waste that is determined to be contaminated will occur during the remediation phase of the project.
5. A LaBella Environmental Geologist will screen soils from the drilling in the field for "evidence of impairment."
6. The groundwater monitoring wells will be developed by removing at least 5 well volumes. Subsequent to development, the wells will be allowed to equilibrate for at least 48 hours prior to purging and sampling. All wells will be checked for dense non-aqueous phase liquid (DNAPL) prior to development and sample purging. DNAPL will be evaluated for using an interface probe or a weighted bailer in each well. The wells will be developed, purged and sampled using disposable bailers. Field measurements of indicator parameters such as temperature, pH, specific conductance, etc. will be utilized to determine the amount of water to purge and when to sample the wells. These parameters will be measured in the purge water until stabilized (i.e., +/- 10% for three consecutive readings).
7. At each of the three deeper well locations, it is anticipated that one soil sample will be collected from each bore hole and analyzed for TCL VOCs using USEPA Methods 8260. These samples are intended to define the vertical limit of impacts and as such these samples will be collected from the apparent 'clean' depth. In addition to the above sampling, QA/QC samples will also be collected and analyzed (e.g., trip blank, duplicate sample, etc.). The specific QA/QC sampling program is detailed in Section 6.2.
8. At this time it is expected that two rounds of groundwater sampling will be conducted at the Site, each round consisting of one (1) groundwater sample collected at each of the seven (7) newly-installed wells. Based on the NYSDEC BCP Guidelines, one groundwater sample is required to be analyzed for the "full suite" of parameters for each well during the initial round of groundwater sampling. Based on the previous work at the Site and the apparent source, the subsequent testing is proposed for only halogenated VOCs; however, the actual testing program will be based on the soil and groundwater sampling data and discussed with NYSDEC prior to conducting. A summary of all the proposed soil and groundwater testing is shown in Section 5.2.
9. In addition to the above sampling, QA/QC samples will also be collected and analyzed (e.g., trip blank, duplicate sample, etc.). The specific QA/QC sampling program is detailed in Section 6.2. The groundwater samples will be delivered under Chain of Custody procedures to a NYSDOH ELAP-certified laboratory. The laboratory will provide a NYSDEC ASP Category B Deliverables data package.

10. Each of the monitoring wells will be surveyed for elevation and located using a Global Positioning System (GPS) GeoXT with GeoBeacon. Each of the monitoring wells will be used for developing groundwater contour maps for the Site (to be included in the Final RI Report). The wells may also be used for evaluating hydraulic conductivity.

Task 5 Soil Gas Sampling

A program requirement of the BCP is to conduct soil gas sampling for both on-site structures and property lines. The previous environmental work included collecting a sub-slab soil vapor sample and an indoor air sample. The sub-slab soil vapor sample indicated the presence of TCE in the sub-slab soil vapor at a concentration above the NYSDOH minimum action level. As such, it appears warranted to install a sub-slab depressurization system rather than conduct additional testing. This work will be conducted as an Interim Remedial Measure (IRM) or as part of the final remedy at the Site.

Based on the above, it is proposed that three (3) soil gas samples and one (1) ambient air sample be collected as part of the RI.

The purpose of this investigation activity will be to determine if subsurface soil gas impacts have the potential to migrate off-site and impact adjacent properties to the north, east and south. [*Note: The closest buildings to the west are approximately 350 ft. away and impacts were not encountered in the soil borings advanced along the western property line. As such a soil gas sample has not been proposed for the western property line.*]

The installation and sampling of the soil gas points will be completed in general accordance with the procedures provided in the *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006. The applicable procedures to be implemented as part of this investigation are summarized below:

1. Soil gas sampling points will be installed using direct push technology to approximately 4 to 5 feet in-depth. A porous, inert backfill material (e.g., glass beads or coarse sand) will be used to create a sampling zone of 1 to 2 feet in length. The soil gas sampling points will be constructed of inert tubing (e.g., polyethylene, stainless steel, or Teflon®) of the appropriate size (typically 1/8 inch to 1/4 inch diameter) and of laboratory or food grade quality to the surface. The soil vapor probes will be sealed above the sampling zone with a minimum 1-foot bentonite slurry. In addition, the sampling zone will be a minimum of 3-feet below the ground surface in order to minimize outdoor air infiltration. The remainder of the borehole will be backfilled with clean material. Soil gas sampling points will be finished with protective casings that are grouted in place to minimize infiltration of water or outdoor air and to prevent damage to the soil gas point.
2. Subsequent to installation, the probes will be allowed to equilibrate at least 24 hours prior to purging and sampling. Initially, one to three probe volumes (i.e., the volume of the sample probe and tube/riser pipe) will be purged in order to ensure that the samples collected are representative of soil gas conditions. The flow rate during purging will not exceed 0.2 liters per minute (L/min) to minimize outdoor air infiltration.

3. During purging of the sample point, a tracer gas evaluation will be conducted to verify the integrity of the soil gas probe seal. Helium will be used as the tracer gas. An enclosure will be constructed around the soil gas sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed to the sample point casing. Subsequently, the enclosure will be enriched with the tracer gas. The purged soil gas will then be tested for the tracer gas by an appropriate meter (i.e., a meter capable of measuring the concentration of the tracer gas in at least percentage increments). In the event that the tracer gas is detected at a concentration of 10% or greater, the sample point will be resealed and retested prior to sampling.
4. Soil gas samples will be collected over the same general time period and in the same manner at all locations to minimize possible discrepancies. Soil gas samples will be collected using Summa Canisters® equipped with flow control regulators. The regulators will be calibrated by the laboratory for a sampling time of 6-hours. The Summa Canister will be connected to the soil gas sampling point via inert tubing (e.g., polyethylene, stainless steel, or Teflon®).
5. In addition to the soil gas samples, one exterior ambient air sample will also be collected. The ambient air sample will be collected from about 3 to 4-ft. above the ground using a Summa Canister over the same approximate sampling period. In addition, the ambient air sample will be collected from the apparent upgradient location (i.e., upwind).
6. Subsequent to completing soil gas sampling, the samples will be sent under chain of custody control to the laboratory for testing. The samples will be tested for VOCs using USEPA Method TO-15. A minimum detection limit of 1 $\mu g/m^3$ should be achievable based on the sample volume and analytical method.
7. The NYSDOH indoor air quality questionnaire and building inventory form will not be completed, since the sampling is being conducted on the exterior only. A sample log sheet summarizing the following information for each sample will be documented:

    - inventory of volatile chemicals used at the Site during normal operations of the facility
    - weather conditions (e.g., precipitation, outdoor temperature, barometric pressure, wind speed and direction) will be noted for the past 24 to 48 hours
    - sample identification
    - date and time of sample collection
    - sampling depth
    - identity of sampler(s)
    - sampling methods and devices
    - purge volumes
    - volume of soil vapor extracted
    - the vacuum before and after samples are collected
    - apparent moisture content (dry, moist, saturated, etc.) of the sampling zone
    - chain of custody protocols used to track samples from sampling point to analysis

Task 6. Qualitative Exposure Assessment

The Qualitative Exposure Assessment will evaluate whether potential or completed exposure pathways exist. This assessment will be based on the data generated during previous work and as part of this Work Plan and will include the following areas of evaluation:

- Source Area – The potential source area (i.e., pump island area)
- Fate & Transport – The property boundary data will be evaluated for potential off-site migration via soil, groundwater, and/or soil gas
- Route of Exposure – The results of site sampling will be interpreted to determine if contaminant concentrations are at levels that have the potential to be inhaled or injested
- Receptor Population – The Site will be evaluated to determine the size and makeup of potential down-gradient receptors including residents, workers, and neighbors

No Fish and Wildlife Resources Impact Analysis (FWRIA) will be completed for the Site based on the absence of fish and/or wildlife resources on or adjacent to the Site, per NYSDEC DER-10 Paragraph 3.10.1(b)1.

6.2 Summary of Laboratory Testing and Quality Assurance/Quality Control Plan

The types and amount of samples and parameters/analytical testing methods are summarized below for the overall Remedial Investigation. It should be noted that the sampling plan below will likely change based on the field conditions and previous laboratory data. The actual sampling completed will be conform to the requirements of the BCP/DER-10 and specific requirements from NYSDEC and NYSDOH.

Table 1
Sampling Plan with QA/QC Samples

Area of Concern	Test Parameters / Number of Samples					
	TCL VOCs[1]	Halogenated VOCs[2]	TCL SVOCs[3]	Pesticides[4]	TAL Metals[5]	PCBs[6]
Soil Samples						
Surface Soil Samples	3	0	3	3	3	3
Phase I Soil Samples	1	12	4*	1	1	1
Phase II Soil Samples	2	19	2	2	2	2
Deep Soil Samples	3	0	0	0	0	0
Sub-Total Soil Samples	*9*	*31*	*9*	*6*	*6*	*6*
QA/QC for Soil Samples						
Field Blanks	3	1	1	1	1	1
Duplicates	2	2	1	1	1	1
MS/MSD[7]	2	2	2	2	2	2
Sub-Total QA/QC Soil Samples	*7*	*5*	*4*	*4*	*4*	*4*
Total Soil Samples	*16*	*36*	*13*	*10*	*10*	*10*

Table 1 (continued)
Sampling Plan with QA/QC Samples

Area of Concern	Test Parameters / Number of Samples					
	TCL VOCs[1]	Halogenated VOCs[2]	TCL SVOCs[3]	Pesticides[4]	TAL Metals[5]	PCBs[6]
Groundwater Samples						
Rd. 1 Groundwater Samples	7	0	7	7	7	7
Rd. 2 Groundwater Samples	0	7	0	0	0	0
Sub-Total Groundwater Samples	*7*	*7*	*7*	*7*	*7*	*7*
QA/QC for Groundwater Samples						
Field Blanks	1	1	1	1	1	1
Duplicates	1	1	1	1	1	1
MS/MSD[7]	2	2	2	2	2	2
Sub-Total QA/QC Groundwater Samples	*4*	*4*	*4*	*4*	*4*	*4*
Total Groundwater Samples	*11*	*11*	*11*	*11*	*11*	*11*
Soil Gas Samples	*3***	*0*	*0*	*0*	*0*	*0*
Total	**30**	**47**	**24**	**21**	**21**	**21**

(1) – denotes TCL VOC analysis by USEPA Method 8260
(2) – denotes halogenated VOC analysis by USEPA Method 8260
(3) – denotes SVOC analysis by USEPA Method 8270
(4) – denotes Pesticides analysis by USEPA Method 8081
(5) – denotes TAL Metals analysis by USEPA Methods 6010 and 7471
(6) – denotes PCBs analysis by USEPA Method 8082
(7) – MS/MSD testing indicates the number of samples tested (i.e., 2 per MS/MSD) and not the number of MS/MSD samples.
* – denotes 3 samples analyzed for NYSDEC STARS-List SVOCs only using USEPA Method 8270.
** – denotes these samples analyzed for VOCs using USEPA Method TO-15.

Activities completed at the Site will be managed under LaBella's Quality Control Program, which is included in Appendix 3. Specific QA/QC sampling to be completed as part of this project is included in the Tasks described above. A Data Usability Summary Report (DUSR) will be conducted on the sampling completed as part of the RI.

7.0 Health and Safety Plan

A Health and Safety Plan (HASP) has been developed for the Site and is included in Appendix 4.

8.0 Reporting and Schedule

Subsequent to completing the work outlined above a Final Remedial Investigation Report will be developed in general accordance with NYSDEC DER-10. The anticipated schedule for the work to be completed is included in Appendix 5. This schedule is dependent on NYSDEC approvals and does not account for potential delays due to public comments, weather conditions, etc.

9.0 Citizen Participation Activities

A citizen participation plan (CPP) will be developed for the project and submitted separately within 20-days of an executed Brownfield Cleanup Agreement (BCA). The CPP will include the following (at a minimum):

- Updates to the names and addresses on the BCP Application (if any)
- Identifies major issues related to the Site
- A description of citizen participation activities already performed
- Identifies the document repository
- Includes a description and schedule of public participation activities

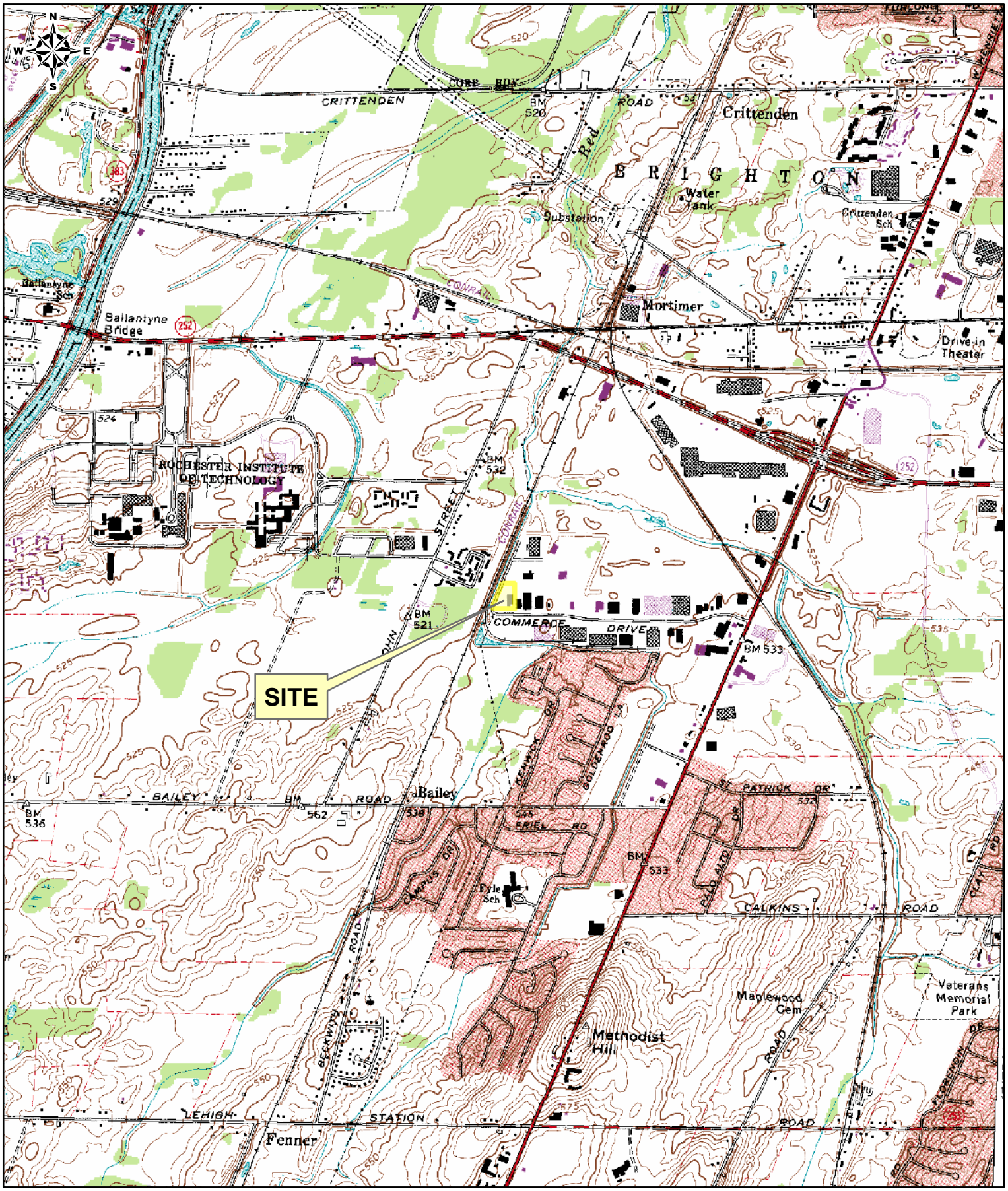
Although the CPP will describe the activities and schedule of the citizen participation activities subsequent to signing of the BCA, until that time, it is understood that the following citizen participation activities will be completed, subsequent to the NYSDEC determining that the BCP application is complete.

- A newspaper notice will be published
- The required notice will be mailed to the Site Contact List
- A certification of mailing will be sent to the NYSDEC within 10-days of mailing
- Proof of the newspaper notice will also be sent (i.e., receipt and/or copy of newspaper notice) within 10-days of receiving
- The BCP application and this Work Plan will be placed in the document repository for a 45-day waiting period

Y:\YARO ENTERPRISE INC\208723 BCP 300 COMMERCE\CLERICAL\WORD\RPT\R8L10DN2.DOC

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Figures



PROJECT/DRAWING NUMBER

208242.01

FIGURE 1

DRAWING TITLE

SITE LOCATION WITH USGS 7.5 MINUTE TOPO MAP

1:24,000

ISSUED FOR: REVIEW

DATE: 12/4/2008

DESIGNED BY: RCN

DRAWN BY: RCN

REVIEWED BY: DPN

FILE: \\rnjepe1\Share\GIS\PROJECTS\300 Commerce Dr \WP FIG 1.mxd

USER: mamirowsky

PROJECT/CLIENT

REMEDIAL INVESTIGATION WORK PLAN

300 COMMERCE DRIVE HENRIETTA, NEW YORK

VOLUNTEER: YARRO ENTERPRISES, INC.

LABELLA Associates, P.C.

300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585)454-3066
www.labellapc.com

Legend

- Vapor Sample
- Boring/Groundwater Monitoring Well
- Boring
- Project Parcel
- Parcels

Notes:
Analytical results for soil are provided in micrograms per kilogram (ug/kg).
Analytical results for groundwater are provided in micrograms per liter (ug/l).
Analytical results for air are provided in micrograms per cubic meter(ug/m3).
Red entry denotes that the compound was detected at a concentration equal to or greater than the appropriate action level as follows:
Soil Samples: NYSDEC TAGM #4046 Recommended Soil Cleanup Objective.
Groundwater Samples: NYSDEC Part 703 Groundwater Quality Standard or Guidance Value.
Air Samples: NYSDOH Sub-Slab Vapor Concentration Decision Matrix Minmium Action Level.

TB-1
TB-2
TB-3
TB-4
TB-6
TB-7
TB-8
TB-9
SB-1/MW-1
SB-2/MW-2
SB-3/MW-3
SB-4/MW-4
SB-5
SB-6
SB-7
SB-8/MW-5
Ambient
SSV-1

SB-5 4'-8'
VOCs
Toluene 25.4
Total VOCs 25.4
SVOCs ND

SB-7 8'-12'
VOCs
Acetone 70.6
cis-1,2-Dichloroethene 15
Trichloroethene 10.4
Total VOCs 96
SVOCs NA

SB-1 8'-12'
VOCs
cis-1,2-Dichloroethene 120
Tetrachloroethene 2,810
Trichloroethene 1,460
Total VOCs 4,390
SVOCs NA

MW-5
VOCs
cis-1,2-Dichloroethene 108,000
Trichloroethene 167,000
SVOCs NA

SB-8 4'-8'
VOCs
cis-1,2-Dichloroethene 4,810
Tetrachloroethene 23,200
Trichloroethene 30,500
Total VOCs 58,510
SVOCs NA

MW-1
VOCs
cis-1,2-Dichloroethene 4,530
Trichloroethene 5,710
Vinyl Chloride 473
SVOCs NA

SB-4 4'-8'
VOCs
Acetone 156
Tetrachloroethene 11.8
Total VOCs 183
SVOCs
Benzo (a) anthracene 465
Benzo (a) pyrene 460
Benzo (b) fluoranthene 427
Benzo (k) fluoranthene 342
Chrysene 397
Fluoranthene 1,130
Phenanthrene 948
Pyrene 958
Total SVOCs 5,127

SB-2 8'-12'
VOCs
cis-1,2-Dichloroethene 877
Tetrachloroethene 3,890
Total VOCs 4,667
SVOCs NA

MW-2
VOCs
cis-1,2-Dichloroethene 5,120
Trichloroethene 17,600
SVOCs NA

SSV-1
VOCs
Dichlorodifluoromethane 64
1,3-Butadiene 2.9
trans-1,2-Dichloroethene 13
1,2-Dichloroethene (total) 190
cis-1,2-Dichloroethene 170
Chloroform 2.0
1,1,1-Trichloroethane 7.6
Carbon Tetrachloride 2.5
n-Hexane 220
Cyclohexane 93
Benzene 48
n-Heptane 180
Trichloroethene 110
Toluene 180
Tetrachloroethene 8.1
Ethylbenzene 20
Xylene (m,p) 150
Xylene (o) 36
Xylene (total) 190
4-Ethyltoluene 28
1,3,5-Trimethylbenzene 36

MW-4
VOCs
cis-1,2-Dichloroethene 3,170
Vinyl Chloride 304
SVOCs
Acenaphthene 11.4
Anthracene 11.5
Benzo (a) anthracene 13.3
Benzo (b) fluoranthene 10.9
Chrysene 10.3
Fluoranthene 41.6
Phenanthrene 44.6
Pyrene 24.3

AMBIENT
VOCs
Dichlorodifluoromethane 4.9
1,3-Butadiene 1.0
1,2-Dichloroethene (total) 3.1
cis-1,2-Dichloroethene 3.6
Chloroform 0.63
1,1,1-Trichloroethane 6.0
Trichlorofluoromethane 1.2
Carbon Tetrachloride 0.35
Cyclohexane 1.2
Benzene 1.9
n-Heptane 1.4
Trichloroethene 3.8
Toluene 14
Tetrachloroethene 2.6
Ethylbenzene 2.4
Xylene (m,p) 7.8
Xylene (o) 2.6
Xylene (total) 11
4-Ethyltoluene 1.9
1,3,5-Trimethylbenzene 0.88

SB-3 12'-16'
VOCs ND
SVOCs NA

COMMERCE DRIVE

0 50 Feet

N

LABELLA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585)454-3066
www.labellapc.com

PROJECT/CLIENT
REMEDIAL INVESTIGATION WORK PLAN
300 COMMERCE DRIVE
HENRIETTA, NEW YORK
VOLUNTEER:
YARO ENTERPRISES, INC

DRAWING TITLE
SITE LOCATION MAP AND INVESTIGATIVE POINTS

ISSUED FOR: DRAFT
DESIGNED BY: DPN
DRAWN BY: RCN
REVISED BY: DPN
DATE: 12/4/2008
FILE: \\mrpeat\Share\GIS\PROJECTS\300 Commerce Dr WP FIG 2.mxd
USER: rmerinovsky

PROJECT/DRAWING NUMBER
208242
FIGURE 2

Legend

Proposed Samples

- *Ambient Air Sampling Location*
- *Soil Gas Sampling Location*
- *Surface Soil Sampling Location*
- *Geoprobe Soil Boring Day 1*
- *Geoprobe Soil Boring Day 2 (Locations may change based on Day 1 results.)*
- *1" Geoprobe Groundwater Monitoring Wells installed on Day 2 (Locations may change based on Day 1 results and site-specific groundwater flow direction.)*
- *2" Rotary Drilled Monitoring Well (Locations may change based on Day 1 results.)*

- Sewer_Basin
- Catch Basin
- Vapor Sample
- Boring/Groundwater Monitoring Well
- Boring
- Project Parcel
- Parcels

TB-1
TB-2
TB-3
SB-6
SB-5
SB-7
TB-9
SB-8/MW-5
SB-4/MW-4
SB-1/MW-1
SB-2/MW-2
TB-4
Ambient
SSV-1
TB-8
SB-3/MW-3
TB-5
TB-7
TB-6

N

COMMERCE DRIVE

0 50 Feet

LABELLA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585)454-3066
www.labellapc.com

PROJECT/CLIENT
REMEDIAL INVESTIGATION WORK PLAN
300 COMMERCE DRIVE
HENRIETTA, NEW YORK
VOLUNTEER:
YARO ENTERPRISES, INC

DRAWING TITLE
SITE LOCATION MAP AND PROPOSED INVESTIGATIVE POINTS

ISSUED FOR: DRAFT
DESIGNED BY: DPN
DRAWN BY: RCN
REVISED BY: DPN
DATE: 12/12/2008
FILE: \\rnpspet1\Share\GIS\PROJECTS\300 Commerce Dr WP FIG 3.mxd
USER: rnemirovsky

PROJECT/DRAWING NUMBER
208242
FIGURE 3

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 1
Contact List and Qualifications

300 Commerce Drive
Henrietta, New York

Contact List Information

Environmental Professional: LaBella Associates

Environmental Director	Greg Senecal, CHMM	ph. 585-295-6243 cell 585-752-6480
Program Manager	Dennis Porter, CHMM	ph. 585-295-6245 cell 585-451-4854
Project Manager/Engineer	Dan Noll, P.E.	ph. 585-295-6611 cell 585-301-8458
Site Safety Supervisor	Mike Pelychaty	ph. 585-295-6253 cell 585-451-6225
Geologists	Evan Dumrese Craig Stiles	ph. 585-295-6643 ph. 585-295-6283
Quality Assurance Officer	Kyle Miller	ph. 585-295-6295 cell 585-216-7635
LaBella Safety Director	Richard Rote, CIH	ph. 585-295-6241

BCP Volunteer: Yaro Enterprises, Inc.

Contact: Tony Kirik office – 909-921-7353

Geoprobe Drilling Contractor: Trec Environmental, Inc.

Contact: Keith Hambley 585-594-5545

Rotary Drilling Contractor: Nothnalgle Drilling, Inc.

Contact: Steve DiLaura 585-538-2328

Gregory Senecal, CHMM

Education:

- SUNY Environmental Science and Forestry at Syracuse: BS, Environmental Science
- SUNY Cobleskill: AAS, Fisheries and Wildlife Technology

Certification/Registration:

- Certified Hazardous Materials Manager (CHMM)
- Certified Hazardous Waste Operations & Emergency Response (40 Hour OSHA Health and Safety Training 29)
- Advanced CPR and First Aid

Mr. Senecal is the Environmental Division Director and is a Certified Hazardous Materials Manager. Mr. Senecal is responsible for the direction of all environmental investigation related projects undertaken by the firm. Mr. Senecal has 17 years experience in designing, managing, and conducting numerous, remedial projects, Brownfield assessment and redevelopment projects groundwater monitoring well installations, test pit excavations, and underground petroleum storage tank removals and spill clean ups.

Key Projects:

- **Foster Wheeler Plant Site Characterization, Dansville, NY**
  Project Manager for this due diligence investigation consisted of a complete Phase I Environmental Site Assessment and Phase II Site Characterization.

- **Environmental Term Agreement, City of Rochester, NY**
  Client Manager who directs all of the projects under the term. Projects range from Phase I Environmental Site Assessments to Site Characterizations, Remedial Cost Estimates, and Brownfield Cleanups.

- **Port of Rochester Re-Development Project Phase II Site Characterization, Rochester, NY**
  Project Manager for complete Phase II Site Characterization, which involved sub surface characterization of approximately 38 acres. Mr. Senecal directed the environmental team who received a beneficial re-use determination to re use 80,000 cubic yards of iron foundry slag as on site fill.

- **Bureau of Water, Lighting, & Parking Meter Operations, Rochester, NY**
  Mr. Senecal served as Client Manager to remediate the Water Bureau site to obtain regulatory closure or inactivation. The project scope includes the redevelopment of the current site for reuse as a new facility for the operations center.

- **CSXT Train Derailment & Hazardous Materials Spill, Rochester, NY**
  Project Manager responsible for review of all delineation reports, implementation of additional delineation studies, review of remedial work plans, and oversight of all facets of the execution of IRM as it related to achieving a clean up that would limit long term liability for the City and allow for the planned redevelopment to occur.

- **Rochester Rhinos Stadium Brownfield Redevelopment, Rochester, NY**
  Mr. Senecal served as Project Manager of the NYSDEC Voluntary Cleanup of this prominent urban redevelopment site. The voluntary clean was based around a soils management plan approach that included the re-use of approximately sixty thousand yards of low level petroleum contaminated soils as on site fill under parking lots and in landscaped berm areas of the property.

- **Seneca Nation: USEPA Brownfield Cleanup Grant**
  Client Manager responsible for the preparation of a USEPA funded Brownfield Cleanup. The site consists of a vacant rail yard that is contaminated with diesel fuel and heavy metals. The cleanup involves removal and ex-situ bio-remediation of petroleum impacted soils and an environmental management approach that allows for the re-use of railroad ballast and shallow soil impacted with low levels of heavy metals and semi

volatile organic compounds as fill under paved parking lots.

- **NYSDOT Hazardous Waste Projects, Region 4 and Region 5, NY**
  Project Manager
  - Development of a characterization workplan to satisfy City, NYSDEC, NYSDOH, MCEMC, and NYSDOT requirements
  - Implementation of a multiple phase workplan including shallow soil sampling, test pitting, drilling, geo-probing, and groundwater monitoring well installation
  - Environmental liaison between LaBella Associates, the NYSDOT, the NYSDEC, and the City of Rochester
  - Direction of investigative and remedial work
  - Evaluation of contamination levels and impacts
  - Responsible for final report preparation for the City and the NYSDEC

- **Automotive Service Center, Voluntary Cleanup Investigation, Rochester, NY**
  Project Manager responsible for the delineation of an area of impairment for the client, and the release of future environmental liability for the client from the NYSDEC.

- **Pennsylvania Act II Site Characterization, Soil and Groundwater Remediation, Coudersport, Pennsylvania**
  Mr. Senecal was Project Manager for a Pennsylvania Department of Environmental Protection Act II Voluntary Cleanup project. The site consisted of approximately five acres of land, two vacant gas stations and an agricultural chemical retail store.

- **Former Trucking Maintenance Facility, Phase II Site Characterization and Remedial Measures, Bloomfield, New York**
  Project Manager for a multi-phased site characterization and remedial effort. Mr. Senecal was responsible for the oversight of the spill closure, design of a sub slab venting system, removal of 800 tons of impaired soil, and negotiations with the NYSDEC.

- **Former Gas Station, Design and Construction of Bio Remediation Project, Rush, New York**
  Mr. Senecal was Project Manager for the removal of three underground gasoline storage tanks and approximately 600 tons of impaired soil. The design and implementation of a bio-cell remediation for the impaired soils, achieved NYSDEC Spill Closure and resulted in a 50 % savings compared to off-site land filling of the soils.

Dennis Porter, CHMM

Education:

- SUNY Oswego: BS, Biology

Certification/Registration:

- Certified Hazardous Materials Manager (CHMM)
- Certified Hazardous Waste Operations & Emergency Response (40 Hour OSHA Health and Safety Training 29)

Professional Affiliations:

- New York State Commercial Association or Realtors
- CHMM Local Chapter

Mr. Porter is the Phase II Environmental Site Assessment and Remediation Program Manager and is a Certified Hazardous Materials Manager. Mr. Porter will be the Project Manager for the Project. Mr. Porter has managed numerous Phase I and II Environmental Site Assessments, Remedial Investigations and Design, Feasibility Studies, industrial hygiene studies, project monitoring and asbestos sampling surveys. Mr. Porter also has significant experience in Brownfield Redevelopment and completed numerous Site Redevelopment Projects under the NYSDEC's Brownfield Cleanup Program.

Key Projects:

- **Brownfield Opportunity Area: Pre-Nomination Study, Rochester, NY**
  Mr. Porter worked on the Project Team for the City of to prepare a pre-nomination study for the proposed Vacuum Oil-South Genesee River Corridor Brownfield Opportunity Area. LaBella developed mapping that allowed for the Brownfield Opportunity Area boundaries to be established in a logical manner at the 56 acre 1.2 mile long corridor along the Genesee River. LaBella conducted economic and demographic research for the project site and gathered zoning, occupancy, and environmental information for potential underutilized Brownfield properties within the Brownfield Opportunity Area.

- **Brownfield Cleanup Grant: Seneca Nation, Salamanca, NY**
  Mr. Porter served as the Remedial Design Manager and assisted in authoring a United States Environmental Protection Agency (USEPA) Brownfield Cleanup Grant for the Seneca Nation. The successful grant application that was prepared sought $200,000 for the cleanup of a vacant rail yard that is contaminated with diesel fuel and heavy metals. The rail yard is located in the Seneca Nation's Allegheny territory in Salamanca, New York.

- **Remedial Investigation, Proposed Port Marina, Port of Rochester, Rochester, NY**
  Mr. Porter served as the Project Manager for the City of Rochester regarding the design and implementation of the Remedial Investigation (RI) regarding the proposed Port Marina Project. The project approach selected consisted of a multi-step investigative process. The main focus for the RI was to evaluate the environmental implications, potential human health exposure issues and associated cost burdens associated with the potential re-development of the site as a marina.

- **Bureau of Water, Lighting, and Parking Meter Operations, Rochester, NY**
  Mr. Porter served as Environmental Project Manager the City of Rochester's new Bureau of Water, Lighting, and Parking Meter Operations complex. Mr. Porter managed a team of LaBella Technical Staff combined with City staff to develop and implement a cost effective site investigation, remedial action plan and successful redevelopment of the Site. This Project was the recipient of the American Public Works Association Environmental Project of the Year for New York State.

- **Port of Rochester Re-Development Project Phase II Site Characterization, Rochester, NY**
  Mr. Porter served as the Technical Team Leader / Sr. Environmental Analyst for complete Phase II Site Characterization of the entire Port of Rochester.

This project involved the sub surface characterization of approximately 38 acres of formerly industrial land targeted for redevelopment for the Fast Ferry Project. The site received a beneficial re-use determination to re utilize 80,000 cubic yards of iron foundry slag as on-site fill and part of the redevelopment of the Site.

- **Adelphia Communications World Headquarters ,Coudersport, PA**
  Mr. Porter served as the Field Project Manager regarding all facets of environmental investigation, characterization, and remediation associated with two former gas stations and a former agricultural distribution center that had been purchased to redevelop as a communications firm $26 million dollar World Headquarters. Planning and management were key to the project's success. The success of the project was driven by Mr. Porter's significant involvement with Adelphia's corporate, legal and design groups and numerous public and private organizations; from utilities and construction crews to neighborhood group.

- **NYSDEC Brownfield Cleanup Program, Portland Ave., Roch.**
  As Project Manager, Mr. Porter managed the implementation of a comprehensive environmental due diligence program prior to the Client divesting the real-estate associated with the complex. Due diligence activities included the performance of an ASTM Phase I Environmental Site Assessment, a Pre-Demolition Asbestos Survey, a Preliminary Phase II Environmental Site Assessment/Remedial Investigation a Remedial Alternatives Analysis Report; and Preliminary Remedial Design. This complex project is scheduled to begin remediation late in 2007.

- **NYSDEC Brownfield Cleanup Program, Penfield, NY**
  Mr. Porter served as the Remedial Program Manager for the Project. This complex project involved a detailed investigation and characterization regarding multiple source areas of chlorinated solvent contamination which included installing shallow overburden and deep overburden groundwater monitoring wells and an extensive soil boring grid. In addition, an exposure assessment for evaluating potential on-site and off-site exposures was completed. This project was further complicated by the close proximity of the Site to residential properties and a commercial Day Care Facility. The RI concluded that an Interim Remedial Measure (IRM) was warranted to immediately remove a source area in order to minimize off-site migration and significantly reduce groundwater impacts in a cost effective and timely manner.

- **NYSDEC Brownfield Cleanup Program, Wolcott, NY**
  Mr. Porter served as the Project Manager for all facets of environmental investigation, characterization and remediation associated with an area of mercury contamination. A Remedial Investigation (RI) was designed in accordance with the NYSDEC BCP in order to provide for the investigation and characterization of the extent of mercury contamination at the site including the evaluation of human exposures to mercury. The selected remedial approach will be to cap the area of mercury contaminated soil with asphalt. This approach will allow for the reduction in potential human exposure to the contaminated soils through direct contact, allow the site owner to develop additional vehicle parking for the employees and eliminate the need for costly off-site landfill disposal of the mercury impacted soils.

- **NYSDEC Brownfield Cleanup Program, Henrietta, NY**
  LaBella Associates, P.C. was retained by a local manufacturing company to

complete the site remediation under the NYSDEC Brownfield Cleanup Program. The project was initiated by another consultant; however, due to cost overruns and timing of the work, the Client selected LaBella to complete the project. Mr. Porter served as the Remedial Program Manager for this Project. Timely response and client involvement was the key to bringing the project back on-track.

- **935 Broad Street, City of Rochester, NY**
  Mr. Porter served as the Project Manager for the City of Rochester during the design and implementation of a comprehensive Remedial Investigation, Remedial Alternatives Analysis, Site Re-Use Concept Plan and a Corrective Action Plan for a Former Gasoline Station at 935 West Broad Street. This project was funded under the NYSDEC 1996 Clean Water/Clean Air Bond Act.

- **Valeo, Facility Wide Decommissioning**
  Mr. Porter served as the Project Manager representing Valeo during the decommissioning of the Complex which consists of an approximately 22-acre site with 1.5 million square feet of manufacturing and warehouse space. LaBella provided Valeo with comprehensive environmental engineering design and management services associated with the phased reduction of operations at the Facility. In addition to the technical decommissioning of much of the manufacturing related infrastructure, it was paramount that LaBella design and manage each aspect to the project to minimize Valeo's long term liability associated with the Facility.

- **NYSDEC Brownfield Cleanup Program, North Goodman, Roch.**
  As Project Manager, Mr. Porter guided the Client through the NYSDEC Brownfield Cleanup Program. The project involved the Developer acquiring the contaminated parcel from the existing owner, assuming all responsibility for cleanup and subsequently entering into the NYSDEC Brownfield Cleanup Program as a Volunteer. This complex project involved detailed investigation and characterization regarding multiple source areas, defining off-site migration pathways, installation of a sub-slab vapor mitigation system for the existing structure and completing the evaluation of bedrock groundwater.

- **Project Management: Remediation, Demolition, and Preliminary Site Work, Wegmans Food Markets, Buffalo, New York**
  Mr. Porter provided on-site Project Management for the remediation, demolition and preliminary site work in preparation for the construction of a new retail facility. The site consisted of an approximately 400,000 square foot industrial complex. This complex project involved pre-demolition remedial measures consisting of an asbestos survey, the removal of underground petroleum bulk storage tanks, above ground paint storage tanks, asbestos abatement, and the dismantlement and disposal of PCB contaminated equipment and materials.

- **Foster Wheeler Plant Site Characterization, Dansville, NY**
  Mr. Porter was the Remedial Investigation Manager for the due diligence investigation regarding Foster Wheeler's Dansville Facility was first developed for industrial purposes in the 1830's as a foundry and heavy industrial operation. The complex consisted of over 500,000 square feet of manufacturing buildings situated on an approximately 80 acre site. The facility had a long history of environmental related issues including Consent Orders from the NYSDEC, being listed as a NYSDEC Inactive Hazardous

Waste Disposal Site (IHWDS) and multiple documented chemical releases.

- **Chautauqua County Jail, Mayville, NY**
  Project Manager for environmental services in support the construction of a 240 bed addition to this existing jail facility and renovations in the existing facility. Environmental issues included defining the nature and extent of existing contamination, completing design/bidding documents, on-site management during construction and mitigating human-health expose issues for both on-site construction workers and the future occupants of the structure.

- **Rochester Economic Development, 110 Colfax St. & 690 Portland Ave.**
  Project Manager for a Remedial Investigation, Remedial Alternatives Analysis, Site Re-Use Concept Plan and a Corrective Action Plan for the former municipal landfill and manufacturing facility, respectively.

- **Environmental Term Agreement, City of Rochester, NY**
  Project Manager on the term agreement, whose responsibilities range from Phase I Environmental Site Assessments to Site Characterizations, Remedial Cost Estimates, and Brownfield Cleanups.

- **Pike Company, Rochester, NY**
  Project Manager responsible for the completion of spill closure requirements for a New York State Department of Environmental Conservation (NYSDEC) Active Spill and to delineate and remediate extensive soils impaired with gasoline.

- **CSXT Train Derailment & Hazardous Materials Spill, Rochester, NY**
  Sr. Environmental Analyst responsible for review of all delineation reports, implementation of additional delineation studies, review of remedial work plans, and oversight of all facets of the execution of IRM as it related to achieving a cleanup that would limit long term liability for the City and allow for the planned redevelopment to occur.

- **North Buffalo Street over Camp Brook Creek, PENNDOT District 3-0, Elkland, PA**
  Sr. Environmental Analyst for the new 60 ft, single span bridge replacement.

- **Water District No. 4, Town of Kendall**
  Sr. Environmental Analyst for four projects to install approximately 18 miles of water mains to extend the Town's distribution system.

NYSDOT
Mr. Porter is a Phase II Environmental Site Assessment and Remediation Program Manager and Certified Hazardous Materials Manager. Mr. Porter will be the Senior Environmental Analyst for the Project. Mr. Porter has completed numerous Phase I and II Environmental Site Assessments, Remedial Investigations and Design, Feasibility Studies, industrial hygiene studies, project monitoring and asbestos sampling surveys. Mr. Porter has completed **Hazardous Waste/Contaminated Materials (HW/CM)** Assessments on the following NYSDOT projects

- **Jefferson Road, Route 252 Phases I-IV, PIN 4046.11**
  Sr. Environmental Analyst

- **Lake Avenue, Rochester, NY, PIN 4067.01**
  Sr. Environmental Analyst
- **NY Route 36 & 408, Village of Mt. Morris, PIN 4096**
  Sr. Environmental Analyst
- **Sweethome Road, Amherst, NY, PIN 5803.35**
  Sr. Environmental Analyst
- **NYS Routes 417 & 305, Portville, NY, PIN 5031.03**
  Sr. Environmental Analyst
- **Route 364, Niagara Falls, PIN 5460.30**
  Sr. Environmental Analyst

Daniel Noll, PE

Education:

- Clarkson University: BS, Chemical Engineering

Certification/Registration:

- Professional Engineer, NY
- 40 Hour OSHA Certified Hazardous Waste Site Worker Training
- 8 Hour OSHA Certified Hazardous Waste Site Worker Refresher Training

Mr. Noll has over 11 years of experience with environmental projects at industrial/manufacturing facilities and environmental investigation projects for financial institutions, developers, industrial clients, etc. Mr. Noll has managed numerous Phase II Environmental Site Assessments and remediation projects including: groundwater monitoring programs, soil vapor investigations, test pit investigations, geo-probe investigations underground storage tank removals, soil removals, bio-cell remediations, in-situ groundwater remediation, etc. In addition, Mr. Noll has assisted industrial, municipal and agricultural clients with permitting and annual reporting for State Pollution Discharge Elimination System (SPDES) permits, Part 360 Land Application permits, Composting permits, and Petroleum Bulk Storage (PBS) registrations.

Key Projects:

- **Mizkan Americas, International company, Lyndonville, NY**
  Project Manager and Engineer for the design and construction assistance for a 700,000 gallon lagoon to store food-grade wastewater. The objective is to reduce facility costs by discharge of food-grade wastewater to local sprayfields. The lagoon will store wastewater during non-spraying season. This is a 20+ year old client who built their existing lagoon with LaBella's assistance in 1987. Project also includes permitting through NYSDEC SPDES (State Pollution Discharge Elimination System) Program.

- **Former Foster Wheeler Facility, Dansville, NY**
  Mr. Noll managed the effort to close out existing NYSDEC and EPA permits for the former facility and subsequently obtained permits for the new facility which included multiple industrial companies operating throughout the campus. The permitting effort included obtaining: a sewer use permit from the local municipality, a SPDES Multi-Sector General Permit, RCRA Generator ID, Title V Air Permit, and PBS Registration.

- **Manufacturing Facility, Rochester, NY**
  Mr. Noll assisted a developer that purchased a former Bausch & Lomb manufacturing facility to obtain a SPDES Permit for Industrial Discharges. This project included assessing the new operations and discussing the Site with NYSDEC to determine the appropriate permits for the facility, since multiple tenants with various operations were now operating at the Site.

- **Manufacturing Facility, Lyndonville, NY**
  Mr. Noll managed a project to design, construct and permit a 700,000 gallon wastewater lagoon and sprayfield operation. The permitting and regulatory requirements included submitting: NYS SPDES Permit for Industrial Discharges, State Environmental Quality Review (SEQR) Long Environmental Assessment Form (LEAF), and a Storm Water Pollution Prevention Plan (SWPP).

- **Leo Dickson and Sons, Inc., Bath, NY**
  Mr. Noll managed a project to permit a composting facility for a wastewater biosolids composting facility. The project included developing a report for NYSDEC to document design details for the facility, facility operations, and proposed monitoring. The facility received a NYSDEC Part 360 Composting Permit. In addition, Mr. Noll continues to provide annual

reporting services for ensuring the facility operates within the permit conditions.

- **Agricultural Sites, Niagara & Orleans Counties, NY**
  Mr. Noll is managing a project to permit land application of wastewater treatment system biosolids from a POTW to 490-acres of agricultural land. This project includes determining/implementing the permit required sampling and drafting a Part 360 Permit for Land Application of Biosolids.

- **Carriage Cleaners, BCP Site, Rochester, NY**
  As Project Manager, Mr. Noll completed a Brownfield Cleanup Program (BCP) Application & Work Plan to conduct a Remedial Investigation at a former dry cleaning facility. A soil, groundwater, and soil gas study was undertaken to develop remedial costs and assist with the redevelopment of property. Subsequently, an Interim Remedial Measure was completed to remove the source area of impacts from the Site. Mr. Noll attended Town Board Meetings regarding this project.

- **Former Manufacturing Facility, BCP Site, Henrietta, NY**
  Mr. Noll is project manager for this Brownfield Cleanup Program (BCP) Site and has overseen the installation of a groundwater monitoring well network and subsequent routine sampling as part of a Monitored Natural Attenuation (MNA) program for remediation chlorinated groundwater impacts at the Site.

- **Former Manufacturing Facility, BCP Site, Rochester, NY**
  Mr. Noll is project engineer for this BCP Site which has undergone a Remedial Investigation, Interim Remedial Measure, and installation of a sub-slab soil vapor suppression system. Mr. Noll drafted and stamped the Final Engineering Report for this Site as part of the request for a Certificate of Completion.

- **Former Gasoline/Service Station, BCP Site, Rochester**
  Mr. Noll is project manager for this BCP Site, which has including conducting Remedial Investigations at two adjoining parcels, implementing Interim Remedial Measures, and developing Remedial Investigation and Interim Remedial Measure reports. This project also including implementing the necessary Citizen Participation requirements.

- **Port Marina, City of Rochester, NY**
  Mr. Noll assisted with the environmental investigation of the City or Rochester Port Marina. This project included evaluating the extent of slag fill materials that would require proper management during any redevelopment work. The extent of slag was evaluated by implementing a grid pattern of soil borings and using the resulting data to develope a 3-dimensional model of the subsurface at the Site. This model was used to generate volumes of material to be disturbed during redevelopment and thus estimate the cost burden of the environmental portion of the project.

- **Former Forestry Building, City of Rochester, NY**
  Mr. Noll managed a project to evaluate the extent of mercury impacts at a former City of Rochester Forestry operations building. The project included multiple rounds of sampling at various depths in order to determine the

extent of mercury impacted soils that required removal prior to redevelopment of the Site by a local manufacturing company.

- **Former Genesee Hospital, Rochester, NY**
  Mr. Noll was Project Manager for a Phase II ESA of a former hospital campus and adjoining parking garage. This assessment included evaluating potential impacts from the hospital chemical storage area, backup generators and associated fuel tanks, and historical site uses which included a former car dealership and service center. The Phase II ESA progressed in to the remediation of a NYSDEC Spill prior to redevelopment of the property.

- **Former Valeo Facility, Rochester, NY**
  Mr. Noll managed Remedial Investigations of two areas of potential contamination at this former manufacturing facility. These assessments included evaluating bedrock groundwater impacts. These evaluations were complicated by the fact that multiple industrial companies operated at the Site in the past.

- **DeCarolis Truck Rental Petroleum Spill Site Remediation, Rochester, NY**
  Mr. Noll was Project Engineer for this site, responsible for the coordination of the removal/disposal of approximately 800 tons of petroleum impacted soil and developed a confirmatory soil sampling program. Mr. Noll also coordinated work with NYSDEC including potential additional requirements to close the spill file.

- **935 Broad Street, City of Rochester, NY**
  As Project Engineer, Mr. Noll developed a soil and groundwater study to investigate former underground storage tanks at a former gasoline/auto repair facility. A remedial alternatives analysis was conducted to evaluate several options for remediating soil and groundwater at the site including light non-aqueous phase liquid. Mr. Noll followed this project through remediation which consisted of removing about 1,500 cy of soil and installing an oxygen injection system to remediate groundwater over time.

- **Barthelmes Manufacturing, Brownfield Cleanup, Rochester, NY**
  As Project Engineer, Mr. Noll completed a Remedial Investigation at an active manufacturing plant. This work was conducted through the NYSDEC Brownfield Cleanup Program. Soil and groundwater studies, including deep bedrock wells, were performed to determine the appropriate remedial actions. This project also included drain discharge evaluation to determine sources of contamination.

Completed under previous employment:

- **LNAPL Removal and Monitoring, Various Railroad Yards**
  Serving as a Project Engineer, Mr. Noll oversaw the delineation of LNAPL plumes at three railroad maintenance yards. Subsequent to delineating the extent of the plumes, LNAPL recharge testing was conducted, a removal system was designed and implemented.

- **PCB Remediation/Encapsulation, Railroad Yard**
  Serving as a Project Engineer, Mr. Noll prepared a remediation plan (approved by the NYSDEC) for decontaminating polychlorinated biphenyls (PCBs) in piping and encapsulating PCBs in concrete. A site-specific procedure was developed for decontamination of piping.

- **Longterm Groundwater Monitoring, Railroad Maintenance Yard**
  Serving as a Project Engineer, Mr. Noll developed and submitted quarterly monitoring reports to the Connecticut Department of Environmental Protection (DEP). A natural attenuation study was conducted using the USEPA BIOSCREEN computer modeling program.

- **Inactive Hazardous Waste Site RI/FS**
  As Project Manager, Mr. Noll managed additional studies to further delineate soil contamination beneath a building formerly used as a metal plating facility where chromium and solvents spilled into the subsurface and migrated into the groundwater. Also managed a study to evaluate indoor air and sub-slab vapor concentrations for potential sub-slab venting systems. Developed a Feasibility Study report for evaluating remedial alternatives of chromium and volatile organic compounds (VOCs) in soil and groundwater. Specific tasks included screening remedial options for the site, obtaining cost estimates, and meetings with the NYSDEC and NYSDOH.

Michael Pelychaty

Education:

- SUNY Fredonia: BS, Geology
- Monroe Community College: AAS, Science

Certification/Registration:

- 40-Hour OSHA HAZWOPER
- NYSDOL Project Monitor
- NYSDOL Air Sampling Technician

Mr. Pelychaty is a staff environmental geologist. He has over nine years of experience in the field of Environmental Management relating to Phase I and Phase II Environmental Site Assessments, Brownfield Remedial Investigations and Corrective Actions.

Current work includes numerous environmental site assessments and audits in New York and Pennsylvania. The site assessments include assessment of environmental liability associated with properties such as warehouses, gas stations, auto repair facilities, manufacturing facilities, farms, commercial properties, and residential homes. While conducting these investigations, Mr. Pelychaty has obtained a solid understanding of the many environmental issues facing property owners, municipalities, and developers.

Key Projects:

- **Phase II ESA, 5450 Southwestern Blvd, Wal-Mart, APD Engineering, Hamburg, NY**
  Mr. Pelychaty served as a Geologist overseeing the implementation of a geophysical survey, test pits, and soil borings to investigate potential for subsurface environmental issues that could affect redevelopment of the site. As part of the investigation, regulated solid waste was identified which involved the development of an environmental management plant to facilitate the handling of regulated waste during redevelopment and to comply with local regulations.

- **Phase I & II ESA, 500 Ann Page Road, Wal-Mart, APD Engineering, Horseheads, NY**
  Mr. Pelychaty served as a Geologist for to investigate potential sub-surface environmental issues associated with historical uses of the site as a manufacturing facility. This project involved the implantation of over twenty-five test boring and six groundwater monitoring wells in areas of suspect concern identified in the Phase I ESA.

- **UST Removals, Industrial Park Circle, Gallina Development Corporation, Gates, NY**
  Mr. Pelychaty oversaw the removal of six underground storage tanks in accordance with state and local regulations. This project also involved the removal of impacted soil as a result of the tank leaking. This project was accomplished during a short time period to facilitate future sale of the site.

- **Former Gasoline/Service Station, BCP Site, Rochester**
  Mr. Pelychaty is Environmental Geologist for this BCP Site, which has including conducting Remedial Investigations at two adjoining parcels, implementing Interim Remedial Measures, and developing Remedial Investigation and Interim Remedial Measure reports. This project also including implementing the necessary Citizen Participation requirements.

- **Former Manufacturing Facility, BCP Site, Henrietta, NY**
  Mr. Pelychaty is currently serving as Environmental Geologist for this Brownfield Cleanup Program (BCP) Site. Some responsibilities included: overseeing the installation of a groundwater monitoring well network and subsequent routine sampling as part of a Monitored Natural Attenuation (MNA) program for remediation chlorinated groundwater impacts at the Site.

- **935 Broad Street, City of Rochester, NY**
  Mr. Pelychaty served as Environmental Geologist for the City of Rochester during the design and implementation of a comprehensive Remedial Investigation, Remedial Alternatives Analysis, Site Re-Use Concept Plan and a Corrective Action Plan for a Former Gasoline Station at 935 West Broad Street. This project was funded under the NYSDEC 1996 Clean Water/Clean Air Bond Act. Over 1,000 tons of petroleum contaminated soil was removed as part of the project and the installation of a groundwater remediation system.

- **Valeo, Facility Wide Decommissioning**
  Mr. Pelychaty served as Environmental Geologist representing Valeo during the decommissioning of the Complex which consists of an approximately 22-acre site with 1.5 million square feet of manufacturing and warehouse space. LaBella provided Valeo with comprehensive environmental engineering design and management services associated with the phased reduction of operations at the Facility. In addition to the technical decommissioning of much of the manufacturing related infrastructure, it was paramount that LaBella design and manage each aspect to the project to minimize Valeo's long term liability associated with the Facility.

- **NYSDEC Brownfield Cleanup Program, Wolcott, NY**
  Mr. Pelychaty served as Environmental Geologist for all facets of environmental investigation, characterization and remediation associated with an area of mercury contamination. A Remedial Investigation (RI) was designed in accordance with the NYSDEC BCP in order to provide for the investigation and characterization of the extent of mercury contamination at the site including the evaluation of human exposures to mercury. The selected remedial approach will be to cap the area of mercury contaminated soil with asphalt. This approach will allow for the reduction in potential human exposure to the contaminated soils through direct contact, allow the site owner to develop additional vehicle parking for the employees and eliminate the need for costly off-site landfill disposal of the mercury impacted soils.

- **Bureau of Water, Lighting, and Parking Meter Operations, Rochester, NY**
  Mr. Pelychaty served as Environmental Geologist to remediate the Water Bureau site to obtain regulatory closure or inactivation. This project involved the removal and disposal of over 20,000 tons of petroleum impacted soil and the installation of a groundwater treatment system. The project scope includes the redevelopment of the current site for reuse as a new facility for the operations center.

- **Port of Rochester Re-Development Project Phase II Site Characterization, Rochester, NY**
  Environmental Geologist for the complete Phase II Site Characterization, which involved sub surface characterization of approximately 38 acres. The site received a beneficial re-use determination to re use 80,000 cubic yards of iron foundry slag as on site fill.

- **CSXT Train Derailment & Hazardous Materials Spill, Rochester, NY**
  Environmental Geologist responsible for all delineation reports, additional delineation studies, remedial work plans, and assisted in the execution of IRM as it related to achieving a clean up that would limit long term liability

for the City and allow for the planned redevelopment to occur.

- **Phase I and II ESA, Village of Clyde, NY**
  Environmental Geologist who performed a Phase I Environmental Site Assessment (ESA) that identified several potential areas of concern at a facility that contained petroleum bulk storage, drywells, and underground hydraulic lifts. Based on the findings of the Phase I ESA, Mr. Pelychaty oversaw the Phase II ESA that involved the advancement of test pits to investigate the identified areas of concern.

- **Phase I and II ESA, Village of Newark**
  Environmental Geologist who performed oversight of the removal and the construction of approximately 5,000 cubic yards of petroleum impacted soil into a bio-cell. Projects tasks involved continuously screening the excavation with a photo-ionization detector and for olfactory observations that would identify areas of soil impairment.

ASBESTOS / IH

Mr. Pelychaty has over six years of experience in the field of Environmental Management relating to asbestos project monitoring, Phase I and Phase II Environmental Site Assessments, and Indoor Air Quality tests, including mold. Mr. Pelychaty's responsibilities for Asbestos project monitoring and air monitoring include observation of work practices for compliance with applicable regulations, inspection of work areas for quantification and completion of work, and air monitoring for contamination and regulatory compliance.

PROJECT MONITORING

- **Asbestos Term Agreement, NYSDOT Regions 3 – 6, NY**
  Mr. Pelychaty routinely provides Project Monitor and Air Monitor services on projects throughout the state. Mr. Pelychaty's work includes observation of work practices for compliance with applicable regulations, inspection of work areas for quantification and completion of work, air monitoring for contamination and regulatory compliance.

  Representative projects under the term include:

  - Route 31, Belgium, PIN 3037.56.321
  - Route 481, Rehabilitation of 28 Bridges, PIN 3056.13.311
  - Route 20A Over Cazenovia Creek, PIN 5010.18.301
  - Route 33 Over Beach Road, PIN 5512.35.321
  - Route 173 Onondaga Hill, PIN 3019.12.321
  - Route 5 and CSX, Batavia, PIN 4005.06.321
  - Route 81, 15 Structures, Syracuse, PIN 3501.49.312
  - Reconstruction of Route 277, Union and William Street, PIN 5131.25.321
  - Demolition of 9 homes, Route 15 & 86, PIN 6008.47.321
  - Rehabilitation of Route 14 over South Street and Seely Creek, PIN 6108.48.321
  - Rehabilitation of 5 Bridges, Route 3, PIN 3015.28.321
  - Route 173, House Demolition, PIN 3019.12.321

- **Hazardous Waste Assessments, NYSDOT, NY**
  Mr. Pelychaty has performed numerous Hazardous Waste Contaminated

Materials Assessments, NYSDOT Phase I Sampling and Testing Studies, and numerous Phase I and II environmental site assessments and audits in New York. This work includes soil and groundwater sampling, underground storage tank removals, and monitoring well installation, purging and sampling. Projects include:

- Lake Avenue, City of Rochester, PIN 4067.01
- Routes 36 & 408, Village of Mt. Morris, PIN 4096.24
- Sweethome Road, Town of Amherst, PIN 5803.35, D010148
- NY Route 165/384 River Road, Wheatfield, NY, PIN 5019.10.101
- NY Route 305, Portville, NY, HW/CM Assessment, PIN 5031.03

- **Air and Project Monitoring, Rush Henrietta Central School District**
  Mr. Pelychaty has provided project monitoring and air monitoring services on a number of different school renovation projects in this school district. Monitoring services include daily observation of contractor conformance with specifications and regulations, and required air monitoring. Projects have included six different schools over four years. (2004 – 2007)

- **Asbestos Inspection, Design, and Monitoring for Demolition, Wegmans Food Markets**
  Mr. Pelychaty has provided project monitoring and air monitoring services on a number of different store renovation projects. Monitoring services include daily observation of contractor conformance with specifications and regulations, and required air monitoring. Projects have included eight different stores over seven years. (2000 – 2007).

Evan Dumrese

Education:

- Cornell University: BS, Science of Earth Systems – Concentration in Biogeochemistry

Certification/Registration:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response Course
- Rutgers University Wetland Delineator Program

Mr. Dumrese is a project geologist. He has over four years of experience in the field of environmental evaluation and remediation. Mr. Dumrese has been involved in numerous Phase II investigations as well as with various brownfield cleanup program sites. From these experiences, he commands a solid understanding of both state and federal regulations. Current work includes assisting with the production of remedial investigation work plans, facilitating field investigations, and project management.

Key Projects:

- **Phase II Subsurface Investigation, City of Rochester Department of Environmental Services, Division of Environmental Quality, Phase II Environmental Site Assessment (ESA) Subsurface Investigation, 15 Flint Street, Rochester, NY**
  Implemented the Phase II ESA at the approximately 5.23 acre parcel to investigate twenty-four recognized environmental conditions. The scope of work included the advancement of twenty-eight soil boring, the installation of seventeen groundwater monitoring wells and the excavation of three test pits. A Phase II ESA Subsurface Investigation Report was written based on the analytical data reported from the collection and submission of twenty-seven soil samples and twenty groundwater samples.

- **Predevelopment Investigation, City of Rochester Department of Environmental Services, Division of Environmental Quality, Port of Rochester, Rochester, NY**
  Conducted a series of Phase II investigative tasks to characterize the subsurface condition of the Site. These tasks included the completion and interpretation of a geophysical survey, the excavation of sixteen test pits, the advancement of seven soil borings, the installation of one groundwater monitoring well. Subsequently, a Predevelopment Report was issued to thoroughly characterize the subsurface conditions of the Site.

- **Remedial Investigation, Mark IV Enterprises, BCP Site #C828137, Pittsford, NY**
  Assisted with the development of a Remedial Investigation Work Plan for the remediation of a New York State Brownfield Cleanup Program site formerly utilized as a bulk petroleum storage and distribution facility. Implemented the Remedial Investigation Work Plan at the Site. This process involved coordination with the New York State Department of Environmental Conservation, the New York State Department of Health, the Monroe County Department of Health and a third party consultant.

- **Phase II Environmental Site Assessment (ESA): Property Line Assessment, 2450 West Ridge Road, Rochester, NY**
  Served as Project Manager for the completion of a Phase II ESA: Property Line Assessment at a Site adjacent to a gasoline filling station. Duties included scheduling of field investigation, laboratory sample coordination, budget tracking and Phase II ESA Report review.

- **Remedial Investigation Work Plan, Northern Ethanol, Inc., BCP Site #C932143, City of Niagara Falls, NY**
  Assisted with the development of a Remedial Investigation Work Plan for the remediation of a New York State Brownfield Cleanup Program site formerly utilized in heavy industry for approximately 100 plus years. Responsibilities included identifying potential areas of concern from historic

maps and making revisions and additions to the work plan.

- **Phase II Environmental Site Assessment and Implementation of a Sub-Slab Vapor Evaluation, 1700 Lexington Avenue, Rochester, NY**
  Oversaw the advancement of numerous soil borings and the installation of multiple groundwater monitoring wells as part of a Phase II ESA at an 18.9-acre Site to evaluate possible influences to Site soil and groundwater from a nearby landfill and former automotive repair facility.

  Conducted a sub-slab vapor evaluation inside a vacant industrial facility. All phases of this evaluation were in accordance with applicable NYSDOH regulations and guidance documents.

- **Marcus-Whitman Central School District, Middlesex Valley Elementary School, 149 State Route 245, Rushville, NY**
  Provided evaluation of previous Phase I and Phase II investigations conducted at the Site. Based on the findings, recommended further remedial strategies and requirements for a solution.

- **Phase II Environmental Site Assessment, Conifer Realty, LLC, Cortland, NY**
  Performed a Phase II ESA of a parcel of land utilized as a commercial storage area with a history of off-site induced groundwater contamination for due diligence as part of a real estate transaction. Also assisted with project management duties for completion of project.

Work completed under previous employment:

- Provided oversight for the installation of a dual phase soil vapor extraction/groundwater pump and treat system at a retail gasoline station in Rochester, New York.

- Managed environmental concerns due to petroleum impacts during the demolition and rebuild of a retail gasoline station in Penfield, New York.

- Conducted routine operation and maintenance activities on soil vapor extraction and pump and treat systems at various retail gasoline stations throughout Upstate New York.

- Assisted in the design and managed the expansion of an existing dual phase soil vapor extraction/groundwater pump and treat system at a former retail gasoline station in Fairport, New York.

- Field geologist for the implementation and completion of a multi-million dollar remedial work plan at a brownfield site in Elizabeth, New Jersey.

- Conducted quarterly groundwater sampling at numerous locations in New Jersey according to the New Jersey Department of Environmental Protection Technical Regulations.

Craig Stiles, CPG

Education:

- SUNY Brockport: BS, Geology

Professional Affiliations:

- New York State Council of Professional Geologists
- Buffalo Association of Professional Geologists American Industrial Hygiene Association
- Professional Geologist Certification for the state of Pennsylvania (Licence No. PG004745)

Craig Stiles has over 18 years of experience in field geology including groundwater sampling, aquifer testing, downhole and surface geophysics, Phase I and II site assessments, well installation, development and abandonment, technical writing, and field team management.

Key Projects:

- **American Siepmann Corporation, Monitored Natural Attenuation, Henrietta, NY**
  Conducted low-flow groundwater sampling on a quarterly basis for a NYSDEC Voluntary Cleanup Program site in Henrietta, New York.

- **Stern Family Limited Partnership, Brownfield Assistance, Rochester, NY**
  Environmental Geologist for a Post-Remedial Action Investigation at a NYSDEC Brownfield Cleanup Program site within Rochester, New York. The project scope included the installation of soil/bedrock interface monitoring wells, quarterly groundwater sampling, monitoring of a sub-slab vapor suppression system, and monitoring of an on-site biocell utilized to remediate petroleum impacted soil.

- **R.J. Dorshel Corporation, Remedial Investigation, Henrietta, NY**
  Environmental Geologist for a Remedial Investigation, an Interim Remedial Action (the excavation of petroleum impacted soil and placement of the soil into a biocell for treatment), and developed a Corrective Action Plan for a former gas station and automobile dealership within Henrietta, New York.

- **Rochester Economic Development, 110 Colfax St. & 690 Portland Ave, Rochester, NY**
  Environmental Geologist for a Remedial Investigation, Remedial Alternatives Analysis, Site Re-Use Concept Plan, and a Corrective Action Plan for the former municipal landfill and manufacturing facility, respectively.

- **Residential Groundwater Monitoring Well, Mark Mette, Victor, NY**
  Environmental Geologist overseeing the accelerated installation of one 95-foot deep monitoring well at a residential construction site located adjacent to a known chlorinated solvent spill site within Victor, New York. This scope of work was coordinated and executed within a 24-hour time span with analytical results for groundwater samples obtained approximately 48-hours after first contact with the client.

- **Valeo, Remedial Investigation, Rochester, NY**
  Environmental Geologist to investigate two former production areas within the Valeo complex in Rochester, New York. The scope-of-work included the installation of four bedrock monitoring wells within the former production building with associated groundwater sampling and analysis.

- **Bureau of Water, Lighting, and Parking Meter Operations, Rochester, NY**

Environmental Geologist to remediate the Water Bureau site to obtain regulatory closure or inactivation. The project scope includes the redevelopment of the current site for reuse as a new facility for the operations center.

- **Foster Wheeler Plant Site Characterization, Dansville, NY**
  Environmental Geologist for this due diligence investigation consisted of a complete Phase I Environmental Site Assessment and Phase II Site Characterization.

- **935 Broad Street, City of Rochester, NY**
  Environmental Geologist for a Remedial Investigation, Remedial Alternatives Analysis, Site Re-use Concept Plan and a Corrective Action Plan for this former gasoline station.

PHASE I & II ENVIRONMENTAL SITE ASSESSMENTS

- Environmental Geologist for the following clients:
  - Canandaigua National Bank & Trust
  - Bank of Castile
  - Bank of Utica
  - Genesee Regional Bank
  - Bank of New England
  - Steuben Trust Company
  - Community Bank of N.A.
  - Northern Trust Bank
  - Citizen's Bank
  - Upstate National Bank
  - Cass Hill Development
  - Alexander Realty, LLC
  - NorthMarq Capital
  - First Niagara Bank
  - Buckingham Properties

ASBESTOS / Air & PROJECT MONITORING

Completed under previous employment:

- **Torrey Landfill Inactive Hazardous Waste Site, Yates County**
  As Environmental Geologist, Mr. Stiles led a Pre-Remedial Design Field Investigation and assisted in the design of the final closure of a NYSDEC Inactive Hazardous Waste Site at a former municipal landfill

- **Ciba-Giegyus EPA Superfund Site, Toms River, NJ**
  As a Field Hydrogeologist and Field Team Leader, Mr. Stiles conducted Hydrogeologic investigations to delineate contaminated plumes and locate potential discharge sites within coastal beach and lagoonal sediments at a former industrial site.

- **NYSDEC Site Investigations, Remedial Design & Long Term**

Monitoring
As a Project Coordinator and Geologist, Mr. Stiles was responsible for the management and implementation of environmental projects including hydrogeologic investigations, interpretation of field data, technical report generation, and design of remedial systems at over 20 NYSDEC petroleum spill sites within New York State.

- **Davis-Howland NYSDEC Superfund Site**
  Mr. Stiles completed a Remedial Investigation/Feasibility Study (RI/FS) at a NYSDEC Superfund site in Rochester, N.Y. For the RI/FS, Mr. Stiles completed a total of ten (10) overburden and eight (8) top-of-rock monitoring wells at the site. Mr. Stiles also assisted in the design of remedial measures for the site including a combined air sparging/soil vapor extraction system, and a free product recovery system.

- **Mattel, Medina, NY**
  Project Manager responsible for Phase I, II, and III environmental projects.

- **Eckenfelder, Inc., Mahwah, NJ**
  Served as Field Hydrogeologist for Phase II environmental and landfill siting investigations.

- **Eastman Kodak Company, Rochester, NY**
  Field Hydrogeologist and Field Task Leader for this project, which involved deep bedrock monitoring well installation and bedrock transport analysis of dense non-aqueous phase liquids.

- **Rodman Landfill, Rodman, NY**
  Field Hydrogeologist and Field Task Leader, responsible for directing monitoring well installations and field sampling activities.

- **Town of Fairport, Fairport, NY**
  Mr. Stiles conducted an underground storage tank (UST) Closure Assessment for the removal and decommissioning of the USTs at the NY Highway Department. Mr. Stiles conducted a full site characterization, and developed and implemented long-term groundwater monitoring plan for the site.

- **Town of Palmyra, Palmyra, NY**
  Mr. Stiles conducted an underground storage tank (UST) Closure Assessment for the removal and decommissioning of one UST DPW garage. Mr. Stiles led a team to conduct a soil gas survey and later a subsurface investigation at the site. Mr. Stiles also designed and supervised the installation of a soil vapor extraction system in the vicinity of the former UST pit.

Kyle Miller

Education:

- State University of New York College at Buffalo: B.S., Earth Science

Certifications:

- USEPA/NYSDOL Certified Asbestos Inspector
- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response Course

Mr. Miller is a Senior Environmental Analyst with over 12 years of experience conducting Phase I and Phase II Environmental Site Assessments, environmental investigations, and remedial projects. He has performed numerous site assessments for potential subsurface contamination including test pits, supervision of well installation and sampling, soil vapor analysis, petroleum storage tank removals, and review and evaluation of analytical groundwater monitoring wells. Mr. Miller is also a USEPA/NYSDOL Certified Asbestos Inspector.

Key Projects:

- **Oil Spill Emergency Response and Remediation, RJ Taylor General Contractors, Inc., 3925 West Henrietta Road, Henrietta, NY**
  Directed emergency response and oil recovery activities associated with a release of virgin motor oil within a auto dealership's service facility. Subsequently, coordinated high-volume oil/water recovery activities, followed by the installation of an oil "skimmer" recovery system for the facility. Coordinated with the New York State Department of Environmental Conservation (NYSDEC) Spill investigator assigned to the release.

- **Environmental Management Plan and Design of a Sub-Slab Vapor Mitigation System, DPI of Rochester, 1560 Emerson Street, Rochester**
  Responsible for creation of an NYSDEC-approved Environmental Management Plan and a Monroe County Health Department (MCHD) approved Sub-Slab Vapor Mitigation System design, required for the construction of a building addition within the footprint of the City of Rochester's Former Emerson Street Landfill. These activities were performed under the City of Rochester's Brownfield Assistance Program.

- **Supplemental Remedial Action, Hoselton Chevrolet, 1301 Fairport Road, Perinton, NY**
  Directed subcontractors to implement field activities for a Supplemental Remedial Action which included: excavation, segregation, and off-site disposal of petroleum impacted soil; confirmatory soil sampling; injection of in-situ groundwater treatment materials; and the installation and sampling of groundwater monitoring wells.

- **Phase II Environmental Site Assessment, Core States Engineering, Ash Road, Vestal, NY**
  Performed a Preliminary Phase II ESA of two adjacent parcels of land containing several areas of concern that were proposed for redevelopment as a petroleum distribution facility. Collected and submitted soil and groundwater samples from soil borings and monitoring wells installed at the site, as well as well elevation and water table elevation data, to determine groundwater flow direction. Drafted a Phase II ESA report which summarized the findings and conclusions of the investigation.

- **Phase II Environmental Site Assessment, Alexander Realty, LLC, Former Genesee Hospital Parking Garage, Rochester, NY**
  Performed a Phase II ESA of this former automotive facility, in order to close a historic NYSDEC Spill file. Collected and submitted soil and groundwater samples from soil borings and monitoring wells installed at the site. Drafted a Phase II ESA report which summarized the findings and conclusions of the investigation.

- **ExxonMobil Remedial Action Oversight, Klee Corporation, 3068 East Henrietta Road, Henrietta, NY**
  Provided on-site observation of remedial activities performed by the former owner's (ExxonMobil's) environmental consultant, including: petroleum-impacted soil excavation and off-site disposal; excavation de-watering; underground storage tank, product piping, and dispenser removal; confirmatory soil sampling; and investigation of subsurface geophysical anomalies.

- **ExxonMobil Remedial Action Oversight, Klee Corporation, 1810 Mt. Hope Avenue, Rochester, NY**
  Provided on-site observation of remedial activities performed by the former owner's (ExxonMobil's) environmental consultant during "tank-top upgrade" activities, including: petroleum-impacted soil excavation and off-site disposal; excavation de-watering; product piping and dispenser removal; and confirmatory soil sampling.

- **Phase I Environmental Site Assessment, Ossining T.B. Flats, LLC, Former Ossining National Bank Building, Village of Ossining, Westchester County, NY**
  Performed an All Appropriate Inquiry (AAI) Phase I ESA of a vacant historic building proposed for redevelopment as residential and retail space.

Work completed under previous employment:

- Phase I and Phase II Environmental Site Assessments of four (4) former light industrial facilities located in Roosevelt, Long Island, New York.

- A Phase II Environmental Site Assessment of a former Long Island bus garage which contained aboveground and underground storage tanks, repair areas, and historic spills.

- A Phase I Environmental Site Assessment of an active gasoline filling station located in the Village of East Syracuse, New York.

- A Phase II subsurface investigation of a restaurant property in the Town of Moreau, New York. The investigation included soil sampling, small-diameter well installations, and groundwater sampling related to the facility's fuel oil underground storage tank and septic system.

- Phase I Environmental Site Assessments of several prospective commercial development sites located in Nassau and Suffolk Counties, Long Island, New York.

- A Phase I Environmental Site Assessment of a senior housing facility that resulted in recommendations regarding an on-site fuel oil underground storage tank.

- A Phase I Environmental Site Assessment of an office building that yielded recommendations to properly abandon or remove an obsolete fuel oil underground storage tank.

- Purging, water level monitoring, and sampling of groundwater monitoring and leachate recovery wells at a solid waste management facility in Western New York.

Richard Rote, MS, CIH

Education:

- University of Rochester: MS, Industrial Hygiene
- St. Lawrence University: BS, Geology

Certification/Registration:

- Certified Industrial Hygienist
- NYSDOL Project & Air Monitor
- Hazardous Waste Operations & Emergency Response

Professional Affiliations:

- American Industrial Hygiene Association
- American Board of Industrial Hygience
- Air & Waste Management Association Association
- American Society of Safety Engineers

Mr. Rote is a Certified Industrial Hygienist with a background in occupational and public safety. He brings to his projects an expertise in asbestos, lead, PCB and the management of other hazardous materials. Projects have included building surveys, hazard assessments, abatement project planning, and project inspection and monitoring. Mr. Rote manages our in-house laboratory for asbestos air and bulk samples, as well as managing air monitoring projects. His responsibility is to identify environmental impacts, and design and manage appropriate environmental responses for these projects.

Key Projects:

ASBESTOS

- **Asbestos Term Agreement, NYSDOT, NY**
  Mr. Rote is Project Manager for LaBella Associates' sixth Term Agreement for Asbestos Management. His responsibilities include coordinating scheduling and supervising field work, reviewing final reports and contract management. Services are provided to four regions and included asbestos sampling, analysis, Project Design, Project Monitoring and Air Monitoring. Over the six consecutive term agreements, Mr. Rote's group has inspected hundreds of bridges and completed over one hundred pre-demolition surveys of other structures. (1990 – 2010)

- **Wegmans Food and Pharmacy, Asbestos Inspection, Design, & Monitoring for Store Demolition**
  Project Manager for hazardous materials management services provided to Wegmans for demolition or renovation of eight stores. Services included hazardous materials inspection, abatement design, bid document preparation, bid support and project and air monitoring.

- **Environmental Testing Term Agreement, Monroe County, Rochester, NY**
  Project Manager for our tenth year of term agreement experience (with renewals) for hazardous materials inspection and abatement design with Monroe County. Projects have ranged from small utility spaces to large multi-story office/housing complexes. Recently completed projects include:
  - Public Safety Building
  - Psychiatric Center
  - Walters Building & staff residence (ACM, lead & PCB)
  - Terrance Building (ACM, lead & PCB)
  - Monroe County Jail (Lead paint testing)
  - MCC Field House Addition
  - Monroe Community Hospital renovations
  - MCC Window Replacement

- **Asbestos Abatement and Inspection, Gates Chili Central School District, Gates, NY**
  Project Manager for asbestos and lead paint inspection, and abatement design related to improvements and modifications to 10 buildings. The project required coordination between the project team, school staff, and several architectural firms.

- **Hazardous Materials Management, Gates Chili High School, Gates, NY**

Project Manager for comprehensive pre-renovation hazardous materials identification and abatement design services. Extensive renovations required the abatement of asbestos, lead, PCBs and mercury prior to construction.

- **Asbestos Inspection, Design, and Monitoring for Renovation, Rush Henrietta Central School District, Henrietta, NY**
  Project Manager for hazardous materials management services provided to Rush Henrietta Central School District for the renovation of six schools. Services, including hazardous materials inspection, abatement design, bid document preparation, bid support and project and air monitoring, have been provided over a six year period.

- **Asbestos Inspection, English Village Apartments**
  Project Manager for asbestos and lead paint inspection of a limited number of units to develop an Asbestos-containing Materials report that was representative of 550 units present at the site. The client's requirement for an accurate abatement cost estimate and sufficient documentation for bidding and abatement were successfully satisfied (2003).

- **Environmental Services, NYSTA, NY**
  Project Manager for a multi-disciplined professional service agreement. Responsibilities included supervising asbestos inspections, testing, abatement design, Project Monitoring and contract management.

- **Seneca Nation of Indians**
  Completed a renovation feasibility study of a vacant 70,000 square foot health care facility. The study included mechanical, electrical, structural and hazardous material investigations.

- **Holy Family Catholic Community**
  A hazardous materials pre-demo inspection was performed at the St. Joseph School. Abatement and demolition design and bid support services were provided. Project Monitoring was performed during abatement and construction management services were provided during demolition.

- **Asbestos Inspection and Abatement Design for Pioch Hall, Basil Hall, and Science Center, St. John Fisher College, Rochester, NY**
  Project Manager for the asbestos inspections and abatement design services. Planned renovations and selective demolition required inspection and testing materials likely to be disturbed by the project. The project required coordination with college staff, the contractor and school schedules.

- **Bureau of Water, Lighting, and Parking Meter Operations, Rochester, NY**
  Mr. Rote served as Project Manager, where preexisting asbestos inspection reports were field verified, and previously untested materials were sampled and submitted for analysis. The buildings were assessed for lead, mercury lamps and PCBs. A detailed cost estimate, abatement specifications, and drawings were prepared.

- **Port of Rochester Re-Development, Rochester, NY**
  Project Manager for the asbestos inspection, abatement design and project monitoring services were a component of a much larger project involving the

design and construction of a new ferry and customs terminal at the Port of Rochester.

- **Hazardous Materials Inspection and Testing, Garlock Sealing Technologies, Palmyra, NY**
  Mr. Rote was Project Manager for the comprehensive hazardous materials inspection and testing of an 80 year old industrial building slated for a complete renovation. Specifications and drawings were prepared for the abatement of ACM, PCB, and mercury-containing items.

- **Horning Construction Company**
  Provided site inspection and work practice consultation regarding concerns over an abatement sub-contractor's work performance.

- **Asbestos Inspection, Abatement Design, & Demolition Specifications, SUNY Alfred, Alfred, NY**
  Project Manager for the asbestos and lead inspection and testing of three greenhouses slated for demolition. Specifications and drawings were prepared for abatement and subsequent demolition

- **Feasibility Study, Newark Housing Authority, Newark, NY**
  Project Manager for a feasibility study for the conversion of 13 buildings and over 1million s.f. of floor space to day treatment and senior assisted housing. An asbestos inspection was completed for nearly half the floor space to prepare abatement cost estimates as part of the feasibility study.

- **Asbestos Inspection and Abatement, Boylan Brown, Rochester, NY**
  Project Manager for the inspection of 5,000 s.f. of professional building in preparation for demolition. Prepared abatement design and specifications for removal of ACM, light ballasts, and refrigeration. Services included pre-bid support and walkthrough, AM/PM during abatement.

- **Asbestos Inspection and Abatement, Dorschel Automotive, Rochester, NY**
  Project Manager for the asbestos inspection and testing to develop an understanding of potential abatement cost liability. The 95,000 s.f. property inspection included both interior and exterior.

- **HOK, SUNY Geneseo**
  Mr. Rote was Project Manager responsible for overseeing all air and project monitoring required during the abatement of pipe insulation, floor tile, asbestos & PCB caulk and other ACM at Greene Hall.

HEALTH & SAFETY

Mr. Rote, LaBella's Laboratory Director, is an industrial hygienist certified in the Comprehensive Practice of Industrial Hygiene. He has been providing health, safety and environmental services to LaBella clients for 17 years. Prior to joining LaBella Associates, he worked over 14 years for Eastman Kodak Company. Mr. Rote has conducted a wide variety of industrial hygiene investigations including:

- **Industrial Hygiene Walk-Through Surveys**
- **OSHA Personnel Exposure Studies**
- **Noise Exposure Studies**
- **OSHA Compliance Programs and Audits**
- **Asbestos Site Surveys**
- **Indoor Air Quality Studies**
- **Mold Assessment and Testing**
- **Non- ionizing Radiation Surveys**
- **Health & Safety Plans for Hazardous Waste Sites**

Mr. Rote has performed exposure studies for a wide variety of agents, from carcinogens and heavy metals to simple irritants and asphyxiants. He is routinely called upon to complete indoor air quality studies, including the assessment of 'Toxic Mold' contamination and potential for occupant exposure. In some studies, computerized data acquisition is used, allowing for complex data analysis and graphical representations of results. In another area of data management, he designed and helped to develop a database for tracking employee exposure histories and training.

Mr. Rote has prepared corporate programs for compliance with OSHA regulations such as Confined Space, Lock Out/Tag Out, Respiratory Protection, Hazard Communication, asbestos, lead and others.

- **Health & Safety Training**
  Mr. Rote has extensive experience with employee health and safety training programs. He has provided Hazard Communication, Right to Know and Hazard Awareness training courses for many large organizations. Average class sizes ranged from 10 - 30 people. Some of the training courses Mr. Rote has prepared and presented are:
  - **Lead**
  - **Hazard Communication**
  - **Hearing Conservation**
  - **Confined Space Entry**
  - **Respiratory Protection**
  - **Lock Out/Tag Out**
  - **Lab Safety**

LEAD
Mr. Rote has conducted many industrial hygiene studies and exposure evaluations on operations where lead exposure was a concern. The types of operations studied include production, maintenance and demolition. Specific operations include: part finishing, hand and wave soldering for circuit board manufacturing, lead chromate painting operations, incinerator maintenance and ash handling operations, lead smelting, and demolition of lead paint coated steel structures. Mr. Rote has experience with the HUD lead paint guidelines for home inspections and abatement clearance.

Key Projects:

- **Astra Zeneca, Environmental, Health & Safety Management**
  Project Manager for on-site environmental, health & safety management services to a large pharmaceutical research facility through a four year

contract. LaBella's personnel were responsible for day to day health & safety responsibilities, including facility inspections, accident investigation and reporting, chemical exposure monitoring, compliance program updates and employee training. LaBella was also responsible for the on-going collection and disposal of all chemical and biological wastes generated at the facility.

The contract terminated when the company relocated to an out of state facility. LaBella managed the environmental shut down operations of the facility. Labs and storage areas were inspected for remaining chemicals. Unused chemicals and chemical wastes were marshaled in selected areas and sorted in preparation for lab pack disposal. Disposal contractors were interviewed and the chemical disposal was bid out. Non-hazardous laboratory equipment and supplies were collected in selected areas and made available to local schools and clinics free of charge. Lab hoods were tested for contaminated residues and cleaned as appropriate. Dumpsters were ordered for the disposal of non-hazardous materials. A cleaning company was contracted to complete a final clean to leave the space as required in the lease.

- **Nazareth College; HSE Compliance Services**
  Project Manager for the assessment of compliance with OSHA and environmental regulations and exposure monitoring in the Art Department. A Spill Prevention Control & Countermeasure Plan and a Laboratory Chemical Hygiene Plan were developed to assist with compliance measures.

- **Elmira Psychiatric Center, NYSOGS, Elmira, NY**
  Project Manager for the comprehensive assessment of radon across the entire facility. Results were reported and at-risk spaces were identified. After consideration of site characteristics, space usage, and existing ventilation performance, a design for a comprehensive ventilation upgrade was provided.

- **Pfaulder, US, Inc.**
  A number of air monitoring studies have been completed to determine exposure concentrations to metals, silica and solvent vapors across a variety of production operations. The work has been completed as a component of the company's Safety Management Program.

  LaBella updated Pfaudler's Confined Space Program by reevaluating the plant for confined space hazards, preparing a new program manual and written entry procedures. The plant was also evaluated for Lock-Out/Tag Out hazards. All powered equipment was assessed and a new Lock-Out/Tag-Out Program was prepared, including written Lock-Out/Tag Out procedures. LaBella has provided employee training in these programs and Hazcom on a regular basis.

- **NYSDOT, Fredonia Maintenance Residency, Fredonia, NY**
  Volatile Organic Compounds were scanned using SUMA canisters and Method TO-15 to achieve very low detection levels in response to employee concerns over sub-slab gasoline and fuel oil contamination. Sample data was compiled and presented in an industrial hygiene format for presentation to employees. Vapor concentrations were concluded to be low enough to not present the potential for adverse health effects.

- **Nexpress/Kodak**
  Project Manager for the assessment of occupational exposures to solvents and noise during the development of coating equipment and processes. Ventilation evaluations and design services were provided to improve performance. Respiratory protection program training and fit testing were provided to new users.

- **City of Rochester Indoor Air Quality Studies, City of Rochester, NY**
  Project Manager for Indoor Air Quality studies, including toxic mold investigations, which been performed at a number of city facilities. Studies have been triggered by employee complaints of upper respiratory irritation, dry scratchy eyes, illness, odors and stale air. Testing was completed for specific contaminants based on conditions identified during the initial walk-through evaluation. Ventilation system design and function are also evaluated. All work was carried out in close association with the Environmental Services Department, including the development of corrective actions.

- **Childtime, Various Sites, Upstate, NY**
  LaBella completed visual inspections and assessments for mold contamination at 10 sites across Upstate New York. Contaminated areas were delineated, limited sampling was completed, remediation recommendations were provided and a remediation specification was prepared. During and post remediation inspections were performed with clearance testing done as needed.

- **City of Rochester Indoor Air Quality Studies, City of Rochester, NY**
  Project Manager for Indoor Air Quality studies, including toxic mold investigations, have been performed at a number of city facilities. Studies have been triggered by employee complaints of upper respiratory irritation, dry scratchy eyes, illness, odors and stale air. Testing was completed for specific contaminants based on conditions identified during the initial walk-through evaluation. Ventilation system design and function are also evaluated. All work was carried out in close association with the Environmental Services Department, including the development of corrective actions.

- **Wegmans Food and Pharmacy**
  Project Manager

  - **Employee Exposure Assessment**
    LaBella measured the concentrations of several different solvents and dark room chemicals to assess employee exposures during various printing operations. The exhaust ventilation system was evaluated for effectiveness. Recommendations were provided on chemical handling and modifications to the exhaust system.

  - **Indoor Air Quality**
    LaBella has completed numerous indoor air quality studies in a variety of environments in response to employee complaints such as, upper respiratory tract irritation, odors, head aches and a high rate of illness. Building design, ventilation, equipment, and operations are evaluated

for factors which could contribute to poor indoor air quality. Testing has included agents such as carbon dioxide, volatile organic compounds, solvents, dust, noise and bioaerosols. Recommendations for remediation and ventilation improvements are provided.

- **Employee Exposure**
  Personal and area samples were taken to measure employee exposures to ammonia and dust at a large egg farm. Full shift dosimetry was performed with data logging. Time history graphs were used to identify specific high exposure tasks.

- **Indoor Air Quality**
  Warehouse guards had expressed concern about exposure to engine exhaust and particulate. Personal sampling was conducted to determine employee exposure concentrations to respirable dust, carbon monoxide, and nitrogen dioxide. Recommendations were made for modifications to the guard house ventilation system to help reduce particulate and exhaust gas infiltration.

- **Warren County Public Safety Facility**
  A community noise study was completed to address neighbor complaints about noise from a recently installed roof top chiller. Measurements were taken at several locations revealing that noise from the chiller was only slightly higher than ambient noise levels.

- **Affinity Realty Partners, LLC**
  Radon monitoring was performed to satisfy lender requirements at this and many other apartment complexes. Testing needs are assessed and monitoring is completed quickly and efficiently.

- **American Motive Power**
  Project manger for on-site provision of environmental, health & safety services. Plant operations were reviewed and investigated; Hazcom, Lockout/Tagout, Respiratory Protection, waste management and air permit programs were developed. Employee training was provided as required. Employees were monitored to determine exposure concentrations to noise and solvents.

- **Nestle Purina**
  Completed employee exposure monitoring for two corrosive irritants used during routine cleaning of processing equipment. The client needed immediate support to respond to employee concerns about the process. Samples were taken for several employee tasks during the B shift within one week of the request to complete the work, the final report was provided two weeks later.

- **SUNY Fredonia**
  The Fenner House Admissions Office was assessed for mold contamination in response to occupant concerns. Inspection and sampling determined that occupied areas were in good condition, but that the basement needed some corrective actions. The inspection revealed several areas and aspects of water infiltration, leading to recommendations for better drainage and other methods to prevent the reoccurrence of mold growth.

- **APD Engineering**
  Community noise studies have been completed in several upstate locations in support of the placement and development of large retail establishments. Follow up noise studies have been completed to support retail store response to neighbor noise complaints.

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 2

NYSDOH Generic Community Air Monitoring Plan

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 3
Quality Control Program

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Quality Control (QC) Program

Location:

300 Commerce Drive
Henrietta, New York

Prepared For:

Yaro Enterprises, Inc.
300 Commerce Drive
Rochester, New York 14617

LaBella Project No. 208723

December 2008

Quality Control (QC) Program

Location:

300 Commerce Drive
Henrietta, New York

Prepared For:

Yaro Enterprises, Inc.
300 Commerce Drive
Rochester, New York 14617

LaBella Project No. 208723

December 2008

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Table of Contents

Table of Contents (continued)

Page

1. Introduction

LaBella's Quality Control (QC) Program is an integral part of its approach to environmental investigations. By maintaining a rigorous QC program, our firm is able to provide accurate and reliable data. QC also provides safe working conditions for all on-site workers.

The Quality Control program contains procedures, which provide for collected data to be properly evaluated, and which document that quality control procedures have been followed in the collection of samples. The quality control program represents the methodology and measurement procedures used in collecting quality field data. This methodology includes the proper use of equipment, documentation of sample collection, and sample handling practices.

Procedures used in the firm's Quality Control program are compatible with federal, state, and local regulations, as well as, appropriate professional and technical standards.

This QC program has been organized into the following areas:

- QC Objectives and Checks
- Field Equipment, Handling, and Calibration
- Sampling Techniques
- Sample Handling and Packaging

2. Quality Control Objectives

The United States Environmental Protection Agency (EPA) has identified five general levels of analytical data quality as being potentially applicable to site investigations conducted under CERCLA. These levels are summarized below:

- **Level I** - Field screening. This level is characterized by the use of portable instruments, which can provide real-time data to assist in the optimization of sampling point locations and for health and safety support. Data can be generated regarding the presence or absence of certain contaminants (especially volatiles) at sampling locations.
- **Level II** - Field analysis. This level is characterized by the use of portable analytical instruments, which can be used on site or in mobile laboratories stationed near a site (close-support labs). Depending upon the types of contaminants, sample matrix, and personnel skills, qualitative and quantitative data can be obtained.
- **Level III** - Laboratory analysis using methods other than the Contract Laboratory Program (CLP) Routine Analytical Services (RAS). This level is used primarily in support of engineering studies using standard EPA-approved procedures. Some procedures may be equivalent to CLP RAS, without the CLP requirements for documentation.
- **Level IV** - CLP Routine Analytical Services. This level is characterized by rigorous QC protocols and documentation and provides qualitative and quantitative analytical data. Some regions have obtained similar support via their own regional laboratories, university laboratories, or other commercial laboratories.

- **Level V** - Non-standard methods. Analyses, which may require method modification and/or development. CLP Special Analytical Services (SAS) are considered Level V.

Unless stated otherwise, all data will be generated in accordance with Level IV. When CLP methodology is not available, federal and state approved methods will be utilized. Level III will be utilized, as necessary, for non-CLP RAS work which may include ignitability, corrosivity, reactivity, EP toxicity, and other state approved parameters for characterization. Level I will be used throughout the RI for health and safety monitoring activities.

All measurements will be made to provide that analytical results are representative of the media and conditions measured. Unless otherwise specified, all data will be calculated and reported in units consistent with other organizations reporting similar data to allow comparability of data bases among organizations. Data will be reported in ug/L and mg/L for aqueous samples, and ug/kg and mg/kg (dry weight) for soils, or otherwise as applicable.

The characteristics of major importance for the assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. Application of these characteristics to specific projects is addressed later in this document. The characteristics are defined below.

2.1. Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

2.2. Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter.

2.3. Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

2.4. Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition

Careful choice and use of appropriate methods in the field will ensure that samples are representative. This is relatively easy with water or air samples since these components are homogeneously dispersed. In soil and sediment, contaminants are unlikely to be evenly distributed, and thus it is important for the sampler and analyst to exercise good judgment when removing a sample.

2.5. Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data sets may be inter- or intra- laboratory.

3. Measurement of Data Quality

3.1. Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" take the form of EPA standard reference materials, or laboratory prepared solutions of target analytes spiked into a pure water or sample matrix. In the case of GC or GC/MS analyses, solutions of surrogate compounds, which can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination, are used.

In each case the recovery of the analyte is measured as a percentage, correcting for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA supplied known solutions, this recovery is compared to the published data that accompany the solution.

For the firm's prepared solutions, the recovery is compared to EPA-developed data or the firm's historical data as available. For surrogate compounds, recoveries are compared to EPA CLP acceptable recovery tables.

If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate. The analyst or his supervisor must initiate an investigation of the cause of the problem and take corrective action. This can include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problems cannot be resolved. For highly contaminated samples, recovery of the matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

3.2. Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is sometimes not known to ASC and usually not known to bench analysts, so their usefulness for monitoring analytical precision at bench level is limited. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen for replication does not contain target analytes so that quantitation of precision is impossible. For EPA CLP analyses, replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD).

- Where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.
- RPDs must be compared to the method RPD for the analysis. The analyst or his supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non homogeneity, analysis of check samples, etc. Follow-up action may include sample reanalysis or flagging of the data as suspect if problems cannot be resolved.
- During the data review and validation process (see Section 9), field duplicate RPDs are assessed as a measure of the total variability of both field sampling and laboratory analysis.

3.3. Completeness

Completeness for each parameter is calculated as follows:

- The firm's target value for completeness for all parameters is 100%. A completeness value of 95% will be considered acceptable. Incomplete results will be reported to the site managers. In planning the field sample collection, the site manager will plan to collect field duplicates from identified critical areas. This procedure should assure 100% completeness for these areas.

3.4. Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site
- The degree of homogeneity of a sample taken from one point in a site
- The available information on which a sampling plan is based

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area. Within the laboratory, precautions are taken to extract from the sample bottle an aliquot representative of the whole sample. This includes premixing the sample and discarding pebbles from soil samples.

4. QC Targets

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are included in the QCP, Analytical Procedures. Note that tabulated values are not always attainable. Instances may arise where high sample concentrations, non homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria. In such instances, the firm will report reasons for deviations from these detection limits or noncompliance with quality control criteria.

5. Sampling Procedures

This section describes the sampling procedures to be utilized for each environmental medium that will be collected and analyzed in accordance with appropriate state and federal requirements. All procedures described are consistent with EPA sampling procedures as described in SW-846, third edition, September 1986. All samples will be delivered to the laboratory within 24 to 28 hours of collection.

6. Soil & Groundwater Investigation

The groundwater sampling plan outlined in this subsection has been prepared in general accordance with RCRA Groundwater Monitoring Technical Enforcement Guidance Document 9950.1 (September 1986), Office of Solid Waste and Emergency Response.

Prior to drilling, all drill sites will be cleared with appropriate utility companies to avoid potential accidents relating to underground utilities.

6.1. Test Borings and Well Installation

6.1.1. Drilling Equipment

Direct Push "Geo-Probe" Soil Borings:

Borings will be advanced with a "geo-probe" direct push sampling system. The use of direct push technology allows for rapid sampling, observation, and characterization of relatively shallow overburden soils. The geo-probe utilizes a four-foot macro-core sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in four-foot sections, and can be easily cut from the polyethylene sleeves for observation and sampling. The macro-core sampler will be decontaminated between samples and borings using an alconox and water solution.

Drill Rig Advanced Soil Borings:

The drilling and installation of monitoring wells will be performed using a rotary drill rig which will have sufficient capacity to perform 4 1/2-inch inside diameter (ID) hollow-stem auger drilling in the overburden, retrieve split-spoon samples, and perform necessary rock coring to provide a minimum 3-inch diameter core, known in the industry as "NX." The borehole may be reamed to 5 1/2-inch diameter prior to monitoring well installation as cased hole in the bedrock, or may be left as open hole, with NYSDEC concurrence.

6.1.2. Drilling Techniques

Direct Push "Geo-Probe" Advanced Borings:

Prior to initiating drilling activities, the Geo-probe, macro cores, drive rods, pertinent equipment, well pipe and screens will be steam cleaned or washed with an alconox and water solution followed by a clean water rinse. This cleaning procedure will also be used between each boring. These activities will be performed in a designated on-site decontamination area. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used. The drilling rig and all equipment will be steam cleaned upon completion of the investigation and prior to leaving the site.

Test borings will be advanced with 2-inch direct push macro-cores through overburden soils. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

It will be the responsibility of the consultant to arrange for the appropriate drilling equipment to be present at the site. Standby time to arrange for additional equipment or a water supply will not be allowed unless caused by unexpected site conditions.

During the drilling, a Photoionization detector (PID) will be used to monitor the gases exiting the hole. Macro-core cuttings will be contained if the PID meter readings are greater than 5 ppm above background or the cuttings show visible evidence of contamination.

Drill Rig Advanced Borings:

Prior to initiating drilling activities, the drilling rig, augers, rods, split spoons, pertinent equipment, well pipe and screens will be steam cleaned. This cleaning procedure will also be used between each boring. These activities will be performed in a designated on-site decontamination area. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used. The drilling rig and all equipment will be steam cleaned upon completion of the investigation and prior to leaving the site.

Test borings will be advanced with 4 1/2-inch (ID) hollow stem augers through overburden, and NX-sized diamond core barrels in competent rock, driven by truck-, track-, or trailer-mounted drilling equipment. Alternative methods of drilling or equipment may be allowed or requested for site-specific criteria, but must be approved by the NYSDEC. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative. One sample from each drilling water source may be analyzed for full TCL.

It will be the responsibility of the consultant to arrange for the appropriate drilling equipment to be present at the site. Standby time to arrange for additional equipment or a water supply will not be allowed unless caused by unexpected site conditions.

During the drilling, a photoionization detector (PID) will be used to monitor the gases exiting the hole. Auger cuttings will be contained if the PID meter readings are greater than 5 ppm above background or the cuttings show visible evidence of contamination.

Where bedrock wells are required, test borings shall be advanced into rock with NX coring tools. Only water from an approved source shall be used in rock coring. The consultant shall monitor and record the petrology, core recovery, fractures, rate of advance, water levels, and water lost or produced in each test boring. The Rock Quality Determination (RQD) value shall be calculated for each 5-foot core. Each core shall be screened with a PID upon extraction to determine proper handling procedure. All core samples shall be retained and stored by the consultant, for review by NYSDEC, in an approved wooden core box for a period of not less than one year.

Bedrock well installation will involve construction of a rock socket. The socket will be drilled into the top of rock at each bedrock well location to allow permanent 3-inch casing to be grouted securely in place prior to completion of the well. The purpose for this is to provide a seal at the overburden/bedrock interface and into the upper bedrock surface, to prevent the entrance of overburden water into the bedrock.

To construct the rock socket, a core hole will be reamed out to a minimum diameter of 3 7/8-inches and set into the first 5-feet of bedrock. This will allow the placement of permanent 3-inch diameter Polyvinyl chloride (PVC) well casing into the bedrock surface. The method selected may be percussion or rotary drilling at the option of the subcontractor. The method and equipment selected must be capable of penetrating the bedrock at each well location to a depth required by the work plan and will be selected based on the results of the rock coring performed.

While the augers are seated on top of bedrock, a cement grout will be tremied into the bedrock socket. Once sufficient grout has been place, the 3-inch PVC casing will be lowered into the bedrock socket. A PVC plug will be placed in the end of the 3-inch PVC casing, prior to insertion in the borehole, to prevent grout from entering the PVC casing. Once the 3-inch PVC casing is in place, the augers can be removed and the remaining grout should be added. After the grout and 3-inch PVC casing have set up for 24 hours, the remaining amount of bedrock can be NX cored through the 3-inch PVC casing to a depth determined by the work plan as shown in Figure 1.

6.1.3. Well Casing (Riser)

Direct Push Geo-Probe Groundwater Monitoring Wells:

Direct Push Geo-Probe advanced groundwater-monitoring wells utilized 1.25-inch threaded flush joint PVC pipe.

Drill Rig Advanced Groundwater Monitoring Wells:

The well riser shall consist of 2-inch or 4-inch diameter, threaded flush-joint PVC pipe. All well risers will conform to the requirements of ASTM-D 1785 Schedule 40 pipe, and shall bear markings that will identify the material as that which is specified. All materials used to construct the wells will be NSF/ASTM approved.

6.1.4. Well Screen

Direct Push Geo-Probe Groundwater Monitoring Wells:

Direct Push Geo-Probe advanced groundwater-monitoring wells utilized 1.25-inch well screen. Groundwater-monitoring wells will set to intersect the top of the shallow overburden groundwater table. Each geo-probe advanced well will be equipped with 10 feet of .010 inch slotted PVC screen connected to an appropriate length of PVC riser to complete the well installation.

Drill Rig Advanced Groundwater Monitoring Wells:

Generally, wells will be constructed with 10-foot machine-slotted screens, unless otherwise specified or dictated by field conditions (i.e., screens of less than 10-feet in length may be used, depending on the characteristics of the well). The well screen slot size will be selected based on the filter pack grain size and the ability to hold back 85 percent or more of the filter pack materials. Screen and riser sections shall be joined by flush-threaded coupling to form watertight unions that retain 100% of the strength of the casing. Solvent PVC glue shall not be used at any time in the construction of the wells. The bottom of the screen shall be sealed with a treated cap or plug. No lead shot or lead wool is to be employed in sealing the bottom of the well or for sealant at any point in the well.

All risers and screens shall be set round, plumb, and true to line.

6.1.5. Artificial Sand Pack

Granular backfill will be chemically and texturally clean (as determined using a 10x hand lens), inert, siliceous, and of appropriate grain size for the screen slot size and the host environment. Sand pack grain size will be selected based on sieve analyses of formation samples. The sand pack will be installed using a tremie pipe and the casing will be equipped with centralizers (wells 15 ft. or deeper only) to minimize the tendency for particle separation and bridging... Prior to casing and screen insertion, a minimum of 1-foot of gravel-pack bedding will be placed in the bottom of the hole. The well screen and casing will be installed, and the sand pack placed around the screen and casing to a depth extending at least 25 percent of the screen length above the top of the screen.

6.1.6. Bentonite Seal

A minimum 2-foot thick seal of tamped bentonite pellets will be placed directly on top of the sand pack, and care will be taken to avoid bridging. The seal will be measured immediately after placement, without allowance for swelling.

6.1.7. Grout Mixture

Upon completion of the bentonite seal, the well will be grouted with a non-shrinking cement grout (e.g., Volclay®) mix to be placed from the top of the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland cement (ASTM C 150) and water, in the proportion of not more than 7 gallons of clean water per bag of cement (1 cubic foot or 94 pounds). Additionally, 3% by weight of bentonite powder shall be added, if permitted.

6.1.8 Surface Protection

At all times during the progress of the work, precautions shall be used to prevent tampering with or the entrance of foreign material into the well. Upon completion of the well, a suitable lockable cap shall be installed to prevent material from entering the well. The PVC well riser shall be protected by a flush mounted road box set into a concrete pad. A concrete pad, sloped away from the well, shall be constructed around the flush mount road box at ground level.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction shall be capped with a watertight cap and equipped with a "vandal-proof" cover, satisfying applicable NYSDEC regulations or recommendations.

6.1.9. Surveying

Coordinates and elevations will be established for each monitoring well and sampling location. Elevations to the closest 0.01 foot shall be used for the survey. These elevations shall be referenced to a regional, local, or project-specific datum. USGS benchmarks will be used whenever available. The location, identification, coordinates, and elevations of the wells will be plotted on maps with a scale large enough to show their location with reference to other structures at each site.

6.1.10. Well Development

After completion of the well, but not sooner than 24 hours after grouting is completed, development will be accomplished using pumping, bailing, or surge blocking. No dispersing agents, acids, disinfectants, or other additives will be used during development or introduced into the well at any other time. During development, water will be removed throughout the entire water column by periodically lowering and raising the pump intake (or bailer stopping point).

Well development will include washing the entire well cap and the interior of the well casing above the water table, using only water from the well itself. As a result of this operation, the well casing will be free of extraneous materials (grout, bentonite, and sand) inside the riser, well cap, and blank casing between top of the well casing and water table. This washing will be conducted before and/or during development; not after development. Development water will be either properly contained and treated as waste until the results of chemical analysis of samples are obtained or discharged on site as determined by the site-specific work plans and/or consultation with the NYSDEC representatives on site.

The development process will continue until a stabilization of pH, specific conductance, temperature, and clarity (goal of <50 NTUs) of the discharge is achieved or for a maximum of two hours.

After final development of the well, water levels will be recorded and approximately 1 liter of water from the well will be collected in a clear glass jar, labeled and photographed, and submitted as part of the well log. The photograph will be taken to show the relative clarity of the water. Visual identification of the physical characteristics of removed sediments will also be recorded.

7. Geologic Logging and Sampling

At each investigative location, the boring will be advanced through overburden using either a drill rig and hollow-stem auger or direct push technology; soils will be visually inspected for stains and monitored with a PID to help determine potential for vertical migration of contaminants. Soil samples will be collected continuously in both the unsaturated soil zone and the saturated zone. Selected wells will be sampled continuously over the entire depth of the well. The sampling device will be decontaminated according to procedures outlined in the Decontamination section of this document. The split-spoon sampler will be driven into the soil using a 140-pound safety hammer and allowed to free-fall 30-inches, in accordance with ASTM-D 1586-84 specifications. The number of blows required to drive the sampler

each 6-inches of penetration will be recorded. Soil samples will be screened in the field for volatile organic vapors using a PID, classified in accordance with Unified Soil Classification System (USCS) specifications, and logged. Samples will be stored in glass jars until they are needed for testing or the project is complete.

All samples will be screened with a PID during collection. The headspace of all samples taken in the field will be screened using USEPA method 3810.

Monitoring well borings will be advanced to maximum design depth below the ground surface, as indicated by the work plan for each site. If hard boulders or bedrock result in auger refusal, rock coring will be used to advance the hole to design depth. If hydrogeologic conditions are favorable for well installation at a depth less than design, the well will be installed at the boring or coring termination depth. In the event that maximum design depth is reached and hydrogeologic conditions are not suitable for well installation, the maximum drilling depth will be revised. Hydrogeologic suitability for well emplacement will be determined by the supervising geologist in consultation with NYSDEC, based on thickness and estimated hydraulic conductivity of the saturated zone encountered. If necessary, the borehole will be advanced to water or abandoned.

Boulders and bedrock encountered during well installation shall be cored by standard diamond-core drilling methods using an "NX" size core barrel. All rock cores recovered will be logged by a geologist, labeled, photographed, and stored in wooden core boxes. The photographs will be submitted as part of the completed boring logs. The cores will be stored by the firm until the project is completed or for at least one year. Drilling logs will be prepared by an experienced geologist or geotechnical engineer, who will be present during all drilling operations. One copy of each field boring and well construction log, including color photographs of the rock core, if encountered, and groundwater data, will be submitted as part of the RI report. The RQD value shall be calculated for each 5-foot section. Information provided in the logs shall include, but not be limited to, the following:

- Date, test hole identification, and project identification
- Name of individual developing the log
- Name of driller and assistant(s)
- Drill, make and model, auger size
- Identification of alternative drilling methods used and justification thereof (e.g., rotary drilling with a specific bit type to remove material from within the hollow stem augers)
- Standard penetration test (ASTM D-1586) blow counts
- Field diagram of each monitoring well installed with the depth to bottom of screen, top of screen, and pack, bentonite seal, etc.
- Reference elevation for all depth measurements
- Depth of each change of stratum
- Thickness of each stratum
- Identification of the material of which each stratum is composed, according to the USCS system or standard rock nomenclature, as appropriate
- Depth interval from which each sample was taken
- Depth at which hole diameters (bit sizes) change
- Depth at which groundwater is encountered
- Depth to static water level and changes in static water level with well depth
- Total depth of completed well

- Depth or location of any loss of tools or equipment
- Location of any fractures, joints, faults, cavities, or weathered zones
- Depth of any grouting or sealing
- Nominal hole diameters
- Amount of cement used for grouting or sealing
- Depth and type of well casing
- Description of well screen (to include depth, length, location, diameter, slot sizes, material, and manufacturer)
- Any sealing-off of water-bearing strata
- Static water level upon completion of the well and after development
- Drilling date or dates
- Construction details of well
- An explanation of any variations from the work plan

8. Hydraulic Conductivity Testing Procedures

If necessary, single-well, rising head tests will be performed in order to determine the in-place hydraulic conductivity of unconsolidated and/or consolidated geologic materials, which occur in the monitoring interval of newly, installed wells. The tests will be performed by a qualified hydrogeologist. These tests involve lowering the water level in the well and measuring the change in head with respect to time as the well is allowed to recover. In wells, which are slow to recover, the water level will be bailed down as described below. The measurements in these wells will be taken manually. Wells, which recover too quickly for this method, will be tested by removing one bailer of water and the recovery measured by means of a pressure transducer system.

The rising head tests for wells with rapid recovery rates will be conducted as follows:

- The static water level in the well to be tested is measured and recorded.
- The pressure transducer is placed in the well to a minimum depth of three feet below the static water level.
- Readings are made using the data logger until three consecutive readings are the same (equilibrium conditions).
- The data logger is then calibrated to read 0.00 feet at static conditions. A pre-cleaned bailer is then lowered into the well and placed just below the water surface.
- Water level measurements are made until the water level returns to static conditions following introduction of the bailer. If static conditions are not reached within 15 minutes following introduction of the bailer, the well will be tested using the procedures described below for slow recovery wells.
- Once static conditions are reestablished, the bailer is rapidly removed from the water column thereby creating an instantaneous decline of the water level in the well. Coincident with the withdrawal of the bailer, automatic logging of the water levels is initiated using the data logger. The primary goal in the recovery test is to "instantaneously" remove a volume of water that will result in a measurable head decline, the recovery of which (to static conditions) can be monitored over time. Such an instantaneous withdrawal results in recovery due to contributions of flow from the surrounding formation. This flow is controlled by its hydraulic conductivity and not by other factors such as storage effects.

- The water level measurements will continue until water levels recover to within a minimum of 10 percent of the original static water level (90 percent recovery), or an elapsed time of one hour. If the well has not recovered to static conditions after one hour at the discretion of the hydrogeologist, the transducer will be removed and the well will be tested at a later date using the procedures described below for slow recovery wells.
- Data stored in the data loggers will be "dumped" to a hard copy printout using a field printer or to a magnetic disk using a portable computer. If field printouts are used, they will be dated and signed by the hydrogeologist.

For wells with slow recovery rates, the following procedures will be used:

- The static water level is measured and recorded.
- The well is bailed by hand until the depth to water appears to stabilize based on the depth of travel of the bailer rope or to the top of the open or screened interval in wells which are screened below the standing water level.
- The bailer is then removed and water level measurements are collected by hand (measuring tape or electronic water level indicator) at a frequency, which will provide approximately 15 to 20 data, points during recovery (to within 10 percent of the total drawdown), if feasible. Water level measurements are recorded on the hydraulic conductivity testing report.
- A pre-cleaned bailer (one for each well) will be used in the rising head testing. All equipment entering the well, such as the transducer and transducer cable, will be cleaned prior to reuse in accordance with the Decontamination section below. All well water and rinse water generated by the tests will be collected in appropriate containers and disposed of in accordance with the Investigation Derived Materials section below.
- The data from both types of rising head tests will be reduces and evaluated.
- The following equation will be used to calculate the in-situ hydraulic conductivity of the formation opposite the interval of the piezometer (Hvorslev, 1951).

$$k = d^2 \ln \frac{\left[\frac{2mL}{D}\right]}{8L(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

Where:

K = hydraulic conductivity (ft./min.)
d = casing diameter (ft.)
L = intake length (ft.)
D = intake diameter (ft.)
t_1 = time 1 from semilog graph (min.)
t_2 = time 2 from semilog graph (min.)
H_1 = residual head (ft.) corresponding to t_1
H_2 = residual head (ft.) corresponding to t_2
m = square root of the ratio of horizontal to vertical permeability (an estimated value)

9. Groundwater Sampling Procedures

The groundwater in all new and existing monitoring wells will be allowed to stabilize for 7 days following development and permeability testing. Water levels will be measured to within 0.01 foot prior to purging and sampling. A temporary staff gauge or other surface water elevation measuring device will be established on any nearby surface water body, which may significantly influence groundwater movement. The surface elevation of these water bodies will be checked whenever groundwater elevations are measured. Purging and sampling of each well will be accomplished using precleaned dedicated PVC bailers on new polypropylene line. Purging will be less aggressive than development to avoid turbidity problems (e.g., avoid "free-falling" bailers). In general, wells will be purged until the pH, conductivity, temperature, and turbidity of the water being pumped from the well have stabilized. All wells will be purged of at least three well-bore volumes or to dryness.

Groundwater samples will be collected according to the following procedures and in the volumes specified in Table 5-1:

- Water clarity will be quantified during sampling with a turbidity meter
- When transferring water from the bailer or pump line to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor, turbidity) at the time of sampling will be recorded
- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded

All groundwater samples and their accompanying QC samples will be run for volatile organic chemicals using NYSDEC ASP 91-1.

10. Geotechnical Sampling

A grain size analysis will be conducted by sieving for two non-cohesive units, and Atterberg limits for one cohesive unit, (ASTM methods D 4318-84 and D 422-63, respectively) in each borehole. Grain size analysis by hydrometer will be performed on soils where 20 percent of the sample is less than No. 200 sieve size (i.e., silt or clay). Site-specific work plans indicate specific sampling requirements for physical or geotechnical testing.

Remolded permeability samples will be analyzed in accordance with ASTM D-5084.

11. Sub-Slab Soil Vapor and Soil Gas Investigations

The sub-slab soil vapor and soil gas investigation procedures are based on the New York Department of Health *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006.

The applicable procedures to be implemented are summarized below:

1. Soil gas sampling points are generally installed using direct push technology to approximately 4 to 5 feet in-depth. A porous, inert backfill material (e.g., glass beads or coarse sand) will be used to create a sampling zone of 1 to 2 feet in length. The soil gas sampling points will be constructed of inert tubing (e.g., polyethylene, stainless steel, or Teflon®) of the appropriate size (typically 1/8 inch to 1/4 inch diameter) and of laboratory or food grade quality to the surface. The soil gas sampling points will be sealed above the sampling zone with a minimum 1-foot bentonite slurry. In addition, the sampling zone will be a minimum of 3-feet below the ground surface in order to minimize outdoor air infiltration. The remainder of the borehole will be backfilled with clean material. Soil gas sampling points will be finished with protective casings that are grouted in place to minimize infiltration of water or outdoor air and to prevent damage to the soil gas sampling point.

2. Subsequent to installation, the probes will be allowed to equilibrate at least 24 hours prior to purging and sampling. Initially, one to three probe volumes (i.e., the volume of the sample probe and tube/riser pipe) will be purged in order to ensure that the samples collected are representative of soil gas conditions. The flow rate during purging will not exceed 0.2 liters per minute (L/min) to minimize outdoor air infiltration.

3. During purging of the sample point, a tracer gas evaluation will be conducted to verify the integrity of the soil gas probe seal. An appropriate tracer gas will be used (e.g., sulfur hexafluoride (SF6), helium, etc.). An enclosure will be constructed around the soil gas sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed to the sample point casing. Subsequently, the enclosure will be enriched with the tracer gas. The purged soil gas will then be tested for the tracer gas by an appropriate meter (i.e., a meter capable of measuring the concentration of the tracer gas in at least percentage increments). In the event that the tracer gas is detected at a concentration of 10% or greater, the sample point will be resealed and retested prior to sampling.

4. Soil gas samples will be collected over the same general time period and in the same manner at all locations to minimize possible discrepancies. Soil gas samples will be collected using Summa Canisters® equipped with flow control regulators. The regulators will be calibrated by the laboratory for a sampling time of 6-hours. The Summa Canister will be connected to the soil gas sampling point via inert tubing (e.g., polyethylene, stainless steel, or Teflon®).

5. In addition to the soil gas samples, one exterior ambient air sample will also be collected. The ambient air sample will be collected from about 3 to 4-ft. above the ground using a Summa Canister over the same approximate sampling period. In addition, the ambient air sample will be collected from the apparent upgradient location (i.e., upwind).

6. Subsequent to completing soil gas sampling, the samples will be sent under chain of custody control to the laboratory for testing. The samples will be tested for VOCs using USEPA Method TO-15. A minimum detection limit of 1 $\mu g/m^3$ should be achievable based on the sample volume and analytical method.

7. At the time of sampling, the NYSDOH indoor air quality questionnaire and building inventory form will be completed. The following information (but not limited to) will be documented as part of these forms:

   - inventory of volatile chemicals used at the Site during normal operations of the facility
   - a sketch of the Site and sampling locations relative to area streets, neighboring properties and structures (with estimated distance to the site), outdoor ambient air sample location(s), if applicable, and orientation (north arrow)
   - weather conditions (e.g., precipitation, outdoor temperature, barometric pressure, wind speed and direction) should be noted for the past 24 to 48 hours
   - any pertinent observations should be recorded, such as odors and readings from field instrumentation

8. In addition to the above information, a sample log sheet summarizing the following information for each sample will be documented:

   - sample identification
   - date and time of sample collection
   - sampling depth
   - identity of sampler(s)
   - sampling methods and devices
   - purge volumes
   - volume of soil vapor extracted
   - the vacuum before and after samples are collected
   - apparent moisture content (dry, moist, saturated, etc.) of the sampling zone
   - chain of custody protocols used to track samples from sampling point to analysis

12. Management of Investigative-Derived Waste

Purpose:

The purposes of these guidelines are to ensure the proper holding, storage, transportation, and disposal of materials that may contain hazardous wastes. Investigation-derived waste (IDW) included the following:

- Drill cuttings, discarded soil samples, drilling mud solids, and used sample containers
- Well development and purge waters and discarded groundwater samples
- Decontamination waters and associated solids
- Soiled disposable personal protective equipment (PPE)
- Used disposable sampling equipment
- Used plastic sheeting and aluminum foil
- Other equipment or materials that either contain or have been in contact with potentially-impacted environmental media
- Because these materials may contain regulated chemical constituents, they must be managed as a solid waste. This management may be terminated id characterization analytical results indicate the absence of these constituents

Procedure:

1. Contain all investigation-derived wastes in Department of Transpiration (DOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.
2. Contain wastes from separate borings or wells in separate containers (i.e. do not combine wastes from several borings/wells in a single container, unless it is a container used specifically for transfer purposes, or unless specific permission to do so has been provided by the LaBella Project Manager. Unused samples from surface sample locations within a given area may be combined.
3. To the extent practicable, separate solids from drilling muds, decontamination waters, and similar liquids. Place solids within separate containers.
4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.
5. Pending transfer, all containers will be covered and secured when not immediately attended,
6. Label all containers with regard to contents, origin, and date of generation. Use indelible ink for all labeling.
7. Collect samples for waste characterization purposes, use boring/well sample analytical data for characterization.
8. For wastes determined to be hazardous in character, be aware on accumulation time limitations. Coordinate the disposal of these wastes with the Owner and NYSDEC.
9. Dispose of investigation-derived wastes as follows;
    - Soil, water, and other environmental media for which analysis does not detect organic constituents, and for which inorganic constituents are at levels consistent with background, may be spread on-site or otherwise treated as a non0-waste material.
    - Soils, water, and other environmental media in which organic compounds are detected or metals are present above background will be disposed as industrial waste. Alternate disposition must be consistent with applicable State and Federal laws.
    - Personal protective equipment, disposable bailers, and similar equipment may be disposed as municipal waste, unless waste characterization results mandate disposal as industrial wastes

13. Decontamination

Sampling methods and equipment have been chosen to minimize decontamination requirements and to prevent the possibility of cross-contamination. Decontamination of equipment will be performed between discrete sampling locations. Equipment used to collect samples between composite sample locations will not require decontamination between collection of samples. All drilling equipment will be decontaminated prior to drilling, after drilling each monitoring well, and after the completion of all drilling. Special attention will be given to the drilling assembly, augers, and PVC casing and screens.

Drilling decontamination will consist of:

- Steam cleaning
- Scrubbing with brushes, if soil remains on equipment
- Steam rinse

Split spoons and other non-disposable equipment will be decontaminated between each sampling event. The sampler will be cleaned prior to each use, by one of the following procedures:

- Initially cleaned of all foreign matter
- Sanitized with a steam cleaner

OR

- Initially cleaned of all foreign matter
- Scrubbed with brushes in trisodium phosphate or alconox solution
- Rinsed with deionized water
- Rinsed with pesticide grade methanol
- Triple rinsed with deionized water
- Allowed to air dry

14. Sample Containers

The volumes and containers required for the sampling activities are included in pre-washed sample containers will be ordered directly from a firm, which prepares the containers in accordance with EPA bottle washing procedures.

Table 1
Water Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Purgeable (volatile) Organics	40-ml glass vial with Teflon-backed septum	Two (2); fill completely, no air space	Cool to 4° C (ice in cooler)	7 days

* Holding time is based on verified time of sample receipt at laboratory.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures. These procedures are incorporated in LaBella Associates Quality Control Procedures Manual, January, 1992

TABLE 2
Soil Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Purgeable (volatile) Organics	8-oz, glass jar with Teflon-lined cap	Two (2), fill as completely as possible	Cool to 4° C (ice in cooler)	7 days
RCRA Characterization	8-oz. glass jar with Teflon-lined cap	One (1); fill completely	Cool to 4° C (ice in cooler)	Must be extracted within 10 days; analyzed with 30 days

* Holding time is based on the times from verified time of sample receipt at the laboratory.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures. These procedures are incorporated in LaBella Associates Quality Control Procedures Manual, January, 1992.

TABLE 3
List of Major Instruments for Sampling and Analysis

- MSA 360 0_2 /Explosimeter
- Photovac Micro Tip FID or PID
- Organic Vapor Analyzer Foxboro (128)
- Hollige Series 963 Nephlometer (turbidity meter)
- EM-31 Geomics Electromagnetic Induction Device
- pH/Temperature/Conductivity Meter - Portable
- Hewlett Packard (HP) 1000 computer with RTE-6 operating system; and HP 9144 computer with RTE-4 operating system equipped with Aquarius software for control and data acquisition from gas chromatograph/mass spectrometer (GC/MS) systems; combined wiley and National Bureau of Standards (NBS) mass spectral library; and data archiving on magnetic tape
- Viriam 6000 and 37000 gas chromatrographs equipped with flame ionization, electron capture, photoionization and wall detectors as appropriate for various analyses,, and interfaced to Variam DS604 or D5634 data systems for processing data.
- Spectra-Physics Model SP 4100 and SP 4270 and Variam 4270 cam puting integrators
- Perkin Eimer (PE) 3000% and 3030% fully Automated Atomic Absorption Spectrophotometers (AAS) with Furnace Atomizer and background correction system
- PE Plasma II Inductively Coupled Argon Plasma (ICAP) Spectre meter with PE7500 laboratory computer
- Dionex 20001 ion chromatograph with conductivity detector for anion analysis, with integrating recorder

15. Sample Custody

This section describes standard operating procedures for sample identification and chain-of-custody to be utilized for all Phase II field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage through analysis. All chain-of-custody requirements comply with standard operating procedures indicated in EPA sample handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field notebooks,
- Sample label,
- Custody seals, and
- Chain-of-custody records.

16. Chain-of-Custody

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

16.1. Field Custody Procedures

- As few persons as possible should handle samples.
- Sample bottles will be obtained precleaned from a source such as I-Chem. Coolers or boxes containing cleaned bottles should be sealed with a custody tape seal during transport to the field or while in storage prior to use.
- The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules.
- The sample collector will record sample data in the notebook.
- The site manager will determine whether proper custody procedures were followed during the fieldwork and decide if additional samples are required.

16.2. Sample Tags

Sample tags attached to or affixed around the sample container must be used to properly identify all samples collected in the field. The sample tags are to be placed on the bottles so as not to obscure any QC lot numbers on the bottles; sample information must be printed in a legible manner using waterproof ink. Field identification must be sufficient to enable cross-reference with the logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

16.3. Transfer of Custody and Shipment

- The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the chain-of-custody record. This record documents sample custody transfer.
- Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are entered in the "Remarks" section of the chain-of-custody record and traffic reports.
- All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment. The other copies are distributed appropriately to the site manage.
- If sent by mail, the package is registered with return receipt requested. If sent by common carrier, a bill of lading is used. Freight bills, Postal Service receipts, and bill of lading are retained as part of the permanent documentation.

16.4. Chain-of-Custody Record

The chain-of-custody record must be fully completed in duplicate, using black carbon paper where possible, by the field technician who has been designated by the project manager as responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints in the "Remarks" section of the record.

16.5. Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain-of-custody record and traffic reports, if required. Pertinent information as to shipment, pickup, and courier is entered in the "Remarks" section.

16.6. Custody Seals

Custody seals are preprinted adhesive-backed seals with security slots designed to break if the seals are disturbed. Sample shipping containers (coolers, cardboard boxes, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before use. On receipt at the laboratory, the custodian must check (and certify, by completing the package receipt log and LABMIS entries) that seals on boxes and bottles are intact. Strapping tape should be placed over the seals to ensure that seals are not accidentally broken during shipment.

17. Documentation

17.1. Sample Identification

All containers of samples collected from the project will be identified using the following format on a label or tag fixed to the sample container (labels are to be covered with Mylar tape):

XX-YY-O/D

- XX This set of initials indicates the specific Phase II sampling project
- YY These initials identify the sample location. Actual sample locations will be recorded in the task log.
- O/D An "O" designates an original sample; "D" identifies it as a duplicate.

Each sample will be labeled, chemically preserved, if required and sealed immediately after collection. To minimize handling of sample containers, labels will be filled out prior to sample collection. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers and protected with Mylar tape. The sample label will give the following information:

- Name of sampler
- Date and time of collection
- Sample number
- Analysis required
- pH
- Preservation

17.2. Daily Logs

Daily logs and data forms are necessary to provide sufficient data and observations to enable participants to reconstruct event that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal proceedings. All daily logs will be kept in a bound waterproof notebook containing numbered pages. All entries will be made in waterproof ink, dated, and signed. No pages will be removed for any reason. Corrections will be made according to the procedures given at the end of this section. The daily logs will include a site log and task log.

The site log is the responsibility of the site manager and will include a complete summary of the day's activity at the site.

The **Task Log** will include:

- Name of person making entry (signature)
- Names of team members on-site
- Levels of personnel protection
  - Level of protection originally used
  - Changes in protection, if required
  - Reasons for changes

- Time spent collecting samples
- Documentation on samples taken, including
  - Sampling location and depth station numbers
  - Sampling date and time, sampling personnel
  - Type of sample (grab, composite, etc.)
  - Sample matrix
- On-site measurement data
- Field observations and remarks
- Weather conditions, wind direction, etc.
- Unusual circumstances or difficulties
- Initials of person recording the information

18. Corrections to Documentation

18.1. Notebook

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside. The correction must be initialed and dated. Most corrected errors will require a footnote explaining the correction.

18.2. Sampling Forms

As previously stated, all sample identification tags, chain-of-custody records, and other forms must be written in waterproof ink. None of these documents are to be destroyed or thrown away, even if they are illegible or contain inaccuracies that require a replacement document.

If an error is made on a document assigned to one individual, that individual may make corrections simply by crossing a line through the error and entering the corrected information. The incorrect information should not be obliterated. Any subsequent error discovered on a document should be corrected by the person who made the entry. All corrections must be initialed and dated.

18.3. Photographs

Photographs will be taken as directed by the site manager. Documentation of a photograph is crucial to its validity as a representation of an existing situation. The following information will be noted in the task log concerning photographs:

- Date, time, location photograph was taken
- Photographer (signature)
- Weather conditions
- Description of photograph taken
- Reasons why photograph was taken
- Sequential number of the photograph and the film roll number
- Camera lens system used

After the photographs have been developed, the information recorded in the field notebook should be transferred to the back of the photographs.

19. Sample Handling, Packaging, and Shipping

The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States Department of Transportation (DOT) in the Code of Federal Regulation, 49 CFR 171 through 177. All samples will be delivered to the laboratory with 24 to 48 hours from the day of collection.

All chain-of-custody requirements must comply with standard operating procedures in the EPA sample handling protocol. All sample control and chain-of-custody procedures applicable to the Consultant are presented in the Field Personnel Chain-of-Custody Documentation and Quality Control Procedures Manual, January 1992.

19.1. Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- The sample volume level can be marked by placing the top of the label at the appropriate sample height, or with a grease pencil. This procedure will help the laboratory to determine if any leakage occurred during shipment. The label should not cover any bottle preparation QC lot numbers.
- All sample bottles are placed in a plastic bag to minimize the potential for vermiculite contamination.
- Shipping coolers must be partially filled with packing materials and ice when required, to prevent the bottles from moving during shipment.
- The sample bottles must be placed in the cooler in such a way as to ensure that they do not touch one another.
- The environmental samples are to be cooled. The use of "blue ice" or some other artificial icing material is preferred. If necessary, ice may be used, provided that it is placed in plastic bags. Ice is not to be used as a substitute for packing materials.
- Any remaining space in the cooler should be filled with inert packing material. Under no circumstances should material such as sawdust, sand, etc., be used.
- A duplicate custody record and traffic reports, if required must be placed in a plastic bag and taped to the bottom of the cooler lid. Custody seals are affixed to the sample cooler.

19.2. Shipping Containers

Shipping containers are to be custody-sealed for shipment as appropriate. The container custody seal will consist of filament tape wrapped around the package at least twice and custody seals affixed in such a way that access to the container can be gained only by cutting the filament tape and breaking a seal.

Field personnel will make arrangements for transportation of samples to the lab. When custody is relinquished to a shipper, field personnel will telephone the lab custodian to inform him of the expected time of arrival of the sample shipment and to advise him of any time constraints on sample analysis. The lab must be notified as early in the week as possible, and in no case later than 3 p.m. (EST) on Thursday, regarding samples intended for Saturday delivery.

19.3. Marking and Labeling

- Use abbreviations only where specified.
- The words "This End Up" or "This Side Up" must be clearly printed on the top of the outer package. Upward pointing arrows should be placed on the sides of the package. The words "Laboratory Samples" should also be printed on the top of the package.
- After a sample container has been sealed, two chain-of-custody seals are placed on the container, one on the front and one on the back. The seals are protected from accidental damage by placing strapping tape over then.
- If samples are designated as medium or high hazard, they must be sealed in metal paint cans, placed in the cooler with vermiculite and labeled and placarded in accordance with DOT regulations.
- In addition, the coolers must also be labeled and placarded in accordance with DOT regulations if shipping medium and high hazard samples.

20. Calibration Procedures and Frequency

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Documentation of all routine and special maintenance and calibration information will be maintained in an appropriate logbook or reference file, and will be available on request. Table 7-1 lists the major instruments to be used for sampling and analysis. Brief descriptions of calibration procedures for major field and laboratory instruments follow.

21. Field Instrumentation

21.1. Photovac Micro Tip Flameionizer (FID)

Standard operating procedures for the FID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers.

21.2. Photovac/MiniRea Photoionization Detector (PID)

Standard operating procedures for the PID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers.

21.3. Organic Vapor Analyzer

Organic vapor analyzers (OVAs) are calibrated and routine maintenance performed every six months when the units are not in use. Calibration is performed and the major system checks are performed prior to the instrument being released for field use.

Calibration of the OVA 128 GC must be performed by a factory-authorized service representative. The instrument is removed from its protective case and the probe is connected to the base unit. After checking for an airtight seal in the sample line (plugging the sample inlet to stop the pump), the hydrogen supply is turned on and the pressure is set to 10 psi. The electronics are turned on and the instrument is allowed to warm up for at least 5 minutes. After warm up, the instrument is zeroed on the "X10" scale using the adjust knob. The flame is then lit and a gas-tight sample bag is filled with a mixture of 100 ppm methane in air. The sample bag is then attached to the probe inlet and the internal pump is allowed to draw in as much sample as is needed. R32 on the control board is adjusted to read 100 ppm on the "X10" scale and then the hydrogen supply is shut down. The pump can now be turned off and the sample bag removed. Using the adjust knob, the meter is set to read 4 ppm on the "X1" scale. Switching back to the "X10" scale the adjust knob is again used to set the meter to 40 ppm. The scale is then set to "X100" and R33 is adjusted until the meter reads 40 ppm on the "X100" scale.

The OVA has a detection limit of 0.1 ppm in methane equivalents and a working range of 0 to 1,000 ppm. During daily field use, system checks are performed which involve calibration and maintenance of the pump systems, gases, and filters. Care is taken to check for and prevent clogging or leaks. Quad rings and the burner chamber are examined on a weekly basis. Routine biannual maintenance includes a thorough cleaning as well as a re-examination of the pump system for leaks and wear. Parts are replaced as necessary. Instrument operation is verified by calibrating and running the OVA for 4 to 6 hours. An instrument specific logbook is maintained with the OVA to document its use and maintenance.

21.4. Conductance, Temperature, and pH Tester

Temperature and conductance instruments are factory calibrated. Temperature accuracy can be checked against an NBS certified thermometer prior to field use if necessary. Conductance accuracy may be checked with a solution of known conductance and recalibration can be instituted, if necessary.

To recalibrate conductance, remove the black plug revealing the adjustment potentiometer screw. Add standard solution to cup, discard and refill. Repeat procedure until the digital display indicates the same value twice in a row. Adjust the potentiometer until the digital display indicates the known value of conductance. To increase the digital display reading, turn the adjustment potentiometer screw counter-clockwise (clockwise to decrease).

To standardize the pH electrode and meter, place the pH electrode in the 7.0 buffer bottle. Adjust the "ZERO" potentiometer on the face of the tester so that the digital display indicates 7.00.

Then place the pH electrode in the 4.0 or 10.0 buffer bottle (depending on where you expect the actual measurement to be). Adjust the "SLOPE" potentiometer on the face of the tester so that the digital display indicates the value of the buffer chosen.

Note: There is interaction between the "ZERO" and "SLOPE" adjustments, so the procedure should be repeated several times.

Do not subject the pH electrode to freezing temperatures.

It is good practice to rinse the electrode in distilled water when going from one buffer to another. When not in use the cap should be kept on the electrode. Keeping the cotton in the cap moist will keep the electrode ready to use. Moisten the cotton frequently (once a week, usually).

21.5. 0_2/Explosimeter

The primary maintenance item of the Model 260 is the rechargeable 2.4 volt (V) nickel cadmium battery. The battery is recharged by removing the screw cap covering receptacle and connecting one end of the charging cable to the instrument and the other end to a 115V AC outlet.

The battery can also be recharged using a 12V DC source. An accessory battery charging cable is available, one end of which plugs into the Model 260 while the other end is fitted with an automobile cigarette lighter plug.

Recommended charging time is 16 hours.

Before the calibration of the combustible gas indicator can be checked, the Model 260 must be in operating condition. Calibration check-adjustment is made as follows:

1. Attach the flow control to the recommended calibration gas tank.
2. Connect the adapter-hose to the flow control.
3. Open flow control valve.
4. Connect the adapter-hose fitting to the inlet of the instrument; after about 15 seconds the LEL meter pointer should be stable and within the range specified on the calibration sheet accompanying the calibration equipment. If the meter pointer is not in the correct range, stop the flow; remove the right hand side cover. Turn on the flow and adjust the "S" control with a small screwdriver to obtain a reading as specified on the calibration sheet.
5. Disconnect the adapter-hose fitting from the instrument.
6. Close the flow control valve.
7. Remove the adapter-hose from the flow control.

8. Remove the flow control from the calibration gas tank.
9. Replace the side cover on the Model 260.

CAUTION: Calibration gas tank contents are under pressure. Use no oil, grease, or flammable solvents on the flow control or the calibration gas tank. Do not store calibration gas tank near heat or fire or in rooms used for habitation. Do not throw in fire, incinerate, or puncture. Keep out of reach of children. It is illegal and hazardous to refill this tank. Do not attach the calibration gas tank to any other apparatus than described above. Do not attach any gas tank other than MSA calibration tanks to the regulator.

21.6. Nephelometer (Turbidity Meter)

The Series 95 nephelometer is calibrated before each use. Allow the instrument to warm up for approximately 2 hours. Using turbidity-free deionized water, zero the meter. Set the scale to 100, fill with a 40 NTU standard (AEPA-1 turbidity standard from Advanced Polymer Systems, Inc.), and insert into the instrument. Adjust the standardize control to give a readout of 200. Re-zero the instrument and repeat these steps with the scale set at 10 and 1 using 4.0 and 0.4 NTU standards, respectively. These standards are prepared by diluting aliquots of the 40 NTU standard.

22. Internal Quality Control Checks

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field-based QC will comprise at least 10% of each data set generated and will consist of standards, replicates, spikes, and blanks. Field duplicates and field blanks will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates or blanks. For each matrix, field duplicates will be provided at a rate of one per 10 samples collected or one per shipment, whichever is greater. Field blanks which consist of trip, routine field, and rinsate blanks will be provided at a rate of one per 20 samples collected for each parameter group, or one per shipment, whichever is greater.

Calculations will be performed for recoveries and standard deviations along with review of retention times, response factors, chromatograms, calibration, tuning, and all other QC information generated. All QC data, including split samples, will be documented in the site logbook. QC records will be retained and results reported with sample data.

22.1. Blank Samples

Blank samples are analyzed in order to assess possible contamination from the field and/or laboratory so that corrective measures may be taken, if necessary. Field samples are discussed in the following subsection:

22.2. Field Blanks

Various types of blanks are used to check the cleanliness of field handling methods. The following types of blanks may be used: the trip blank, the routine field blank, and the field equipment blank. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination. Field staff may add blanks if field circumstances are such that they consider normal procedures are not sufficient to prevent or control sample contamination, or at the direction of the project manager. Rigorous documentation of all blanks in the site logbooks is mandatory.

- **Routine Field Blanks** or bottle blanks are blank samples prepared in the field to access ambient field conditions. They will be prepared by filling empty sample containers with deionized water and any necessary preservatives. They will be handled like a sample and shipped to the laboratory for analysis.
- **Trip Blanks** are similar to routine field blanks with the exception that they are **not** exposed to field conditions. Their analytical results give the overall level of contamination from everything except ambient field conditions. One trip blank is typically collected with every batch of water samples for volatile organic analysis. Each trip blank will be prepared by filling a 40-ml vial with deionized water prior to the sampling trip, transported to the site, handled like a sample, and returned to the laboratory for analysis without being opened in the field.
- **Field Equipment Blanks** are blank samples (sometimes called transfer blanks or rinsate blanks) designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use, and that cleaning procedures between samples are sufficient to minimize cross contamination. If a sampling team is familiar with a particular site, they may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

22.3. Field Duplicates

Field duplicate samples consist of a set of two samples collected independently at a sampling location during a single sampling event. In some instances the field duplicate can be a blind duplicate, i.e., indistinguishable from other analytical samples so that personnel performing the analyses are not able to determine which samples are field duplicates. Field duplicates are designed to assess the consistency of the overall sampling and analytical system.

22.4. Quality Control Check Samples

Inorganic and organic control check samples are available from EPA free of charge and are used as a means of evaluating analytical techniques of the analyst. Control check samples are subjected to the entire sample procedure, including extraction, digestion, etc., as appropriate for the analytical method utilized.

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 4

Health & Safety Plan

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Site Health and Safety Plan

Location:

300 Commerce Drive
Henrietta, New York 14623

Prepared For:

Yaro Enterprises, Inc.
228 Rosemont Drive
Rochester, New York 14617

LaBella Project No. 208723

December 2008

Site Health and Safety Plan

Location:

300 Commerce Drive
Henrietta, New York 14623

Prepared For:

Yaro Enterprises, Inc.
228 Rosemont Drive
Rochester, New York 14617

LaBella Project No. 208723

December 2008

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Table of Contents

Page

SITE HEALTH AND SAFETY PLAN

Project Title:	300 Commerce Drive, Brownfield Cleanup Program
Project Number:	208723
Project Location (Site):	300 Commerce Drive, Henrietta, New York 14623
Environmental Director:	Gregory R. Senecal, CHMM
Project Manager:	Daniel Noll, P.E.
Plan Review Date:	December 18, 2008
Plan Approval Date:	December 18, 2008
Plan Approved By:	Richard K. Rote, CIH
Site Safety Supervisor:	Michael F. Pelychaty
Site Contact:	To Be Determined
Safety Director:	Richard K. Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	Generally level and encompassing approximately 2.7 acres
Site Environmental Information Provided By:	Phase I ESA and Phase II ESA by LaBella Associates
Air Monitoring Provided By:	LaBella Associates, P.C.
Site Control Provided By:	Contractor(s)

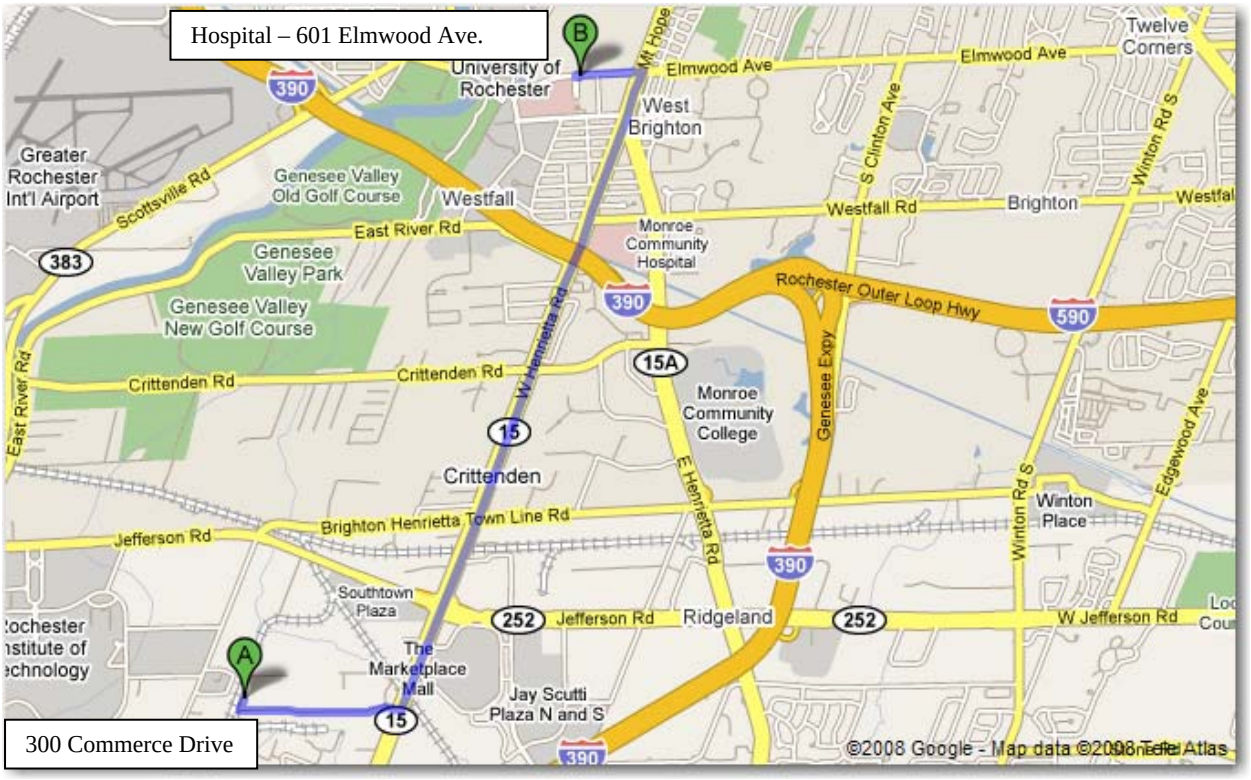
EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Strong Memorial Hospital	585-275-2100
Poison Control Center:	Finger Lakes Poison Control	585-275-3232
Police (local, state):	Monroe County Sheriff	911
Fire Department:	Henrietta Fire Department	911
Site Contact:	Tony Kirik	Direct: 585-624-3121
Agency Contact:	NYSDEC – Bart Putzig NYSDOH – Debby McNaughton Finger Lakes Poison Control MCDOH – Joseph Albert	585-226-5349 585-423-8069 1-800-222-1222 585-274-6904
Environmental Director:	Gregory R. Senecal, CHMM	Direct: 585-295-6243 Cell: 585-752-6480 Home: 585-323-2142
Project Manager:	Daniel Noll, P.E.	Direct: 585-295-6611 Cell: 585-301-8458
Site Safety Supervisor:	Michael F. Pelychaty	Direct: 585-295-6253 Cell: 585-451-6225
Safety Director	Richard K. Rote, CIH	Direct: 585-295-6241

MAP AND DIRECTIONS TO THE MEDICAL FACILITY
- STRONG MEMORIAL HOSPITAL -

Total Est. Time: 13 minutes **Total Est. Distance:** 4.4 miles

1:	Head South then East (90 degree bend in road) on Commerce Drive	0.8 miles
2:	Turn Left (North) on West Henrietta Road/Rt. 15.	3.2 miles
3:	Turn Left (West) on Elmwood Avenue	0.3 miles
4:	Turn Left (South) into Emergency Room entrance (look for signs)	<0.1 miles
5:	End at **601 Elmwood Ave** Rochester, NY 14642-0001, US	



1.0 Introduction

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during the Remedial Investigation (RI) at 300 Commerce Drive, Henrietta, Monroe County, New York. This HASP only reflects the policies of LaBella Associates P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications and the Community Air Monitoring Plan (CAMP) are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- Management of environmental investigation and remediation activities
- Environmental Monitoring
- Collection of samples
- Management of study derived waste.

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable.

Fencing and/or barriers accompanied by "no trespassing" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation or construction, work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm or benzene readings of 1.0 ppm are encountered personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

5.5 Injuries Due to Extreme Hot or Cold Weather Conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):
The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC concentrations to unacceptable levels based on field screening. These site activities include contaminated soil excavation and soil sampling activities. If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require level of protection of Level D or modified Level D. However, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8-hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring will consist at a minimum of the procedure listed below. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications.

The Air Monitor will utilize a photoionization Detector (PID) to screen the ambient air in the work areas (excavation, soil staging, and soil grading areas) for total Volatile Organic Compounds (VOCs) and a DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes or more often using a PID and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hours of use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 50 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If downwind PID measurements reach or exceed 25 ppm consistently for a 5 minute period downwind of the work area, PID readings will be taken within the buildings (if occupied) on Site to ensure that the vapors are not penetrating any occupied building and effecting the personnel working within. If the PID measurements reach or exceed 25 ppm within the nearby buildings, the personnel should be evacuated via a route in which they would not encounter the work area. The building should then be ventilated until the PID measurements within the building are at or below background levels.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL (ppm)(b)	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69
Anthracene	.2	.2	NA	NA	NA	NA	Faint aromatic	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	.096	10.07
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07
Ethylbenzene	100	100	NA	1.0	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56
Metals									
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	Almond		NA
Cadmium	0.2	0.5	NA	NA	NA				NA
Chromium	1	0.5	NA	NA	NA				NA
Lead	0.05	0.15	NA	NA	NA	700			NA
Mercury	0.05	0.05	NA	NA	NA	28	Odorless		NA
Selenium	0.2	0.02	NA	NA	NA	Unknown			NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.

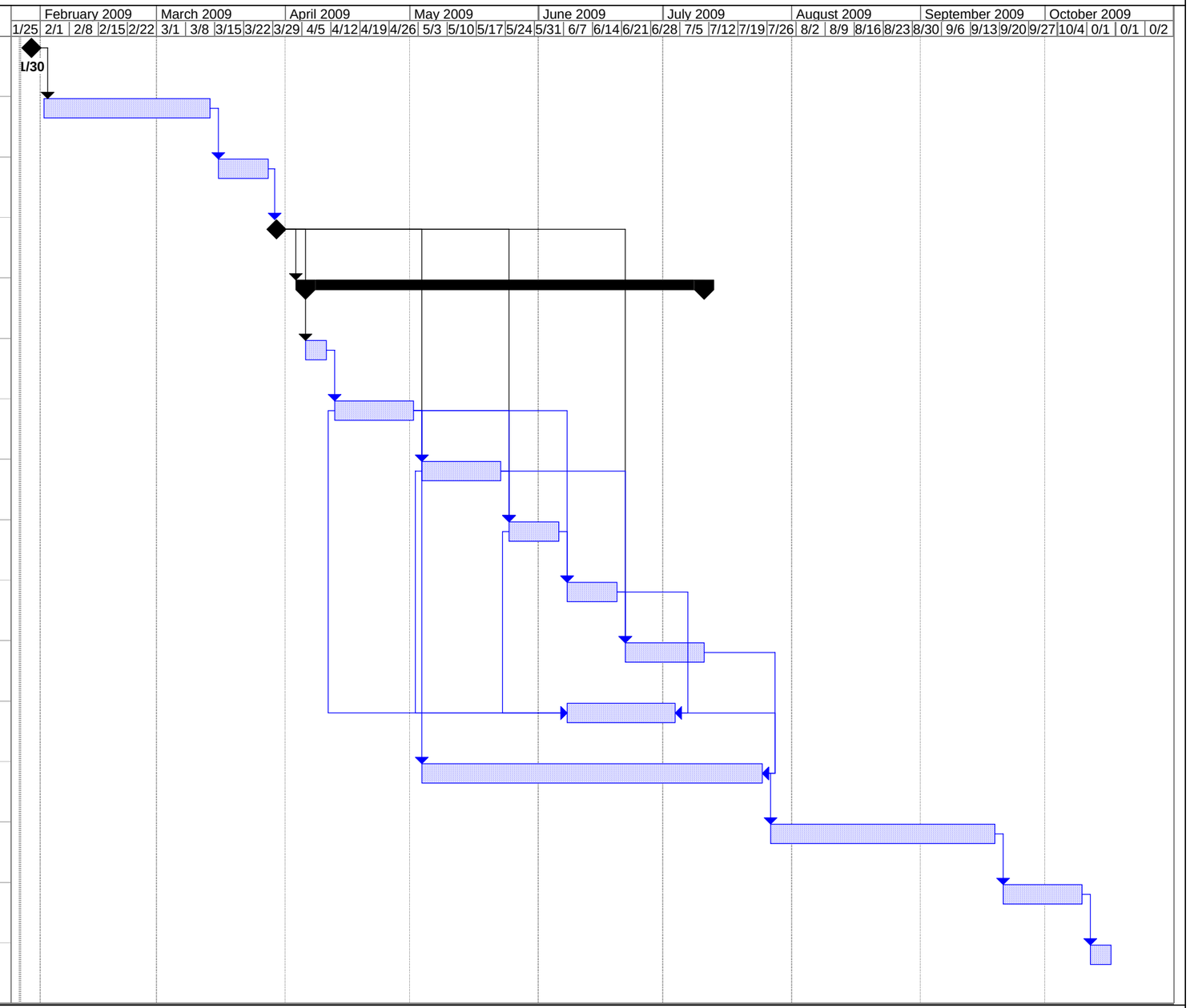
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 5

Anticipated Project Schedule

Brownfield Cleanup Program
Remedial Investigation Schedule
300 Commerce Drive
Henrietta, New York

ID	Task Name
1	Submit Remedial Investigation (RI) Work Plan
2	Public/DEC Review of Work Plan (DEC Required : 30 Calender Days)
3	Revisions to RI Work Plan
4	Formal DEC Approval of RI Work Plan
5	**Implement RI Work Plan**
6	Contractor Coordination
7	Surface Soil Sampling & Phase I - Geoprobe Soil Borings
8	Phase II - Geoprobe Soil Borings
9	Groundwater Investigation
10	Soil Gas Investigation
11	Qualitative Exposure Assessment
12	Data Usability Summary Report
13	Remedial Investigation Report
14	Public/DEC Review of RI Report and Remedial Work Plan(s), if necessary (DEC Required : 45 Calender Days)
15	Revisions to RI Report and Remedial Work Plan(s)
16	Formal DEC Approval of RI Report and Remedial Work Plans



Project #208723
Date: Tue 1/27/09

Task Milestone Summary

Note: Dates are approximate and assume certain response times. Therefore actual dates may vary.

\\mrpepe1\projects2006\Yaro Enterprise Inc\208723 BCP 300 Commerce\Clerical\Word\Rpt\Schedule.mpp