Work Plan for Remedial Investigation / Alternatives Analysis Report / Interim Remedial Measures

Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

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Prepared For:

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RI/AAR/IRM WORK PLAN

Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Table of Contents

Table of Contents

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

This document presents the proposed scope of work and implementation procedures for completion of Interim Remedial Measures (IRM), Remedial Investigation (RI) and Alternatives Analysis Report (AAR) at the Niagara Street and Pennsylvania Avenue site (Site), located at 517 Niagara Street in the City of Buffalo, New York (see Figures 1 and 2). 9154 Group, LLC plans to redevelop the Site as a commercial retail store.

9154 Group, LLC has elected to pursue cleanup and redevelopment of the Site under the New York State Brownfield Cleanup Program (BCP), and has applied to the Brownfield Cleanup Program (BCP) with the intention to enter into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC).

The RI/AAR/IRM will be completed by TurnKey Environmental Restoration, LLC (TurnKey) on behalf of 9154 Group, LLC. The work will be completed in accordance with NYSDEC DER-10 guidelines (Ref. 1).

1.1 Background

The Site is an approximate 0.27-acre parcel located on the corner of Niagara Street and Pennsylvania Avenue, addressed at 517 Niagara Street (Tax I.D. No. 110.27-5-1.1) (see Figures 1 and 2). The Site is a portion of a greater approximate 0.5-acre redevelopment area that is comprised of the Site and four adjacent parcels (see Figure 2).

The Site is developed with a former gasoline service station and auto repair facility that was built in approximately 1925 (see Figure 2). Three underground storage tanks (USTs), and associated vent and fill pipes and product dispensers remain at the Site. The former auto repair facility contains an in-ground hydraulic lift and numerous abandoned auto parts, 55-gallon drums and other containers related to historic automotive repair. The former gas station and auto repair facility is generally in poor condition and in a state of disrepair with apparent petroleum staining on the floors and observable sheen in standing water in two floor drains within the building.

The Site is bordered by Niagara Street to the west, Pennsylvania Avenue to the north, Reynolds Alley to the east and vacant parcels to the south. The Site is located in a highly developed urban area generally comprised of residential and commercial use properties.

1.2 Project Objectives

For sites entering the BCP at the point of investigation, NYSDEC requires completion of a RI/AAR. The primary objectives of the RI/AAR are to:

- Collect additional soil/fill and groundwater samples, under appropriate quality assurance/quality control criteria, to better delineate the nature and extent of contamination.
- Determine if the concentrations of constituents of concern in site soil and/or groundwater pose potential unacceptable risks to human health and the environment.
- Provide the data needed to evaluate potential remedial measures and determine appropriate actions to address potential significant risks.

As part of the Remedial Investigation, an IRM will be completed to immediately address known environmental impacts related to past use of the Site as a gasoline station and automotive repair facility. An IRM will quickly mitigate risks to public health and the environment attributable to petroleum contamination at the Site. The current UST system, including USTs, product dispensers and product piping and the in-ground lift will be removed. Impacted soil will be removed and impacted groundwater (if encountered) will be extracted and treated during the IRM.

2.0 SITE DESCRIPTION

2.1 General

The Site is an approximate 0.27-acre parcel located on the corner of Niagara Street and Pennsylvania Avenue. The Site is developed with a former gasoline service station and auto repair facility. The remainder of the Site is vacant land covered in grass or gravel (see Figure 2).

2.2 Site Topography and Drainage

The Site is generally flat lying with limited distinguishable Site features. The surface of the Site is covered with asphalt, grass or gravel. Precipitation (i.e., rain or melting snow) moves to the storm drains in the roadways via overland flow. Surface and shallow groundwater flow are likely impacted by various cycles of development and filling, as well as utility lines and foundations.

2.3 Geology and Hydrogeology

2.3.1 Overburden

The U.S. Department of Agriculture Soil Conservation Service soil survey map of Erie County (Ref. 2) describes the general soil type at the Site as urban land, indicating level to gently sloping land with at least 40 percent of the soil surface covered by asphalt, concrete, buildings, or other impervious structures typical of an urban environment. The presence of overburden fill material is widespread and common throughout the City of Buffalo.

2.3.2 Bedrock

Based on the bedrock geologic map of Erie County (Ref. 3), the Site is situated over the Onondaga Formation of the Middle Devonian Series. The Onondaga Formation is comprised of a varying texture from coarse to very finely crystalline with a dark gray to tan color and chert and fossils within. The unit has an approximate thickness of 110 to 160 feet. Structurally, the bedrock formations strike in an east-west direction and exhibit a regional dip that approximates 40 feet per mile (3 to 5 degrees) toward the south and southwest. As a result of this dip, the older Onondaga limestone outcrops or subcrops north of the

Hamilton Group. An intersecting, orthogonal patter of fractures and joint sets are common throughout the bedrock strata. The surficial geomorphology of the bedrock strata was modified by period subaerial erosion and continental glaciation. Depth to and type of bedrock below the Site has not been determined by drilling.

2.3.3 Hydrogeology

Groundwater flow direction follows regional topography in the vicinity of the subject property and is to the west toward Lake Erie. Local groundwater flows, however, may be influenced by subsurface features, such as utilities and localized fill-conditions. Localized groundwater flow will be confirmed during the RI.

2.4 Climate

Western New York has a cold continental climate, with moisture from Lake Erie causing increased precipitation. Average annual precipitation is reportedly 40.5 inches and snowfall is 93.6 inches (Ref. 4) to the northern part of the watershed with over 150 inches per year falling on the southern portion of the watershed. Average monthly temperatures range from 24.5 degrees Fahrenheit in January to 70.8 degrees Fahrenheit in July (Ref. 4). The ground and lakes typically remain frozen from December to March. Winds are generally from the southwest (240 degrees) with a mean velocity of 10 miles per hour (Buffalo Airport, 1999).

2.5 Population and Land Use

The City of Buffalo, encompassing 40.6 square miles, has a population of 292,648 persons (2000 U.S. Census Bureau), a decrease of 35,527 from the 1990 U.S. Census. The population density in the City is 7,205.8 people per square mile. Buffalo is primarily zoned residential with commercial use mixed in along major roads. The Site is located in Census Tract 71.01, in an area of the City zoned commercial/residential and has a population density that is 12,625 to 18,252 per square mile.

Properties adjacent to the Site include commercial and residential properties. The surrounding land-use is mixed use, including commercial and residential.

2.6 Utilities and Groundwater Use

The subject property has access to major public and private utilities, including water (City of Buffalo Division of Water), sanitary and storm sewers (City of Buffalo), electric (National Grid), and natural gas (National Fuel Gas).

Groundwater at the Site is assigned Class "GA" by 6NYCRR Part 701.15. Currently, there are no deed restrictions on the use of groundwater at the Site; however, there are no groundwater supply wells on the property. Regionally, groundwater in the area has not been developed for industrial, agriculture, or public supply purposes. Municipal potable water service is provided on-site and off-site. Currently, there are no permanent groundwater monitoring wells on the Site.

2.7 Wetlands and Floodplains

There are no State or Federal wetlands or floodplains on the Site.

2.8 Previous Investigations

A summary of the investigations that have occurred at the Site are presented below. These reports are presented in Appendix A.

2.8.1 June 2003 – Summary Report: Limited Subsurface Investigation

A Subsurface Investigation Report was completed by Construction Lending Services, Inc. in June 2003 (Ref. 5) to determine the presence/absence of potential subsurface contamination associated with the former Marranca's Service Station (i.e., 517 Niagara Street). Based on that study, soil borings along Niagara Street and Pennsylvania Avenue were impacted with volatile organic compounds (VOCs). The impact was based on visual and olfactory observations and elevated photoionization detector (PID) readings. No samples were submitted for chemical analysis at that time. Construction Lending Services, Inc. concluded that the Marranca's Service Station is the likely source of the contamination.

2.8.2 August 2007 – Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) Report was completed for the Site by TurnKey in August 2007 (Ref. 6). The Phase I ESA identified several environmental concerns due to the potential for chemical and/or petroleum product releases associated with historic use of the Site as a gasoline station and automotive repair shop. The Site

included an abandoned gasoline station/automotive repair building, at least three abandoned USTs, several drums and other containers of automotive fluids and one in-ground hydraulic lift on the property.

2.9 Primary Constituents of Potential Concern (COPCs)

Based on findings to date, the Constituents of Potential Concern (COPCs) are presented by media below:

- ***Soil:*** VOCs, SVOCs and lead
- ***Groundwater:*** VOCs, SVOCs and lead

3.0 INTERIM REMEDIAL MEASURES

As part of the Remedial Investigation, an IRM will be completed to immediately address known environmental impacts related to past use of the Site as a gasoline station and automotive repair facility. One in-ground hydraulic lift and the current UST system, including USTs, product dispensers and product piping will be removed. Impacted soil/fill will be removed and impacted groundwater (if encountered) will be extracted and treated during the IRM. The proposed IRM work is described below.

3.1 Site Preparation

Prior to implementing IRM activities, 9154 Group, LLC will remove automotive parts, containers of automotive fluids and miscellaneous debris located within the building. The building will then be demolished.

3.2 Utility Clearance

Dig Safely New York (Call 811) will be contacted by the site contractor a minimum of three business days in advance of the work and informed of the intent to perform excavation work at the Site. If underground utilities are present on the property and are anticipated to interfere with UST, product dispenser, piping removal and/or impacted soil removal, 9154 Group, LLC and the NYSDEC will be contacted to discuss mitigating measures.

3.3 Waste Characterization

Waste characterization samples will be collected and analyzed prior to initiating excavation work. One composite sample will be collected from three soil/fill borings in the area of the USTs and product dispensers and one composite sample will be collected from two soil/fill borings in the area of the in-ground lifts. Pre-characterization of the soil will allow for direct loading and off-site transportation the time of the UST system and in-ground lift removal.

Waste characterization samples will be analyzed for toxicity characteristic leaching procedure (TCLP) VOCs, TCLP SVOCs, TCLP metals, total polychlorinated biphenyls (PCBs), ignitability and pH. Based on the results of the waste characterization sampling,

impacted soil will be managed according to all federal, State and local waste disposal regulations.

3.4 UST System and In-ground Lift Removal

The following equipment will be removed in accordance with applicable NYSDEC guidelines: two 6,000-gallon steel USTs, one 1,000-gallon UST previously abandoned in place, three product dispensers and their associated piping and one in-ground lift. Figure 2 shows the location of the UST system components relative to key Site features. The NYSDEC will be notified at least one week prior to UST system and in-ground lift removal activities.

3.5 Removal of Impacted Soils

Immediately following removal of the UST system and in-ground lift, impacted soil/fill will be excavated and loaded into dump trucks for off-site disposal at a permitted landfill. A PID and visual/olfactory observations will be used to screen soil/fill materials and assist in verifying removal of impacted soil/fill. All excavation work will be directed by an experienced TurnKey environmental scientist to remove all impacted material. Lateral and vertical excavation will continue as described above until visually impacted soil/fill is removed, Part 375 restricted-commercial SCOs are met, excavation has reached the property line, or NYSDEC agrees that no further excavation is required.

3.6 Excavation Confirmation Sampling

Post excavation confirmatory composite samples will be collected from the excavated areas. Sample locations from excavated areas will include samples from excavation sidewalls and bottom. A minimum of one sample per 30 linear feet of sidewall and one sample for each 900 square feet of excavation bottom will be collected. Sample locations beneath the piping will include one sample for each 20 linear feet of piping. All samples will be analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified analytical laboratory for NYSDEC STARS List VOCs (including MtBE), NYSDEC STARS List SVOCs, total lead and tetraethyl lead in accordance with USEPA Methodology with an equivalent Category B deliverables package

to facilitate data evaluation by a third-party validation expert. Two-business day turnaround times will be requested for the analytical results to minimize the time that the excavation(s) remains open.

3.7 Groundwater Management

Water removed from excavations and surface water run-in to excavations during the impacted soil removal will be treated on-site prior to discharge to the municipal sewer. In general, water removed from excavations will be stored/settled in a portable 20,000-gallon steel tank and pumped through a bag or cartridge filter prior to treatment using granular activated carbon (GAC). Following completion of excavation work, settled solids remaining in the tank and spent filter bags will be containerized for off-site disposal. Spent GAC will be characterized (TCLP VOC testing) and regenerated off-site, or disposed at a permitted treatment, storage and disposal facility (TSDF) in accordance with applicable federal and state regulations. The tank will be decontaminated via pressure washing. TurnKey or the Site owner will coordinate with the City of Buffalo to obtain any necessary temporary discharge permits.

3.8 Excavation Backfill

Following NYSDEC concurrence that the excavation is complete, the resulting excavation will be backfilled. Backfilling will closely follow the excavation work to minimize the amount of time that the excavation remains open. The excavation will be backfilled with non-impacted on-Site overburden soil/fill and imported backfill material.

Backfill of select material approved by the Site owner will be completed to the final grade. Backfill will be placed in maximum 1-foot thick lifts, and compacted by compaction equipment approved by the Site owner. Compaction testing of each borrow source will be completed. Standard proctor tests will be employed to establish a maximum compaction. Backfill will be compacted to achieve at least 90% of maximum dry density as determined by the Modified Proctor Test. The handling, spreading, and compacting will be directed toward obtaining a stable and homogeneous fill that is free of stratifications, lenses, or pockets. Backfill will not occur when soils are frozen or moisture content is too high/low to achieve compaction requirements. Admixing of wet soils with dry backfill material and addition of water will be permitted to achieve suitable moisture content.

Imported backfill must meet the criteria of Table 1, as well as the following criteria:

- Off-site soil/fill will originate from known sources having no evidence of disposal or releases of hazardous substances, hazardous, toxic or radioactive wastes, or petroleum.

- No off-site materials meeting the definition of a solid waste as defined in 6NYCRR, Part 360-1.2(a) shall be used as backfill.

3.8.1 Characterization Requirements

In addition to the above criteria, all backfill materials will be subject to the following characterization requirements:

- Off-site material will be sampled according to the following schedule:
  - 1 composite per 500 cubic yards of soil for the first 1,000 cubic yards
  - 1 composite per 1,000 cubic yards of soil thereafter

  Each composite will be comprised of a minimum of three grab samples (samples for VOC analysis will be collected as individual grabs in lieu of composites). Samples will be analyzed for the following constituents in accordance with USEPA SW-846 methodology:
  - Target Compound List (TCL) VOCs - Method 8260B
  - TCL SVOCs - Method 8270C
  - TCL Organochlorine Pesticides and PCBs - Method 8081A/8082
  - TAL Metals – Method 6010B
  - Cyanide - Method 9013
  - Herbicides – Method 8051A

Only materials that contain concentrations of these organic compounds and metals at or below concentrations on Table 1 will be used. Characterization testing for off-site sources will be performed by an independent, NYSDOH ELAP-approved laboratory. An equivalent Category B deliverables package will be furnished with the data to allow data evaluation and preparation of a Data Usability Summary Report by an independent, third party data

validation expert. Quality Assurance (QA) samples will be collected to support the data evaluation. The QA samples will include a minimum of one matrix spike, one matrix spike duplicate, and one blind duplicate per 20 verification samples.

4.0 COMMUNITY AIR MONITORING

Real-time community air monitoring will be performed during IRM activities at the Site. A Community Air Monitoring Plan is included with TurnKey's Health and Safety Plan (HASP). Particulate and VOC monitoring will be performed along the downwind perimeter of the work area during subgrade excavation, grading and soil/fill handling activities in accordance with this plan. This plan is consistent with the requirements for community air monitoring at remediation sites as established by the NYSDOH and NYSDEC. Accordingly, it follows procedures and practices outlined under NYSDOH's Generic Community Air Monitoring Plan (dated June 20, 2000) and NYSDEC Technical Assistance and Guidance Memorandum (TAGM) 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

5.0 REMEDIAL INVESTIGATION SCOPE OF WORK

The Remedial Investigation (RI) scope of work is typically focused on defining the nature and extent of contamination on-Site, identifying the source of contamination, defining chemical constituent migration pathways, qualitatively assessing human health and ecological risks (if necessary), and obtaining data of sufficient quantity and quality to perform the remedial alternatives evaluation. However, most these scope items (i.e., defining the nature and extent of contamination on-Site, identifying the source of contamination, defining chemical constituent migration pathways, and obtaining data of sufficient quantity and quality to perform the remedial alternatives evaluation) will substantially be completed during planned IRM activities, which include source removal and post-excavation verification sampling. As such, RI activities at this Site will focus any collecting BCP site characterization data in soil and groundwater subsequent to IRM activities.

Field team personnel will collect environmental samples in accordance with the rationale and protocols described in the Field Sampling Plan (FSP) presented in the Quality Assurance Project Plan (QAPP), provided under separate cover. USEPA and NYSDEC-approved sample collection and handling techniques will be used. Samples for chemical analysis will be analyzed in accordance with USEPA SW-846 methodology with an equivalent Category B deliverable package to meet the definitive-level data requirements. Analytical results will be evaluated by a third-party data validation expert in accordance with provisions described in the QAPP.

5.1 Field Investigation Activities

5.1.1 Soil/Fill Investigation

The planned IRM activities include excavation and off-site disposal of impacted soil/fill in the area of USTs, product dispensers, piping and an in-ground lift. Subsequent to IRM activities, a soil/fill investigation will be completed to evaluate whether additional impact exists beyond the limits of the planned excavation(s). The soil/fill investigation will include seven soil borings as illustrated in Figure 3. The sampling plan includes analysis of petroleum VOCs, SVOCs and lead in all planned soil borings. As a requirement of the BCP, the soil/fill investigation will also include limited sampling for PCBs, pesticides, herbicides

and metals to assess whether other potential contaminants exist within on-site soil/fill at concentrations of concern.

A small area of the Site southeast of the building is grass-covered. As such, one composite surface sample from the grass-covered area will be analyzed for Target Compound List (TCL) SVOCs, TCL polychlorinated biphenyls (PCBs) and Target Analyte List (TAL) metals and one grab surface sample from the grass-covered area will be analyzed for TCL plus NYSDEC STARS List VOCs.

Seven soil borings, designated as SB-1 through SB-7, will be completed on-Site; Figure 3 depicts planned soil boring locations. The soil investigation will employ direct-push drilling techniques. Each soil boring will be advanced to approximately 16 feet below ground surface (fbgs). However, soil borings will continue if field observations (i.e., sustained photoionization detector (PID) readings above 5 ppm, visual/olfactory evidence of impact) suggest impact within soils at 16 fbgs. Soil samples will be collected from all soil borings as described below. All soil samples will be field screened for the presence of VOCs using a field PID as a procedure for ensuring the health and safety of personnel at the Site and to identify potentially impacted soil samples for laboratory analysis. Upon reaching the completion depth of each boring, PID and visual/olfactory results will be reviewed. The sample interval identified as the most impacted (i.e., greatest PID scan result and/or evidence of visual/olfactory impact) will be selected for analysis. In the event that either the impacts are ubiquitous from grade to final depth or no impacts were identified, the soil/fill horizon above the native soils/water table will be selected for analysis.

Soil samples will be collected using dedicated stainless steel sampling tools. Representative soil samples will be placed in pre-cleaned laboratory provided sample bottles, cooled to 4ºC in the field, and transported under chain-of-custody command to TestAmerica (formerly Severn Trent Laboratories, Inc.), located in Amherst, New York, a NYSDOH ELAP-certified analytical laboratory. Each of the subsurface soil samples will be analyzed for Target Compound List (TCL) plus NYSDEC STARS List VOCs (including MTBE), TCL SVOCs, total lead and tetraethyl lead and three of the soil samples will be also be analyzed for TAL metals, TCL PCBs, pesticides and herbicides.

5.1.2 Supplemental Groundwater Investigation

Six new groundwater monitoring wells will be installed on-Site within the planned soil borings at the proposed locations shown on Figure 3. The new monitoring wells will

provide groundwater flow information as well as groundwater quality information. Monitoring well installation, well development, and groundwater sample collection are discussed in the following sections.

5.1.2.1 Monitoring Well Installation

Six of the planned soil borings will facilitate installation of six groundwater-monitoring wells, designated as MW-1 through MW-6 as shown on Figure 3. A GeoProbe 6620 DT direct-push drill rig capable of advancing hollow-stem augers will be employed to install 2-inch inside diameter (ID) monitoring wells.

Each boring location will be advanced to approximately 16 fbgs, or a minimum of 5 feet below the first encountered groundwater, using hollow stem auger drilling methods. Recovered samples will be described in the field by qualified TurnKey personnel using the Unified Soil Classification System (USCS), scanned for total volatile organic vapors with a calibrated PID equipped with a 10.6 eV lamp (or equivalent), and characterized for impacts via visual and/or olfactory observations. All non-dedicated drilling tools and equipment will be decontaminated between boring locations using potable tap water and a phosphate-free detergent (e.g., Alconox).

Subsequent to boring completion, a 2-inch ID diameter flush-joint Schedule 40 PVC monitoring well will be installed at the boring locations. Each well will be constructed with a 10-foot flush-joint Schedule 40 PVC, 0.010-inch machine slotted well screen. Each well screen and attached riser will be placed at the bottom of each borehole and a silica sand filter pack (size #0) will be installed from the base of the well to a maximum of 2 feet above the top of the screen. A bentonite chip seal will then be installed and allowed to hydrate sufficiently to mitigate the potential for downhole grout contamination. Cement/bentonite grout will be installed to approximately 1 fbgs via pressure tremie-pipe procedures. The newly installed monitoring wells will be completed with keyed-alike locks, a lockable J-plug, and an 8-inch diameter steel flush mounted road box anchored within a 2-foot by 2-foot by 1-foot square concrete pad.

5.1.2.2 Well Development

Upon installation, but not within 24 hours, newly installed monitoring wells will be developed in accordance with TurnKey and NYSDEC protocols. Development of the monitoring wells will be accomplished with dedicated disposable polyethylene bailers via surge and purge methodology. Field parameters including pH, temperature, turbidity,

dissolved oxygen and specific conductance will be measured periodically (i.e., every well volume or as necessary) during development. Field measurements will continue until they became relatively stable. Stability will be defined as variation between measurements of approximately 10 percent or less with no overall upward or downward trend in the measurements. A minimum of three well volumes will be evacuated from each monitoring well. Development water from the monitoring wells will be passed through a mobile granular-carbon treatment vessel, and discharged to the ground.

5.1.2.3 Groundwater Sample Collection

Prior to sample collection, static water levels will be measured and recorded from all on-site monitoring wells. Following water level measurement, TurnKey personnel will purge and sample monitoring wells MW-1 through MW-6 using either a peristaltic pump with dedicated pump tubing following low-flow/minimal drawdown purge and sample collection procedures or using a dedicated polyethylene bailer.. Prior to sample collection, groundwater will be evacuated from each well at a low-flow rate (typically less than 0.1 L/min). Field measurements for pH, temperature, turbidity, dissolved oxygen, specific conductance and water level, as well as visual and olfactory field observations, will be periodically recorded and monitored for stabilization. Purging will be considered complete when pH, specific conductivity, dissolved oxygen and temperature stabilize and when turbidity measurements fall below 50 Nephelometric Turbidity Units (NTU), or become stable above 50 NTU. Stability is defined as variation between field measurements of 10 percent or less and no overall upward or downward trend in the measurements. Upon stabilization of field parameters, groundwater samples will be collected and analyzed as discussed below.

Upon arrival at each monitoring well, field personnel will visually inspect the monitoring well for defects and/or vandalism. Following location and inspection of each well, the static water level and total depth will be recorded and one standing well volume will be calculated. The following bulletized list describes each sample collection method that may be implemented during the RI.

- **<u>Peristaltic Pump with Dedicated Pump Tubing</u>**

  Wells less than 20 fbgs will be purged and sampled using a peristaltic pump and dedicated pump tubing following low-flow (minimal drawdown) purge and sample collection procedures in a manner similar to that described in the previous section. However, the pump will not require decontamination because

all components are dedicated to each monitoring well. In addition, groundwater samples collected for VOC analysis will not be sampled directly through the peristaltic pump due to potential degassing (i.e., loss of VOCs) of the groundwater sample. Instead, prior to collection of VOC samples, the pump will be turned off and the pressure on the flexible walled tubing within the pump head will be maintained in order to prevent water within the collection tubing from escaping. The tubing will be removed from the well and coiled to prevent any contact with the ground surface. Upon removal of the tubing and prior to re-activating the pump, the pump flow direction will be reversed. Upon pump re-activation, the pumping rate will be slowly increased; positively displacing groundwater within the tubing allowing it to flow, without disturbance and degassing, into the appropriate VOC sample jars.

- **Polyethylene Disposable Bailer**

  Wells of any depth (up to 100 fbgs) may be purged and sampled using a polyethylene disposable bailer via direct grab. In general, a bottom filling dedicated polyethylene bailer is attached to a length of dedicated hollow-braid polypropylene rope and lowered into the well smoothly and slowly as not to agitate the groundwater or damage the well. Purging continues until a predetermined volume of water has been removed (typically three well volumes) or to dryness. Measurements for pH, temperature, specific conductance, dissolved oxygen and turbidity are recorded following removal of each well volume. The well is purged until the readings for indicator parameters stabilize or the well is purged to dryness.

Prior to and immediately following collection of groundwater samples, field measurements for pH, specific conductance, temperature, dissolved oxygen, turbidity and water level as well as visual and olfactory field observations will be recorded. All collected groundwater samples will be placed in pre-cleaned, pre-preserved laboratory provided sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to STL for analysis.

5.1.2.4 Groundwater Sample Analyses

Groundwater samples will be analyzed from all six monitoring wells for TCL plus NYSDEC STARS list VOCs (including MtBE), TCL SVOCs, total lead and tetraethyl lead in accordance with USEPA SW 846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment. In addition, three groundwater samples will be analyzed for TAL Metals and PCBs.

5.1.3 Field Specific Quality Assurance/Quality Control Sampling

In addition to the soil/fill and groundwater samples described above, field-specific quality assurance/quality control (QA/QC) samples will be collected and analyzed to ensure the reliability of the generated data as described in the QAPP (provided under separate cover) and to support the required third-party data usability assessment effort. Site-specific QA/QC samples will include matrix spikes, matrix spike duplicates, blind duplicates, and trip blanks.

5.2 Investigation-Derived Waste Management

During installation of the monitoring wells, excess soil cuttings will be containerized in 55-gallon drums, and sampled to determine if they can be utilized on-Site or require treatment or off-Site disposal. Groundwater from well development and purging will be passed through a mobile granular-carbon treatment vessel and discharged to the ground.

Drums will be labeled with regard to contents, origin, and date of generation using a paint stick marker on two sides and the top of each drum. The drums will be staged on-site pending soil analyses and remedial measures assessment.

5.3 Site Mapping

A Site map will be developed during the field investigation. All sample points and relevant Site features will be located on the map. TurnKey will employ a Trimble GeoXT handheld GPS unit to identify the locations of all soil borings and newly installed wells relative to State planar grid coordinates. Monitoring well elevations will be measured by TurnKey's surveyor. An isopotential map showing the general direction of groundwater flow will be prepared based on water level measurements relative to USGS vertical datum. Maps will be provided with the RI report.

6.0 QUALITY ASSURANCE/QUALITY CONTROL PROTOCOLS

A Quality Assurance Project Plan (QAPP) has been prepared as a stand-alone document for the RI/IRM activities. The QAPP dictates implementation of the investigation tasks delineated in this Work Plan. A Sampling and Analysis Plan (SAP) identifying methods for sample collection, decontamination, handling, and shipping, is provided as Section 4.0 to the QAPP. The RI/IRM project management methods, organizational structure, and schedule are also included in the QAPP.

The QAPP will assure the accuracy and precision of data collection during the Site characterization and data interpretation periods. The QAPP identifies procedures for sample collection to mitigate the potential for cross-contamination, as well as analytical requirements necessary to allow for independent data validation. The QAPP has been prepared in accordance with USEPA's Requirements for Quality Assurance Project Plans for Environmental Data Operations (Ref. 7); the EPA Region II CERCLA Quality Assurance Manual (Ref. 8), and NYSDEC's December 2002 draft DER-10 Technical Guidance for Site Investigation and Remediation (Ref. 1).

7.0 HEALTH AND SAFETY PROTOCOLS

TurnKey Environmental Restoration has prepared a Site-Specific Health and Safety Plan (HASP) for use by our employees in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120. The HASP, provided in Appendix B, includes the following site-specific information:

- A hazard assessment.
- Training requirements.
- Definition of exclusion, contaminant reduction, and other work zones.
- Monitoring procedures for site operations.
- Safety procedures.
- Personal protective clothing and equipment requirements for various field operations.
- Disposal and decontamination procedures.

The HASP also includes a contingency plan that addresses potential site-specific emergencies, and a Community Air Monitoring Plan that describes required particulate and vapor monitoring to protect the neighboring community during intrusive site investigation and remediation activities.

Health and safety activities will be monitored throughout the field investigation and IRM. A member of the field team will be designated to serve as the on-site Health and Safety Officer throughout the field program. This person will report directly to the Project Manager and the Corporate Health and Safety Coordinator. The HASP will be subject to revision as necessary, based on new information that is discovered during the field investigation and/or remedial activities.

8.0 CITIZEN PARTICIPATION ACTIVITIES

NYSDEC will coordinate and lead community relations throughout the course of the project. TurnKey will support NYSDEC's community relations activities, as necessary. A Citizen Participation Plan will be prepared by TurnKey and submitted to NYSDEC under separate cover. The Citizen Participation Plan will follow NYSDEC's Citizen Participation Plans template for Brownfield Cleanup Program sites entering the BCP at the point of site investigation.

9.0 REPORTING AND SCHEDULE

Upon completion of the IRM and RI fieldwork, a comprehensive RI/AAR/IRM report will be completed summarizing the IRM and RI tasks completed as described below.

9.1 IRM Reporting

A TurnKey scientist or engineer will be on-site on a full-time basis during the UST system, in-ground lift and soil/fill removal to document IRM activities. Such documentation will include, at minimum, daily reports of IRM activities, community air monitoring results, photographs and sketches.

9.1.1 Construction Monitoring

Standard daily reporting procedures will include preparation of a daily report and, when appropriate, problem identification and corrective measures reports. Appendix C contains sample project documentation forms. Information that may be included on the daily report form includes:

- Processes and locations of construction under way.
- Equipment and personnel working in the area, including subcontractors.
- Number and type of truckloads of soil/fill removed from the site.
- A description of off-site materials received.
- Approximate verification sampling locations (sketches) and sample designations.

The completed reports will be available on-site and will be submitted to the NYSDEC as part of the Final Engineering Report. The NYSDEC will be promptly notified of problems requiring modifications to this Work Plan prior to proceeding or completion of the construction item.

Photo documentation of the IRM activities will be prepared by turnKey throughout the duration of the project as necessary to convey typical work activities and whenever changed conditions or special circumstances arise.

9.1.2 IRM Construction Closeout

A summary of the IRM construction will be included in the RI/AAR/IRM report submitted to the NYSDEC, with full details of the IRM activities included in the Final Engineering Report. At a minimum, the IRM section of the report will include:

- A Site or area planimetric map showing the parcel(s) remediated.
- A survey showing: the lateral limits of excavation.
- Summaries of unit quantities, including: volume of soil/fill excavated; disposition of excavated soil/fill and collected ground/surface water; volume/type/source of backfill; and volume of ground/surface water pumped and treated.
- Planimetric map showing location of all verification and other sampling locations with sample identification labels/codes.
- Tabular comparison of verification and other sample analytical results to SCOs. An explanation shall be provided for all results exceeding acceptance criteria.
- Text describing that the excavation activities were performed in accordance with this Work Plan.

9.2 Remedial Investigation Reporting

The RI section of the RI/AAR/IRM report will include the following information and documentation, consistent with the NYSDEC's DER-10 Technical Guidance for Site Investigation and Remediation (Ref. 1).

- Introduction and background.
- A description of the site and the investigation areas.
- A description of the field procedures and methods used during the RI.
- A discussion of the nature and rationale for any significant variances from the scope of work described in this RI Work Plan.
- The data obtained during the RI and historical data considered by TurnKey to be of useable quality. This will include geochemical data, field measurements, etc.

- Comparative criteria that may be used to calculate cleanup levels during the alternatives analysis report (AAR) process, such as NYSDEC Soil Cleanup Objectives and other pertinent regulatory standards or criteria.

- A discussion of contaminant fate and transport. This will provide a description of the hydrologic parameters of the Site, and an evaluation of the lateral and vertical movement of groundwater.

- Conclusions regarding the extent and character of environmental impact in the media being investigated.

- The conclusions of the qualitative human health and environmental risk assessments, including any recommendations for more detailed assessments, if applicable.

- Supporting materials for RI data. These will include boring logs, monitoring well construction diagrams, laboratory analytical reports, and similar information.

In addition, TurnKey will require third-party data review by a qualified, independent data validation expert. Specifically, a Data Usability Summary Report (DUSR) will be prepared, with appropriate data qualifiers added to the results. The DUSR will follow NYSDEC format per the NYSDEC's September 1997 DUSR guidelines and draft DER-10 guidance. The DUSR and any necessary qualifications to the data will be appended to the RI report.

9.3 Alternatives Analysis Report

An alternatives analysis report (AAR) is typically developed to provide a forum for evaluating and selecting a recommended remedial approach. However, the planned IRM may effectively remove contaminants from the Site. If additional contamination is discovered during RI site characterization activities, or if RI activities identify groundwater contamination that requires remediation, the AAR may need to evaluate additional remedial measures beyond the IRM activities. If the IRM effectively removes site contaminants, the AAR will evaluate the IRM as the final remedy.

A list of remedial action objectives will be developed based on findings of the RI and IRM and the requirement for the selected remedial measures to be protective of human health and the environment under the proposed future use scenario. Proposed soil cleanup

objectives (SCOs) for the property will also be presented based on the proposed future use of the Site. SCOs will be based on published standards, criteria, and guidance (SCGs) and other NYSDEC and NYSDOH-accepted values.

Based on the remedial action objectives and SCOs, volumes and areas of media potentially requiring additional remediation will be calculated. General response actions will then be delineated to address each of the site problem areas. These response actions will form the foundation for the development and screening of applicable remedial alternatives against the following criteria as described in 6NYCRR 375-1.10:

- Overall Protection of Human Health and the Environment
- Compliance with Standards, Criteria, & Guidance (SCGs)
- Long-term Effectiveness & Permanence
- Reduction of Toxicity, Mobility, or Volume
- Short-term Effectiveness
- Implementability
- Cost

In addition, the criteria of community acceptance will be considered based on public comments on the AAR and proposed remedial action. Following the screening of alternatives, a comparative analysis will be performed against the above criteria. The comparative analysis will allow for better understanding of the relative advantages and disadvantages of each of the alternatives, and will facilitate identification of a recommended remedial approach.

9.4 Project Schedule

A tentative project schedule for the major tasks to be performed in support of the RI/AAR/IRM is presented as Figure 4.

10.0 REFERENCES

1. New York State Department of Environmental Conservation. *Draft DER-10; Technical Guidance for Site Investigation and Remediation.* December 2002.

2. United States Department of Agriculture (USDA), Soil Conservation Service. *Soil Survey of Erie County, New York*. December 1986.

3. Buehler, E.J., & Tesmer, I.H. *Geology of Erie County, New York: Buffalo Society of Natural Sciences Bulletin v. 21, no. 3*. 1963.

4. National Oceanic & Atmospheric Administration (NOAA) Satellites and Information. Data Tables through 2000.

5. Construction Lending Services, Inc. *Subsurface Investigation Report, South of 517 Niagara Street, Buffalo, New York*. June 2003.

6. TurnKey Environmental Restoration, LLC. *Phase I Environmental Site Assessment for Niagara Street and Pennsylvania Avenue Site.* August 2007.

7. U.S. Environmental Protection Agency. *Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5).* October 1998.

8. U.S. Environmental Protection Agency, Region II. *CERCLA Quality Assurance Manual, Revision I.* October 1989.

TABLES

TABLE 1

CRITERIA FOR USE OF OFF-SITE SOIL

RI/AAR/IRM Work Plan
Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Parameter	Allowable Concentration for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,2-Dichloroethene(cis)	0.25
1,2-Dichloroethene(trans)	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	3.2
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
Propylbenzene-n	3.9
Sec-Butylbenzene	11
Tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47

TABLE 1

CRITERIA FOR USE OF OFF-SITE SOIL

RI/AAR/IRM Work Plan
Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Parameter	Allowable Concentration for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
Trimethylbenzene-1,2,4	3.6
Trimethylbenzene-1,3,5	8.4
Vinyl chloride	0.02
Xylene (mixed)	1.6
Semi-Volatile Organic Compounds (mg/kg)	
Acenaphthene	98
Acenaphthylene	107
Anthracene	500
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1.7
Benzo(g,h,i)perylene	500
Benzo(k)fluoranthene	1.7
Chrysene	1
Dibenz(a,h)anthracene	0.56
Fluoranthene	500
Fluorene	386
Indeno(1,2,3-cd)pyrene	5.6
m-Cresol(s)	0.33
Naphthalene	12
o-Cresol(s)	0.33
p-Cresol(s)	0.33
Pentachlorophenol	0.8
Phenanthrene	500
Phenol	0.33
Pyrene	500

TABLE 1

CRITERIA FOR USE OF OFF-SITE SOIL

RI/AAR/IRM Work Plan
Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Parameter	Allowable Concentration for Use of Off-Site Soil
Metals (mg/kg)	
Arsenic	16
Barium	400
Beryllium	47
Cadmium	7.5
Chromium, Hexavalent[1]	19
Chromium, Trivalent[1]	1500
Copper	270
Cyanide	27
Lead	450
Manganese	2000
Mercury (total)	0.73
Nickel	130
Selenium	4
Silver	8.3
Zinc	2480
PCBs/Pesticides (mg/kg)	
2,4,5-TP Acid (Silvex)	3.8
4,4'-DDE	17
4,4'-DDT	47
4,4'-DDD	14
Aldrin	0.19
Alpha-BHC	0.02
Beta-BHC	0.09
Chlordane (alpha)	2.9
Delta-BHC	0.25
Dibenzofuran	210
Dieldrin	0.1
Endosulfan I	102
Endosulfan II	102

TABLE 1

CRITERIA FOR USE OF OFF-SITE SOIL

RI/AAR/IRM Work Plan
Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Parameter	Allowable Concentration for Use of Off-Site Soil
PCBs/Pesticides (mg/kg)	
Endosulfan sulfate	200
Endrin	0.06
Heptachlor	0.38
Lindane	0.1
Polychlorinated biphenyls	1

Notes:

1. The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

TABLE 2

SAMPLING AND ANALYTICAL PROGRAM

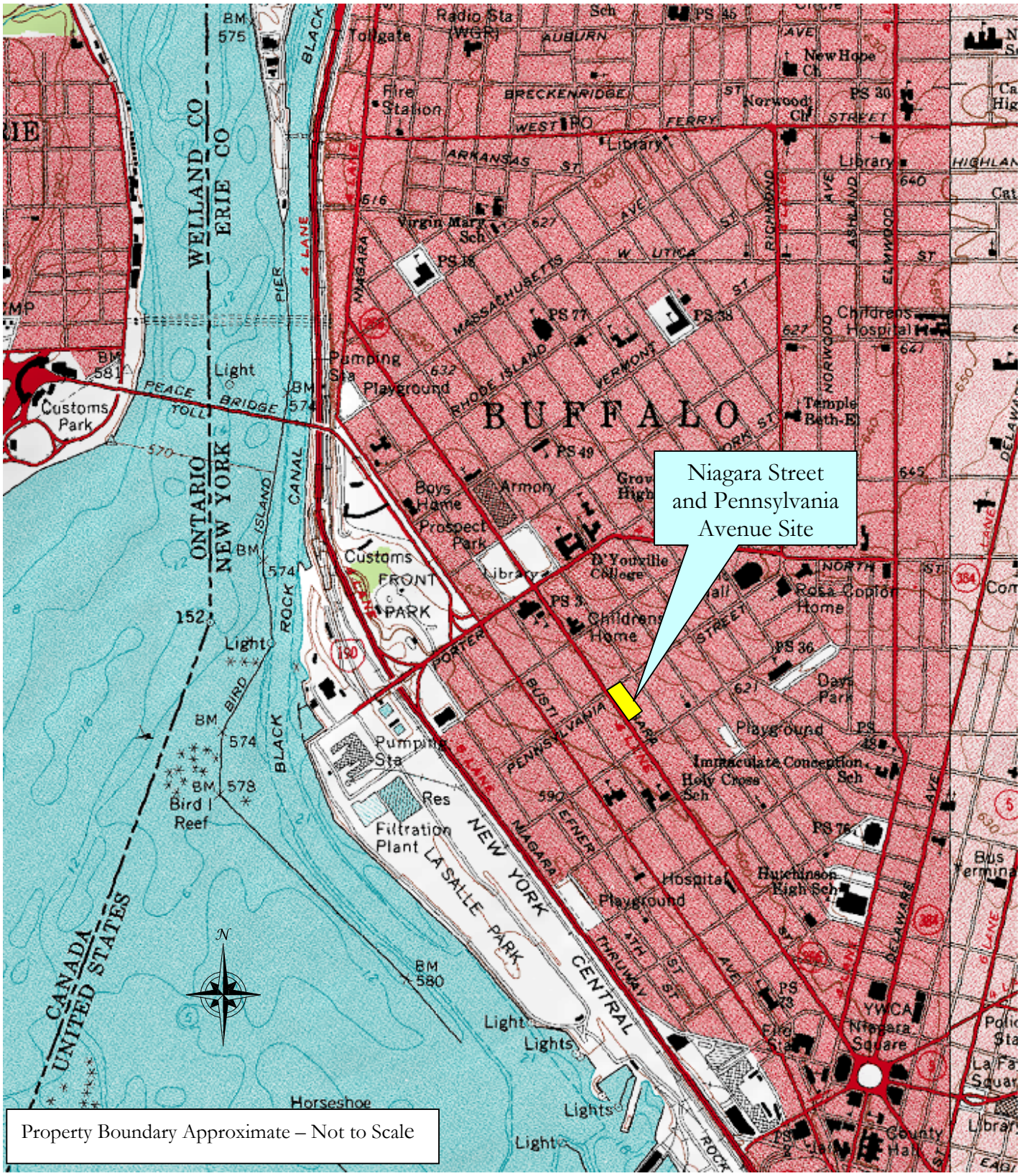
RI/AAR/IRM WORK PLAN
Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Matrix	Parameter[1]	No. Samples	Estimated Number of QC Samples					Total
			Trip Blank[2]	Matrix Spike[3]	Matrix Spike Duplicate[3]	Equipment Blank[4]	Blind Duplicate[3]	
Soil/Fill	TCL + STARS VOCs + MTBE	7		1	1		1	10
	TCL SVOCs	7		1	1		1	10
	Total lead	7		1	1		1	10
	Tetraethyl lead	7		1	1		1	10
	TAL Metals	3		1	1		1	6
	PCBs	3		1	1		1	6
	Pesticides	3		1	1		1	6
	Herbicides	3		1	1		1	6
Surface Soil	TCL + STARS VOCs + MTBE	1						1
	TCL SVOCs	1						1
	TAL Metals	1						1
	PCBs	1						1
Groundwater	TCL + STARS VOCs + MTBE	6	1	1	1		1	10
	TCL SVOCs	6		1	1		1	9
	Total lead	6		1	1		1	9
	Tetraethyl lead	6		1	1		1	9
	TAL Metals	3		1	1		1	6
	PCBs	3		1	1		1	6
	Field Parameters: DO, pH, Turbidity, Conductance, Temperature	6						6

Notes:
1. Analyses will be performed via USEPA SW-846 methodology w/ equivalent Category B deliverables package.
2. Trip blanks will be submitted to the laboratory each day aqueous volatile organic samples are collected.
3. Blind duplicate and MS/MSD samples will be collected at a frequency of 1 per 20 samples collected.
4. Dedicated sampling equipment will be used for groundwater and soil/fill sample collection.

FIGURES

FIGURE 1



TURNKEY ENVIRONMENTAL RESTORATION, LLC

726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0635

PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2007

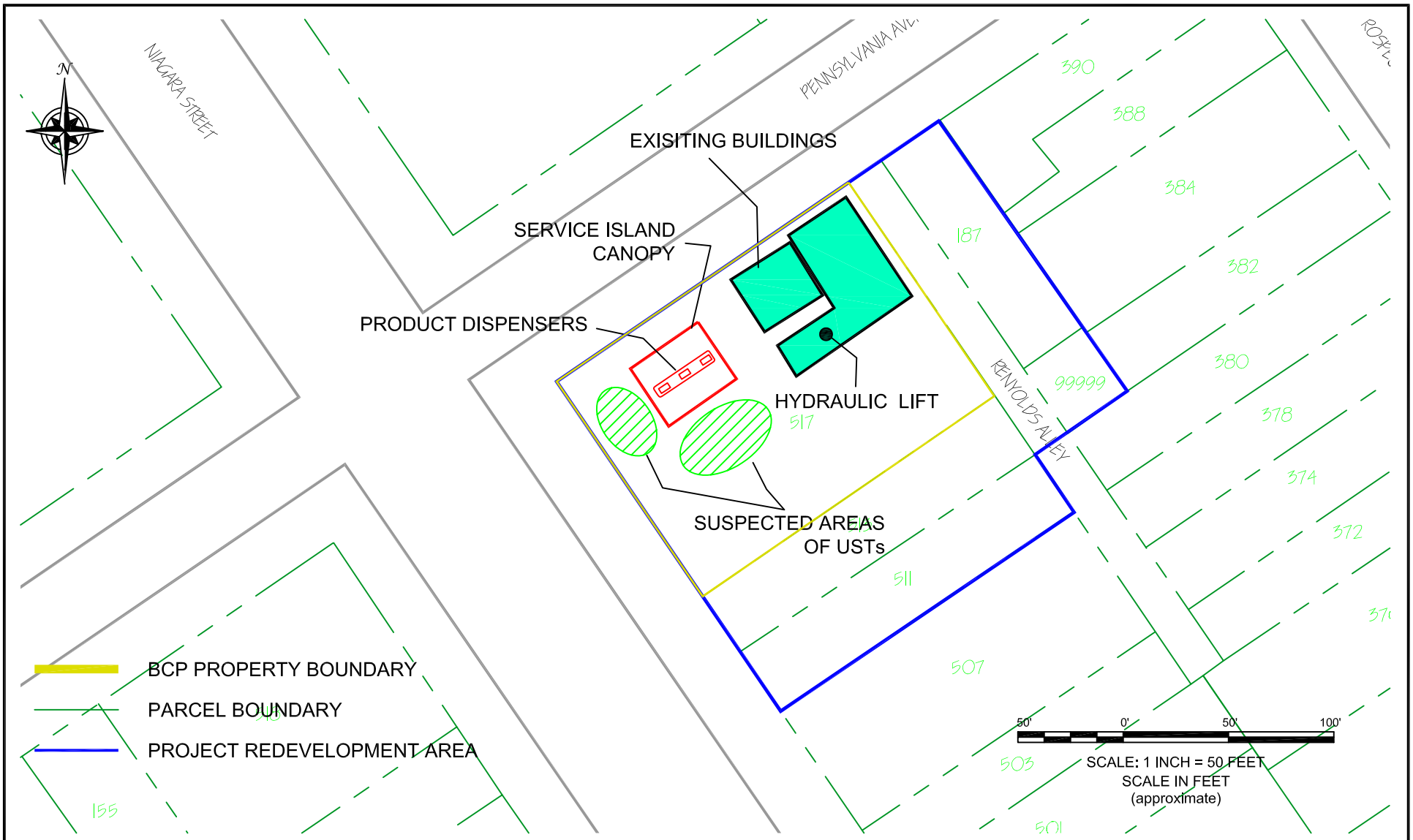
DRAFTED BY: NTM

SITE LOCATION AND VICINITY MAP

RI / AAR / IRM WORK PLAN

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
BUFFALO, NEW YORK

PREPARED FOR
9154 GROUP, LLC



TurnKey Environmental Restoration, LLC
726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0635

PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2008

DRAFTED BY: NTM

SITE PLAN MAP

RI/AAR/IRM WORK PLAN

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE

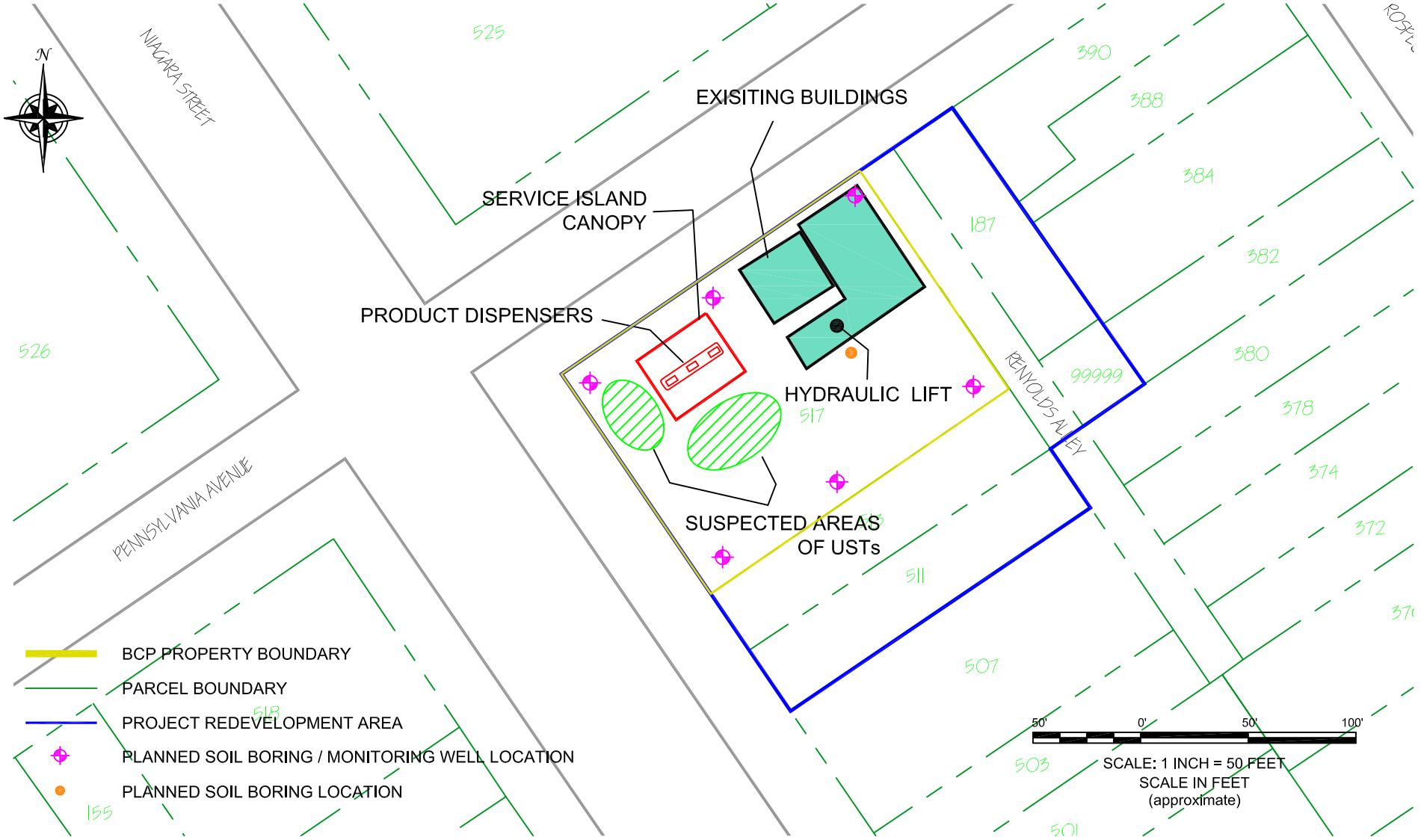
BUFFALO, NEW YORK

PREPARED FOR

9154 GROUP, LLC

FIGURE 2

F:\CAD\TurnKey\Ellicott Development\Niagara and Pennsylvania RI WP\Figure 3; RI Sample Location Map.dwg



TURNKEY ENVIRONMENTAL RESTORATION, LLC

726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0635

PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2008

DRAFTED BY: NTM

RI SAMPLE LOCATION MAP

RI/AAR/IRM WORK PLAN

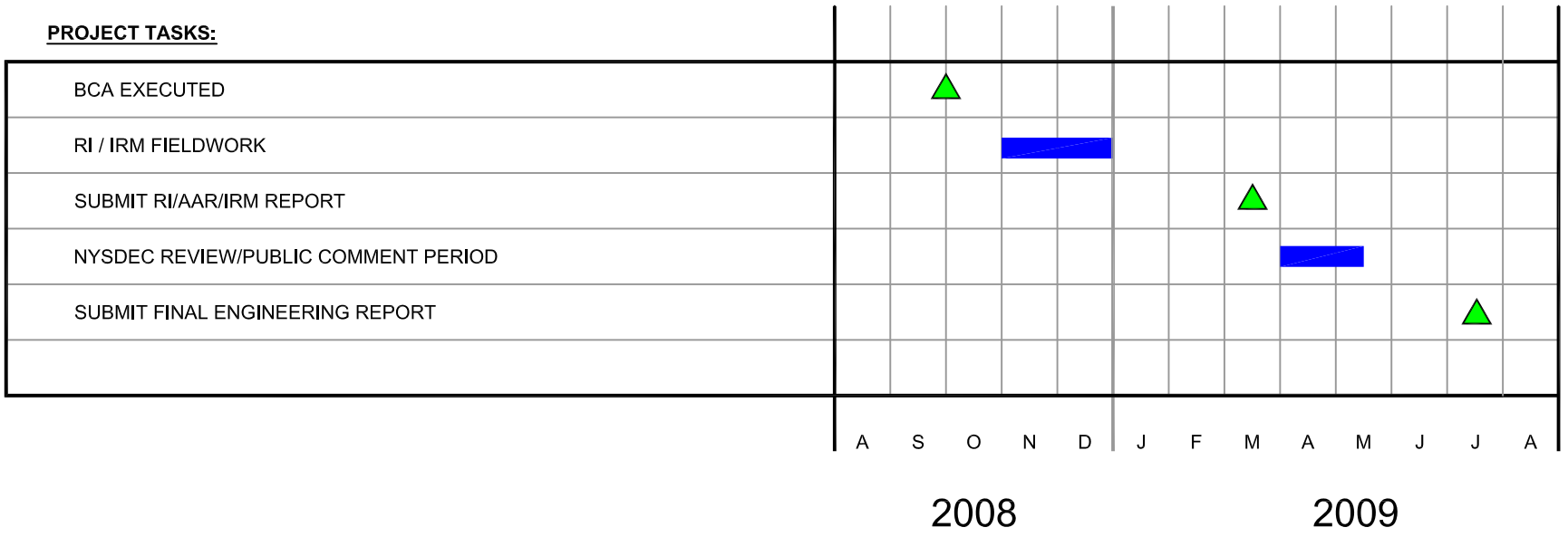
NIAGARA STREET AND PENNSYLVANIA AVENUE SITE

BUFFALO, NEW YORK

PREPARED FOR

9154 GROUP, LLC

FIGURE 3



TURNKEY ENVIRONMENTAL RESTORATION, LLC
726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0635

PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2008

DRAFTED BY: NTM

PROJECT SCHEDULE

BCP Site No. C915223

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE

BUFFALO, NEW YORK

PREPARED FOR

9154 GROUP, LLC

FIGURE 4

APPENDIX A

PREVIOUS INVESTIGATION

SUBSURFACE INVESTIGATION REPORT
CONSTRUCTION LENDING SERVICES (JUNE 2003)

Construction Lending Services, Inc.
P.O. Box 272
Buffalo, NY 14205
Phone: 716-854-0937
Fax: 716-854-0718
www.clsnailsit.com

Nailing the details Since 1981

June 27, 2003

6253 Group, Inc.
295 Main Street, Suite 210
Buffalo, New York 14203

ATTN: ***Mr. Paul V. Moretta***

RE: ***SUMMARY REPORT: Limited Subsurface Investigation, South of 517 Niagara Street, Buffalo, New York NYSDEC Spill #0375039 P.O. 6253-000064***

Dear Paul:

Construction Lending Services, Inc. (CLS) is pleased to submit this summary report for the performance of a limited subsurface investigation which was undertaken at the above referenced property (refer to Figure #1). The purpose of the limited subsurface investigation was to determine the presence/absence of potential subsurface contamination associated with the former gasoline dispensing facility north of your firm's property.

A listing of the subject property owner (i.e., J-P Group at 511 Niagara Street), and the two adjacent properties (i.e., Marranca Service, Inc. at 517 Niagara Street and Jeffrey/Judy Drago at 513 Niagara Street) are also presented in the attached real estate record obtained from a web-based real estate data base report, real-info.com (see attached listings). The methodology and results of the investigation are presented in the sections below.

1.0 Limited Subsurface Investigation

The limited subsurface investigation consisted of mobilizing a Geoprobe-type rig from BMS Drilling Services, Inc. to the site for the purpose of obtaining soil samples from 12 shallow soil borings (i.e., identified as B-1 through B-12 on Figure #2).

Continuous soil samples were obtained at each boring location. The recovered soil samples were logged in the field by the *CLS* senior geologist. The recovered soil samples were also scanned with a photoionization detector (PID) for total ionizable compounds (i.e., volatile organics) and evidence of olfactory/visual contamination. It should be noted that based on the recorded PID readings (refer to the attached soil boring logs), elevated PID readings, above ambient atmospheric conditions, were recorded from borings B-8 through B-10. In addition, olfactory evidence of contamination was observed on the recovered soil samples in boring B-8 through B-10, and visual evidence of contamination was observed on the recovered soil samples in boring B-9.

The soil borings were extended to a depth of between 8 feet and 16 feet below ground surface (BGS). The

borings were extended to the depth where the recovered soil samples exhibited saturated or very moist conditions; this depth represents the first-encountered water (perched) table depth.

Based on the recovered soil samples, the general subsurface conditions consist of either concrete pavement (i.e., sidewalks) or granular fills (i.e., gravel, sand, brick), underlain by red-brown clayey silts/silty clays. A wet tan-brown silt was encountered in borings B-1, B-2, B-7, B-9, B-10, and B-12. The observed moisture conditions of the recovered soil samples indicates that the local groundwater table was encountered in the borings at a depth of between 9 and 14.9 feet BGS. This depth approximately corresponds to the depth of the tan-brown silt soils.

It should be noted that, petroleum hydrocarbon odors and staining were encountered in boring B-9 at a depth of 8 feet to 10 feet BGS.

Based on the limited nature of this subsurface investigation, no soil samples were collected or submitted for laboratory testing. In addition, the field observations recorded during the subsurface investigation indicate that the northwestern corner of the adjacent property (Marranca Service, Inc.) to the subject property (owned by 6253 Group, Inc.) is potentially contaminated with petroleum hydrocarbons.

Conclusions

CLS undertook a limited subsurface investigation program to determine the presence/absence of potential subsurface contamination associated with a former gasoline dispensing facility, located north of the subject property. Based solely on this investigative program, subsurface contamination was encountered north of the subject property. The New York State Department of Environmental Conservation has assigned spill #0375039 to the adjacent property due to the encountered contamination.

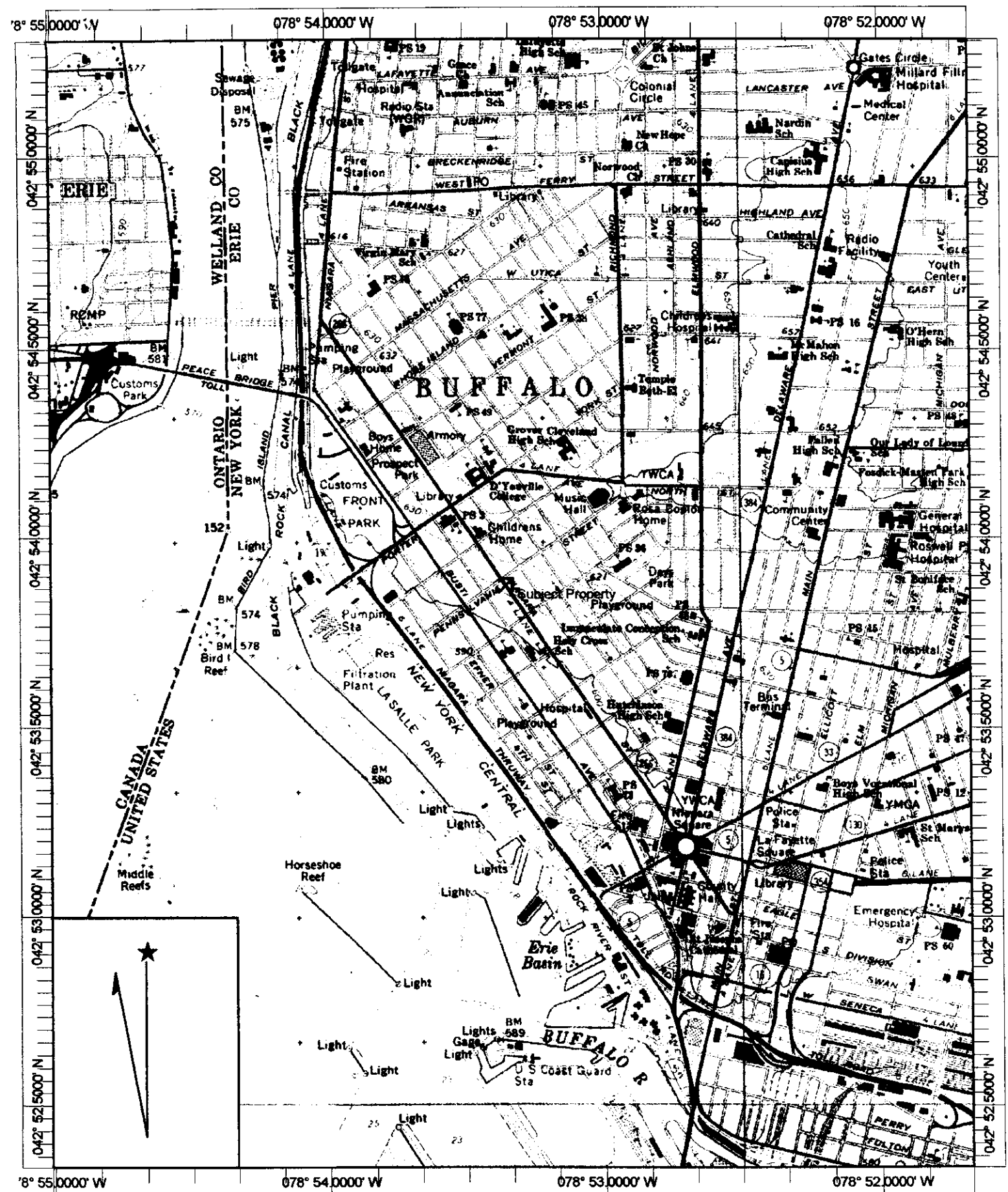
Thank you for the opportunity to assist you with this project. Please call the undersigned at your earliest convenience, if you have any questions.

Very truly yours,
CONSTRUCTION LENDING SERVICES, INC.

Andrew J. Kucserik, CPG, PG
Senior Geologist
Manager of Environmental Services

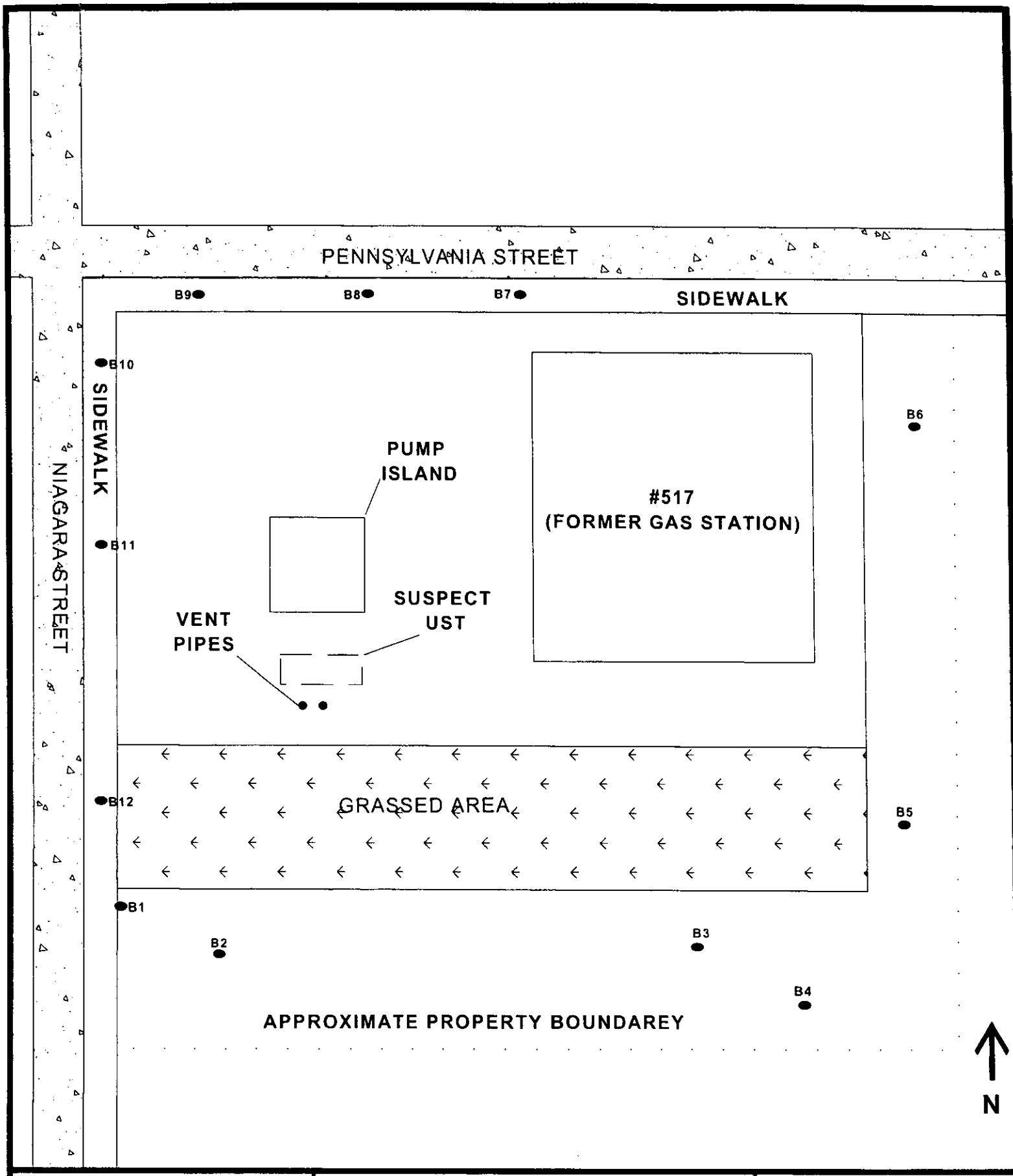
David J. Topian
President

Attachments Figures : #1 - Topographic Map / #2 - Soil Boring Location Plan
Real-info.com Data Base Reports
Soil Boring Logs



Name: BUFFALO NW
Date: 10/13/2003
Scale: 1 inch equals 2000 feet

Location: 042° 53.8221' N 078° 53.3430' W
Caption: 03CLS043.90: Limited Subsurface Investigation, Niagara _Pennsylvania Streets,Buffalo, New York



CLS INC.

PRELIMINARY PHASE II
SUBSURFACE INVESTIGATION
NIAGARA ST.
(SOUTH OF 517 NIAGARA ST.)
BUFFALO, NY (FOR 6253 GROUP INC.)

Drawn by:JMR

Checked by:AK

Scale: Approx. 1 inch = 15 ft.

CLS Project #03CLS043.90

realRecord™

OWNERSHIP INFORMATION	PARCEL NO: 110.27-5-27
J-P GROUP **511 NIAGARA ST** **BUFFALO NY 14201-1740**	**Mail:** **PHONE NUMBER:**
COUNTY: ERIE	
PROPERTY CLASS: 330-VACANT COMM LAND	**CENSUS TRACT:**

SALE INFORMATION						
Sale Date	11/17/1992	**Price $**	0	**Deed Date**	12/29/1992
Arms Length	N Libre 10581	**Page**	514	**# Total Parcels**	1
Personal Property	0 Seller	**Buyer**	UNKNOWN		

SALE HISTORY	PRICE	DATE	SELLER
PRIOR # 1	$ 1,000	08/15/1991	SUCH,SHIRLEY A

STRUCTURAL INFORMATION		LOT INFORMATION		TAX INFORMATION	
Square Feet	0	**Lot Size Dim.:**	25.00x125.00	**Tax ID#**	110.27-5-27
Sqft. 1st Floor		**Zoning**		**Assessed Value $**	1,600
Sqft. 2nd Floor		**Nbhd Code**	00500	**Land Assesment $**	1,600
Fin. Basement Sqft.		**School District**	BUFFALO	**School Tax $**	20
Year Built	0	**Lot Size Acres**	0.07	**County/Town Tax $**	8
Bldg Style		**Desirability**	TYPICAL	**City/Village Tax $**	23
# Units	1	**Water Front**	NO	**Total Tax $**	51
# Stories		**Sewer**	COMM/PUBLIC	**Full Tax Value $**	1,600
# Baths	0.00	**Water**	COMM/PUBLIC	**Equalization Rate**	1.00
# Bedrooms		**Utilities**	GAS & ELECTRIC		
# Fireplaces		**Nbhd. Rating**			
# Kitchens		**Nbhd. Type**			
Garage Type		**# Res. Sites**	0		
Garage Bays		**# Comm. Sites**	1		
Cooling Detail	NONE	**Swis Code**	140200		
Heat Type					
Exterior					
Condition	POOR				
Basement Type					

*The calculated tax amounts are not exact. No special district tax amounts have been included. Taxes should be verified directly from the local tax collector.

EXEMPTIONS:

IMPROVEMENTS:

Note: Display indicates first residential site and up to four improvements.

realRecord™

OWNERSHIP INFORMATION

MARRANCA SERVICE INC.
517 NIAGARA ST
BUFFALO NY 14201-1740

PARCEL NO: 110.27-5-1.1

Mail: 521 NIAGARA ST
BUFFALO NY 14201-

PHONE NUMBER: 716-835-8473

COUNTY: ERIE
PROPERTY CLASS: 432-SERVICE OR GAS STAT

CENSUS TRACT:
SWIS_SBL: 140200110270000500110000000

SALE DATE	PRICE	DEED DATE	LIBER	PAGE	ARMS. LEN.	SELLER	PERS. PROP.	# PARCELS
05/22/1998	$ 1	05/22/1998	10932	9821	N	MARRANCA SALVATORE L	0	1
04/21/1998	$ 1	04/21/1998	10931	869	N	MARRANCA SALVATORE L	0	1

STRUCTURAL INFORMATION

Overall Eff. Yr Built	1927
Overall Grade	
Overall Condition	FAIR
Construction Type	

TAX INFORMATION

SBL(Tax ID)#:	110.27-5-1.1
Assessed Value $	100,000
Land Assesment $	22,800
School Tax $	1,249
County/Town Tax $	497
City/Village Tax $	1,424
Total Tax $	3,170
Full Tax Value $	100,000
Equalization Rate	1.00

*The calculated tax amounts are not exact. No special district tax amounts have been included. Taxes should be verified directly from the local tax collector.

LOT INFORMATION

Lot Size Dim.:	91.50x125.00
Zoning	
Nbhd Code	00500
School District	BUFFALO
Lot Size Acres	0.26
Desirability	SUPERIOR
Water Front	NO
Sewer	COMM/PUBLIC
Water	COMM/PUBLIC
Utilities	GAS & ELECTRIC
Nbhd. Rating	
Nbhd. Type	
# Res. Sites	0
# Comm. Sites	1
Swis Code	140200

BUILDING USAGE

USE AS: FULL SRV GAS
FULL SRV GAS: 1,780 SQ. FT., UNIT TYPE: 01, NO. UNITS: 0

BUILDING BREAKDOWN

# IDENT. BLDS.	BOECKH MODEL	YR. BUILT	QUALITY	CONDITION	PERIMETER	GROSS SQ.FT.	STORY STORIES	HEIGHT	AC%	SPRINKLER%	ALARM%	BSMT. TYPE	BSMT. SQ.FT.
	SERVICE	1927	AVERAGE	AVERAGE		352		10					
	SERVICE	1927	AVERAGE	AVERAGE		1,428	1	10					

IMPROVEMENTS:

Note: Display indicates first residential site and up to four improvements.

realRecord™

OWNERSHIP INFORMATION

DRAGO JEFFREY & JUDY
513 NIAGARA ST
BUFFALO NY 14201-1740

COUNTY: ERIE
PROPERTY CLASS: 330-VACANT COMM LAND

PARCEL NO: 110.27-5-28

Mail:

PHONE NUMBER:

CENSUS TRACT:
SWIS_SBL: 140200110270000502800000000

SALE DATE	PRICE	DEED DATE	LIBER	PAGE	ARMS. LEN.	SELLER	PERS. PROP.	# PARCELS
02/01/1989	$ 37,000	11/30/1999	0	0	Y		0	0

STRUCTURAL INFORMATION

Overall Eff. Yr Built	0
Overall Grade	
Overall Condition	
Construction Type	

TAX INFORMATION

SBL(Tax ID)#:	110.27-5-28
Assessed Value $	6,000
Land Assesment $	6,000
School Tax $	75
County/Town Tax $	30
City/Village Tax $	85
Total Tax $	190
Full Tax Value $	6,000
Equalization Rate	1.00

*The calculated tax amounts are not exact. No special district tax amounts have been included. Taxes should be verified directly from the local tax collector.

LOT INFORMATION

Lot Size Dim.:	24.58x125.00
Zoning	
Nbhd Code	00500
School District	BUFFALO
Lot Size Acres	0.07
Desirability	TYPICAL
Water Front	NO
Sewer	COMM/PUBLIC
Water	COMM/PUBLIC
Utilities	GAS & ELECTRIC
Nbhd. Rating	
Nbhd. Type	
# Res. Sites	0
# Comm. Sites	1
Swis Code	140200

BUILDING USAGE

USE AS: NON-CONTRIB
DINER: 777 SQ. FT., UNIT TYPE: 04, NO. UNITS: 0
EXTERNAL APT: 2,789 SQ. FT., UNIT TYPE: 02, NO. UNITS: 3

BUILDING BREAKDOWN

# BLDS.	IDENT. MODEL	BOECKH YR. BUILT	QUALITY	CONDITION	PERIMETER	GROSS SQ.FT.	STORY STORIES	HEIGHT	AC%	SPRINKLER%	ALARM%	BSMT. TYPE	BSMT. SQ.FT.
1			AVERAGE GOOD			3,566	10					PIER-SLAB	1,424

IMPROVEMENTS:

Note: Display indicates first residential site and up to four improvements.

Construction Lending Services, Inc.
P.O. Box 272, Buffalo, New York 14205
Tel. (716) 854-0937 Fax (716) 854-0718

SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-1
DATE STARTED: 3/24/03 | DATE COMPLETED: 3/24/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 45F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	30	0.0'-1.5' Brown and gray SLAG, Silt, moist (FILL)
2	0.0	2-4	U	-	-		1.5'-10.3' Red-brown, Silty CLAY, trace sand (moist) (ML-CL)
3	0.0	4-6	U	-	-	48	
4	0.0	6-8	U	-	-		
5	0.0	8-10	U	-	-	48	
6	0.0	10-12	U	-	-		10.3'-12.0' Tan-brown, Silt, trace fine sand, wet (ML)
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C - CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-2
DATE STARTED: 3/24/03 | DATE COMPLETED: 3/24/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 45F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	30	0.0'-2.0' Red Brick and Sand and Gravel, little Silt (moist) (FILL)
2	0.0	2-4	U	-	-		2.0'-9.0' Red-brown, Silty CLAY, trace sand, occassional tan (wet) Silt
3	0.0	4-6	U	-	-	48	Partings (moist) (ML-CL)
4	0.0	6-8	U	-	-		
5	0.0	8-10	U	-	-	48	
							9.0'-10.0' Tan-brown SILT, trace fine sand (wet) (ML)
6	0.0	10-12	U	-	-		
							10.0'-12.0' Red-brown Silty CIAY, trace sand, moist (ML-CL)
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P – PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets — PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company — WELL/BORING No. B-3
DATE STARTED: 3/24/03 — DATE COMPLETED: 3/24/03 — RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 — AFTER COMPLETION: 0
WEATHER: Sunny, 45F — DRILL RIG: Geoprobe — DRILLER: BMS Drilling
DRILL SIZE/TYPE: — SAMPLE HAMMER: WEIGHT — FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	38	0.0'-2.5' Brown SILT, some fine/course Sand, trace gravel, trace roots, (moist, FILL)
2	0.0	2-4	U	-	-		
3	0.0	4-6	U	-	-	36	2.5'-12.0' Red-brown Silty CLAY, trace-little fine-medium Sand (moist)(ML-CL)
4	0.0	6-8	U	-	-		
5	0.0	8-10	U	-	-	48	
6	0.0	10-12	U	-	-		Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-4
DATE STARTED: 3/24/03 | DATE COMPLETED: 3/24/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 45F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	38	0.0'-3.1' Brown and black fine/coarse SAND, some Foundary Sand, little fine/coarse Gravel, trace slag (moist-wet, Fill)
2	0.0	2-4	U	-	-		3.1'-4.0' Brown fine SAND, little Silt, trace gravel (moist) (SP)
3	0.0	4-6	U	-	-	48	4.0'-12.0' Red-brown Silty CLAY, some fine/coarse Sand, trace gravel, (moist) (ML-CL)
4	0.0	6-8	U	-	-		
5	0.0	8-10	U	-	-	48	
6	0.0	10-12	U	-	-		Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-5
DATE STARTED: 3/24/03 | DATE COMPLETED: 3/24/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 45F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	40	0.0'-4.8' Brown and black fine/coarse SAND, some Slag, little fine/ coarse Gravel, trace brick (moist, Fill)
2	0.0	2-4	U	-	-		
3	0.0	4-6	U	-	-	48	4.8'-12.0' Red-brown Silty CLAY, some fine/coarse Sand, trace gravel (moist) (ML-CL)
4	0.0	6-8	U	-	-		occ. Silt seams (wet) @ 9'-10'
5	0.0	8-10	U	-	-	48	
6	0.0	10-12	U	-	-		
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-6
DATE STARTED: 3/24/03 | DATE COMPLETED: 3/24/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 45F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	42	0.0'-4.6' Black and brown fine/coarse SAND, some Silt, trace slag, little Cinders (moist, FILL)
2	0.0	2-4	U	-	-		
3	0.0	4-6	U	-	-	48	4.6'-12.0' Red-brown Silty CLAY, some fine/coarse Sand, trace gravel (moist) (ML-CL)
4	0.0	6-8	U	-	-		
5	0.0	8-10	U	-	-	48	
6	0.0	10-12	U	-	-		Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-7
DATE STARTED: 4/16/03 | DATE COMPLETED: 4/16/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 55F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	30	0.0'-0.3' Concrete (Sidewalk)
							0.3'-4.5' Brown SILT, little fine/coarse Sand, trace clay (moist, Fill)
2	0.0	2-4	U	-	-		
3	0.0	4-6	U	-	-	36	4.5'-9.0' Red-brown Clayey SILT, little fine/coarse Sand, trace gravel (moist) (ML-CL)
4	0.0	6-8	U	-	-		
5	0.0	8-10	U	-	-	48	9.0'-10.5' Tan-brown SILT, trace sand, trace clay (wet) (ML)
6	0.0	10-12	U	-	-		10.5'-12.0' Red-brown Clayey SILT, little fine/coarse Sand, trace gravel (moist) (ML-CL)
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-8
DATE STARTED: 4/16/03 | DATE COMPLETED: 4/16/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 55F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	38	0.0'-0.2' Concrete (Sidewalk)
							0.2'-1.5' Brown and black TOPSOIL (moist)
2	0.0	2-4	U	-	-		1.5'-5.0' Tan-brown SILT, little fine Sand, trace clay (wet) (ML)
3	0.0	4-6	U	-	-	36	5.0'-12.0' Red-brown Clayey SILT, little fine/coarse Sand, trace
	152.0						gravel (moist) (ML-CL)
4	72.0	6-8	U	-	-		occ. Silt lenses @ 10.5'-10.7' and @ 11.3'-11.4'
	54.8						
5	56.1	8-10	U	-	-	48	
	76.7						
6	1.9	10-12	U	-	-		
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-9
DATE STARTED: 4/16/03 | DATE COMPLETED: 4/16/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 45F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	40	0.0'-0.2' Concrete (Sidewalk)
							0.2'-0.4' Brown SAND and Gravel moist (FILL)
2	0.0	2-4	U	-	-		0.4'-5.3' Tan-brown SILT, little fine/coarse Sand, trace clay (moist)
							(ML)
3	74.4	4-6	U	-	-	48	5.3'-7.5' Tan-brown SILT, little fine/coarse Sand, trace clay (wet)
							(ML)
4	0.0	6-8	U	-	-		7.5'-12.0' Red-brown Clayey SILT, some fine/coarse Sand, trace
							gravel (moist) (ML-CL)
5	0.0	8-10	U	-	-	48	Black staining, wet, petroleum product odors
6	0.0	10-12	U	-	-		
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-10
DATE STARTED: 4/16/03 | DATE COMPLETED: 4/16/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 55F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	28	0.0'-0.1' Concrete (Sidewalk)
							0.1'-6.9' Brown/black Clayey SILT some fine/coarse Sand, trace
2	7.1	2-4	U	-	-		gravel (moist-wet) (FILL)
	9.3						
3		4-6	U	-	-	42	
	180.0						
4		6-8	U	-	-		6.8'-14.9' Tan-brown SILT, little fine Sand (wet) (ML)
5	90.3	8-10	U	-	-	48	
6		10-12	U	-	-		
7	121.0	12-14	U	-	-	48	
							14.9'-16.0' Red-brown Clayey SILT, little fine/coarse Sand, trace
8	1.7	14-16	U	-	-		gravel (moist) (ML-CL)
							Boring Complete @ 16.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets | PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company | WELL/BORING No. B-11
DATE STARTED: 4/16/03 | DATE COMPLETED: 4/16/03 | RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 | AFTER COMPLETION: 0
WEATHER: Sunny, 55F | DRILL RIG: Geoprobe | DRILLER: BMS Drilling
DRILL SIZE/TYPE: | SAMPLE HAMMER: WEIGHT | FALL

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	29	0.0'-0.1' Concrete (Sidewalk)
							0.1'-6.1' Brown Clayey SILT and fine/coarse Sand (moist) (FILL)
2	0.0	2-4	U	-	-		
3	0.0	4-6	U	-	-	31	
4	0.0	6-8	U	-	-		6.1'-7.1' Gray-black TOPSOIL (moist-wet)
							7.2'-12.0' Red-brown Clayey SILT, little fine/coarse Sand, trace
5	0.0	8-10	U	-	-	48	gravel (moist) (ML-CL)
6	0.0	10-12	U	-	-		
							Boring Complete @ 12.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

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SUBSURFACE LOG

PROJECT/ LOCATION: Niagara and Pennsylvania Streets — PROJECT No. 03CLS043.90
CLIENT: Ellicott Development Company — WELL/BORING No. B-12
DATE STARTED: 4/16/03 — DATE COMPLETED: 4/16/03 — RECORDED BY: A. J. Kucserik
GROUNDWATER DEPTH WHILE DRILLING: 0 — AFTER COMPLETION: 0
WEATHER: Sunny, 55F — DRILL RIG: Geoprobe — DRILLER: BMS Drilling
DRILL SIZE/TYPE: _____ — SAMPLE HAMMER: WEIGHT _____ — FALL _____

Sample No.	PID/HNu Reading (ppm)	Depth (Feet)	Type *	Blows/6"	N	Recovery (Inches)	Material Classification and Description (Unified Soil Classification System-Visual Manual Method)
1	0.0	0-2	U	-	-	20	0.0'-0.1' Concrete (Sidewalk)
							0.1'-1.0' Brown and black SAND and Gravel, moist (FILL)
2	0.0	2-4	U	-	-		1.0'-3.0' Tan-brown SILT, little fine/coarse Sand, trace clay (moist)
							(ML)
3	0.0	4-6	U	-	-	48	3.0'-8.0' Red-brown Clayey SILT, some fine/coarse Sand, (moist)
							(ML-CL)
4	0.0	6-8	U	-	-		Boring Complete @ 8.0'

NOTES

*SS - SPLIT-SPOON SAMPLE U – UNDISTURBED TUBE P - PISTON TUBE C – CORE

APPENDIX B

SITE-SPECIFIC HEALTH AND SAFETY PLAN

SITE HEALTH AND SAFETY PLAN
for
BROWNFIELD CLEANUP PROGRAM
RI/IRM ACTIVITIES

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
BUFFALO, NEW YORK

October 2007 0136-002-101
Revised September 2008

Prepared for:

9154 GROUP, LLC

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

ACKNOWLEDGEMENT

Plan Reviewed by (initial):

Corporate Health and Safety Director: Thomas H. Forbes, P.E.

Project Manager: Michael Lesakowski

Designated Site Safety and Health Officer: Bryan C. Hann

Acknowledgement:
I acknowledge that I have reviewed the information contained in this site-specific Health and Safety Plan, and understand the hazards associated with performance of the field activities described herein. I agree to comply with the requirements of this plan.

NAME (PRINT)	SIGNATURE	DATE

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

TABLE OF CONTENTS

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

TABLE OF CONTENTS

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 General

In accordance with OSHA requirements contained in 29 CFR 1910.120, this Health and Safety Plan (HASP) describes the specific health and safety practices and procedures to be employed by TurnKey Environmental Restoration, LLC and Benchmark Environmental Engineering & Science, PLLC employees (referred to jointly hereafter as "TurnKey-Benchmark") during Remedial Investigation (RI) and Interim Remedial Measures (IRM) activities at the Niagara Street and Pennsylvania Avenue Site located in the City of Buffalo, New York.. This HASP presents procedures for TurnKey-Benchmark employees who will be involved with RI/IRM field activities; it does not cover the activities of other contractors, subcontractors or other individuals on the Site. These firms will be required to develop and enforce their own HASPs as discussed in Section 2.0. TurnKey-Benchmark accepts no responsibility for the health and safety of contractor, subcontractor or other personnel.

This HASP presents information on known Site health and safety hazards using available historical information, and identifies the equipment, materials and procedures that will be used to eliminate or control these hazards. Environmental monitoring will be performed during the course of field activities to provide real-time data for on-going assessment of potential hazards.

1.2 Background

The Site is an approximate 0.5-acre parcel located on the west corner of Niagara Street and Pennsylvania Avenue, comprised of five tax parcels with addresses of 511 Niagara Street, 513 Niagara Street, 517 Niagara Street, 187 Pennsylvania Avenue and 99999 Prospect Avenue. Reynolds Alley, owned by the City of Buffalo, runs approximately northwest/southeast through the Site (see Figures 1 and 2).

The portion of the Site addressed at 517 Niagara Street is developed with a former gasoline service station and auto repair facility that was built in approximately 1925 (see Figure 2). Three underground storage tanks (USTs), and associated vent and fill pipes and product dispensers remain at the Site. The former auto repair facility contains an in-ground hydraulic lift and numerous abandoned auto parts, 55-gallon drums and other containers related to historic automotive repair. The former gas station and auto repair facility is

generally in poor condition and in a state of disrepair with apparent petroleum staining on the floors and observable sheen in standing water in two floor drains within the building.

The remainder of the Site is vacant land covered in grass or gravel. The Site is bordered by Niagara Street to the west, Pennsylvania Avenue to the north, an automotive repair facility and residential properties to the east and a residential apartment building to the south. The Site is located in a highly developed urban area generally comprised of residential and commercial use properties.

1.3 Known and Suspected Environmental Conditions

A Subsurface Investigation Report was completed by Construction Lending Services, Inc. in June 2003 (Ref. 1) to determine the presence/absence of potential subsurface contamination associated with the former Marranca's Service Station (i.e., 517 Niagara Street). Based on that study, soil borings along Niagara Street and Pennsylvania Avenue were impacted with volatile organic compounds (VOCs). The impact was based on visual and olfactory observations and elevated photoionization detector (PID) readings. No samples were submitted for chemical analysis at that time. Construction Lending Services, Inc. concluded that the Marranca's Service Station is the likely source of the contamination.

A Phase I Environmental Site Assessment (ESA) Report was completed for the Site by TurnKey in August 2007 (Ref. 2). The Phase I ESA identified several environmental concerns due to the potential for chemical and/or petroleum product releases associated with historic use of the Site as a gasoline station and automotive repair shop. The Site included an abandoned gasoline station/automotive repair building, at least three abandoned USTs, several drums, and other containers of automotive fluids and one in-ground hydraulic lift on the property.

The RI will be performed in support of the BCP to determine the nature and extent of impacts from these known and suspect environmental conditions on this parcel. As part of the RI, an IRM will be completed to immediately address known environmental impacts related to past use of the Site as a gasoline station and automotive repair facility. An IRM will quickly mitigate risks to public health and the environment attributable to petroleum contamination at the Site. The current UST system, including USTs, product dispensers and product piping and the in-ground lift will be removed. Impacted soil will be removed and impacted groundwater (if encountered) will be extracted and treated during the IRM.

1.4 Parameters of Interest

Based on the previous investigations, constituents of potential concern (COPCs) in soil and groundwater at the Site include:

- **Volatile Organic Compounds (VOCs)** – VOCs present at elevated concentration may include benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tert-butyl ether (MTBE). These VOCs are typically associated with storage and handling of petroleum products such as gasoline.

- **Semi-Volatile Organic Compounds (SVOCs) –** SVOCs present at elevated concentrations may include polynuclear aromatic hydrocarbons (PAHs), which are byproducts of incomplete combustion and impurities in petroleum products. Although PAHs are commonly found in urban soil environments, they may be present at the Site at concentrations that are elevated compared to typical "background" levels.

- **Inorganic Compound** – The inorganic COPC potentially present at elevated concentrations is lead. Since a gasoline service station and auto repair facility were built on the Site in approximately 1925. Although Federal restrictions governing the lead content of motor fuels were in effect in the 1970s, leaded gasoline was not banned in the US until 1986.

1.5 Overview of RI/IRM Activities

TurnKey-Benchmark personnel will be on-site to observe and perform RI and IRM activities. The field activities to be completed as part of the RI and IRM are described below. Planned RI activities are more fully described in the RI/AAR/IRM Work Plan for the Site (Ref. 3).

<u>Remedial Investigation Activities</u>

1. **Subsurface Soil Sampling:** TurnKey-Benchmark will advance ten soil borings and collect one subsurface soil sample from each boring for the purpose of determining the nature and extent of potential COPC impacts.

2. **Monitoring Well Installation/Development and Sampling:** TurnKey-Benchmark will observe the installation of six on-site groundwater monitoring wells, develop the wells, and collect groundwater samples for the purpose of determining the nature and extent of potential COPC impacts.

Potential IRM Activities

1. **Removal of In-Ground Hydraulic Lift and UST System:** The remediation contractor would remove the USTs, product dispensers, product piping, and the in-ground lift.

2. **Soil Excavation:** The remediation contractor would perform soil excavation activities and coordinate disposal of excavated soil.

3. **Backfilling:** The remediation contractor would coordinate and perform backfilling activities.

4. **Verification Sampling:** The remediation contractor would collect soil samples from the side-walls and bottom of the excavations using a backhoe to verify that cleanup objectives have been met.

5. **Groundwater and Surface Management:** The remediation contractor would direct groundwater/surface water collection during soil excavation activities and coordinate disposal of the collected water.

2.0 ORGANIZATIONAL STRUCTURE

This chapter of the HASP describes the lines of authority, responsibility and communication as they pertain to health and safety functions at the Site. The purpose of this chapter is to identify the personnel who impact the development and implementation of the HASP and to describe their roles and responsibilities. This chapter also identifies other contractors and subcontractors involved in work operations and establishes the lines of communications among them for health and safety matters. The organizational structure described in this chapter is consistent with the requirements of 29 CFR 1910.120(b)(2). This section will be reviewed by the Project Manager and updated as necessary to reflect the current organizational structure at this Site.

2.1 Roles and Responsibilities

All Turnkey-Benchmark personnel on the Site must comply with the minimum requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this Site are detailed in the following paragraphs.

2.1.1 Corporate Health and Safety Director

The TurnKey-Benchmark Corporate Health and Safety Director is ***Mr. Thomas H. Forbes***. The Corporate Health and Safety Director responsible for developing and implementing the Health and Safety program and policies for Benchmark Environmental Engineering & Science, PLLC and TurnKey Environmental Restoration, LLC, and consulting with corporate management to ensure adequate resources are available to properly implement these programs and policies. The Corporate Health and Safety Director coordinates TurnKey-Benchmark's Health and Safety training and medical monitoring programs and assists project management and field staff in developing site-specific health and safety plans.

2.1.2 Project Manager

The Project Manager for this Site is ***Mr. Michael Lesakowski.*** The Project Manager has the responsibility and authority to direct all TurnKey-Benchmark work operations at the Site. The Project Manager coordinates safety and health functions with the Site Safety and Health Officer, and bears ultimate responsibility for proper implementation

of this HASP. He may delegate authority to expedite and facilitate any application of the program, including modifications to the overall project approach as necessary to circumvent unsafe work conditions. Specific duties of the Project Manager include:

- Preparing and coordinating the Site work plan.
- Providing TurnKey-Benchmark workers with work assignments and overseeing their performance.
- Coordinating health and safety efforts with the Site Safety and Health Officer (SSHO).
- Reviewing the emergency response coordination plan to assure its effectiveness.
- Serving as the primary liaison with Site contractors and the property owner.

2.1.3 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) for this Site is ***Mr. Bryan C. Hann***. The qualified alternate SSHO is ***Mr. Richard L. Dubisz.*** The SSHO reports to the Project Manager. The SSHO is on-site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions for TurnKey-Benchmark personnel on the Site.
- Serving as the point of contact for safety and health matters.
- Ensuring that TurnKey-Benchmark field personnel working on the Site have received proper training (per 29 CFR Part 1910.120(e)), that they have obtained medical clearance to wear respiratory protection (per 29 CFR Part 1910.134), and that they are properly trained in the selection, use and maintenance of personal protective equipment, including qualitative respirator fit testing.
- Performing or overseeing Site monitoring as required by the HASP.
- Assisting in the preparation and review of the HASP.

- Maintaining site-specific safety and health records as described in this HASP.
- Coordinating with the Project Manager, Site Workers, and Contractor's SSHO as necessary for safety and health efforts.

2.1.4 Site Workers

Site workers are responsible for: complying with this HASP or a more stringent HASP, if appropriate (i.e., Contractor and Subcontractor's HASP); using proper PPE; reporting unsafe acts and conditions to the SSHO; and following the safety and health instructions of the Project Manager and SSHO.

2.1.5 Other Site Personnel

Other Site personnel who will have health and safety responsibilities will include the Drilling Contractor, who will be responsible for developing, implementing and enforcing a Health and Safety Plan equally stringent or more stringent than TurnKey-Benchmark's HASP. TurnKey-Benchmark assumes no responsibility for the health and safety of anyone outside its direct employ. Each Contractor's HASP shall cover all non-TurnKey/Benchmark Site personnel. Each Contractor shall assign a SSHO who will coordinate with TurnKey-Benchmark's SSHO as necessary to ensure effective lines of communication and consistency between contingency plans.

In addition to TurnKey-Benchmark and Contractor personnel, other individuals who may have responsibilities in the work zone include subcontractors and governmental agencies performing Site inspection work (i.e., the New York State Department of Environmental Conservation). The Contractor shall be responsible for ensuring that these individuals have received OSHA-required training (29 CFR 1910.120(e)), including initial, refresher and site-specific training, and shall be responsible for the safety and health of these individuals while they are on-site.

3.0 HAZARD EVALUATION

Due to the presence of certain contaminants at the Site, the possibility exists that workers will be exposed to hazardous substances during field activities. The principal points of exposure would be through direct contact with and incidental ingestion of soil, and through the inhalation of contaminated particles or vapors. Other points of exposure may include direct contact with groundwater. In addition, the use of drilling and/or medium to large-sized construction equipment (e.g., excavator) will also present conditions for potential physical injury to workers. Further, since work will be performed outdoors, the potential exists for heat/cold stress to impact workers, especially those wearing protective equipment and clothing. Adherence to the medical evaluations, worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, establishment work zones and Site control, appropriate decontamination procedures and contingency planning outlined herein will reduce the potential for chemical exposures and physical injuries.

3.1 Chemical Hazards

As discussed in Section 1.3, historic activities have potentially resulted in impacts to Site soils and groundwater. Visual and olfactory observations, as well as elevated PID readings, indicate a potential VOC impact to Site soil. In addition to VOCs, soil and groundwater may be impacted by SVOCs (PAHs) and lead due to historic use as a gasoline station and automotive repair shop. Table 1 lists exposure limits for airborne concentrations of the COPCs identified in Section 1.4 of this HASP. Brief descriptions of the toxicology of the prevalent COPCs and related health and safety guidance and criteria are provided below.

- **Benzene (CAS #71-43-2)** poisoning occurs most commonly through inhalation of the vapor, however, benzene can also penetrate the skin and poison in that way. Locally, benzene has a comparatively strong irritating effect, producing erythema and burning and, in more severe cases, edema and blistering. Exposure to high concentrations of the vapor (i.e., 3,000 ppm or higher) may result in acute poisoning characterized by the narcotic action of benzene on the central nervous system. In acute poisoning, symptoms include confusion, dizziness, tightening of the leg muscles, and pressure over the forehead. Chronic exposure to benzene (i.e., long-term exposure to concentrations of 100 ppm or less) may lead to damage of the blood-forming system. Benzene is very flammable when exposed to heat or flame and can react vigorously with oxidizing materials.

- **Ethylbenzene (CAS #100-41-4)** is a component of automobile gasoline. Over-exposure may cause kidney, skin liver and/or respiratory disease. Signs of exposure may include dermatitis, irritation of the eyes and mucus membranes, headache. Narcosis and coma may result in more severe cases.

- **Lead (CAS #7439-92-1)** can affect almost every organ and system in our bodies. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed. Lead may decrease reaction time, cause weakness in fingers, wrists or ankles and possibly affect memory. Lead may cause anemia.

- **Methyl Tert-Butyl Ether (MTBE) (CAS #1634-04-4)** is a volatile, flammable and colorless liquid that is highly soluble in water with a characteristic odor. MTBE was a gasoline additive, used as an oxygenate and to raise the octane number, and is a fossil fuel. MTBE can be absorbed into the body by inhalation and by ingestion. The substance is irritating to the skin. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

- **Polycyclic Aromatic Hydrocarbons (PAHs)** are formed as a result of the pyrolysis and incomplete combustion of organic matter such as fossil fuel. PAH aerosols formed during the combustion process disperse throughout the atmosphere, resulting in the deposition of PAH condensate in soil, water and on vegetation. In addition, several products formed from petroleum processing operations (e.g., roofing materials and asphalt) also contain elevated levels of PAHs. Hence, these compounds are widely dispersed in the environment. PAHs are characterized by a molecular structure containing three or more fused, unsaturated carbon rings. Seven of the PAHs are classified by USEPA as probable human carcinogens (USEPA Class B2). These are: benzo(a)pyrene; benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; dibenzo(a,h)anthracene; and indeno(1,2,3-cd)pyrene. The primary route of exposure to PAHs is through incidental ingestion and inhalation of contaminated particulates. PAHs are characterized by an organic odor, and exist as oily liquids in pure form. Acute exposure symptoms may include acne-type blemishes in areas of the skin exposed to sunlight.

- **Toluene (CAS #108-88-3)** is a common component of paint thinners and automobile fuel. Acute exposure predominantly results in central nervous system depression. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and coordination loss. Repeated exposures may cause removal of lipids from the skin, resulting in dry, fissured dermatitis.

- **Xylenes (o, m, and p) (CAS #95-47-6, 108-38-3, and 106-42-3)** are colorless, flammable liquids present in paint thinners and fuels. Acute exposure may cause central nervous system depression, resulting in headache, dizziness, fatigue, muscular weakness, drowsiness, and coordination loss. Repeated exposures may also cause removal of lipids from the skin, producing dry, fissured dermatitis. Exposure of high concentrations of vapor may cause eye irritation and damage, as well as irritation of the mucus membranes.

With respect to the anticipated RI/IRM activities discussed in Section 1.5, possible routes of exposure to the above-mentioned contaminants are presented in Table 2. The use of proper respiratory equipment, as outlined in Section 7.0 of this HASP, will minimize the potential for exposure to airborne contamination. Exposure to contaminants through dermal and other routes will also be minimized through the use of protective clothing (Section 7.0), safe work practices (Section 6.0), and proper decontamination procedures (Section 12.0).

3.2 Physical Hazards

RI/IRM field activities at the Niagara Street and Pennsylvania Avenue Site may present the following physical hazards:

- The potential for physical injury during heavy construction equipment use, such as backhoes, excavators and drilling equipment.

- The potential for heat/cold stress to employees during the summer/winter months (see Section 10.0).

- The potential for slip and fall injuries due to rough, uneven terrain and/or open excavations.

These hazards represent only some of the possible means of injury that may be present during RI/IRM operations and sampling activities at the Site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

4.0 TRAINING

4.1 Site Workers

All personnel performing RI/IRM activities at the Site (such as, but not limited to, equipment operators, general laborers, and drillers) and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the Site shall receive training in accordance with 29 CFR 1910.120(e) before they are permitted to engage in operations in the exclusion zone or contaminant reduction zone. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSHO prior to the start of field activities. A description of topics to be covered by this training is provided below.

4.1.1 Initial and Refresher Training

Initial and refresher training is conducted by a qualified instructor as specified under OSHA 29 CFR 1910.120(e)(5), and is specifically designed to meet the requirements of OSHA 29 CFR 1910.120(e)(3) and 1910.120(e)(8). The training covers, as a minimum, the following topics:

- OSHA HAZWOPER regulations.
- Site safety and hazard recognition, including chemical and physical hazards.
- Medical monitoring requirements.
- Air monitoring, permissible exposure limits, and respiratory protection level classifications.
- Appropriate use of personal protective equipment (PPE), including chemical compatibility and respiratory equipment selection and use.
- Work practices to minimize risk.
- Work zones and Site control.

- Safe use of engineering controls and equipment.
- Decontamination procedures.
- Emergency response and escape.
- Confined space entry procedures.
- Heat and cold stress monitoring.
- Elements of a Health and Safety Plan.
- Spill containment.

Initial training also incorporates workshops for PPE and respiratory equipment use (Levels A, B and C), and respirator fit testing. Records and certification received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file at TurnKey-Benchmark's Buffalo, NY office. Contractors and Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not been certified as having received health and safety training in conformance with 29 CFR 1910.120(e) is prohibited from working in the exclusion and contamination reduction zones, or to engage in any on-site work activities that may involve exposure to hazardous substances or wastes.

4.1.2 Site Training

Site workers are given a copy of the HASP and provided a site-specific briefing prior to the commencement of work to ensure that employees are familiar with the HASP and the information and requirements it contains. The Site briefing shall be provided by the SSHO prior to initiating field activities and shall include:

- Names of personnel and alternates responsible for Site safety and health.
- Safety, health and other hazards present on the Site.
- The site lay-out including work zones and places of refuge.

- The emergency communications system and emergency evacuation procedures.
- Use of PPE.
- Work practices by which the employee can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Medical surveillance, including recognition of symptoms and signs of over-exposure as described in Chapter 5 of this HASP.
- Decontamination procedures as detailed in Chapter 12 of this HASP.
- The emergency response plan as detailed in Chapter 15 of this HASP.
- Confined space entry procedures, if required, as detailed in Chapter 13 of this HASP.
- The spill containment program as detailed in Chapter 9 of this HASP.
- Site control as detailed in Chapter 11 of this HASP.

Supplemental health and safety briefings will also be conducted by the SSHO on an as-needed basis during the course of the work. Supplemental briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during ongoing Site characterization and analysis. Conditions for which the SSHO may schedule additional briefings include, but are not limited to: a change in Site conditions (e.g., based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during Site work.

4.2 Supervisor Training

On-site safety and health personnel who are directly responsible for or who supervise the safety and health of workers engaged in hazardous waste operations (i.e., SSHO) shall receive, in addition to the appropriate level of worker training described in Section 4.1, above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

4.3 Emergency Response Training

Emergency response training is addressed in Appendix A of this HASP, Emergency Response Plan.

4.4 Site Visitors

Each Contractor's SSHO will provide a site-specific briefing to all Site visitors and other non-TurnKey/Benchmark personnel who enter the Site beyond the Site entry point. The site-specific briefing will provide information about Site hazards, the Site layout including work zones and places of refuge, the emergency communications system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

Site visitors will not be permitted to enter the exclusion zone or contaminant reduction zones unless they have received the level of training required for Site workers as described in Section 4.1.

5.0 MEDICAL MONITORING

Medical monitoring examinations are provided to TurnKey-Benchmark employees as stipulated under 29 CFR Part 1910.120(f). These exams include initial employment, annual and employment termination physicals for all TurnKey-Benchmark employees involved in hazardous waste site field operations. Post-exposure examinations are also provided for employees who may have been injured, received a health impairment, or developed signs or symptoms of over-exposure to hazardous substances or were accidentally exposed to substances at concentrations above the permissible exposure limits without necessary personal protective equipment. Such exams are performed as soon as possible following development of symptoms or the known exposure event.

Medical evaluations are performed by ADP Screening & Selection Services, an occupational health care provider under contract with TurnKey-Benchmark. ADP's local facility is Health Works WNY, Seneca Square Plaza, 1900 Ridge Road, West Seneca, New York 14224. The facility can be reached at (716) 823-5050 to schedule routine appointments or post-exposure examinations.

Medical evaluations are conducted according to the TurnKey-Benchmark Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment. The examinations include:

- Occupational/medical history review.
- Physical exam, including vital sign measurement.
- Spirometry testing.
- Eyesight testing.
- Audio testing (minimum baseline and exit, annual for employees routinely exposed to greater than 85db).
- EKG (for employees >40 yrs age or as medical conditions dictate).
- Chest X-ray (baseline and exit, and every 5 years).
- Blood biochemistry (including blood count, white cell differential count, serum multiplastic screening).

- Medical certification of physical requirements (i.e., sight, musculoskeletal, cardiovascular) for safe job performance and to wear respiratory protection equipment.

The purpose of the medical evaluation is to determine an employee's fitness for duty on hazardous waste sites; and to establish baseline medical data.

In conformance with OSHA regulations, TurnKey-Benchmark will maintain and preserve medical records for a period of 30 years following termination of employment. Employees are provided a copy of the physician's post-exam report, and have access to their medical records and analyses.

6.0 SAFE WORK PRACTICES

All TurnKey-Benchmark employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion and contamination reduction zones:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited.

- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above.

- Respiratory protective equipment and clothing must be worn by all personnel entering the Site as required by the HASP or as modified by the Site safety officer. Excessive facial hair (i.e., beards, long mustaches or sideburns) that interferes with the satisfactory respirator-to-face seal is prohibited.

- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross contamination and need for decontamination.

- Medicine and alcohol can synergize the effects of exposure to toxic chemicals. Due to possible contraindications, use of prescribed drugs should be reviewed with the TurnKey-Benchmark occupational physician. Alcoholic beverage and illegal drug intake are strictly forbidden during the workday.

- All personnel shall be familiar with standard operating safety procedures and additional instructions contained in this Health and Safety Plan.

- On-site personnel shall use the "buddy" system. No one may work alone (i.e., out of earshot or visual contact with other workers) in the exclusion zone.

- Personnel and equipment in the contaminated area shall be minimized, consistent with effective Site operations.

- All employees have the obligation to immediately report and if possible, correct unsafe work conditions.

- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion into full-face respirators will be provided for TurnKey-Benchmark employees, as requested and required.

The recommended specific safety practices for working around the contractor's equipment (e.g., backhoes, bulldozers, excavators, drill rigs etc.) are as follows:

- Although the Contractor and subcontractors are responsible for their equipment and safe operation of the Site, TurnKey-Benchmark personnel are also responsible for their own safety.

- Subsurface work will not be initiated without first clearing underground utility services.

- Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The Site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.

- Care should be taken to avoid overhead wires when moving heavy-equipment from location to location.

- Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.

- The work Site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the Site.

- Proper lighting must be provided when working at night.

- Construction activities should be discontinued during an electrical storm or severe weather conditions.

- The presence of combustible gases should be checked before igniting any open flame.

- Personnel shall stand upwind of any construction operation when not immediately involved in sampling/logging/observing activities.

- Personnel will not approach the edge of an unsecured trench/excavation closer than 2 feet.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 Equipment Selection

Personal protective equipment (PPE) will be donned when work activities may result in exposure to physical or chemical hazards beyond acceptable limits, and when such exposure can be mitigated through appropriate PPE. The selection of PPE will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the Site, the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Equipment designed to protect the body against contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories, designated A through D consistent with United States Environmental Protection Agency (USEPA) Level of Protection designation, are:

- **Level A:** Should be selected when the highest level of respiratory, skin and eye protection is needed.

- **Level B:** Should be selected when the highest level of respiratory protection is needed, but a lesser level of skin protection is required. Level B protection is the minimum level recommended on initial Site entries until the hazards have been further defined by on-site studies. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.

- **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.

- **Level D:** Should not be worn on any Site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection.

OSHA requires the use of certain PPE under conditions where an immediate danger to life and health (IDLH) may be present. Specifically, OSHA 29 CFR 1910.120(g)(3)(iii) requires use of a positive pressure self-contained breathing apparatus, or positive pressure air-line respirator equipped with an escape air supply when chemical exposure levels present a substantial possibility of immediate serious injury, illness or death, or impair the ability to

escape. Similarly, OSHA 29 CFR 1910.120(g)(3)(iv) requires donning totally-encapsulating chemical protective suits (with a protection level equivalent to Level A protection) in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate serious illness, injury or death, or impair the ability to escape.

In situations where the types of chemicals, concentrations, and possibilities of contact are unknown, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be further characterized. The individual components of clothing and equipment must be assembled into a full protective ensemble to protect the worker from site-specific hazards, while at the same time minimizing hazards and drawbacks of the personal protective gear itself. Ensemble components are detailed below for levels A/B, C, and D protection.

7.2 Protection Ensembles

7.2.1 Level A/B Protection Ensemble

Level A/B ensembles include similar respiratory protection, however Level A provides a higher degree of dermal protection than Level B. Use of Level A over Level B is determined by: comparing the concentrations of identified substances in the air with skin toxicity data, and assessing the effect of the substance (by its measured air concentrations or splash potential) on the small area of the head and neck unprotected by Level B clothing.

The recommended PPE for level A/B is:

- Pressure-demand, full-face piece self-contained breathing apparatus (MSHA/-NIOSH approved) or pressure-demand supplied-air respirator with escape self-contained breathing apparatus (SCBA).
- Chemical-resistant clothing. For Level A, clothing consists of totally-encapsulating chemical resistant suit. Level B incorporates hooded one-or two-piece chemical splash suit.
- Inner and outer chemical resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

7.2.2 Level C Protection Ensemble

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing an air-purifying device. The device (when required) must be an air-purifying respirator (MSHA/NIOSH approved) equipped with filter cartridges. Cartridges must be able to remove the substances encountered. Respiratory protection will be used only with proper fitting, training and the approval of a qualified individual. In addition, an air-purifying respirator can be used only if: oxygen content of the atmosphere is at least 19.5% in volume; substances are identified and concentrations measured; substances have adequate warning properties; the individual passes a qualitative fit-test for the mask; and an appropriate cartridge/canister is used, and its service limit concentration is not exceeded.

Recommended PPE for Level C conditions includes:

- Full-face piece, air-purifying respirator equipped with MSHA and NIOSH approved organic vapor/acid gas/dust/mist combination cartridges or as designated by the SSHO.
- Chemical-resistant clothing (hooded, one or two-piece chemical splash suit or disposable chemical-resistant one-piece suit).
- Inner and outer chemical-resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

An air-monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators. Continual surveillance using direct-reading instruments is needed to detect any changes in air quality necessitating a higher level of respiratory protection.

7.2.3 Level D Protection Ensemble

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances

and where the atmospheric contains at least 19.5% oxygen.

Recommended PPE for Level D includes:

- Coveralls.
- Safety boots/shoes.
- Safety glasses or chemical splash goggles.
- Hardhat.
- Optional gloves; escape mask; face shield.

7.2.4 Recommended Level of Protection for Site Tasks

Based upon current information regarding both the contaminants suspected to be present at the Site and the various tasks that are included in the remedial activities, the minimum required levels of protection for these tasks shall be as identified in Table 3.

8.0 EXPOSURE MONITORING

8.1 General

Based on the results of historic sample analysis and the nature of the proposed work activities at the Site, the possibility exists that organic vapors and/or particulates may be released to the air during intrusive construction activities. Ambient breathing zone concentrations may at times, exceed the permissible exposure limits (PELs) established by OSHA for the individual compounds (see Table 1), in which case respiratory protection will be required. Respiratory and dermal protection may be modified (upgraded or downgraded) by the SSHO based upon real-time field monitoring data.

8.1.1 On-Site Work Zone Monitoring

TurnKey personnel will conduct routine, real-time air monitoring during all intrusive construction phases such as excavation, backfilling, drilling, etc. The work area will be monitored at regular intervals using a photo-ionization detector (PID), combustible gas meter and a particulate meter. Observed values will be recorded and maintained as part of the permanent field record.

Additional air monitoring measurements may be made by TurnKey personnel to verify field conditions during subcontractor oversight activities. Monitoring instruments will be protected from surface contamination during use. Additional monitoring instruments may be added if the situations or conditions change. Monitoring instruments will be calibrated in accordance with manufacturer's instructions before use.

8.1.2 Off-Site Community Air Monitoring

In addition to on-site monitoring within the work zone(s), monitoring at the down-wind portion of the Site perimeter will be conducted. This will provide a real-time method for determination of vapor and/or particulate releases to the surrounding community as a result of ground intrusive investigation work.

Ground intrusive activities are defined by NYSDOH Appendix 1A Generic Community Air Monitoring Plan (Ref. 4) and attached as Appendix C. Ground intrusive activities include soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Non-intrusive activities include the

collection of soil and sediment samples or the collection of groundwater samples from existing wells. Continuous monitoring is required for ground intrusive activities and periodic monitoring is required for non-intrusive activities. Periodic monitoring consists of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring while bailing a well, and taking a reading prior to leaving a sampling location. This may be upgraded to continuous if the sampling location is in close proximity to individuals not involved in the Site activity (i.e., on a curb of a busy street). The action levels below will be used during periodic monitoring.

8.2 Monitoring Action Levels

8.2.1 On-Site Work Zone Action Levels

The PID, or other appropriate instrument(s), will be used by TurnKey personnel to monitor organic vapor concentrations as specified in this HASP. Combustible gas will be monitored with the "combustible gas" option on the combustible gas meter or other appropriate instrument(s). In addition, fugitive dust/particulate concentrations will be monitored during major soil intrusion (viz., well/boring installation) using a real-time particulate monitor as specified in this plan. In the absence of such monitoring, appropriate respiratory protection for particulates shall be donned. Sustained readings obtained in the breathing zone may be interpreted (with regard to other Site conditions) as follows for TurnKey-Benchmark personnel:

- Total atmospheric concentrations of unidentified vapors or gases ranging from 0 to 1 ppm above background on the PID) - Continue operations under Level D (see Appendix A).

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings from >1 ppm to 5 ppm above background on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - Continue operations under Level C (see Appendix A).

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings of >5 ppm to 50 ppm above background on the PID - Continue operations under Level B (see Attachment 1), re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.

- Total atmospheric concentrations of unidentified vapors or gases above 50 ppm on the PID - Discontinue operations and exit the work zone immediately.

The explosimeter will be used to monitor levels of both combustible gases and oxygen during RI/IRM activities. Action levels based on the instrument readings shall be as follows:

- Less than 10% LEL - Continue engineering operations with caution.
- 10-25% LEL - Continuous monitoring with extreme caution, determine source/cause of elevated reading.
- Greater than 25% LEL - Explosion hazard, evaluate source and leave the Work Zone.
- 19.5% - 21% oxygen - proceed with extreme caution; attempt to determine potential source of oxygen displacement.
- Less than 19.5% oxygen - leave work zone immediately.
- 21-25% oxygen - Continue engineering operations with caution.
- Greater than 25% oxygen - Fire hazard potential, leave Work Zone immediately.

The particulate monitor will be used to monitor respirable dust concentrations during all intrusive activities and during handling of Site soil/fill. Action levels based on the instrument readings shall be as follows:

- Less than 50 mg/m^3 - Continue field operations.
- 50-150 mg/m^3 - Don dust/particulate mask or equivalent
- Greater than 150 mg/m^3 - Don dust/particulate mask or equivalent. Initiate engineering controls to reduce respirable dust concentration (viz., wetting of excavated soils or tools at discretion of Site Health and Safety Officer).

Readings with the organic vapor analyzer, combustible gas meter, and particulate monitor will be recorded and documented on the appropriate Project Field Forms. All

instruments will be calibrated before use on a daily basis and the procedure will be documented on the appropriate Project Field Forms.

8.2.2 Community Air Monitoring Action Levels

In addition to the action levels prescribed in Section 8.2.1 for Benchmark personnel on-site, the following criteria shall also be adhered to for the protection of downwind receptors consistent with NYSDOH requirements (Appendix C):

- **ORGANIC VAPOR PERIMETER MONITORING:**
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the sustained organic vapor decreases below 5 ppm over background, work activities can resume but more frequent intervals of monitoring, as directed by the Site Health and Safety Officer, must be conducted.

  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone are greater than 5 ppm over background but less than 25 ppm for the 15-minute average, activities can resume provided that: the organic vapor level 200 feet downwind of the working site or half the distance to the nearest off-site residential or commercial structure, whichever is less, is below 5 ppm over background; and more frequent intervals of monitoring, as directed by the Site Health and Safety Officer, are conducted.

  - If the sustained organic vapor level is above 25 ppm at the perimeter of the exclusion zone for the 15-minute average, the Site Health and Safety Officer must be notified and work activities shut down. The Site Health and Safety Officer will determine when re-entry of the exclusion zone is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified in the ***Organic Vapor Contingency Monitoring Plan*** below. All readings will be recorded and will be available for New York State Department of Environmental Conservation (DEC) and Department of Health (DOH) personnel to review.

- **ORGANIC VAPOR CONTINGENCY MONITORING PLAN:**

- If the sustained organic vapor level is greater than 5 ppm over background 200 feet downwind from the work area or half the distance to the nearest off-site residential or commercial property, whichever is less, all work activities must be halted.

- If, following the cessation of the work activities or as the result of an emergency, sustained organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest off-site residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site residential or commercial structure (20-foot zone).

- If efforts to abate the emission source are unsuccessful and if sustained organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above background for longer than one minute, then the ***Major Vapor Emission Response Plan*** (see below) will automatically be placed into effect.

o **MAJOR VAPOR EMISSION RESPONSE PLAN:**

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in this Health and Safety Plan and the Emergency Response Plan (Appendix A) will be advised.

2. The local police authorities will immediately be contacted by the Site Health and Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two sustained successive readings below action levels are measured, air monitoring may be halted or modified by the Site Health and Safety Officer.

The following personnel are to be notified in the listed sequence in the event that a Major Vapor Emission Plan is activated:

Responsible Person	Contact	Phone Number
SSHO	Police	911
SSHO	State Emergency Response Hotline	(800) 457-7362

Additional emergency numbers are listed in the Emergency Response Plan included as Appendix A.

- **EXPLOSIVE VAPORS:**
  - Sustained atmospheric concentrations of greater than 10% LEL in the work area - Initiate combustible gas monitoring at the downwind portion of the Site perimeter.
  - Sustained atmospheric concentrations of greater than 10% LEL at the downwind Site perimeter – Halt work and contact local Fire Department.

- **AIRBORNE PARTICULATE COMMUNITY AIR MONITORING**

  Respirable (PM-10) particulate monitoring will be performed on a continuous basis at the upwind and downwind perimeter of the exclusion zone. The monitoring will be performed using real-time monitoring equipment capable of measuring PM-10 and integrating over a period of 15-minutes for comparison to the airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. All readings will be recorded and will be available for NYSDEC and NYSDOH review. Readings will be interpreted as follows:

  - If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than the background (upwind perimeter) reading 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 provided that the downwind PM-10 particulate levels do not exceed 150 ug/m^3 above the upwind level and that visible dust is not migrating from the work area.
  - If, after implementation of dust suppression techniques downwind PM-10 levels are greater than 150 ug/m^3 above the upwind level, work activities must be stopped and dust suppression controls re-evaluated. Work can resume provided that supplemental dust suppression measures and/or other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Pertinent emergency response information including the telephone number of the Fire Department is included in the Emergency Response Plan (Appendix A).

9.0 SPILL RELEASE/RESPONSE

This chapter of the HASP describes the potential for and procedures related to spills or releases of known or suspected petroleum and/or hazardous substances on the Site. The purpose of this Section of the HASP is to plan appropriate response, control, counter-measures and reporting, consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii). The spill containment program addresses the following elements:

- Potential hazardous material spills and available controls.
- Initial notification and evaluation.
- Spill response.
- Post-spill evaluation.

9.1 Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous material and oil/petroleum spills at this Site. For the purpose of this evaluation, hazardous materials posing a significant spill potential are considered to be:

- CERCLA Hazardous Substances as identified in 40 CFR Part 302, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Extremely Hazardous Substances as identified in 40 CFR Part 355, Appendix A, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Hazardous Chemicals as defined under Section 311(e) of the Emergency Planning and Community Right-To-Know Act of 1986, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Toxic Chemicals as defined in 40 CFR Part 372, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Chemicals regulated under 6NYCRR Part 597, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

Oil/petroleum products are considered to pose a significant spill potential whenever the following situations occur:

- The potential for a "harmful quantity" of oil (including petroleum and non-petroleum-based fuels and lubricants) to reach navigable waters of the U.S. exists (40 CFR Part 112.4). Harmful quantities are considered by USEPA to be volumes that could form a visible sheen on the water or violate applicable water quality standards.

- The potential for any amount of petroleum to reach any waters of NY State, including groundwater, exists. Petroleum, as defined by NY State in 6NYCRR Part 612, is a petroleum-based heat source, energy source, or engine lubricant/maintenance fluid.

- The potential for any release, to soil or water, of petroleum from a bulk storage facility regulated under 6NYCRR Part 612. A regulated petroleum storage facility is defined by NY State as a site having stationary tank(s) and intra-facility piping, fixtures and related equipment with an aggregate storage volume of 1,100 gallons or greater.

The evaluation indicates that, based on Site history and decommissioning records, a hazardous material spill and/or a petroleum product spill is not likely to occur during RI/IRM efforts.

9.2 Initial Spill Notification and Evaluation

Any worker who discovers a hazardous substance or oil/petroleum spill will immediately notify the Project Manager and SSHO. The worker will, to the best of his/her ability, report the material involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, if any, and any associated injuries. The Emergency Response Plan presented in Attachment H2 of this HASP will immediately be implemented if an emergency release has occurred.

Following initial report of a spill, the Project Manager will make an evaluation as to whether the release exceeds RQ levels. If an RQ level is exceeded, the Project Manager will notify the Site owner and NYSDEC at 1-800-457-7362 within 2 hours of spill discovery. The Project Manager will also determine what additional agencies (e.g., USEPA) are to be contacted regarding the release, and will follow-up with written reports as required by the applicable regulations.

9.3 Spill Response

For all spill situations, the following general response guidelines will apply:

- Only those personnel involved in overseeing or performing containment operations will be allowed within the spill area. If necessary, the area will be roped, ribboned, or otherwise blocked off to prevent unauthorized access.
- Appropriate PPE, as specified by the SSHO, will be donned before entering the spill area.
- Ignition points will be extinguished/removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked to prevent inflow of spilled materials or applied materials.

For minor spills, the Contractor will maintain a Spill Control and Containment Kit in the Field Office or other readily accessible storage location. The kit will consist of, at a minimum, a 50 lb. bag of "speedy dry" granular absorbent material, absorbent pads, shovels, empty 5-gallon pails and an empty open-top 55-gallon drum. Spilled materials will be absorbed, and shoveled into a 55-gallon drum for proper disposal (NYSDEC approval will be secured for on-site treatment of the impacted soils/absorbent materials, if applicable). Impacted soils will be hand-excavated to the point that no visible signs of contamination remains, and will be drummed with the absorbent.

In the event of a major release or a release that threatens surface water, a spill response contractor will be called to the Site. The response contractor may use heavy equipment (e.g., excavator, backhoe, etc.) to berm the soils surrounding the spill Site or create diversion trenching to mitigate overland migration or release to navigable waters. Where feasible, pumps will be used to transfer free liquid to storage containers. Spill control/cleanup contractors in the Western New York area that may be contacted for assistance include:

- The Environmental Service Group of NY, Inc.: (716) 695-6720
- Environmental Products and Services, Inc.: (716) 447-4700
- Op-Tech: (716) 873-7680

9.4 Post-Spill Evaluation

If a reportable quantity of hazardous material or oil/petroleum is spilled as determined by the Project Manager, a written report will be prepared as indicated in Section 9.2. The report will identify the root cause of the spill, type and amount of material released, date/time of release, response actions, agencies notified and/or involved in cleanup, and procedures to be implemented to avoid repeat incidents. In addition, all re-useable spill cleanup and containment materials will be decontaminated, and spill kit supplies/disposable items will be replenished.

10.0 HEAT/COLD STRESS MONITORING

Since some of the work activities at the Site will be scheduled for both the summer and winter months, measures will be taken to minimize heat/cold stress to TurnKey-Benchmark employees. The Site Safety and Health Officer and/or his or her designee will be responsible for monitoring TurnKey-Benchmark field personnel for symptoms of heat/cold stress.

10.1 Heat Stress Monitoring

Personal protective equipment may place an employee at risk of developing heat stress, a common and potentially serious illnesses often encountered at construction, landfill, waste disposal, industrial or other unsheltered sites. The potential for heat stress is dependent on a number of factors, including environmental conditions, clothing, workload, physical conditioning and age. Personal protective equipment may severely reduce the body's normal ability to maintain temperature equilibrium (via evaporation and convection), and require increased energy expenditure due to its bulk and weight.

Proper training and preventive measures will mitigate the potential for serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules.
- Modify work/rest schedules according to monitoring requirements.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat (i.e., eight fluid ounces must be ingested for approximately every 1 lb of weight lost). The normal thirst

mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost perspiration. When heavy sweating occurs, workers should be encouraged to drink more.

- Train workers to recognize the symptoms of heat related illness.

Heat-Related Illness - Symptoms:

- Heat rash may result from continuous exposure to heat or humid air.

- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include: muscle spasms; pain in the hands, feet and abdomen.

- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting.

- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms are: red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

The monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit or above. For monitoring the body's recuperative ability to excess heat, one or more of the following techniques should be used as a screening mechanism.

- Heart rate may be measured by the radial pulse for 30 seconds as early as possible in the resting period. The rate at the beginning of the rest period should not exceed 100 beats per minute. If the rate is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest periods stay the same, If the pulse rate is 100 beats per minute at the beginning of the nest rest period, the following work cycle should be further shortened by 33%.

- Body temperature may be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature at the beginning of the rest period

should not exceed 99.6 degrees Fahrenheit. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period remains the same. However, if the oral temperature exceeds 99.6 degrees Fahrenheit at the beginning of the next period, the work cycle may be further shortened by 33%. Oral temperature should be measured at the end of the rest period to make sure that it has dropped below 99.6 degrees Fahrenheit. No TurnKey-Benchmark employee will be permitted to continue wearing semi-permeable or impermeable garments when his/her oral temperature exceeds 100.6 degrees Fahrenheit.

10.2 Cold Stress Monitoring

Exposure to cold conditions may result in frostbite or hypothermia, each of which progresses in stages as shown below.

- **Frostbite** occurs when body tissue (usually on the extremities) begins to freeze. The three states of frostbite are:

    1) **Frost nip** - This is the first stage of the freezing process. It is characterized by a whitened area of skin, along with a slight burning or painful sensation. Treatment consists of removing the victim from the cold conditions, removal of boots and gloves, soaking the injured part in warm water (102 to 108 degrees Fahrenheit) and drinking a warm beverage. Do not rub skin to generate friction/ heat.

    2) **Superficial Frostbite** - This is the second stage of the freezing process. It is characterized by a whitish gray area of tissue, which will be firm to the touch but will yield little pain. The treatment is identical for Frost nip.

    3) **Deep Frostbite** - In this final stage of the freezing process the affected tissue will be cold, numb and hard and will yield little to no pain. Treatment is identical to that for Frost nip.

- **Hypothermia** is a serious cold stress condition occurring when the body loses heat at a rate faster than it is produced. If untreated, hypothermia may be fatal. The stages of hypothermia may not be clearly defined or visible at first, but generally include:

    1) Shivering
    2) Apathy (i.e., a change to an indifferent or uncaring mood)

3) Unconsciousness
4) Bodily freezing

Employees exhibiting signs of hypothermia should be treated by medical professionals. Steps that can be taken while awaiting help include:

1) Remove the victim from the cold environment and remove wet or frozen clothing. (Do this carefully as frostbite may have started.)

2) Perform active re-warming with hot liquids for drinking (Note: do not give the victim any liquid containing alcohol or caffeine) and a warm water bath (102 to 108 degrees Fahrenheit).

3) Perform passive re-warming with a blanket or jacket wrapped around the victim.

In any potential cold stress situation, it is the responsibility of the Site Health and Safety Officer to encourage the following:

- Education of workers to recognize the symptoms of frostbite and hypothermia.
- Workers should dress warmly, with more layers of thin clothing as opposed to one thick layer.
- Personnel should remain active and keep moving.
- Personnel should be allowed to take shelter in a heated areas, as necessary.
- Personnel should drink warm liquids (no caffeine or alcohol if hypothermia has set in).
- For monitoring the body's recuperation from excess cold, oral temperature recordings should occur:
  - At the Site Safety Technicians discretion when suspicion is based on changes in a worker's performance or mental status.
  - At a workers request.
  - As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20 degrees Fahrenheit or wind chill

less than 30 degrees Fahrenheit with precipitation).

- As a screening measure, whenever anyone worker on-site develops hypothermia.

Any person developing moderate hypothermia (a core body temperature of 92 degrees Fahrenheit) will not be allowed to return to work for 48 hours without the recommendation of a qualified medical doctor.

11.0 WORK ZONES AND SITE CONTROL

Work zones around the areas designated for construction activities will be established on a daily basis and communicated to all employees and other Site users by the SSHO. It shall be each Contractor's Site Safety and Health Officer's responsibility to ensure that all Site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

- Exclusion Zone ("Hot Zone") - The area where contaminated materials may be exposed, excavated or handled and all areas where contaminated equipment or personnel may travel. The zone will be delineated by flagging tape. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 7.

- Contamination Reduction Zone - The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contamination Reduction Zone until decontaminated.

- Support Zone - The part of the site that is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

In the absence of other task-specific work zone boundaries established by the SSHO, the following boundaries will apply to all investigation and construction activities involving disruption or handling of Site soils or groundwater:

- Exclusion Zone: 50 foot radius from the outer limit of the sampling/construction activity.

- Contaminant Reduction Zone: 100 foot radius from the outer limit of the sampling/construction activity.

- Support Zone: Areas outside the Contaminant Reduction Zone.

Access of non-essential personnel to the Exclusion and Contamination Reduction Zones will be strictly controlled by the SSHO. Only personnel who are essential to the

completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the SSHO.

The SSHO will maintain a Health and Safety Logbook containing the names of TurnKey-Benchmark workers and their level of protection. The zone boundaries may be changed by the SSHO as environmental conditions warrant, and to respond to the necessary changes in work locations on-site.

12.0 DECONTAMINATION

12.1 Decontamination for TurnKey-Benchmark Employees

The degree of decontamination required is a function of a particular task and the environment within which it occurs. The following decontamination procedure will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions that may arise at the Site. All TurnKey-Benchmark personnel on-site shall follow the procedure below, or the Contractor's procedure (if applicable), whichever is more stringent.

Station 1 - Equipment Drop: Deposit visibly contaminated (if any) re-useable equipment used in the contamination reduction and exclusion zones (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic sheeting.

Station 2 - Boots and Gloves Wash and Rinse: Scrub outer boots and outer gloves. Deposit tape and gloves in waste disposal container.

Station 3 - Tape, Outer Boot and Glove Removal: Remove tape, outer boots and gloves. Deposit tape and gloves in waste disposal container.

Station 4 - Canister or Mask Change: If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot cover donned, and worker returns to duty.

Station 5 - Outer Garment/Face Piece Removal: Protective suit removed and deposited in separate container provided by Contractor. Face piece or goggles are removed if used. Avoid touching face with fingers. Face piece and/or goggles deposited on plastic sheet. Hard hat removed and placed on plastic sheet.

Station 6 - Inner Glove Removal: Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in waste disposal container.

Following PPE removal, personnel shall wash hands, face and forearms with absorbent wipes. If field activities proceed for a duration of 6 consecutive months or longer, shower facilities will be provided for worker use in accordance with OSHA 29 CFR 1910.120(n).

12.2 Decontamination for Medical Emergencies

In the event of a minor, non-life threatening injury, personnel should follow the decontamination procedures as defined, and then administer first-aid.

In the event of a major injury or other serious medical concern (e.g., heat stroke), immediate first-aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a Site contaminant would be considered "Immediately Dangerous to Life or Health."

12.3 Decontamination of Field Equipment

Decontamination of heavy equipment will be conducted by the Contractor in accordance with his approved Health and Safety Plan in the Contamination Reduction Zone. As a minimum, this will include manually removing heavy soil contamination, followed by steam cleaning on an impermeable pad.

Decontamination of all tools used for sample collection purposes will be conducted by TurnKey-Benchmark personnel. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal), which will aid in the decontamination effort. Any tool or part of a tool made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.

Decontamination of bailers, split-spoons, spatula knives, and other tools used for environmental sampling and examination shall be as follows:

- Disassemble the equipment
- Water wash to remove all visible foreign matter.
- Wash with detergent.
- Rinse all parts with distilled-deionized water.
- Allow to air dry.
- Wrap all parts in aluminum foil or polyethylene.

13.0 CONFINED SPACE ENTRY

OSHA 29 CFR 1910.146 identifies a confined space as a space that is large enough and so configured that an employee can physically enter and do assigned work, has limited or restricted means for entry and exit, and is not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells, and excavations.

Confined space entry by TurnKey-Benchmark employees is not anticipated to be necessary to complete the RI/IRM activities identified in Section 2.0. In the event that the scope of work changes or confined space entry appears necessary, the Project Manager will be consulted to determine if feasible engineering alternatives to confined space entry can be implemented. If confined space entry by TurnKey-Benchmark employees cannot be avoided through reasonable engineering measures, task-specific confined space entry procedures will be developed and a confined-space entry permit will be issued through TurnKey-Benchmark's corporate Health and Safety Director. TurnKey-Benchmark employees shall not enter a confined space without these procedures and permits in place.

14.0 FIRE PREVENTION AND PROTECTION

14.1 General Approach

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory authorities, the project management will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative or other designated official. Essential considerations for the Fire Protection Plan will include:

- Proper Site preparation and safe storage of combustible and flammable materials.
- Availability of coordination with private and public fire authorities.
- Adequate job-site fire protection and inspections for fire prevention.
- Adequate indoctrination and training of employees.

14.2 Equipment and Requirements

Fire extinguishers will be provided by each Contractor and are required on all heavy equipment and in each field trailer. Fire extinguishers will be inspected, serviced, and maintained in accordance with the manufacturer's instructions. As a minimum, all extinguishers shall be checked monthly and weighed semi-annually, and recharged if necessary. Recharge or replacement shall be mandatory immediately after each use.

14.3 Flammable and Combustible Substances

All storage, handling or use of flammable and combustible substances will be under the supervision of qualified persons. All tanks, containers and pumping equipment, whether portable or stationary, used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the National Fire Protection Association.

14.4 Hot Work

If the scope of work necessitates welding or blowtorch operation, the hot work permit presented in Appendix B will be completed by the SSHO and reviewed/issued by the Project Manager.

15.0 EMERGENCY INFORMATION

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan is attached to this HASP as Appendix A. The hospital route map is presented within Appendix A as Figure 1.

16.0 REFERENCES

1. Construction Lending Services, Inc. 2003. *Summary Report: Limited Subsurface Investigation, South of 517 Niagara Street, Buffalo, New York*. Prepared for 6253 Group, Inc. on June 27.

2. TurnKey Environmental Restoration, LLC. 2007. *Phase I Environmental Site Assessment (ESA), Niagara and Pennsylvania Site, Buffalo, New York*. Prepared for Ellicott Development Company in August.

3. TurnKey Environmental Restoration, LLC. 2007. *Remedial Investigation/Alternatives Analysis Report/Interim Remedial Measures (RI/AAR/IRM) Work Plan, Niagara Street and Pennsylvania Avenue Site, Buffalo, New York*. Prepared for 9154 Group, LLC in September.

4. New York State Department of Health. 2002. *Generic Community Air Monitoring Plan, Appendix 1A, Draft DER-10 Technical Guidance for Site Investigation and Remediation*. December.

TABLES

TABLE 1

TOXICITY DATA FOR CONSTITUENTS OF POTENTIAL CONCERN

Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Parameter	Synonyms	CAS No.	Code	Concentration Limits [1]		
				PEL	TLV	IDLH
Volatile Organic Compounds (VOCs): ppm						
Benzene	Benzol, Phenyl hydride	71-43-2	Ca	1	0.5	500
Ethylbenzene	Ethylbenzol, Phenylethane	100-41-4	*none*	100	100	800
Methy Tert-Butyl Ether	MTBE	1634-04-4	*none*	--	50	--
Toluene	Methyl benzene, Methyl benzol	108-88-3	C-300	200	50	500
Xylene, Total	o-, m-, p-isomers	1330-20-7	*none*	100	100	900
Semi-volatile Organic Compounds (SVOCs) [2]***: ppm***						
Acenaphthene	*none*	83-32-9	*none*	--	--	--
Acenaphthylene	*none*	208-96-8	*none*	--	--	--
Anthracene	*none*	120-12-7	*none*	--	--	--
Benzo(a)anthracene	*none*	56-55-3	*none*	--	--	--
Benzo(a)pyrene	*none*	50-32-8	*none*	--	--	--
Benzo(b)fluoranthene	*none*	205-99-2	*none*	--	--	--
Benzo(ghi)perylene	*none*	191-24-2	*none*	--	--	--
Benzo(k)fluoranthene	*none*	207-08-9	*none*	--	--	--
Chrysene	*none*	218-01-9	*none*	--	--	--
Dibenzo(a,h)anthracene	*none*	53-70-3	*none*	--	--	--
Fluoranthene	*none*	206-44-0	*none*	--	--	--
Fluorene	*none*	86-73-7	*none*	--	--	--
Indeno(1,2,3-cd)pyrene	*none*	193-39-5	*none*	--	--	--
Naphthalene	Naphthalin, Tar camphor, White tar	91-20-3	*none*	10	10	250
Phenanthrene	*none*	85-01-8	*none*	--	--	--
Pyrene	*none*	129-00-0	*none*	--	--	--
Inorganic Compounds: mg/m [2]						
Lead	*none*	7439-92-1	*none*	0.05	0.15	100

Notes:

1. Concentration limits as reported by NIOSH Pocket Guide to Chemical Hazards, February 2004 (NIOSH Publication No. 97-140, fourth printing with changes and updates).
2. " -- " = concentration limit not available; exposure should be minimized to the extent feasible through appropriate engineering controls & PPE.

Explanation:

Ca = NIOSH considers constituent to be a potential occupational carcinogen.

C-## = Ceiling Level equals the maximum exposure concentration allowable during the work day.

IDLH = Immediately Dangerous to Life or Health.

ND indicates that an IDLH has not as yet been determined.

TLV = Threshold Limit Value, established by American Conference of Industrial Hygienists (ACGIH), equals the maximum exposure concentration allowable for 8 hours/day @ 40 ho

TLVs are the amounts of chemicals in the air that almost all healthy adult workers are predicted to be able to tolerate without adverse effects. There are three types.

TLV-TWA (TLV-Time-Weighted Average) which is averaged over the normal eight-hour day/forty-hour work week. (Most TLVs.)

TLV-STEL or Short Term Exposure Limits are 15 minute exposures that should not be exceeded for even an instant. It is not a stand alone value but is accompanied by the TLV-TWA.

TLV-C or Ceiling limits are the concentration that should not be exceeded during any part of the working exposure.

Unless the initials "STEL" or "C" appear in the Code column, the TLV value should be considered to be the eight-hour TLV-TWA.

PEL = Permissible Exposure Limit, established by OSHA, equals the maximium exposure conconcentration allowable for 8 hours per day @ 40 hours per week

TABLE 2

POTENTIAL ROUTES OF EXPOSURE TO THE CONSTITUENTS OF POTENTIAL CONCERN

Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

Activity [1]	Direct Contact with Soil/Fill	Inhalation of Vapors or Dust	Direct Contact with Groundwater
Remedial Investigation Tasks			
1. Subsurface Soil Sampling	**x**	**x**	
2. Monitoring Well Installation/Development and Sampling	**x**	**x**	**x**
Interim Remedial Measures Tasks			
1. Removal of In-Ground Hydraulic Lift and UST System	x	x	
2. Soil Excavation	x	x	
3. Backfilling	x	x	
4. Verification Sampling	x	x	
5. Groundwater and Surface Water Management	x		x

Notes:
1. Activity as described in Section 1.5 of the Health and Safety Plan.

TABLE 3

REQUIRED LEVELS OF PROTECTION
FOR RI/IRM TASKS

Niagara Street and Pennsylvania Avenue Site
Buffalo, New York

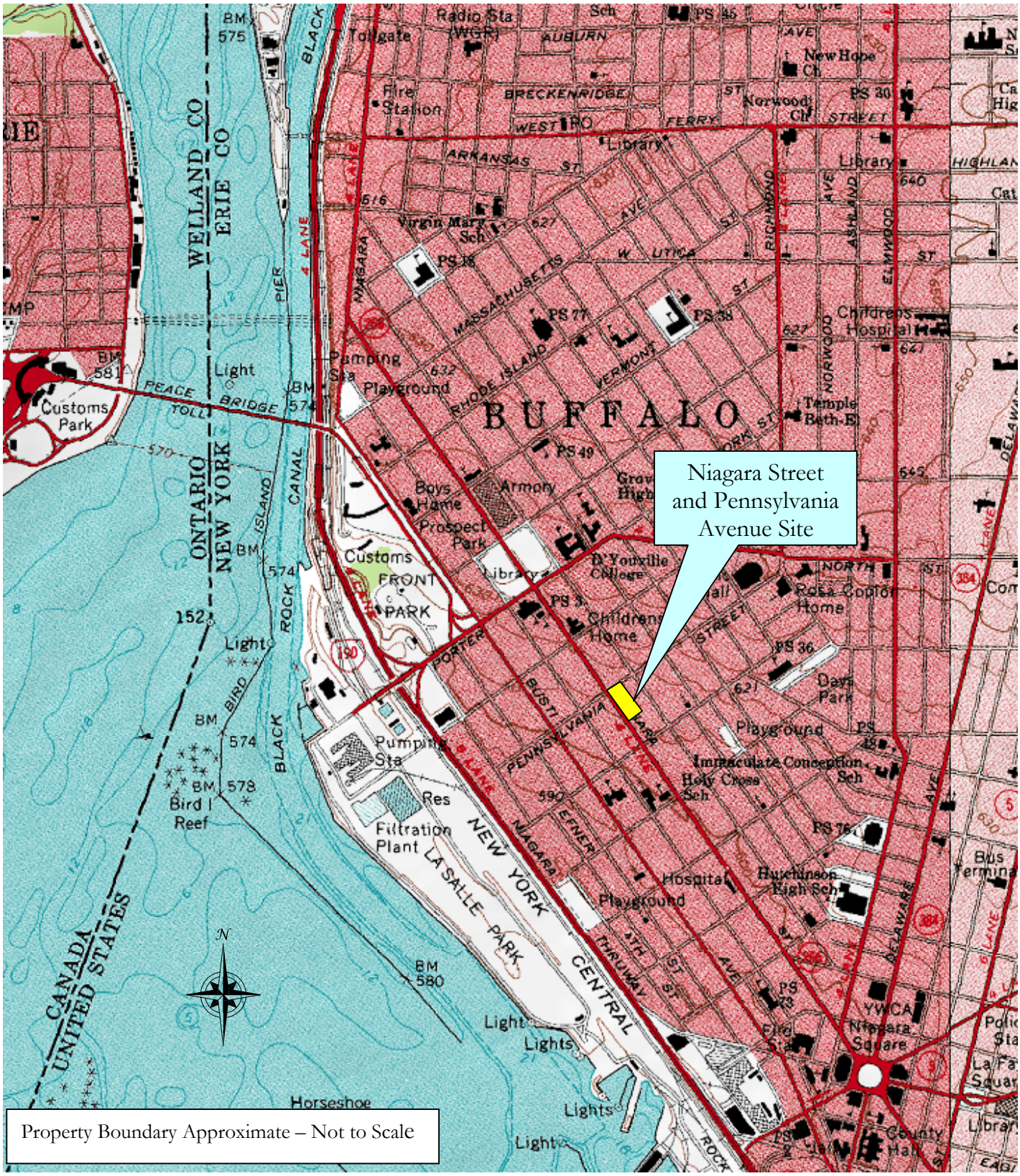
Activity	Respiratory Protection [1]	Clothing	Gloves [2]	Boots [2, 3]	Other Required PPE/Modifications [2, 4]
Remedial Investigation Tasks					
1. Subsurface Soil Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
2. Monitoring Well Installation/Development and Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	SGSS
Interim Remedial Measures Tasks					
1. Removal of In-Ground Hydraulic Lift and UST System	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
2. Soil Excavation	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
3. Backfilling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
4. Verification Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
5. Groundwater and Surface Water Management	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS

Notes:

1. Respiratory equipment shall conform to guidelines presented in Section 7.0 of this HASP. The Level C requirement is an air-purifying respirator equiped with organic compound/acid gas/dust cartridge.
2. HH = hardhat; L= Latex; L/N = latex inner glove, nitrile outer glove; N = Nitrile; S = Saranex; SG = safety glasses; SGSS = safety glasses with sideshields; STSS = steel toe safety shoes.
3. Latex outer boot (or approved overboot) required whenever contact with contaminated materials may occur. SSHO may downgrade to STSS (steel-toed safety shoes) if contact will be limited to cover/replacement soils.
4. Dust masks shall be donned as directed by the SSHO (site safety and health officer) or site safety technician whenever potentially contaminated airborne particulates (i.e., dust) are present in significant amounts in the breathing zone. Goggles may be substituted with safety glasses w/side-shields whenever contact with contaminated liquids is not anticipated.

FIGURES

FIGURE 1



TURNKEY ENVIRONMENTAL RESTORATION, LLC

726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0635

PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2007

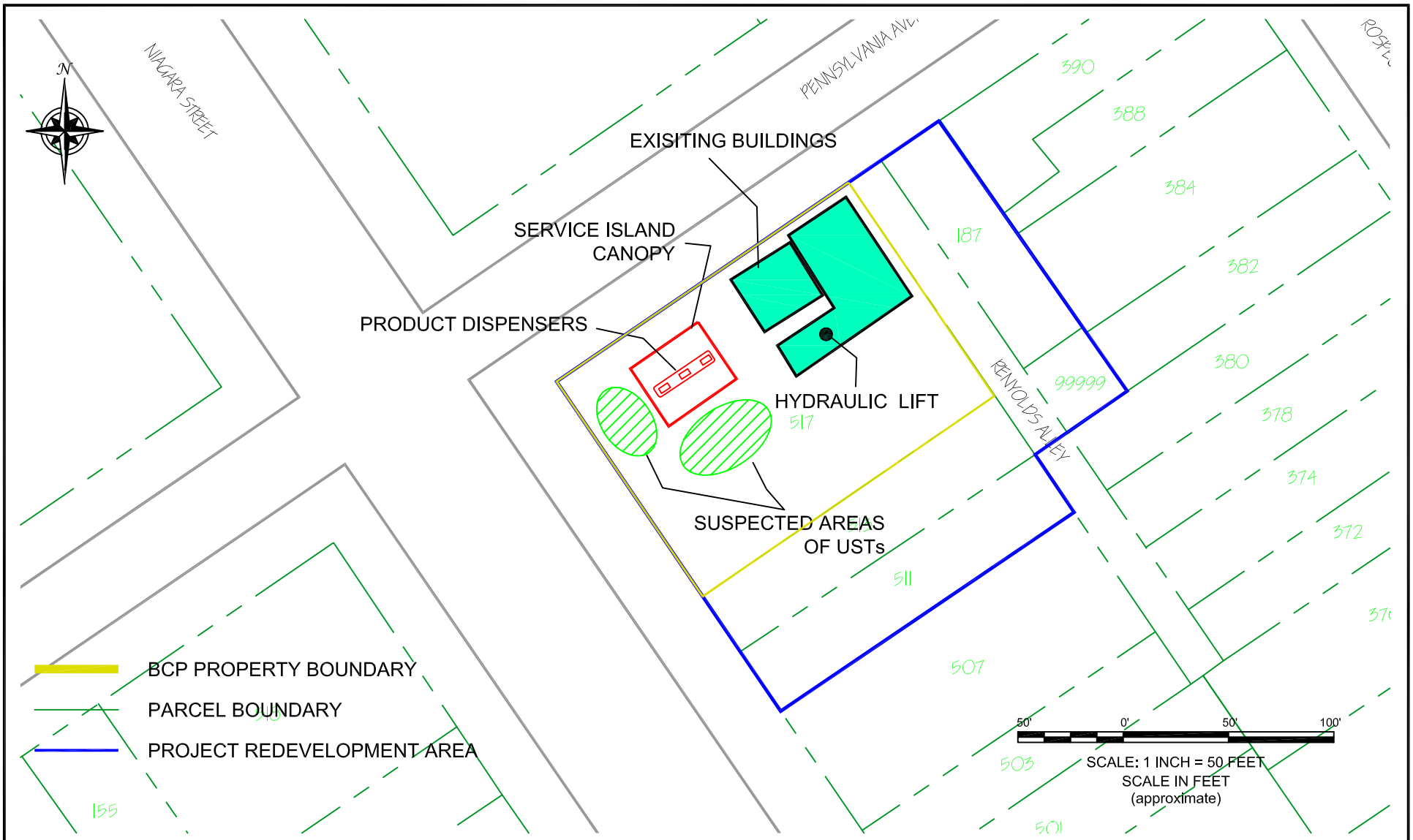
DRAFTED BY: NTM

SITE LOCATION AND VICINITY MAP

RI / AAR / IRM WORK PLAN

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
BUFFALO, NEW YORK

PREPARED FOR
9154 GROUP, LLC



TurnKey Environmental Restoration, LLC
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BUFFALO, NEW YORK 14210
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PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2008

DRAFTED BY: NTM

SITE PLAN MAP

RI/AAR/IRM WORK PLAN

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE

BUFFALO, NEW YORK

PREPARED FOR

9154 GROUP, LLC

FIGURE 2

APPENDIX A

EMERGENCY RESPONSE PLAN

EMERGENCY RESPONSE PLAN
for
BROWNFIELD CLEANUP PROGRAM
RI/IRM ACTIVITIES

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
BUFFALO, NEW YORK

September 2007 0136-002-101
Revised September 2008

Prepared for:

9154 GROUP, LLC

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES
APPENDIX A: EMERGENCY RESPONSE PLAN

TABLE OF CONTENTS

LIST OF FIGURES

1.0 GENERAL

This report presents the site-specific Emergency Response Plan (ERP) referenced in the Site Health and Safety Plan (HASP) prepared for Remedial Investigation (RI) AND Interim Remedial Measures (IRM) activities at the Niagara Street and Pennsylvania Avenue Site in Buffalo, New York. This appendix of the HASP describes potential emergencies that may occur at the Site; procedures for responding to those emergencies; roles and responsibilities during emergency response; and training all workers must receive in order to follow emergency procedures. This ERP also describes the provisions this Site has made to coordinate its emergency response planning with other contractors on-site and with off-site emergency response organizations.

This ERP is consistent with the requirements of 29 CFR 1910.120(l) and provides the following site-specific information:

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- Emergency personal protective equipment (PPE) and equipment.

2.0 PRE-EMERGENCY PLANNING

This Site has been evaluated for potential emergency occurrences, based on site hazards, the required work tasks, the site topography, and prevailing weather conditions. The results of that evaluation indicate the potential for the following site emergencies to occur at the locations indicated.

Type of Emergency:

1. Medical, due to physical injury
2. Fire, due to flammability of Kensol 61 product in subsurface

Source of Emergency:

1. Slip/trip/fall
2. Fire

Location of Source:

1. Non-specific

3.0 ON-SITE EMERGENCY RESPONSE EQUIPMENT

Emergency procedures may require specialized equipment to facilitate worker rescue, contamination control and reduction, or post-emergency clean up. Emergency response equipment available on the Site is listed below. The equipment inventory and storage locations are based on the potential emergencies described above. This equipment inventory is designed to meet on-site emergency response needs and any specialized equipment needs that off-site responders might require because of the hazards at this Site but not ordinarily stocked.

Any additional personal protective equipment (PPE) required and stocked for emergency response is also listed in below. During an emergency, the Emergency Response Coordinator (ERC) is responsible for specifying the level of PPE required for emergency response. At a minimum, PPE used by emergency responders will comply with Section 7.0, Personal Protective Equipment, of this HASP. Emergency response equipment is inspected at regular intervals and maintained in good working order. The equipment inventory is replenished as necessary to maintain response capabilities.

Emergency Equipment	Quantity	Location
First Aid Kit	1	Site Vehicle
Chemical Fire Extinguisher	2 (minimum)	All heavy equipment and Site Vehicle

Emergency PPE	Quantity	Location
Full-face respirator	1 for each worker	Site Vehicle
Chemical-resistant suits	4 (minimum)	Site Vehicle

4.0 EMERGENCY PLANNING MAPS

An area-specific map of the Site will be developed on a daily basis during performance of field activities. The map will be marked to identify critical on-site emergency planning information, including: emergency evacuation routes, a place of refuge, an assembly point, and the locations of key site emergency equipment. Site zone boundaries will be shown to alert responders to known areas of contamination. There are no major topographical features, however the direction of prevailing winds/weather conditions that could affect emergency response planning are also marked on the map. The map will be posted at site-designated place of refuge and inside the TurnKey personnel field vehicle.

5.0 EMERGENCY CONTACTS

The following identifies the emergency contacts for this ERP.

Emergency Telephone Numbers:

Project Manager: ***Michael Lesakowski***
Work: (716) 856-0599
Mobile: (716) 818-3954

Corporate Health and Safety Director: ***Thomas H. Forbes***
Work: (716) 856-0599
Mobile: (716) 864-1730

Site Safety and Health Officer (SSHO): ***Bryan C. Hann***
Work: (716) 856-0635
Mobile: (716) 870-1165

Alternate SSHO: ***Richard L. Dubisz***
Work: (716) 856-0635
Mobile: (716) 998-4334

BUFFALO GENERAL HOSPITAL (ER):	(716) 859-5600
FIRE:	911
AMBULANCE:	911
BUFFALO POLICE:	911
STATE EMERGENCY RESPONSE HOTLINE:	(800) 457-7362
NATIONAL RESPONSE HOTLINE:	(800) 424-8802
NYSDOH:	(716) 847-4385
NYSDEC:	(716) 851-7220
NYSDEC 24-HOUR SPILL HOTLINE:	(800) 457-7252

The Site location is:
Niagara Street and Pennsylvania Avenue Site
517 Niagara Street
Buffalo, New York 14201
Site Phone Number: (Insert Cell Phone or Field Trailer): _____

6.0 EMERGENCY ALERTING & EVACUATION

Internal emergency communication systems are used to alert workers to danger, convey safety information, and maintain site control. Any effective system can be employed. Two-way radio headsets or field telephones are often used when work teams are far from the command post. Hand signals and air-horn blasts are also commonly used. Every system must have a backup. It shall be the responsibility of each contractor's Site Health and Safety Officer to ensure an adequate method of internal communication is understood by all personnel entering the site. Unless all personnel are otherwise informed, the following signals shall be used.

1) Emergency signals by portable air horn, siren, or whistle: two short blasts, personal injury; continuous blast, emergency requiring site excavation.

2) Visual signals: hand gripping throat, out of air/cannot breathe; hands on top of head, need assistance; thumbs up, affirmative/ everything is OK; thumbs down, no/negative; grip partner's wrist or waist, leave area immediately.

If evacuation notice is given, site workers leave the worksite with their respective buddies, if possible, by way of the nearest exit. Emergency decontamination procedures detailed in Section 12.0 of the HASP are followed to the extent practical without compromising the safety and health of site personnel. The evacuation routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by rehearsals and inputs from emergency response organizations. Wind direction indicators are located so that workers can determine a safe up wind or cross wind evacuation route and assembly area if not informed by the emergency response coordinator at the time the evacuation alarm sounds. Since work conditions and work zones within the site may be changing on daily basis, it shall be the responsibility of the construction Site Health and Safety Officer to review evacuation routes and procedures as necessary and to inform all TurnKey-Benchmark workers of any changes.

Personnel exiting the site will gather at a designated assembly point. To determine that everyone has successfully exited the site, personnel will be accounted for at the assembly

site. If any worker cannot be accounted for, notification is given to the SSHO (***Bryan Hann*** or ***Richard Dubisz***) so that appropriate action can be initiated. Contractors and subcontractors on this site have coordinated their emergency response plans to ensure that these plans are compatible and that source(s) of potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

7.0 EXTREME WEATHER CONDITIONS

In the event of adverse weather conditions, the Site Safety and Health Officer in conjunction with the Contractor's SSHO will determine if engineering operations can continue without sacrificing the health and safety of site personnel. Items to be considered prior to determining if work should continue include but are not limited to:

- Potential for heat/cold stress.
- Weather-related construction hazards (e.g., flooding or wet conditions producing undermining of structures or sheeting, high wind threats, etc).
- Limited visibility.
- Potential for electrical storms.
- Limited site access/egress (e.g., due to heavy snow)

8.0 EMERGENCY MEDICAL TREATMENT & FIRST AID

Personnel Exposure:

The following general guidelines will be employed in instances where health impacts threaten to occur acute exposure is realized:

- Skin Contact: Use copious amounts of soap and water. Wash/rinse affected area for at least 15 minutes. Decontaminate and provide medical attention. Eyewash stations will be provided on site. If necessary, transport to Mercy Hospital.

- Inhalation: Move to fresh air and, if necessary, transport to Mercy Hospital.

- Ingestion: Decontaminate and transport to Mercy Hospital.

Personal Injury:

Minor first-aid will be applied on-site as deemed necessary. In the event of a life threatening injury, the individual should be transported to Mercy Hospital via ambulance. The Site Health and Safety Officer will supply available chemical specific information to appropriate medical personnel as requested.

First aid kits will conform to Red Cross and other applicable good health standards, and shall consist of a weatherproof container with individually sealed packages for each type of item. First aid kits will be fully equipped before being sent out on each job and will be checked weekly by the SSHO to ensure that the expended items are replaced.

Directions to Buffalo General Hospital (see Figure 1):

The following directions describe the best route from the Site to Buffalo General Hospital:

- Travel southeast along Niagara Street toward Hudson St.
- Turn left onto Hudson St.
- Turn right onto Wadsworth St. Wadsworth becomes Allen St.
- Turn left onto Main St.
- Turn right onto High St. Follow signs to ER at 100 High St.

9.0 EMERGENCY RESPONSE CRITIQUE & RECORD KEEPING

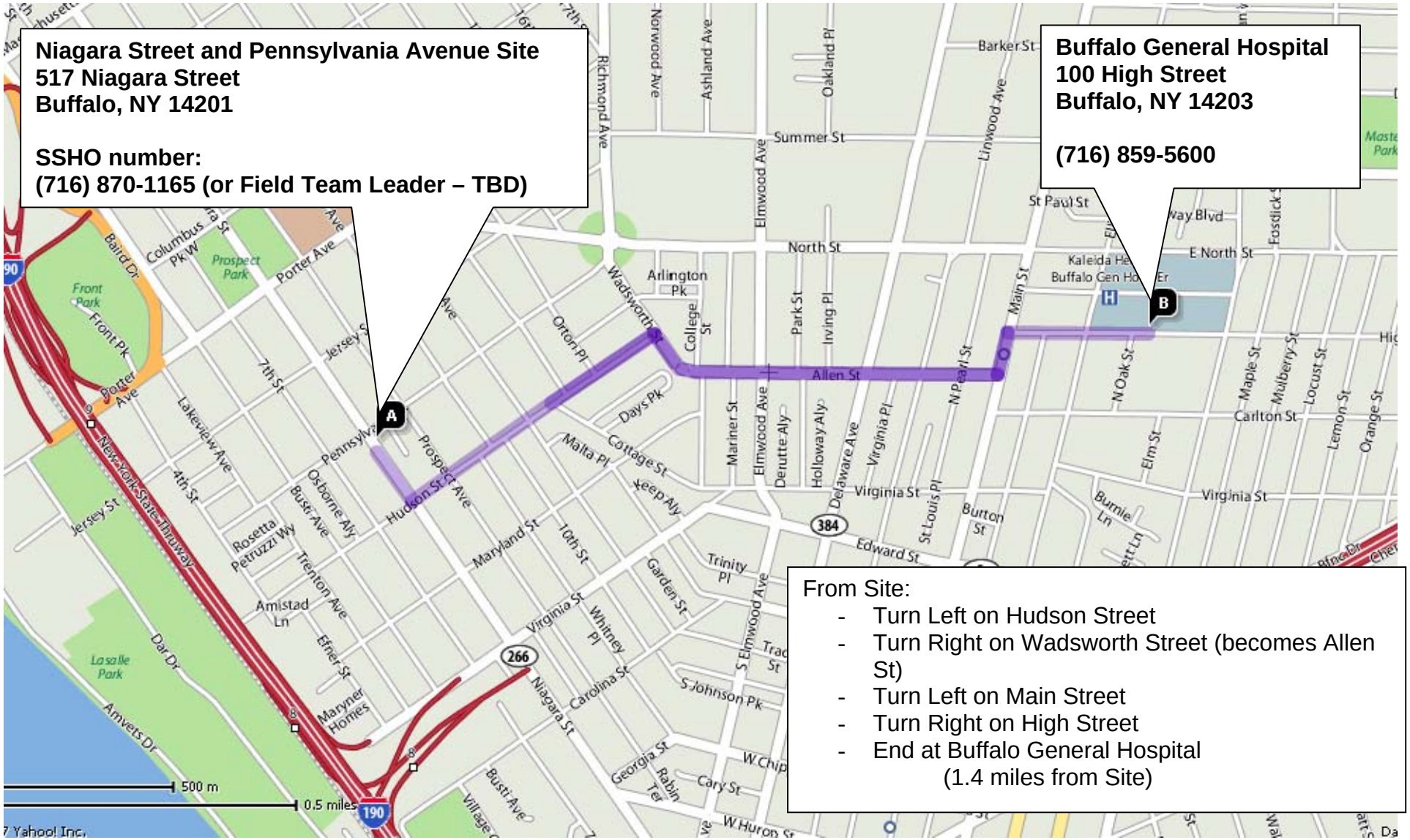
Following an emergency, the SSHO and Project Manager shall review the effectiveness of this Emergency Response Plan (ERP) in addressing notification, control and evacuation requirements. Updates and modifications to this ERP shall be made accordingly. It shall be the responsibility of each contractor to establish and assure adequate records of the following:

- Occupational injuries and illnesses.
- Accident investigations.
- Reports to insurance carrier or State compensation agencies.
- Reports required by the client.
- Records and reports required by local, state, federal and/or international agencies.
- Property or equipment damage.
- Third party injury or damage claims.
- Environmental testing logs.
- Explosive and hazardous substances inventories and records.
- Records of inspections and citations.
- Safety training.

10.0 EMERGENCY RESPONSE TRAINING

All persons who enter the worksite, including visitors, shall receive a site-specific briefing about anticipated emergency situations and the emergency procedures by the SSHO. Where this site relies on off-site organizations for emergency response, the training of personnel in those off-site organizations has been evaluated and is deemed adequate for response to this site.

FIGURES



TURNKEY ENVIRONMENTAL RESTORATION, LLC
726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0635

PROJECT NO.: 0136-002-101

DATE: SEPTEMBER 2007

DRAFTED BY: NTM

FILEPATH:

HOSPITAL ROUTE MAP

EMERGENCY RESPONSE PLAN

NIAGARA STREET AND PENNSYLVANIA AVENUE SITE
BUFFALO, NEW YORK

PREPARED FOR
9154 GROUP, LLC

FIGURE 1

APPENDIX B

HOT WORK PERMIT FORM

HOT WORK PERMIT

PART 1 - INFORMATION

Issue Date:	
Date Work to be Performed: Start:	Finish (permit terminated):
Performed By:	
Work Area:	
Object to be Worked On:	

PART 2 - APPROVAL

(for 1, 2 or 3: mark Yes, No or NA)*

Will working be on or in:	Finish (permit terminated):	
1. Metal partition, wall, ceiling covered by combustible material?	yes	no
2. Pipes, in contact with combustible material?	yes	no
3. Explosive area?	yes	no

* = If any of these conditions exist (marked "yes"), a permit will not be issued without being reviewed and approved by Thomas H. Forbes (Corporate Health and Safety Director). Required Signature below.

PART 3 - REQUIRED CONDITIONS**

(Check all conditions that must be met)

	PROTECTIVE ACTION		PROTECTIVE EQUIPMENT
	Specific Risk Assessment Required		Goggles/visor/welding screen
	Fire or spark barrier		Apron/fireproof clothing
	Cover hot surfaces		Welding gloves/gauntlets/other:
	Move movable fire hazards, specifically		Wellintons/Knee pads
	Erect screen on barrier		Ear protection: Ear muffs/Ear plugs
	Restrict Access		B.A.: SCBA/Long Breather
	Wet the ground		Respirator: Type:
	Ensure adequate ventilation		Cartridge:
	Provide adequate supports		Local Exhaust Ventilation
	Cover exposed drain/floor or wall cracks		Extinguisher/Fire blanket
	Fire watch (must remain on duty during duration of permit)		Personal flammable gas monitor
	Issue additional permit(s):		

Other precautions:

** Permit will not be issued until these conditions are met.

SIGNATURES

Orginating Employee:	Date:
Project Manager:	Date:
Part 2 Approval:	Date:

APPENDIX C

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.

APPENDIX C

PROJECT DOCUMENTATION FORMS

INSPECTOR'S DAILY REPORT

CONTRACTOR			
CLIENT		DATE:	

LOCATION				DAY		JOB NO.	
WEATHER		TEMP	° F	START		END	

WORK PERFORMED:

CONTRACTOR ACTIVITIES:

[PUT CONTRACTOR ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES PERFORMED, BY WHOM, LOCATION OF LANDFILL ETC.]

TURNKEY ACTIVITIES:

[PUT ENGINEER ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES AND TESTING PERFORMED, SAMPLES COLLECTED, BY WHOM, LOCATION OF LANDFILL ETC.]

TEST PERFORMED		*QA PERSONNEL* SIGNATURE			
PICTURES TAKEN	none	REPORT NO.			
VISITORS	none	SHEET	1	OF	

INSPECTOR'S DAILY REPORT

MEETINGS HELD & RESULTS:

CONTRACTOR'S WORK FORCE AND EQUIPMENT

DESCRIPTION	*H*	#	*DESCRIPTION*	*H*	#	*DESCRIPTION*	*H*	#	*DESCRIPTION*	*H*	#
Field Engineer						Equipment			Front Loader Ton		
Superintendent			Ironworker			Generators			Bulldozer		
						Welding Equip.			DJ Dump truck		
Laborer-Foreman			Carpenter						Water Truck		
Laborer									Backhoe		
Operating Engineer			Concrete Finisher						Excavator		
						Roller			Pad foot roller		
Carpenter						Paving Equipment					
						Air Compressor					

REMARKS:

REFERENCES TO OTHER FORMS:

SAMPLES COLLECTED:					
SAMPLE NUMBER					
APPROX. LOCATION OF STOCKPILE					
NO. OF STOCKPILE					
DATE OF COLLECTION					
CLIMATOLOGIC CONDITIONS					
FIELD OBSERVATION		SHEET		OF	

DAILY LOG	DATE			
	REPORT NO.			
	PAGE		OF	

PROBLEM IDENTIFICATION REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Problem Description:

Problem Location (reference test location, sketch on back of form as appropriate):

Problem Causes:

Suggested Corrective Measures or Variances:

Linked to Corrective Measures Report No. *or Variance Log No.*

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

DAILY LOG	DATE			
	REPORT NO.			
	PAGE		OF	

CORRECTIVE MEASURES REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Corrective Measures Undertaken (reference Problem Identification Report No.)

Retesing Location:

Suggested Method of Minimizing Re-Occurrence:

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative