REVISED SUPPLEMENTAL REMEDIAL INVESTIGATION WORK PLAN FORMER SIGNORE FACILITY ELLICOTVILLE, NEW YORK BROWNFIELD CLEANUP PROGRAM SITE NO. C905034

Prepared For:

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1.0 INTRODUCTION

1.1 PURPOSE AND OBJECTIVE

This Supplemental Remedial Investigation (SRI) Work Plan has been developed by GZA GeoEnvironmental of New York (GZA), on behalf of Iskalo Ellicottville Holdings LLC (Iskalo), for additional RI activities to be conducted at the Former Signore Facility Brownfield Cleanup Program (BCP) Site No. C905034 located at 55-57 Jefferson Street, Ellicottville, New York (see Figure 1). The SRI will focus on the 8.43-acre portion of the facility deemed the Signore BCP Area (see Figure 2) that was accepted into the BCP in January 2011.

The work described in this SRI Work Plan is being done under a New York State Department of Environmental Conservation (NYSDEC) BCP Agreement. This SRI Work Plan presents the project scope, objectives, planned activities, and reporting requirements.

The objective of the SRI Work Plan is to further assess the nature and extent of petroleum and chlorinated solvent contamination present in soil, groundwater and vapor intrusion and the degree to which the potential contamination poses a threat to human health and the environment.

NYSDEC prepared a comment letter dated March 3, 2011 to respond to the submittal of the Draft "Site Investigation/Alterative Analysis Report & Remedial Action Plan, Brownfield Cleanup Program, Former Signore Inc. Manufacturing, 55-57 Jefferson Street, Ellicottville, New York" dated October 29, 2010 (Draft SI/AAR). Comment No. 41 indicated that "Previous investigations were focused solely on VOC contamination. The supplemental RI must include random sampling for all contaminants (metals, VOCs, SVOCs, PCBs, Herb./Pest.) in surface soils, subsurface soils, sediment and groundwater."

The remedial investigation previously conducted at the Signore Facility under NYSDEC Administrative Order on Consent #B9-0258-89-03 and documented in the "Remedial Investigation Report, Signore Facility, Ellicottville, New York" dated April 1991 (Previous RI) and prepared by Lozier/Groundwater Associates, included subsurface soil, sediment, surface water and groundwater sampling for VOCs, SVOCs, metals, PCBs and pesticides.

Fourteen soil borings (see Figure A in Appendix A) were completed to collect thirty-one soil samples for laboratory analysis. Fourteen soil samples were analyzed for VOCs and seventeen samples were analyzed for SVOCs, metals, PCBs and pesticides. No PCBs or pesticides were detected above method detection limits. Twelve SVOCs were detected, but the concentrations were below the Part 375 Unrestricted Soil Cleanup Objectives (USCOs). Of the metals detected, five metals (arsenic (four locations), barium (one location), nickel (one location), zinc (three locations and cyanide (one location) were detected above the USCOs, which does not represent a significant threat or concern at the site. Analytical tables from the Previous RI have been included in Appendix A.

Nine surface water and sediment samples were also collected as part of the Previous RI at

locations upgradient, adjacent and downgradient of the Signore Facility. The samples were analyzed for VOCs, SVOCs, metals, PCBs and pesticides. No SVOCs, PCBs or pesticides were detected in the surface water samples. Chloroform (0.6 parts per billion) was the only VOC detected in one downgradient surface water sample. Several metals were detected; however, iron was the only metal identified as a concern, but was detected at elevated concentrations at both upgradient and downgradient locations and could not necessarily be attributed to the Signore Facility. Four VOCs, 18 SVOCs and one pesticide were detected in downstream sediment samples. Of the 23 compounds detected, all were detected equal to or at higher concentrations in the upstream sample locations, with one exception, 4-methylphenol which was detected at 120 parts per billion (ppb). It does not appear that the Signore Facility is a threat or concern to surface water or sediment in Plum Creek or Great Valley Creek. Analytical tables from the Previous RI have been included in Appendix A.

Numerous on-site monitoring wells were also sampled as part of the Previous RI and analyzed for VOCs, SVOCs, metals, PCBs and pesticides. No PCBs or pesticides were detected in the groundwater samples collected. One SVOC (bis-(2-ethylhexyl)phthalate) was detected at one well location at 1 ppb. Metals were detected in the groundwater samples collected from the site. Of the metals detected, eight metals (barium (two locations), chromium (one location), copper (one location), iron (twelve locations), lead (five locations), manganese (eleven locations), nickel (one location) and sodium (seven locations) were detected above the NYSDEC Class GA groundwater criteria. However, the groundwater samples collected were not filtered and the presence may be due to suspended solids within the sample. It does not appear that SVOCs, metals, PCBs and pesticides are a concern at the Signore Facility. VOCs (primarily chlorinated solvent compounds) were identified as a concern at both on and offsite locations. Analytical tables from the Previous RI have been included in Appendix A.

Based on the Previous RI study, groundwater was determined to be the only environmental media most severely impacted by contamination and VOCs were the primary contaminant identified in the soil and groundwater. Therefore, Iskalo would like to limit the subsurface soil and groundwater sample analysis for the SRI to VOCs only.

The SRI will involve on-site surface and on-site subsurface soil sampling, on-site groundwater sampling and an off-site vapor intrusion assessment. The specific objectives of the RI are as follows:

- Further evaluate extent of contamination;
- Further evaluate transport mechanisms;
- Assess the potential source(s) of contamination and assess impact to soil and groundwater; and
- Identify potential pathways for human exposure as part of a qualitative risk assessment.

It should be noted that an Interim Remedial Measures (IRM) Work Plan has been developed to address the removal of underground storage tanks (USTs) and associated petroleum impacted soils located within two accessible outside areas of concern, AOC-1 and AOC-2. The IRM Work Plan also addresses the removal of two additional USTs, identified outside of AOC-1 and

AOC-2. However, contaminated soil was not encountered in association with these two USTs. This IRM will be implemented prior to conducting the SRI activities.

1.2 PROJECT BACKGROUND

The Former Signore Facility is located at 55-57 Jefferson Street in the Village of Ellicottville, Cattaraugus County, New York. Ellicottville is located approximately 60 miles south of Buffalo, New York, and is a popular ski-resort area. General adjoining land uses are residential and recreational. The entire property is approximately 55 acres of which 8.43 acres (Signore BCP Area, see Figure 2) are occupied by the former Signore building (168,000 square feet), other ancillary buildings and parking areas. The remaining acreage is vacant, undeveloped land. The property consists of approximately 21 acres of "flat land" area and about 34 acres of hill side.

The property has been used for manufacturing purposes for over 50 years. It is reported that a tool and die operation occupied a garage associated with the residential dwelling that was formerly present at the property. The Signore BCP Area was primarily used for the manufacturing of metal products. The existing Signore building has undergone various expansions since 1952. The actual development date for the property is unknown, but occurred sometime between the 1940s and 1952 as the property was identified as vacant woodland between 1922 and 1939.

The property is listed on the NYSDEC State Superfund Program as Site Number 905023. In 1986, the Signore facility underwent a soil and groundwater sampling program which identified low concentrations of volatile organic compounds (VOCs) at the Site. Both downgradient public and private drinking water wells were affected. The contamination was attributed to spills, leakage and other plant operations.

In August 1989, Signore entered into an Administrative Order on Consent #89-258-89-03 to perform a Remedial Investigation/Feasibility Study at the Site and three Interim Remedial Measures (IRMs). Results of the Previous RI are discussed in section 1.1 and the three IRMs included the following.

- 1. Installation of an interceptor well upgradient of the Town drinking water well;
- 2. Connection of 34 residential properties to the municipal water supply source; and
- 3. Installation of an interceptor well on a downgradient portion of the Signore property.

The IRM activities were completed and in operation by January 1992. The contaminants of concern were identified as trichloroethene (TCE) and trichloroethane (TCA). Additional volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, or polychlorinated biphenyl's (PCBs) were not identified on the Site during the RI.

In 1993, the Site was reclassified from a Class #2 to a Class #4, as it had been properly closed. However, NYSDEC required groundwater monitoring at on and off-site locations on a semiannual basis, which Iskalo is continuing to perform. Long term monitoring data has shown a general decrease in site contaminants and off-site migration.

In 2002, the on-Site interceptor well and the Town Well interceptor well were shut down, as approved by NYSDEC, due to long-term sampling results at both wells indicating either non-detect concentrations or levels below State drinking water standards.

In October 2007, GZA completed a Phase II ESA at the Site as part of due diligence services for Iskalo. GZA's work included observing soil probes at 29 locations and test pit excavations at eight locations. During the Phase II activities, VOC contamination and separate phase petroleum (SPP) product were identified impacting soil and groundwater at the Site (see Appendix A for Analytical Summary Tables from Phase II ESA). Three areas of concern (AOC) were identified where the contaminant concentrations were greater than the NYSDEC recommended soil cleanup objectives (Part 375 criteria). The attached Figure 3 identifies the three AOCs and a brief description of each AOC follows below. AOC-1 and AOC-2 are to addressed by the IRM Work Plan. AOC-3 is located beneath the existing building and will be addressed at a later time after the building is demolished.

- AOC-1 Petroleum underground storage tank (UST) Area Three 1,000-gallon USTs, located on the eastern portion of the Site, were closed in-place in December 1986. Three test pits and four soil probes were completed in the area. SPP product and petroleum impacted soil was identified during test pit completion. GZA contacted NYSDEC and Spill #707350 was assigned to the Site on October 3, 2007. Analytical test results identified petroleum compounds at concentrations greater than the NYSDEC Unrestricted Use Soil Cleanup Objective (SCO). Additionally, 1,2,4-trimethylbenzene (TMB) was detected at a concentration greater than the Restricted Residential SCO. Additional soil probes were performed to further delineate the petroleum impacted soil. One apparent downgradient groundwater sample was collected south of the Petroleum UST Area, which identified impacted groundwater.
- 2. AOC-2 One 1,000-gallon UST Area The historic contents of a UST identified on the southwest side of the main building are unknown. The UST was reportedly closed in the late 1980s. GZA completed one test pit and four soil probes in the area of the UST. SPP product was identified during the test pit completion. Analytical test results identified several compounds, including toluene, ethylbenzene, and xylenes at concentrations greater than the Unrestricted Use SCO. Additionally, toluene and m&p xylene were detected at concentrations greater than the Restricted Residential SCO. One groundwater sample was collected from the south side of the UST. Total VOCs were detected at a concentration of 17 ppm.
- 3. AOC-3 Paint Kitchen Area VOC impacted soil was identified in the area within the main building identified as the paint kitchen and spray booth area. Additionally, a former septic system was also present in the area. "Product" was identified during the soil probe investigation. Analytical test results identified several compounds at concentrations above Unrestricted Use SCO. Additionally, ethylbenzene, m&p xylene, o-xylene, n-propylbenzene, 1,3,5-TMB, and 1,2,4-TMB was detected at concentrations above

Restricted Residential SCO. Two compounds (1,3,5-TMB and 1,2,4-TMB) were detected at two locations at concentrations greater than the Restricted Industrial SCOs. Two groundwater samples were collected from within Area 3. Total VOCs were detected at concentrations of 43 ppm and 64 ppm.

Groundwater impacts from the identified VOCs in AOC-1, -2 and -3 appear to be within the upper groundwater zone, present at the Site at approximately 10 to 12 feet below ground surface (bgs).

Also during the Phase II ESA work, two additional UST areas were identified. Contaminated soil requiring remediation was not encountered at these two locations, based on analytical soil data, field screening results and observations.

The owner of the property in October 2007 was Signore, Inc. No further work has been completed and the spills status remains "open". Iskalo took ownership of the property on February 11, 2008. In May 2008, Iskalo submitted a BCP Application to NYSDEC for the 8.43-acre portion (Signore BCP Area) of the property. The Signore BCP Area was accepted into the BCP in January 2011, when NYSDEC issued and executed a Brownfield Cleanup Agreement with Iskalo.

AOC-1, AOC-2 and the two USTs are to be addressed as part of an IRM, for which a separate work plan has been submitted to NYSDEC. AOC-3, which is present beneath the existing building, will be addressed after the building is demolished and the concrete floor slab is removed. It should be noted that in February 2011 a portion of the building collapsed (see Figure 3 for areas). Therefore, portions of the building are not accessible due to the collapsed roof or have been deemed structurally unsafe at this time.

1.3 PROJECT MANAGEMENT AND ORGANIZATION

1.3.1 Personnel

The general responsibilities of key project personnel are listed below.

NYSDEC Project Manager - Chad Staniszewski will have the responsibility for regulatory oversight for the work associated with BCP Site No. C905034.

Iskalo Development Project Manager – Paul Iskalo will have the responsibility for implementing the project and has the authority to commit funding necessary to meet the objectives and requirements.

Project Manager - Christopher Boron will be responsible for managing the implementation of the activities associated with the BCP investigation, remediation and coordinating the collection of data during the project. The Project Manager is responsible for technical quality control and project oversight.

Quality Assurance (QA) Officer – Daniel Troy P.E., will report to the Project Manager and will be responsible for ensuring that QA/QC procedures are being followed. The QA Officer will be responsible for overseeing the review of field and laboratory data.

The QA Officer will monitor the performance of the laboratory to verify that the Data Quality Objectives for the project are met.

Field QA Officer – Jennifer Davide will be responsible for the overall operation of the field team and reports directly to the Project Manager.

1.3.2 Specific Tasks and Services

GZA will obtain subcontractor specialists for services relating to underground storage tank and contaminated soil removal, soil disposal, laboratory/analytical services and data validation services. The subcontractors to be utilized will be determined at a later time.

2.0 DESCRIPTION OF FIELD ACTIVITIES

2.1 GENERAL FIELD ACTIVITIES

General field activities include site meetings, mobilization, implementing the health and safety plan, test borings, sampling and analytical testing, decontamination and handling of investigation wastes and surveying. Subcontractors will be used for drilling, analytical testing and surveying.

2.1.1 Site Meeting

A Site "kick-off" meeting will be held with Iskalo, GZA and the drilling subcontractor(s) prior to initiating field work activities. The purpose of the meeting will be to orient field team members, Iskalo staff and subcontractors with the Site, project personnel, Site background, scope of work, potential dangers, health and safety requirements, site-specific security and safety protocols, emergency contingencies and other field procedures. NYSDEC staff are welcome to attend and will be notified at least seven (7) days in advance of the meeting.

2.1.2 Mobilization

Following approval of the SRI Work Plan by NYSDEC, the Underground Facilities Protection Organization (UFPO) will be contacted at 1-800-962-7962 to clear exploration locations. Utility clearance will require three working days by UFPO. GZA and its subcontractors will then mobilize necessary materials and equipment to the Site.

2.1.3 Health and Safety

It is anticipated that the work to be completed at the Site will be done at level D personal protection. Should health and safety monitoring during field activities warrant an upgrade to

level C protection, work will stop, Site conditions will be re-evaluated prior to further investigation activities. See Section 6.0 for additional information on Health and Safety.

2.1.4 Decontamination and Handling of Investigation Derived Waste

The sampling methods and equipment selected limit both the need for decontamination and the volume of waste material to be generated. Decontamination procedures specific to each of the field activities are described in the QAPP. Personal protective equipment and disposable sampling equipment will be placed in plastic garbage bags for disposal as a solid waste.

2.1.5 Survey

Following completion of the SRI investigation, a professional land surveying firm will be subcontracted to locate exploration locations and prepare a Site base map.

2.2 SRI FIELD INVESTIGATIONS

SRI field work will generally be done in compliance with NYSDEC's DER-10 "Technical Guidance for Site Investigation and Remediation", dated June 2010.

2.2.1 Vapor Intrusion Assessment

The purpose of this vapor intrusion air sampling is to assess ten off-site residential dwellings along Jefferson Street for vapor intrusion, due to the detections of chlorinated solvents in groundwater. Attached Figure 4 identifies two sampling zones located northeast and south of the Signore BCP Site. Five homes from each sampling zone will assessed for vapor intrusion. If access to five homes within each zone cannot be achieved, NYSDEC will be notified to discuss additional sampling locations.

Air sampling will be done in general accordance with the October 2006 New York State Department of Health (NYSDOH) Final "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH Guidance Document). GZA proposes the following scope of work to assess the potential for vapor intrusion at ten residential structures.

Product Inventory Review

Prior to initiating air sampling, GZA will visit the ten residential structures to complete an indoor air quality questionnaire and survey of each building for an inventory of various chemicals and products used within the respective structures. The purpose of the survey is to determine if products containing contaminants of concern (e.g., chlorinated solvent compounds) are currently used and/or stored at the sampling locations and could have the potential to create an interference affecting the air sampling results. If such chemical or products are found they will be removed from the respective structure at least 24hours prior to initiating the sampling.

Vapor Intrusion Sampling

Two types of air samples will be collected from within each of the residential structures: a sub-slab sample and an indoor air sample. The samples will be collected via methodology identified in the referenced NYSDOH Guidance Document. Each sub-slab sample will be collected from beneath the concrete basement floor through an approximate 1/2-inch diameter hole drilled in a competent portion of the floor away from cracks or drains. Clean, dedicated polyethylene tubing will be placed into the hole to the bottom of the slab and sealed at the floor surface with modeling clay. The modeling clay to be used is non-toxic and does not contain VOCs.

Prior to starting the sub-slab sampling, a tracer gas (e.g., helium) will be released under an enclosure placed over the top of the sealed sub-slab sampling tubing setup to check for surface infiltration into the subsurface. A helium detector (i.e., Mark Model 9822 Helium Detector or equivalent) will be used to determine if helium from inside the enclosure is being drawn into the subsurface. Once it is determined that the sampling system is sealed and there is no infiltration into the subsurface, the sub-slab tubing will be connected to the sampling container. NYSDOH Guidance allows for up to 10 percent helium to be detected within the subslab sampling system and still be considered acceptable for sampling.

Each indoor air sample will be collected from the breathing zone (approximately 4 to 5 feet above the slab-on-grade floor) in the immediate vicinity of the sub-slab sample. Air sampling will be completed for a 24-hour duration, in accordance with NYSDOH requirements.

Ambient outdoor air samples will be collected for background comparative purposes from an exterior upwind location of the sampling area each day a vapor intrusions sampling event is conducted. The outdoor air sample will be collected from the breathing zone (approximately 4 to 5 feet above the ground surface). The outdoor sample location will be based on the wind direction the day of the sampling event.

The air samples collected will be submitted for chemical analysis. Each sample will be tested for VOCs via analytical test method TO-15. The analytical methodologies to be used for the indoor air samples will result in reporting limits for trichloroethylene (TCE), carbon tetrachloride and vinyl chloride to 0.25 ug/m³ and for tetrachloroethylene (PCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethele (1,1-DCE) and cis-dichloroethene (cis-DCE) to 1 ug/m³. The ambient outdoor air and sub-slab samples will have reporting limits to 1 ug/m³.

As part of our quality control and quality assurance, a duplicate air sample will be collected from an indoor air sampling location. A polyethylene "tee" will be used to link the two canisters together and utilize the same intake port for the duration of the duplicate air sampling.

2.2.2 Surface Soil Sampling

Surface soil samples are proposed to be collected from six locations within the Signore BCP Area. Locations to be sampled will be from areas of surficial staining, potential surface

discharge areas, and areas of the Signore BCP Site not covered by future hard development (i.e., buildings, roads, parking lots, etc.). The most recent development plan has included as an overlay on Figure 5.

Soil samples will be collected from a depth of 0 to 2 inches bgs (if no pavement is present). Collection will be done using a pre-cleaned stainless steel spoon (the spoon will be cleaned as described in the QAPP). Vegetation will be removed from the area to be sampled. Roots, to the extent practical, will also be removed. The spoon will be used to scoop the soil into a stainless steel mixing bowl to be homogenized prior to placement into the appropriate laboratory provided containers. Sample analysis will include VOCs, SVOCs, PCBs, pesticides and metals (see Table 1 for the proposed number of samples and analytical parameters).

Samples to be collected from beneath the pavement (if required) will be collected with the soil probe sampler. The sample will be collected from the two inch zone of soil present beneath the pavement and subbase. The sample will be visually described and placed into a stainless steel mixing bowl to be homogenized prior to placement into the appropriate laboratory provided containers.

2.2.3 Subsurface Soil Explorations

GZA is proposing to complete 25 exploration locations as part of the SRI as shown on Figure 6. These exploration locations will include a combination of test pits and soil probes. Five locations will be completed in the northwestern exterior portion of the Signore BCP Area to assess the elevated soil gas results from the 1991 RI work (see Figure 6). One location will be completed within the footprint of AOC-3. Two locations will be completed to the southwest of AOC-2. Eight locations will be completed in the northern central portion of the building footprint. Three locations will be completed in the eastern portion of the building footprint. Four locations will be completed in the southern portion of the building footprint and two locations will be completed south of AOC-1.

Test pits will be completed using a rubber tire back hoe or small track excavator with an approximate 10 to 12 foot reach. Limits of the excavations will be defined by field screening, presence of groundwater and engineering judgment. The reach of the machine may also limit the excavation depth. If further depth exploration is required at a specific location, it will be completed with a soil probe. If the proposed exploration locations are in areas not practical for test pits (i.e., health and safety issues, physical constraints, presence of concrete slab) soil probes will be used.

A field engineer/geologist will observe the excavations and create a field log (including photograph) for each test pit location. Real time air monitoring will be conducted while the excavations are open using an OVM. Excavated soil will be placed on plastic sheeting near the test pit location. Soil samples will be collected from the excavations for classification, laboratory analysis and screening with the OVM. Soil samples will be collected at two-foot intervals to the bottom of the test pit. Samples collected for analytical testing will typically be collected from contaminated soils or material, based on visual, olfactory, field screening

techniques and engineering judgment that warrant analysis. Excavated soil shall be returned to the test pit in the general order that it was excavated. Photographs of each excavated test pit will be taken as documentation.

The soil probes will be advanced into overburden soils utilizing direct push technology via a hydraulic hammer mounted on a truck or track mounted rig equipped with a 2-inch outer diameter by 48-inch long macrocore sampler. Soil probes will be advanced to 16 to 20 feet bgs. If contamination is encountered and still present at a depth of 20 feet bgs, the probe will be advanced until contamination is no longer present, refusal, or soil probe equipment limitations, whichever occurs first. Should it be required that additional depth is needed to explore the vertical extent of potential contamination, traditional hollow-stem auger drilling methods will be used.

A field engineer/geologist will observe the soil probes and create a field log for each probe. Real time air monitoring will be conducted while soil probes are being completed using an OVM. Soil samples will be collected from the soil probes for classification, laboratory analysis, and screening with the OVM. Soil samples will be collected at two foot intervals to the bottom of the probes. Samples collected for analytical testing will typically be collected from contaminated soils or material, based on visual, olfactory, field screening and engineering judgment that warrant further analysis.

If groundwater is encountered during the soil probes, a 1-inch diameter polyvinyl chloride (PVC) microwell with a 10-foot slotted screen may be installed inside the soil probe for groundwater sample collection and to obtain water level information. We have proposed to install 15 microwells as part of the SRI. The locations and depths of the microwells will be based on the conditions identified in the field. These microwells will be completed with road boxes at ground surface. These wells will be sampled for VOCs with six locations (to be determined) being analyzed for natural attenuation parameters, as follows.

Field Measured Parameters:	temperature, specific conductance, pH, turbidity, dissolved oxygen (DO) and oxidation reduction potential (ORP).
Natural Attenuation Parameters:	methane, dissolved iron, dissolved magnesium, dissolved manganese, dissolved potassium, dissolved sodium, alkalinity, total organic carbon, chloride, nitrate, nitrite, sulfate and sulfide.

Microwell Monitoring & Purging Methodologies

The newly installed microwells will be developed prior to sampling to remove fines that may have accumulated within the well. Prior to the start of the monitoring and purge event, a static water level will be measured from the top of the monitoring well riser and recorded on the monitoring well sampling log. At each microwell location new polyethylene tubing will be lowered into the microwell and positioned at the approximate center of the well screen.

A peristaltic pump will be used at a flow rate that minimizes draw-down of the water column within the well. The first set of water quality readings will be collected when the flow-through cell is completely full and water begins to flow out. Readings will be recorded once a constant head is established and continued until water quality readings stabilized for three successive readings. These three successive readings should be within \pm 0.1 for pH, \pm 0.005 milliSiemen per centimeter (mS/cm) for conductivity, less than 1 mS/cm and \pm 0.01 mS/cm for conductivity greater than 1 mS/cm, \pm 10 mV for oxidation reduction potential (ORP) and \pm 10% for turbidity and dissolved oxygen (DO). If readings stabilize prior to removing one well volume, purging/monitoring will continue until one well volume is removed while maintaining a constant head. Once a constant head is established, we will hold pumping flow rates as constant as possible. Sampling flow rates will be kept consistent with purging/monitoring flow rates. Altering the flow rates could likely change the chemistry within the well (i.e., stagnant water within the well will mix with formation water coming into the well).

Once the water quality readings have stabilized and at least one well volume has been removed after a constant head has been established, groundwater analytical samples will be collected. The polyethylene tubing connecting the peristaltic pump to the water quality meter will be disconnected at the water quality meter and used to fill the appropriate groundwater sample jars, provided by the laboratory. After the appropriate sample containers have been filled, the pump will be shut off and the tubing removed from the monitoring well and pump head, and will be properly disposed of as solid waste.

2.2.4 Existing Groundwater Well Sampling

To assess the current groundwater conditions associated with the deeper groundwater zones (intermediate zone (30 to 50 feet deep) and deep zone (50 to 75 feet deep)) at the Site, GZA is proposing to sample the six existing monitoring wells (MW-1D, MW-4I, MW-5I, MW-8I, MW-8D and EW-2.5). These wells will be sampled for VOCs and select natural attenuation parameters identified in Section 2.2.3, with the exception of EW-2.5. This well will be sampled for natural attenuation parameters only, as it is sampled as part of the semi-annual groundwater sampling currently conducted.

Prior to the start of the existing well monitoring purge event, a static water level will measured from the top of the monitoring well riser and recorded on the monitoring well sampling log. Due to the depth of these wells, a down-hole submersible pump (i.e., Grundfos or similar) will be used. At each well location new polyethylene tubing will be connected to the pump and lowered into the well and positioned at the approximate center of the well screen. Purging and sampling will be conducted similar to the microwell sampling as discussed in Section 2.2.3.

2.2.5 Fish and Wildlife Resources Impact Analysis

A fish and wildlife impact analysis that characterizes resources used to identify potential or actual impacts will be performed for the Site (Part 1 assessment – see NYSDEC Draft DER-10). If no fish or wildlife resources or ecological exposure pathways are identified, then this component of the work will be considered complete. If there is a potential for fish and wildlife impacts, then a plan will be developed to implement a preliminary ecological impact assessment (Part 2).

2.3 ENVIRONMENTAL ANALYTICAL TESTING PROGRAM

The proposed environmental testing program is summarized in Table 1. The location for sample collection will be determined based upon the results of the field screening and engineering judgment. The samples collected as part of this SRI will be subject to analytical testing methodologies that follow NYSDEC Analytical Service Protocol (ASP) Category B deliverables and data validation. Further information regarding sampling and testing methodologies can be found in the QAPP (see Section 4.0).

3.0 DATA DOCUMENTATION

Field notes will be kept during the SRI work, in addition to daily field summaries that will be generated summarizing the field work and become part of the project file. The daily field summaries will include the following daily information for the SRI activities:

- Date;
- Meteorological conditions (temperature, wind, precipitation);
- Site conditions (e.g., dry, damp, dusty, etc.);
- Identification of crew members (GZA and subcontractor present) and other personnel (e.g., agency or site owner) present;
- Description of field activities;
- Location(s) where work is performed;
- Sampled collected;
- Problems encountered and corrective actions taken;
- Records of field measurements or descriptions recorded; and
- Notice of modifications to the scope of work.

Photographic documentation of the SRI activities will be done. Pertinent photographs will be included in the SRI Report.

4.0 REPORT

Results of the SRI will be incorporated in the revisions of the Draft SI/AAR dated October 29, 2010. In addition to addressing the comments in the March 3, 2011 NYSDEC letter, the revised report will also include the following.

- Provide a summary of the supplemental activities completed as part of the SRI work;
- Present the supplemental analytical data along with the existing data from previous investigation activities;
- Provide figures showing the location of SRI activities;
- Provide pertinent photographic documentation of the activities completed;
- Present the findings, conclusions and revised alternative assessment resulting from the SRI work. The revised report will be submitted to NYSDEC for review.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The Quality Assurance Project Plan (QAPP) to be used for the Former Signore Facility SRI activities is the "Quality Assurance Project Plan, Former Signore Facility, Ellicottville, New York, Brownfield Cleanup Program, Site No. C905034" dated May 2011. The QAPP presents the sampling procedures, analytical methods and QA/QC procedures associated with the activities planned for BCP Site. Protocols for sample collection, sample handling and storage, Chain of Custody procedures, and laboratory and field analyses are described or specifically referenced to related investigation documents.

6.0 HEALTH AND SAFETY PROTOCOLS

The health and safety protocols to be used for the Former Signore Facility SRI activities are in the "Health and Safety Plan, Former Signore Facility, Ellicottville, New York, Brownfield Cleanup Program, Site No. C905034" dated May 2011. The Health and Safety Plan (HASP) presents the specific health and safety protocols associated with the activities planned for BCP Site.

7.0 CITIZEN PARTICIPATION

The Citizen Participation (CP) component for the Former Signore Facility BCP Site discussed in the "Brownfield Cleanup Program, Citizen Participation Plans, Former Signore Facility, 55 Jefferson Street, Village of Ellicottville, Cattaraugus County, New York, Site Number: C905034" dated March 2011. The CP Plan outlines how members of the affected and interested

public are provided with information about how NYSDEC will inform and involve them during the investigation and remediation of the Site. Information such as project contacts, document repositories, site contact lists, and CP activities are provided in the CP Plan.

8.0 SCHEDULE

The following schedule is proposed for the field activities and Revised SI/AAR preparation.

Duration:	Anticipated Date:
	October 13, 2011
30 days	November 11, 2011
5 days	November 25, 2011
5 days	December 9, 2011
To be determined (see	e below)
	October 1, 2012
2 8 1	Ouration: 0 days 5 days 5 days 70 be determined (see

The SRI schedule is dependent on the building demolition schedule. In February 2011, a portion of the roof collapsed and other portions of the building have been deemed structurally unsafe due to the collapse. Investigation activities inside portions the building is not possible at this time. Iskalo is currently awaiting the results of their insurance claim assessment from the insurance carrier. The outcome of the claim will have an effect on the building demolition schedule. The best case scenario is that the demolition occurs in fall 2011, while the worst case scenario is that the demolition occurs in fall 2012.

Prop	oosed Supp	lemental R Form BCP Ellico	Table 1 I Analytical er Signore Site No. C9 ottville, Nev	Testing Pr Facility 05034 v York	ogram Sum	nmary	
Location	VOCs TCL	SVOCs BN	TAL Metals	PCBs	Pesticides	NA Parameters	VOC Air Samples
Surface Soil Samples							
Primary Sample	4	4	4	4	4	0	0
Duplicate	1	1	1	1	1	0	0
MS/MSD	2	2	2	2	2	0	0
Rinsate	1	1	1	1	1	0	0
Total	8	8	8	8	8	0	0
Subsurface Soil Probe	Samples						
Primary Sample	20	0	0	0	0	0	0
Duplicate	1	0	0	0	0	0	0
MS/MSD	2	0	0	0	0	0	0
Rinsate	1	0	0	0	0	0	0
Total	24	0	0	0	0	0	0
Groundwater Samples							
Primary Sample	15	0	0	0	0	12	0
Duplicate	1	0	0	0	0	1	0
MS/MSD	2	0	0	0	0	0	0
Rinsate	1	0	0	0	0	0	0
Total	19	0	0	0	0	13	0
Soil Vapor Intrusion As	sessment						
Indoor Air	0	0	0	0	0	0	10
Subslab Air	0	0	0	0	0	0	10
Outdoor Air	0	0	0	0	0	0	3
Duplicate	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	24
TOTAL	51	8	8	8	8	13	24

Notes:

MS/MSD - Matrix Spike/Matrix Spike Duplicate.

TCL VOCs - Target Compound List Volatile Organic Compounds.

SVOCs BN - Semi-volatile Organic Compounds Base Neutral List.

TAL Metals - Target Analyte List Metals.

NA Parameters - Natural Attenuation Parameters as discussed in Section 2.2.3.

VOC Air Samples - will be done using TO-15 analysis.

FIGURES











Drawing File: S:\55 Jefferson St\Master Plan\Concept\400's Pre-Design Criteria, Research & Feasability\430 Soil Investigation_Reports\Brownfield Boundry of BCP Area.dwg Plotted: Oct 03, 2011 1:15pm



C 2011 GZA GeoEnvironmental of New York

APPENDIX A

SOIL SAMPLE VOC ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

-

		METHYLE	NE			ETHYL-						
SOIL E	BORING	CHLORID	E ACETONE	2-BUTANONE	TOLUENE	BENZENE	XYLENE	1,1,1-TCA	PCE	1,2-DCE	TCE	1,1,2-TCA
====== BH-1	4-6	тарана 17 в	======= 13 в									
BH-2	2-4	23 B	72 B	17 B								
BH-2	6-8	38 B	120 B	16 B	3 J			55				
DUP 8	(BH-2 6-8)	18 B	46 B	18 B								
BH-3	2-4	38 B	35 B	6 B		3 J	73					
BH-3	4-6	42 B	100 B	7 В	6 J							
BH-3	6-8	23 B	63 B	6 B	5 J	2 J	11					•-
BH-4	6-8	9 B	20 B	2 B								
BH-4	8-10	21 B	38 B	5 B								
BH-4	10-12	8 B	17 B	3 B						22		
BH-4	12-14	5 B	11 B									
BH-5	4-6	22 B	50 B	6 B	1 B							
BH-6	6-8	19 B	30 B	5 B		55						5.0
BH-6	10-12	19 B	67 B	24 B								
BH-7	2-4	58 B	43 B	8 B		12	4 J			1 J	9	
BH-7	4-6	22 B	43 B	6 В		2 J				2 J	15	
BH-7	6-8	16 B	41 B	5 B							10 J	
BH-8	4-6	36 B	30 B	5 B								
BH-8	8-10	22 B	49 B	4 B					02125		12121	
BH-9	0-2	19 B	66 B	8 B				3 J				
BH-9	6-8	17 B	47 B	4 B								
BH-9	8-10	23 B	24 B	3 B								
BH-10	2-4	43 B	24 B	2 B								
BH-10	4-6	23 B	26 B	3 B				1 J				
DUP 1	1(BH-10 4-6)	27 В	31 B									
BH-10	6-8	26 B	49 B	7В				8				••
BH-11	4-6	17 B	50 B	4 B								
BH-12	10-12	15 B	40 B	3 B				••				
DUP 1	O(BH-12 10-12)	16 B	39 B	7 B								
BH-13	8-10	26 B	28 B	5 B								
BH-14	0-2	25 B	41 B	6 B								6 J
BH-14	2-4	12 B	19 B	2 B				5.5			2 J	6 J
BH-14	4-6	16 B	42 B	6 B	••			••				
DUP S	(BH-14 4-6)	10 B	15 B	1 B				••				
BH-14	6-8	32 B	24 B	2 B				5	5 J		24	

All Results in ug/kg J=Estimated Value B=Compound was also detected in blank --=Not Detected Samples collected on 7/30/90 through 8/3/90

4-22

SOIL SAMPLE SEMI-VOLATILE ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

.

		BIS(2-ETHYL						BENZO(B)	BENZO(K)			INDENO	BENZO
		НЕХҮГ	PHENAN-	FLUORAN-		BENZO(A)		FLUOR -	FLUOR -	BENZO(A)		(1,2,3)	(C,H,I)
		PHTHALATE)	THRENE	THENE	PYRENE	ANTHRACENE	CHRYSENE	ANTHENE	ANTHENE	PYRENE	ANTHRACENE	CD PYRENE	PERYLENE
								*****		*********			
BH-2 6	8-	130 B	;	;	3	3	:	:	:	;	:	:	;
DUP 8 (BH-2 6-8)	110 8	:	:	;	;	:	;	:	:	:	:	:
BH-3 2	7-1	470 B	;	:	:	:	;	:	:	:	:	:	:
BH-4 8	-10	160 J	:	;	:	:	:	:	:	:	;	:	:
BH-6 6	8-	:	Z20 J	Z90 J	350 J	110 J	140 J	210 J	210 J	Г 96	:	:	:
BH-7 4	-6	ł	;	:	:	:	;	3	:	:	:	;	1
BH-7 6	-8	;	1	:	:	;	;	;	:	;	•	;	;
BH-8 4	-6	:	:	:	:	;	;	:	:	;	:	;	:
BH-9 0	-2	1	:	;	;	:	;	:	:	:	;	:	:
BH-9 6	-8	1	;	;	:	;	:	:	;	:	:	:	:
BH-10 4	-6	1	;	:	:	:	:	;	:	:	:	:	;
BH-11 4	-6	ł	;	:	:	:	:	:	:	:	:	:	:
BH-14 0	-2	46 J	;	:	:	:	:	:	:	;	:	;	:
BH-14 4	-6	110 J	:	48 J	47 J	;	:	:	:	:	:	:	•
DUP 9 (BH-14 4-6)	200 J	600	1200	970	430	580	740	550	400	98 J	r 011	220 J

Samples collected on 7/30/90 through 8/3/90 B=Compound was also detected in blank All Results in ug/kg J=Estimated Value --=Not Detected

.

SOIL SAMPLE INORGANIC ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

			DUP 8												774	oup 9
		BH-2	BH-2	BH-3	BH-4	8H-6	ВН-7	BH-7	BH-8	8H-9	8H-9	ВН-10	ВН-11	BH-14	BH-14	BH-14
	ANALYSIS	18-19	18-19	14-12	81-101	18-19	19-17	61-81	19-14	01-21	6'-8'	41-61	41-61	01-21	41-61	
82		12300	9280	14300	8130	5650	11200	9100	13300	14300	6370	8890	14100	13200	10700	10800
	ANTIMONY	;	;	;	;	:	;	:	:	:	:	:	:	:	;	1
	ARSENIC	1.4 J	8.9 J	8.6 J	8.9 J	6.6 J	13.1 J	10.10 J	L 20 J	16.9 J	5.4 J	8.3 J	2.4 J	14.7 J	10.5 J	8.4 J
	BARIUM	360	333	214	• 94	9.66	124	88.4	172	199	99.8	111	153	137	160	174
	BERYLLIUM	0.84 J	0.87 J	0.95 J	0.43 J	;	0.60 J	0.31 J	0.50 J	0.74 J	0.29 J	0.44 J	0.66 J	0.58 J	0.75 J	0.57 J
\sim	CADMIUM	:	:	;	1.2 8	:	:	;	;	:	:	:	1.3	;	:	:
ĉ	CALCIUM	2200 J	3520 J	3870 J	3140 J	16200 J	1270 J	1720 J	2190 J	C 0744	1360 J	1660 J	1930 J	1460 J	1180 J	1430 J
	CHROMIUM	15.6	14.1	17.8	17.2	6.2	14.8	12.5	15.6	16.7	8	11.7	18.7	14.3	13.1	12.7
	COBALT	8.5 B	6.5 B	13.2 J	6.8 B	5.2 J	11.2 J	8.3 J	6.4.1	15.5 J	6.5 J	9.4 J	9.8 J	9.6 J	16.9 J	12.7 J
	COPPER	19.6 B	30.5 B	13.2 B	15.9 B	18.2 J	19.6 J	24.2 J	22.4 J	21.3 J	28.8	19.0 J	17 J	13.2 J	16.5 J	16.2 J
	IRON	17100	14600	25400	19100	14800	35500	26000	26000	35900	17200	20900	26200	26400	26200	25300
1	LEAD	12.7 J	11.7 J	25.5 J	34.8	15.8 J	15.4 J	15.8 J	16.3 J	17.1 J	33.1 J	12 J	C 7.6	17 J	16.1 J	16.1 J
	MAGNESIUM	2970	2090	3440	2620	10100	3600	3080	4060	4230	2240	2790	3750	3240	3250	3140
	MANGANESE	163 B	215 J	350 B	270 B	1410 J	231 J	358 J	806 J	1240 J	1110 J	489 J	307 J	483 J	975 J	678 J
	MERCURY	;	:	;	;	:	:	;	:	;	;	:	:	:	:	:
	NICKEL	23.7	20.4	29.3	19.6	19.4	26.7	21.4	30.7	28.2	18	21	23.4	23.1	23	25.5
14	POTASSIUM	:	:	857	;	;	856	763	991	729	;	713	926	;	;	;
	SELENIUM	:	:	:	;	:	;	;	;	;	;	;	:	:	;	;
	SILVER	:	;	:	:	:	;	;	:	:	:	:	:	:	:	:
9	SOD I UM	165	229	167	180	105	140	106	152	151	:	142	. 179	338	116	113
3	THALLIUM	:	:	:	:	;	;	:	:	:	:	:	;	:	:	:
ſ	VANAD I UM	19.6	19.6	21.1	12.3	7.5	19.0	13.9	17.2	21.1	9.2	13.6	24.8	20.4	18	17.1
С.	ZINC	6.03 J	46.5 J	70.6 J	07.9 J	92.8 J	122 J	115 J	168 J	85.9 J	84.4 J	62.7 J	60.2 J	65.8 J	53.9 J	56.6 J
	CYANIDE	:	27.5 J	;	1.7	:	:	:	:	:	:	:	:	2.6	;	;

Samples collected on 7/30/90 through 8/3/90

All concentrations in mg/kg B=Compound was detected in blank

J=Estimated Value --=Not Detected

10 600

GROUND WATER ORGANIC ANALYTICAL RESULTS ON-SITE MONITORING WELLS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

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SEMI - VOLATILES

	METHYL FNF	VINYI	CHLORO-											BIS (2-ETHYL
NELL	CHLORIDE	CHLORIDE	ETHANE	1,1,1-TCA	TCE P	щ	1,1-DCE A	ACETONE	1,2-DCE	1,1-DCA	BENZENE	TOLUENE	2-BUTANONE	HEXYL PHTHALATE)
MU-1S	1 8			:	1 J	:			2	l 00 l		:	:	;
MW-11	2 B	2 J	2 J	9	55	ΓZ	L 7.0	;	r 62	۲3 J	:	:	:	:
MW-1D	5 8	:	:	4 38 J	25	ר ר	:	;	2 J	6	:	:	:	1
MW-2S	0.8 8	:	:	:	:	:	:	;	3	:	:	:	;	:
S4-WW	5 8	:	:	10	27	M	:	:	ю	L L	:	:	:	:
MW-5S	3 B	;	2 J	r 66	100 J	۲ L	L 1	:	20	8	:	:	:	;
MW-50	5 B	;	:	:	;	:	:	6 B	ł	L L	٦ ۲	۲ ۲	:	;
S9-MM	2 B	:	;	:	;	:	:	5 8	1	1	:	;	8	;
09-MM	4 B	;	;	:	:	ł	:	2 B	l	;	;	1	:	-
MW-85	3 B	;	3	5	19	м	;	:	L L	8	:	:	:	:
DUP 4 (8S	i) 2 B	;	:	5	18	м	:	;	L 1	1	:	:	:	:
S6-MW	0.8 8	;	:	:	;	:	:	;	ł	;	:	1	:	1
16-MM	14 B	:	;	10	28	2 J	٦ ۲	;	;	;	:	1	: ;	:
DUP 3 (91	1) 48	:	:	:	30	2 J	1 J	;	:	;	:	;	r 01	:

All results in ug/L B=Compound was also detected in blank J=Estimated Value --=Not Detected

Samples collected on 6/28/90 and 6/29/90

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GROUND WATER INORGANIC ANALYTICAL RESULTS ON-SITE MONITORING WELLS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

											(MU-8S)			(I6-MW)
ANALYSIS	MW-1S	11-MM	MW-1D	MW-2S	S7-MM	MW-5S	MU-50	89-MM	09-MH	MU-85	DUP 4	S6-MM	16-MM	DUP 3
	12.3 J	0.23 B	4.82 J	36.8 J	4.73 J	2.22 J	0.326 B	5.9 J	3.25 J	3.34 J	0.948 J	1.15 J	4.21 J	0.324 B
ANTIMONY	:	:	:	;	:	:	:	:	:	:	:	:	:	:
ARSENIC	0.006 J	0.0164	0.0043 J	:	:	:	;	0.0043	0.0032	:	:	:	0.0022 J	:
BARIUM	0.859	0.689	1.39	2.58	0.552	0.387	0.166	0.735	0.337	0.543 J	0.304 J	0.152	0.511 J	0.238 J
BERYLLIUM	0.001	:	;	0.0038	:	;	:	:	;	:	1	:	;	;
CADMIUM	:	;	:	;	;	:	:	;	;	1	:	:	:	;
CALCIUM	127	104	90.9	50.3	53.4	58.9	23.9	110	70.8	142	116	77.6	106	26
CHROMIUM	0.0231	;	0.0115	0.053	;	:	:	0.0134	:	0.0076	:	:	0.0106 J	:
COBALT	0.0421	3	0.0093	0.0726	0.0075	0.0043	:	0.0169	0.005	0.006	;	0.0087	0.0127 J	:
COPPER	0.0867		0.0346 J	0.203	0.0261	J 0.0301 .	: -	0.0403 J	0.026 J	0.0284 J	0.0184 J	0.0111 J	1 0.0341 J	:
IRON	24.7	30.2	14.1	60.3	7.63	1.54	0.826	25	7.08	5.81 J	1.63 J	5.05	L 7.11	0.759 J
LEAD	0.0894	J 0.0023	1 0.0344 J	1 0.148 J	0.0177	J 0.0092	J 0.0042 J	0.0296 J	0.0112 J	0.0059 J	:	0.0071 J	1 0.0295 J	0.0021 J
MAGNESIUM	19.2	8.86	9.68	12	8.95	5.24	0.912	22.6	8.2	17.4	13.7	15.7	15.3 J	9.5 J
MANGANESE	8.3	1.87	1.74	19	1.05	0.852	0.0754	12.6	0.386	2.16 J	0.688 J	1.62	2.35 J	0.21 J
MERCURY	;	:	:	;*	:	:	:	:	:	;	:	:	:	;
NICKEL	;	:	:	0.107	:	1	:	:	:	:	:	;	:	:
POTASSIUM	:	;	3.430	4.1	12.5	:	10.6	ŀ	4.670	:	3.010	3.180	:	:
SELENIUM	:	:	:	:	:	:	;	:	:	:	:	;	:	:
SILVER	;	:	:	:	;	;	;	:	:	:	:	:	:	:
SOD I UM	29.9	8.1	24.8	3.48 B	43.7	26.3	19.5	33.7	15.4	26.4	21.3	31.2	13.3	13.3
THALLIUM	;	;	;	;	;	:	:	:	;	;	;	;	:	:
VANAD I UM	0.027	:	0.0098	0.0588	;	;	:	0.0086	0.0056	:	:	;	0.0063	:
ZINC	0.259	0.0135 E	3 0.145	0.64	0.122	0.135	0.156	0.148	0.058	0.148 J	0.0509 B	0.0236 B	0.14 J	0.0123 B
CYANIDE	:	:	:	:	:	:	:	:	3	;	;	0.0351	;	:
			a.											
	ALL RESU	JLTS IN MC	3/L											

Samples collected on 6/28/90 and 6/29/90

B=Compound was also detected in blank

J=Estimated Value --=Not detected

GROUND WATER ORGANIC ANALYTICAL RESULTS RI MONITORING WELLS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

WELL	METHYLENE CHLORIDE	ACETONE	1,1,1-TCA	PCE	1,2-DCE	TCE	1,1-DCA	CHLOROETHANE	1,1-DCE
EW-1.25		19 B	84		42	180	37	1	1
EW-1.50	1 B	1	160 J	1	5	65 J	20	1 J	1 J
EW-2.25	20	1	1	1	1	ł	!	!	
DUP 16 (2.25)	24	!	1	ł	1	!	!	ł	!
EW-2.50	6 B	ł	1	!	:	ЪJ		1	ł
EW-3.50	2 B		1	1	8	53	!	1	-
EW-4.25	2 B		1	1	!	ł	!	1	1
EW-4.50	2 B		37	0.8 Ј	2	29	4	1	1
EW-5.25	1 B		2	Г 6.0	!	4	ł	1	1
EW-5.50	1 B	1	2	ЪJ	!	9	ł	ł	
EW-6.25	1 B	1	!	!	ł	ł	!	1	1
EW-6.50	1 B	!	!	ł	!	ł	;	1	1
EW-7.25	1 B	1	1	!	!	ł	ł	1	
DUP 15 (7.25)	1 B		1	{	!	ł	;	1	
EW-7.50	1 B	1	2	ł	!	e	1	1	
	All Resul B=Compoun J=Estimat =Not De Samples c	ts in uc id was a tected collected	g/L lso detect e i on 9/10/9	in blank o					

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GROUND WATER INORGANIC ANALYTICAL RESULTS RI MONITORING WELLS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE. NEW YORK

				(2.25)										(7.25)	
ANALYSIS	EW-1.25	EW-1.50	EW-2.25	DUP 16	EW-2.50	EW-3.50	EW-4.25	EW-4.50	EU-5.25	EU-5.50	EU-6.25	EU-6.50	EU-7.25	DUP 15	EW-7.50
ALUMINUM	61	51.1	56.1	NA	53.4	AN	NA	NA	NA	AN	NA	NA	NA	NA	NA
ANT I MONY	;	;	;	NA	:	NA	NA	NA							
ARSENIC	0.015 J	0.012 J	0.008 J	NA	0.012 J	NA	NA	NA							
BARIUM	1.8	0.996	0.188	NA	1.09	NA	NA	NA							
BERYLLIUM	0.003	0.003	:	NA	0.002	NA	NA	NA							
CADMIUM	:	:	;	AN	:	NA	NA	NA							
CALCIUM	144	105	37.3	NA	185	NA	NA	NA							
< CHROMIUM	0.076	0.062	0.022	NA	0.064	NA	NA	NA							
COBALT	0,060	0,046	0.052	NA	0.052	NA	NA	NA							
COPPER	0.255	0.156	0.033 B	NA	0.18	NA	NA	NA							
IRON	132	105	29.4	NA	115	NA	NA	NA							
LEAD	0.128	0.068	0.014 J	0.025 J	0.103	0.007	0.174	0.076	0.144	0.049	0.003	0.02	0.023	0.028	0.005
MAGNESIUM	39.2	26	6.15	NA	33.2	NA	NA	NA							
MANGANESE	5.37	5.97	0.803	NA	5.69	NA	NA	NA							
MERCURY	:	:		NA	;	NA	NA	NA							
NICKEL	0.169	0.105	0.025	MA	0.102	NA	NA	NA							
POTASSIUM	11.1	11.2	2.54	NA	10.4	NA	NA	NA							
SELENIUM	ł	:	1	NA	1	NA	NA	NA							
SILVER	1	t.	:	NA	:	NA	NA	NA							
NO 1 OOS	12.2	14	25	NA	12.6	NA	NA	NA							
THALLIUM	:	;	:	NA	:	NA	NA	NA	AN	NA	NA	NA	NA	NA	NA
VANADIUM	0.106	0.081	0.013	NA	0.08	NA	NA	NA							
ZINC	0.830	0.543	0.121	NA	0.567	NA	NA	NA							
CYANIDE	:	;	:	NA	:	NA	NA	NA							
	NA = Not	Analyzed	for												
	All Resul	ts in MG/	יר												

(Rev. 4/91)

B=Compound was also detected in blank

J=Estimated Value --=Not Detected Samples collected on 9/10/90

SURFACE WATER ORGANIC ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

SAMPLE NO.	ACETONE	METHYLENE CHLORIDE	CHLOROFORM
SW-GV-1		2 B	
SW-GV-2		2 B	
SW-GV-3		3 B	0.6 J
DUP 5 (GV-3)		1 B	
SW-PC-1		1 B	
SW-PC-2		0.8 B	
SW-PC-3			
SW-PC-4		2 B	
SW-PC-5			
SW-PC-6		1 B	

All results in ug/L J=Estimated Value B=Compound was also detected in blank --=Not Detected Samples collected on 7/11/90

SURFACE WATER INORGANIC ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

				DUP 5						
ANALYSIS	SW-GV-1	SW-GV-2	SW-GV-3	SW-GV-3	SW-PC-1	SW-PC-2	SW-PC-3	SW-PC-4	SW-PC-5	SW-PC-6
ALUMINUM	0.127 в	0.132 B	0.192 B	0.425 B	0.128 B	0.334 B	0.124 B	0.109 B	0.0866 B	о.124 в
ANTIMONY										
ARSENIC				22						
BARIUM	0.0608 B	0.0657 B	0.0664 B	0.072 B	0.0783 B	0.0823 B	0.0749 B	0.0696 B	0.0679 B	0.068 B
BERYLLIUM			272	0.001 J	0.0012 J		0.0012 J	0.001 J		
CADMIUM						7.7				
CALCIUM	30	30.4	29.9	31.3	30.4	30.3	30.6	29.1	28.7	30.1
CHROMIUM			7.7	0.0085 J						0.0111 J
COBALT										
COPPER	0.0128 J			0.0107 J	0.0104 J	0.0081 J				0.012 J
IRON	0.292	0.251 B	0.372 J	0.856 J	0.2 B	0.515	0.118 B	0.14 B	0.105 B	0.0983 B
LEAD					22				2.2	
MAGNESIUM	3.76	3.8	3.78	4.01	3.78	3.81	3.78	3.6	3.57	3.67
MANGANESE	0.0303 J	0.0232 J	0.04 J	0.0608 J	0.0195 J	0.0474 J	0.0076 J	0.0124 J	0.0111 J	0.0076 J
MERCURY		-						0.707		
NICKEL							7.7			
POTASSIUM							5.5			
SELENIUM										
SILVER		T .T.								
SODIUM	7	8.21	7.27	7.5	12.7	12.7	12.8	12.3	12	12.3
THALLIUM							2.2			
VANADIUM						22				
ZINC	0.0259 B	0.0126 B	0.019 B	0.0296 B	0.0218 B	0.0204 B	0.0138 B	0.0117 B	0.0131 B	0.0258 B
CYANIDE										

J=Estimated Value B=Compound was also detected in blank --=Not Detected ALL RESULTS IN MG/L Samples collected on 7/11/90

SURFACE WATER SEDIMENT ORGANIC ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

COMPOUND	SED-GV-1	SED-GV-2 DUP	7 (GV-2)	SED-GV-3	SED-PC-1	SED-PC-2	SED-PC-3	SED-PC-4	SED-PC-5	SED-PC-6
	*********	***********								
VOLATILES										
		<i>.</i> -					1.5			
2-BUTANONE	4 B	4 B		2 B			5 B			3 B
METHYLENE CHLORIDE	25 B	34 B	21 B	43 B	18 B	28 B	47 B	15 B	28 B	41 B
ACETONE	54 B	41 B	36 B	52 B	37 B	34 B	29 B	45 B	24 B	27 B
CHLOROFORM	2 J									
SEMI-VOLATILES										
PHENANTHRENE	2000	870	170 J	260 J	120 J	590		170 J	73 J	
FLUORANTHENE	1500	210 J	200 J	230 J	68 J		47 J		89 J	
PYRENE	1500	190 J	160 J	190 J	65 J		46 J		65 J	
BENZO(A)ANTHRACENE	450	90 J	62 J	75 J						
CHRYSENE	610	87 J	88 J	89 J						
BENZO(B)FLUORANTHANE	1100 J	140 J	280 J	200 J					48 J	43 J
BENZO(K)FLUORANTHENE	1100 J	140 J	280 J	200 J					48 J	43 J
BENZO(A)PYRENE	310 J	54 J	63 J	79 J					3.5.	
NAPHTHALENE	130 J								7.7	
2-METHYLNAPHTHALENE	62 J	(2-5.)								
ACENAPHTHENE	91 J								•••	
DIBENZOFURAN	94 J									
FLUORENE	130 J									
ANTHRACENE	200 J	57 J						212		
BIS(2-ETHYLHEXYL) PHTHALATE	60 J			54 J						
INDENO(1,2,3-CD)PYRENE	120 J									
BENZO (G,H,I) PERYLENE	120 J									
4-METHYLPHENOL				120 J						
BENZOIC ACID				••		50 J	120 J	73 J	• •	
ACENAPHTHYLENE					••				••	
PESTICIDE/PCB										
ENDOSULFAN SULFATE	27									
	All resu	lts in ug/kg								
	J=Estima	ted Value								
	B=Compou	nd was also d	letected i	n blank						
	=Not D	etected								

Samples collected on 7/11/90

SURFACE WATER SEDIMENT INORGANIC ANALYTICAL RESULTS

SIGNORE REMEDIAL INVESTIGATION REPORT ELLICOTTVILLE, NEW YORK

				(GV-2)															
ANALYSIS	SED-GV-1	SE	D-GV-2	D	OUP 7	SE	D-GV-3	S	ED-PC-1	SEC	0-PC-2	SE	ED-PC-3	S	ED-PC-4	SE	D-PC-5	S	ED-PC-6	
ALUMINUM	8630		17800	====	11200		13600		14100	===:	17500		13100	==	14000	===	12200	==	11000	=
ANTIMONY																				
ARSENIC	10.20 J	29	9.4 J	17.	.3 J	18	3.6 J	3	2.6 J	27	.7 J	13	3.8 J	1	8.7 J	19	.2 J	1	3.2 J	
BARIUM	89.90		361		193		256		250		315		217		269		192		190	
BERYLLIU	4		0.95		0.53		0.67		0.59		0.86		0.74		0.61		0.48		0.38	
CADMIUM																				
CALCIUM	2180	J	3190	J	2090	J	3260	J	2080	J	3600	J	7590	J	1850	J	1860	J	1720	J
CHROMIUM	11.80		22.10		14.20		16.10		16.80		22.10		14.30		18.00		17.70		14.00	
COBALT	8.70	J	21.90	J	16.80	J	16.10	J	15.20	J	22.30	J	15.00	J	18.20	J	14.10	J	12.00	J
COPPER	13.30	J	17.60	J	20.90	J	14.50	J	19.90	J	44.40		10.30	J	29.80		6.30	J	15.20	J
IRON	26500		50300		33600		41000		38000		57100		34700		41300		37400		30600	
LEAD	21.80	J	33.20	J	20.90	J	19.50	J	19.50	J	74.40	J	16.30	J	28.00	J	25.80	J	16.50	J
MAGNESIU	M 2820		5150		3410		4240		4290		5880		5340		4190		3560		3410	
MANGANES	E 557	J	1830	J	1160	J	1510	J	983	J	1690	J	995	J	1690	J	974	J	921	J
MERCURY																			0.10	
NICKEL	21.60		35.20		24.90		30.40		27.20		37.40		21.00		32.20		31.50		23.90	
POTASSIU	M		1740				1280		922		1380		1210		1440		1170		769	
SELENIUM																				
SILVER																				
SODIUM	276		192		130		172		147		189		138		174		155		129	
THALLIUM																				
VANADIUM	13.70		26.40		17.20		19.00		17.80		23.20		17.20		19.50		18.40		15.00	
ZINC	118	J	180	J	118	J	127	J	119	J	169	J	122	J	111	J	127	J	107	J
CYANIDE	35.10																			
			22																	5

J=Estimated Value B=Compound was also detected in blank --=Not Detected ALL RESULTS IN MG/KG Samples collected on 7/11/90

