Report

Site Investigation Report
Hanna Furnace – Parcel 2
Buffalo, New York

Rebuild Now - NY

June 2002

O'BRIEN & GERE
ENGINEERS, INC.

Report

Site Investigation Report
Hanna Furnace - Parcel 2
Buffalo, New York

Rebuild Now - NY

James R. Heckathorne, P.E.
Vice President

June 2002

O'BRIEN & GERE
ENGINEERS, INC.

Transmittal

O'BRIEN & GERE
ENGINEERS, INC.

To: John Heffron
BERC
617 Main Street
Suite 200
Buffalo, New York 14203

Date: July 15, 2002

File: 10569/25466 #2

Re: Union Ship Canal

We are sending you:

_X_ herewith_under separate cover: _drawings _X_ descriptive literature_letters

If material received is not as listed, please notify us at once.

Quan.	Identifying Number	Title	Action*
1	June 2002	Draft Site Investigation Report, Hanna Furnace – Parcel 2, Buffalo, New York	I

*Action letter code: R-reviewed N-reviewed and noted I-for your information
S-resubmit J-rejected Y-for your approval

Remarks: Enclosed is a draft copy of the above referenced report for your information.

cc:

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

David J. Carnevale
Senior Project Hydrogeologist

I:\DIV83\PROJECTS\10569\25466\2_corres\heffrondraftSIR-trans.doc

O'Brien & Gere Engineers, Inc., an O'Brien & Gere company
5000 Brittonfield Parkway / P.O. Box 4873, Syracuse, New York 13221-4873
(315) 437-6100 / FAX (315) 463-7554 • http:// www.obg.com
. . . and offices in major U.S. cities

Contents

List of Tables

List of Figures

List of Appendices

1. Introduction

1.1. Overview and objectives

The Hanna Furnace Site is a vacant industrial property currently owned by the City of Buffalo. The site surrounds the eastern portion of the Union Ship Canal, and encompasses approximately 113 acres, including the Former Manufacturing Area. The location of the site is shown on Figure 1. The Hanna Furnace Site has been characterized during several previous investigations. Based on the findings of those investigations together with the size of the parcel, its historic use, and the City's current developmental needs and plans, the Hanna Furnace Site has been subdivided into four parcels for future developmental considerations. The Former Railroad Yard has been designated Parcel 1. Parcel 2 is comprised of the Former Manufacturing Area and is the focus of this report. Parcel 3 consists of an area surrounding the Union Ship Canal 200-feet wide on each side. Parcel 4 includes the Former Filter Cake/Flue Ash Disposal Area located to the north of the Union Ship Canal. The parcels are shown on Figure 2. The parcels are considered separately in regards to future environmental investigatory and remedial activities, as well as during redevelopment activities at the site. This investigation report has been created specifically for the Former Manufacturing Area (Parcel 2).

An application for the voluntary cleanup of the Former Manufacturing Area (Subparcel 2) will be submitted to the New York State Department of Environmental Conservation (NYSDEC). The voluntary cleanup will allow for the future redevelopment of the Former Manufacturing Area for commercial and industrial purposes. The current proposed transitional development plan for the site includes lower profile, flex-type product in closest proximity to the canal and high-bay distributors/light manufacturing buildings on the outer perimeter of the site. The estimated average land coverage is 25 percent.

1.2. Facility description and history

1.2.1. Facility description

Parcel 2 of the Union Ship Canal consists of an 32-acre portion of the Hanna Furnace site located at the southern edge of the City of Buffalo in Erie County (Figure 1). This portion of the property was once the main processing area. Structures formerly located on this parcel included several production buildings, three blast furnaces, and various support structures. The Hanna Furnace site is bordered to the west by New York State Route 5, to the south by the Lackawanna Commerce Park, to the east by railroad tracks, and to the north by wetland areas, and the former Shenango Steel property.

1.2.2. Facility history

Pig iron manufacturing commenced during the period of 1900 to 1915 with the construction of the blast furnaces. Following the construction of the blast furnaces, the Hanna Furnace Company acquired the property from Buffalo Union Steel. Buffalo steel subsequently purchased the property in 1929. Iron ore, lime, coke and other raw materials were received via the Union Ship Canal and were stockpiled along the southern edge of the canal for use in the manufacturing process.

1.3. Previous investigations

Several environmental investigations have been performed at the Hanna Furnace Site over the last 20 years by various agencies, none of which concluded that remedial action was necessary. However, the areas investigated at the Hanna Furnace Site have varied between investigations; therefore, it is important to keep in mind the area of investigation when evaluating and comparing data results and recommendations. The previous sampling locations on Parcel 2 for which analytical data is available are shown on Figure 2. The following is a chronological summary of the significant site investigations performed at the Hanna Furnace Site and the results or recommendations of each:

- In 1979 Rupley, Bahler, and Blake, Consulting Engineers prepared a Solid Waste Management Facility Report for the Hanna Furnace Corporation. This report includes an evaluation of surface water quality in the Union Ship Canal and an on-site pond. The water samples contained phenols and soluble iron at concentrations above

NYSDEC Class GA (drinking water) groundwater standards. It should be noted that groundwater is not used as a drinking water supply in the area of the site.

- In April 1982, after the cessation of pig iron manufacturing at the site, the Erie County Department of Environmental Protection inspected the site and prepared a report entitled "Inactive Site Profile Report". The report recommended that the NYSDEC downgrade the classification of the site to a "class F" which pertains to a site where no further action is warranted and little to no environmental hazard potential exists.

- In 1983, the NYSDEC, after inspection of the site, prepared an "Inactive Hazardous Waste Disposal Site Report". The on-site inactive landfill was assigned a site number (# 915029).

- Also in 1983, the United States Geological Survey (USGS) drilled and sampled seven test borings on the north side of the Union Ship canal. Samples from these borings were analyzed for a short list of heavy metals. In their report entitled "Draft Report of Preliminary Evaluation of Chemical Migration to the Niagara River from Hazardous Waste Disposal Sites in Erie and Niagara Counties," the USGS concluded that there was potential for lateral migration of contaminants at and away from the site. No samples were collected in the Former Production Area during this investigation.

- In 1985, a site inspection and Phase I investigation was performed for the NYSDEC by Engineering-Science and Dames & Moore. The Phase I investigation was limited to areas north of the Union Ship Canal and included a records search and scoring the site using the Hazard Ranking Scoring (HRS) system. The study area was assigned a score of 8.73 out of 100 in the Phase I report. Sites with scores greater than 28.5 are generally considered to pose an immediate threat to human health and the environment and are recommended for placement on the National Priorities List. Additional data needs were identified by the Phase I investigation and a Phase II investigation was recommended and outlined.

- In 1988, Recra Environmental, Inc. (Recra) performed a "Site Characterization and Environmental Assessment" for the New York State Department of Transportation. The characterization and assessment included the entire 113-acre site. The work involved the collection of samples of surface and subsurface soil/fill, surface water, sediment and groundwater, performance of a risk assessment, and an evaluation of remedial alternatives. The investigation included the collection and analysis of eight surface soil samples, six subsurface soil samples, and two groundwater samples in the Former Production Area. The soil and groundwater samples were analyzed for arsenic, chromium, copper, lead, cyanide, oil and grease, ammonia, and PCBs. Analytical results indicated elevated levels of metals and low (less than 1 part per million) concentrations of PCBs

in the soil samples. Groundwater samples from the monitoring wells contained arsenic, chromium, lead, and cyanide at concentrations above the class GA standards. The pH of the groundwater was also above the range of the class GA standard. The HRS score of the Hanna Furnace site was recalculated using the data collected from the site characterization. The revised HRS, as scored by Recra, remained low at 12.28 out of 100, and Recra concluded that the site does not pose an immediate threat to human health and the environment.

- In 1990, The NYSDEC collected two surface soil samples (one composite and one discrete) from the Former Production Area for analysis of PCBs. The composite sample was collected from three locations in the vicinity of the oil shack building where it was identified that transformer salvaging apparently had been conducted. The discrete sample was collected from oil-stained soil in the vicinity of a suspected transformer pen in the southwest corner of the site, near the former office building. PCBs were not detected in either sample.

- In 1994, the NYSDEC collected 36 surface soil samples from the Hanna Furnace Site, of which 13 were collected in the Former Production Area. The thirteen samples were analyzed for PCBs using immunoassay techniques, and were analyzed for metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and selenium) using standard laboratory methodologies. PCBs were not detected in the samples, and all the metals except for silver were detected at concentrations exceeding the current NYSDEC soil cleanup guidelines in at least one sample.

- In 1995, ABB Environmental Services performed a Preliminary Site Assessment (PSA) for the NYSDEC at the site. The PSA included not only the 113-acre Hanna Furnace site but also the adjacent Shenango Steel Site. The purpose of the PSA was to more thoroughly characterize the site, recalculate the site score using the HRS system, and reclassify the site. Of the sampling conducted during the PSA, five surface soils, two subsurface soils, and two ground water samples were collected from the Former Production Area. The soil and groundwater samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), SVOCs, pesticides/PCBs, and Target Analyte List (TAL) metals plus cyanide. The surface soil samples were also analyzed for EPTox metals.

  Analytical results for the surface soil samples indicated that SVOCs, primarily polycyclic aromatic hydrocarbons (PAHs), and a number of metals were detected at concentrations exceeding the TAGM 4046 soil cleanup guidelines. Metals were detected in the EPTox analysis at low concentrations. The analytical results for the two subsurface samples indicated that no VOCs, SVOCs, pesticides, or PCBs were detected, and a number of metals were detected at concentrations exceeding the soil cleanup guidelines

Analysis of the groundwater samples indicated that only iron; magnesium, manganese, and sodium were detected at concentrations exceeding the NYSDEC Glass GA Groundwater Quality Standards. VOCs, SVOCs, and pesticides/PCBs were not detected in the groundwater samples.

No disposal of listed or characteristic hazardous waste was documented at the site. Therefore, the NYSDEC removed the Hanna Furnace Site from its Registry of Inactive Hazardous Waste Disposal Sites.

- In 1997, Ecology and Environment, Inc. (E&E) performed an Environmental Site Assessment for the Buffalo Urban Renewal Agency. The objective of the assessment was to summarize all available and pertinent environmental information, to identify variations in current site conditions relative to those defined in earlier investigations, and to identify potential areas of concern. The assessment involved a review of records as well as the performance of three site inspections. The assessment report presented the findings in order of environmental concern by area. The only environmental concern associated with the railroad yard area was solid waste disposal. Several waste piles of railroad ties, tires, C&D debris, household trash, firebrick and black material were noted in the report. Only those debris piles with black material were considered to have potential contamination by E&E.

- On February 13, 2001, Malcolm Pirnie, Inc. reported that a petroleum product was observed in split spoon samples collected from a boring completed near the large, 2-story brick building at the Parcel No. 2 site. The observations were made during the implementation of a geotechnical sampling program being conduced by Barron & Associates, P.C. for the Ciminelli Development Company. Observations in the boring indicated that the sheen was visible in the split spoon collected from the interval of 4 to 6 feet bgl. The three subsequent split spoons (6 to 8 feet, 8 to 10 feet, and 10 to 12 feet bgl.) also contained petroleum product. The product was described as a light brown to brown viscous fluid with a petroleum odor. The advancement of the boring was halted at 18 feet bgl so that the underlying lacustrine clay would not be penetrated.

2. Site investigation

Environmental Resources Management (ERM) completed a two-phase site investigation at the Union Ship Canal site on behalf of the New York State Department of Environmental Conservation (NYSDEC) as part of the Rebuild Now – NY (Rebuild) program. The Rebuild program is designed to identify sites that are well suited for economic development but are unattractive due to environmental liability concerns. The program is managed by the NYSDEC and Empire State Development. The investigation was completed in accordance with the Work Plan prepared by ERM, O'Brien and Gere Engineers, Inc., and the NYSDEC

The investigation was completed in two phases. The initial phase of the investigation was completed by ERM during July and August 2001. This phase of the program included the following activities:

- Thirty three soil borings were completed to a depth of approximately 15 feet below ground level (bgl) or to the top of native material (i.e. peat, clay, till, bedrock) using 2.25 inch hollow stem augers (HSA). The boring locations are shown on Figure 3. Two samples were collected at each soil boring location, one surface sample (below vegetative cover to six inches bgl) and one subsurface sample coinciding with a depth which exhibited the highest photoionization detector (PID) reading, presence of staining, or strong chemical odor. These samples were collected in accordance with the Sampling, Analysis, and Monitoring Plan (SAMP) (ERM, July 2001; revised August 2001) and submitted to Ecology and Environment (E&E) for analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and total analyte list (TAL) metals.

- Three monitoring wells (MW-004, MW-005, and MW-006) were installed using 4-1/4-inch HSA with continuous split spoon sampling to characterize the fill material into which they were installed. A fourth well (MW-007) was installed at the direction of NYSDEC to further delineate the presence of non-aqueous phase liquid (NAPL) present on the groundwater table in the vicinity of the two story brick building. All wells were fitted with protective casings and equipped with uniform locks.

- The two existing monitoring wells (MW-106 and MW-107) and four new wells (MW-004, MW-005, MW-006, and MW-007) were developed before groundwater sampling was performed. The new wells were developed after 24 hours to allow the wells to equilibrate

after final completion. MW-106 was found to be damaged and was subsequently repaired during the site investigation.

- Groundwater samples from each of the seven monitoring wells were collected using low flow sampling technologies and submitted for analysis of VOCs, SVOCs, PCBs, and TAL metals.

- Test pits were excavated at 14 locations in the area shown in Figure 3. This was done to determine the nature and extent of the NAPL discovered in earlier investigations. The test pits were inspected to identify the subsurface soil type, the composition of the subsurface material, visible evidence of staining and moisture conditions. This data was recorded on field logs and documented with photographs. Soil and groundwater samples were collected from two test pits (TP-US-13 and TP-US-14) and submitted for analysis of SVOCs, PCBs, and TAL metals. The soil samples were collected using stainless steel spoons and bowls. The ground water samples were collected from the standing water at the base of each test pit excavation using a stainless steel bucket.

- A site survey was conducted to document the location of the sampling points including soil borings, monitoring wells, and test pits. The sampling locations are depicted on Figure 3.

A supplemental investigation was completed by ERM during March 2002. This phase of the program was completed to fill in data gaps identified as a result of the Phase I findings and included the following activities:

- Completion of 37 soil borings (SB-34 through SB-71) using direct-push (Geoprobe®) methods.
- Collection of 8 subsurface soil samples for SVOC analysis and 4 subsurface soil samples for TAL metal analysis.

2.1. Surface soil sampling

The surface soil samples were collected from just below the vegetative cover to six inches below grade using the HSA techniques. One surface soil sample was collected from each of the 33 boring locations. The boring locations are shown on Figure 3. The samples were submitted to E&E for analysis in accordance with the SAMP. Drilling and sampling equipment was decontaminated prior to use at each location in accordance with the procedures specified in the SAMP. Upon retrieval, a portion of each split-spoon sample was immediately placed in a pre-cleaned sampling jar and sealed for subsequent screening with a photoionization detector (PID) while the remainder of the sample was placed in a pre-cleaned sampling jar supplied by the laboratory for analysis of VOCs. The surface material was logged using the Unified

Soil Classification System by the ERM geologist. The log included a description of the color, texture, moisture content, odor, absence/presence of staining, and PID headspace data. The boring logs are contained in Appendix A. Appropriate Quality Assurance/Quality Control (QA/QC) samples were collected in accordance with the SAMP.

2.2. Subsurface soil sampling

Soil borings were used to collect subsurface samples for evaluation of geologic materials and collection of samples for analysis. Borings SB-01 through SB-33 were completed during the initial investigation using hollow stem auger drilling and split-barrel sampling methods. The locations of the borings, which are the coincident with the surface soil samples, are shown on Figure 3. Subsurface soil samples were collected continuously starting at approximately two feet below grade to the top of the native material. The sample collected for analysis was selected based on the presence of staining, PID measurements, or heavy chemical odor. Absent any of the indicators listed above, samples were collected from the interval of 4 to 6 feet bgl which corresponds to the depth that utilities and other subsurface piping would likely have been installed.

Borings SB-34 through SB-71 were completed during the supplemental investigation. These borings were completed using direct-push (Geoprobe®) methods. Samples were collected continuously to the identified termination depth of the boring. Samples were collected for analysis from select borings based on the information required.

Boring logs are contained in Appendix A.

2.3. Test pits

In addition to the soil sampling discussed above, test pits were completed at 14 selected locations across the site. The test pit locations are shown on Figure 3. The test pits were excavated to a depth of 4 to 6 feet bgl (approximate depth where groundwater is first encountered) and were approximately 15 feet in length. The test pit locations were selected in the field by the NYSDEC and ERM. Each test pit was inspected and the subsurface soil type, composition, any visible evidence of staining, and moisture conditions were documented in the field logs and with if present photographs. Test pit logs are presented in Appendix B.

Groundwater in test pits was monitored for the presence of NAPL and the headspace was screened with a PID if a groundwater sample was collected. ERM submitted two groundwater samples from these test pits (TP-US-13 and TP-US-14) based on the aforementioned criteria for full TAL/TCL analysis. ERM also submitted two soil samples for full

TAL/TCL analysis to the analytical laboratory based on results of the field screening process (PID measurement, evidence of staining, and presence of NAPL).

2.4. Ground water monitoring wells

2.4.1. Well installation

Four overburden well borings (MW-004, MW-005, MW-006, and MW-007) were advanced using 4-1/4-inch hollow stem augers (HSA). The locations of the monitoring wells are shown on Figure 3. Soil samples were collected continuously using split spoons and the logged by an ERM geologist. The wells were constructed with screens that intersected the water table to allow for detection of any NAPL present on the water table. The maximum depth of the wells is between 13 to 18 feet bgl.

Overburden monitoring wells were constructed in the boreholes once the augers had reached the target depth. Based on the observed depth to the water table interface, ten to fifteen feet of well screen were installed. The wells were constructed of two-inch diameter PVC with 0.010-inch slot screen and riser. Following the screen and riser installation, a sandpack consisting of #1 Morie sand was installed to a level three feet above the top of the screen. The remainder of the annulus to the surface consisted of a bentonite seal (and grout if applicable). Monitoring well construction diagrams are presented in Appendix C.

Once installed, the top of the well risers was marked for subsequent surveying and water level measurements. The wells were then completed with a steel protective casing. The protective casings were installed to approximately three feet above grade and were equipped with locking caps. Adequate space was left above the top of the well riser and below the steel protective cover to allow for fitting of an expandable cap. All site wells (including previously existing) were fitted with keyed-alike locks to maintain well integrity.

2.4.2. Well development, and sampling

The monitoring wells (four new and two existing) were developed by surging and evacuation (pumping) prior to any water level measurement or sampling activities. Temperature, pH, specific conductivity and turbidity were measured at a minimum frequency of once per well volume of water evacuated during well development. Development continued until these parameters had stabilized and the turbidity level was consistently below 50 Nephelometric Turbidity Units (NTU). If the 50 NTU target was not reached development was continued until no change in the turbidity measurement was observed. Well development records are presented in Appendix D.

Groundwater samples were collected during the initial investigation from the seven monitoring wells at the Site and submitted for analysis. This sampling event was performed after allowing at least one week for equilibration following well development. Groundwater was monitored in the field for the presence of NAPL, pH, temperature, conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential. During the supplemental investigation, an additional set of ground water measurements was collected. In addition, the pH in each of the wells was measured using litmus paper. A summary of the water level elevation measurements collected is presented in Table 1, and groundwater contour maps showing direction of ground water flow are presented on Figures 4 and 5. The field data has been recorded on field logs and submitted to the NYSDEC. Monitoring well sampling logs are presented in Appendix E.

2.5. Site survey

At the completion of the both phases of investigation fieldwork, a site survey was completed to locate sampling points including soil borings, test pits, and monitoring wells with respect to a known datum. The elevations of monitoring well casings were established to within an accuracy of plus or minus 0.01 feet based on the NAD 83 datum. A notch was etched in all interior casings to provide a reference point for all future groundwater elevation measurements.

3. Site investigation results

Data generated as part of the investigative efforts described in Section 2 are summarized in the following subsections. An evaluation of the data is also presented in this section, as well as a description of the site hydrogeologic conditions.

Site-specific action levels (SSALs) for soil have been approved by the NYSDEC and NYSDOH for Parcel 2. The SSALs were established using data generated during the Parcel 1 investigation, including the risk assessment prepared by Malcolm Pirnie (Malcolm Pirnie, May 2000) and in consideration of the intended future use of the property. The purpose of the SSALs is to provide future developers of the site with concentrations of specific constituents that are acceptable to be left on site following grading and excavation activities. Table 2 summarizes the SSALs for soil for Parcel 2 and a comparison of the proposed levels to other applicable screening levels or standards. For the purpose of discussing the findings of the investigations, the analytical results for the soil samples are compared to the SSALs. Ground water analytical data was compared to New York State Class GA ground water standards.

3.1. Geologic and hydrogeologic conditions

The site is located within the Erie-Ontario Lowlands physiographic province of New York State. Historically, the overburden had been mapped as lacustrine silts and clays. Fill has been encountered at the ground surface to approximately 13 feet below ground level (bgl). The fill consists of industrial waste (fly ash, cinders, etc.) and fine to coarse sands. Beneath the fill, layers of peat and organic rich silts are present. The combined average thickness of this peat and silt are estimated to vary from a few inches to as much as 8 feet. Moderately plastic silty clays of lacustrine origin underlie the peat and organic silts. The thickness of these clays varies from 2 to 26 feet. Glacial till is present beneath the clays. Till in this area is estimated to vary in thickness across the site. Previous investigators encountered weathered shale bedrock below the glacial till at depths ranging from 22 to 46 feet bgl.

The data from previous field investigations indicates that ground water in the fill overburden is perched over the underlying peat and organic silty clay deposits. During this investigation, the ground water table was encountered at depths of approximately 1 foot to 8 feet bgl. Based on the ground water elevations collected during this investigation, ground

water flows in a northwesterly direction towards the Union Ship Canal. Ground water flow maps for the three dates that water level measurements were collected are shown on Figures 4, 5, and 6, respectively.

3.2. Soil

Data generated during the soil investigative efforts described in Section 2 are summarized below. Graphical presentations of the constituents identified in surface and subsurface soil above SSALs are provided on Figures 7 and 8.

3.2.1. Surface soil

A total of 35 surface soil samples were collected during the investigation. Surface soil samples were collected during advancement of the 33 soil borings from below the overlying vegetative cover to depths of approximately 6-inches below grade. The surface soil samples were collected concurrent with the soil borings and their locations correspond to the soil boring locations as shown on Figure 3. In addition, two surface soil samples were collected from test pit locations TP-US-13 and TP-US-14. The surface soil analytical data for VOCs, SVOCs, PCBs, and metals are presented on Tables 3 through 6, respectively.

VOCs

The VOC analytical data for the surface soil samples are presented on Table 3. A total of three surface soil samples (SB-09 (0.0 to 0.5 ft), SB-13 (0.0 to 0.5 ft), and SB-18 (0.0 to 0.5 ft)) were analyzed for VOCs. As indicated on Table 3, a total of seven VOCs were detected in the surface soil samples. The concentrations of the detected VOCs were below the SSALs of 1 mg/Kg.

SVOCs

The SVOC analytical data for the surface soil samples are presented on Table 4. The 33 surface soil samples from the borings and two surface soil samples from the test pits were analyzed for SVOCs. As indicated on Table 4, a total of 24 SVOCs were detected in the surface soil samples. The majority of the SVOCs detected are classified as polycyclic aromatic hydrocarbons (PAHs). Screening levels have not been proposed for each individual SVOC; however, the SSAL for total SVOCs is 500 mg/Kg. Of the 35 surface soil samples collected, one sample (SB-01) had a total SVOC concentration that exceed the proposed screening level. Additional surface soil samples were to be collected during the supplemental investigation to asses whether the PAHs were localized or widespread. However, during demolition of the nearby structures, the surface of the area in which SB-01 was located was disturbed and covered with demolition debris. Therefore, only a subsurface soil sample was collected in this area. The total SVOC

concentration in this sample was less than 0.5 mg/kg. The presence of elevated PAHs in the surface soil sample from SB-01 is, therefore, considered to be localized and not of significance.

PCBs

The PCB analytical data for the surface soil samples are presented on Table 5. Four surface soil samples from the soil borings and two surface soil samples from the test pits were analyzed for PCBs. As indicated on Table 5, a total of three PCB aroclors were detected in the surface soil samples. Aroclor 1242 was detected in sample SB-13 (0.0 to 0.5 ft) at a concentration of 0.0995 mg/Kg. Concentrations of Aroclor 1254 ranged from 0.0597 mg/Kg in SB-13 (0.0 to 0.5 ft) to 0.153 mg/Kg in SB-18 (0.0 to 0.5 ft). Concentrations of Aroclor 1260 ranged from 0.0939 mg/Kg in SB-09 (0.0 to 0.5 ft) to 0.29 mg/Kg in SB-18 (0.0 to 0.5 ft). Aroclor 1260 was detected in the test pit surface soil samples TP-US-13 and TP-US-14 at concentrations of 0.0173 mg/Kg and 0.0321 mg/Kg, respectively. These concentrations are well below the SSAL for PCBs in surface soil of 1 mg/Kg.

Inorganics

The inorganic analytical data for the surface soil samples are presented on Table 6. The distribution of metals in surface soil is shown on Figure 6. A total of 33 surface soil samples from the soil borings and two surface soil samples from the test pits were analyzed for TAL metals and cyanide. As indicated on Table 6, eight of the 33 samples collected from the soil boring locations contained TAL metals above their respective SSAL. The inorganics that were detected in the surface soil samples at concentrations that exceeded SSALs included chromium (1 sample), lead (2 samples), and mercury (6 samples).

3.2.2. Subsurface soil

Subsurface soil samples were collected during advancement of the borings at varying depths between 0.5 ft and 8 ft below grade. The locations of the soil borings are shown on Figure 3. The subsurface soil analytical data for VOCs, SVOCs, PCBs, and metals are presented on Tables 7 through 10, respectively.

VOCs

The VOC analytical data for the subsurface soil samples are presented on Table 7. A total of five subsurface soil samples (SB-09 (6.0 to 8.0 ft), SB-13 (0.5 to 2.0 ft), SB-14 (6.0 to 8.0 ft), SB-16 (2.0 to 4.0 ft), and SB-18 (2.0 to 4.0 ft)) were analyzed for VOCs. As indicated on Table 7, a total of twelve VOCs were detected in the subsurface soil samples. The concentrations of the detected VOCs were below the SSALs of 1 mg/Kg.

SVOCs

The SVOC analytical data for the subsurface soil samples are presented on Table 8. A total of 16 subsurface soil samples from the borings were analyzed for SVOCs. As indicated on Table 8, a total of 22 SVOCs were detected in the subsurface soil samples. The majority of the SVOCs

detected are classified as polycyclic aromatic hydrocarbons (PAHs). Screening levels have not been proposed for each individual SVOC; however, the SSAL for total SVOCs is 500 mg/Kg. Total SVOC concentrations detected in the subsurface soil samples do not exceed the SSAL.

PCBs

The PCB analytical data for the subsurface soil samples are presented on Table 9. Five subsurface soil samples from the soil borings were analyzed for PCBs. As indicated on Table 9, one PCB congener (Aroclor 1260) was detected in subsurface soil samples collected from SB-14 (6.0 to 8.0 ft) and SB-16 (2.0 to 4.0 ft). The PCB concentrations detected in the two subsurface soil samples are well below the SSAL of 10 mg/Kg.

Inorganics

The inorganic analytical data for the subsurface soil samples are presented on Table 10. The distribution of metals in the subsurface soil is shown on Figure 7. A total of 37 subsurface soil samples collected from the soil borings were analyzed for TAL metals and cyanide. As indicated on Table 10, four of the 37 samples collected from the soil boring locations contained inorganic constituents above their respective SSALs. The inorganic constituents that were detected in the subsurface soil samples at concentrations that exceeded their respective SSALs included barium at SB-03 and SB-06, lead at SB-12, and lead and mercury at SB-70. SB-03 and SB-06 are located approximately 250 ft apart and at the southwest edge of Parcel 2. The barium concentrations observed in SB-03 and SB-06 were 658 and 722 mg./Kg, respectively. These values are only slightly higher than the SSAL of 500 mg/Kg. Lead was identified at concentrations of approximately 1,800 mg/Kg at both SB-12 and SB-70. These borings are located approximately 50 ft apart. Samples collected from SB-68, SB-69 and SB-71, which are in the immediate vicinity of SB-12 and SB-70, contained lead at concentrations on the order of 50 mg/Kg. This suggests that the extent of the material containing elevated lead concentration is limited.

3.3. Ground water

Ground water samples were collected from the four newly installed monitoring wells (MW-004, MW-005, MW-006, and MW-007), three existing monitoring wells (MW-003, MW-106, and MW-107), and test pits TP-US-13 and TP-US-14. The locations of the monitoring wells and test pits are shown on Figure 3. The ground water sample analytical data for VOCs, SVOCs, PCBs, and metals are presented on Tables 11 through 14, respectively.

Although ground water samples were collected from TP-US-13 and TP-US-14 for screening purposes, the results are not considered to be

representative of ground water quality due to the inherent turbidity associated with these types of grab samples.

VOCs

The VOC analytical data for the ground water samples are presented on Table 11. Ground water samples from each of the seven monitoring wells were analyzed for VOCs. As indicated on Table 11, VOCs were not detected in the ground water samples.

SVOCs

The SVOC analytical data for the ground water samples are presented on Table 12. Ground water samples from each of the seven monitoring wells and two test pits (TP-US-13 and TP-US-14) were analyzed for SVOCs. As indicated on Table 12, two SVOCs (bis(2-ethylhexyl)phthalate (BEHP) and naphthalene) were detected in the ground water sample collected from MW-004, and two SVOCs (1,1'-biphenyl and 2-methylnaphthalene) were detected in the ground water sample collected from MW-007. The detected concentrations of 1,1'-biphenyl and BEHP are below the New York State Class GA ground water standards. The detected concentration of naphthalene is below the Class GA guidance value. A ground water standard for 2-methylnaphthalene has not been established. SVOCs were not detected in the remaining five monitoring wells. A total of nine SVOCs were detected in the ground water sample collected from test pit TP-US-13. The SVOCs detected in TP-US-13 are classified as PAHs. Ground water standards have not been established for the detected compounds. SVOCs were not detected in the ground water sample collected from test pit TP-US-14.

PCBs

The PCB analytical data for the ground water samples are presented on Table 13. Ground water samples from each of the seven monitoring wells and test pits TP-US-13 and TP-US-14 were analyzed for PCBs. As indicated on Table 13, PCBs were not detected in the ground water samples.

Inorganics

Ground water samples from each of the seven monitoring wells and test pits TP-US-13 and TP-US-14 were analyzed for TAL metals and cyanide. The inorganic analytical data for the ground water samples are presented on Table 14.

As indicated on Table 14, each of the ground water samples collected from the monitoring wells and test pits contained inorganics above Class GA ground water standards. Iron and sodium concentrations were above the Class GA standards in most of the wells. In addition the following metals were detected at concentrations exceeding Class GA ground water standards in at least one of the monitoring wells: arsenic (1 sample), cyanide (2 samples), lead (2 samples), and manganese (1 sample). Most of these exceedances were within twice the standard value with the exception of manganese in MW-003 and cyanide in MW-004. Although

the latter two concentrations are elevated, they are localized to these two wells, likely due to constituents in the fill material in the area. Furthermore, they are not know to be related to the production of pig iron so widespread deposition is not expected.

The concentrations of inorganics exceeding Class GA ground water standards in the ground water samples collected from the test pits included arsenic (1 sample), cadmium (1 sample), chromium (1 sample), copper (2 samples), iron (2 samples), lead (2 samples), manganese (2 samples), mercury (2 samples), selenium (1 sample), and sodium (2 samples). The ground water samples collected from the test pits were likely more turbid than the samples collected from the monitoring wells, which likely accounts for there being more metal constituents detected in the test pit ground water samples. By definition, ground water samples that have high turbidity contain suspended sediment, which in turn contain metal constituents. As required by the analytical procedures, ground water samples are preserved with nitric acid. In ground water samples with sediment, the preservation causes metal constituents from the sediment to solubilize into the water. Ground water samples for metals analyses that have high turbidity are not considered representative of those metal constituents that migrate with the ground water system.

pH

During the purging and sampling of the monitoring wells in August 2001, pH measurements were recorded. The data indicate pH was elevated in the ground water at monitoring wells MW-004 (pH of 11.08), MW-006 (pH of 11.79), and MW-106 (pH of 10.99) in the western portion of Parcel 2, as well as monitoring wells MW-104 (pH of 11.3) and MW-105 (pH of 9.5) in the western portion of Parcel 1 as shown on Figure 9. During the supplemental investigation, additional pH measurements were collected using litmus paper. The results of this evaluation indicated that the pH of the ground water ranged from 6 to 8.5. These data suggest that the pH may vary, possibly as a result of recharge to the shallow ground water system.

The source of the elevated pH is suspected to be the pig iron building located on Parcel 1. Lime was used in this building as a mold-release compound. The molds were dipped in lime prior to filling with the liquid iron. The filled molds were then brought up the tower where they were quenched with water to cool them prior to dumping them out for final cooling and staging. This process resulted in the generation of high-pH water, which could have impacted the pH of the ground water.

3.4. Extent of contamination

This section describes the extent of contamination in surface soil, subsurface soil, and ground water within Parcel 2.

3.4.1. Non-aqueous phase liquid (NAPL)

During the implementation of the geotechnical sampling program conducted by Barron & Associates, P.C. for the Ciminelli Development Company petroleum product (NAPL) was observed in split spoon samples collected from boring SB-205A completed near the large, two-story brick building at the Parcel No. 2 site. Reported observations indicated that the sheen was visible in the split spoon collected from the interval of 4 to 6 feet bgl. The three subsequent split spoons (6 to 8 feet, 8 to 10 feet, and 10 to 12 feet bgl.) also contained petroleum product. The product was described as a light brown to brown viscous fluid with a petroleum odor. The advancement of the boring was terminated at 18 feet bgl so that the underlying lacustrine clay would not be penetrated.

Borings, wells, and test pits were completed during the field program to assess the nature and extent of the NAPL. The analytical results did not reveal the presence of elevated concentrations of petroleum-related constituents. However, staining, odors and sheens on the water were noted in this area as well as several locations north and east of the former Oil Shack area. These areas are identified on Figure 9. Of note, no measurable free product was noted in the monitoring wells or within the open test pits. The NAPL area north of the 2-story brick building appears to be contiguous extending from beneath the eastern end of the foundation northward. The thickness of impacted soil is thickest, extending to as much as 8 ft below grade, in the area beneath the building. The areal extent of these soils is approximately 2,225 sq ft. At the outermost edges the staining appears to be limited to the 2-ft interval surrounding the water table. The areal extent of the NAPL-impacted soils in this outer area is on the order of 3,025 sq ft. Using these dimensions, the total estimated volume of petroleum-impacted soil is 23,850 cu ft (883 cu yds).

Two separate areas with petroleum impacted soil were identified in the vicinity of the former oil shack. Area A is the largest and extends northwest from under the eastern edge of the building. The depth of the impacted soil column is greatest, 8 ft, at SB-53, which is located on the southeastern corner of the building. In SB-59 impacted soils were observed in the 1 to 4 ft depth interval. At TP-13, a sheen was noted on the water table located at approximately 5 ft below grade. The extent of this area is approximately 1,700 sq ft. Using an average thickness of 4 ft, the volume of impacted soil is estimated to be on the order of 6,800 sq ft (250 cu yds).

Oil Shack - Area B is located to the east of the Oil Shack foundation footprint. This area was identified by one boring, SB-60. The depth of impacted soil extends from the surface to approximately 5.5 ft below grade. This distribution and isolated occurrence suggests that the impacted soils in Area B are the result of a surface spill. An estimated volume of 6,911 cu ft (255 cu yds) of impacted soil was calculated using a radius of approximately 20-ft around the boring and a thickness of 5.5 ft.

3.4.2. VOCs

VOCs were detected in surface soil and subsurface soil but at concentrations that are one to two orders of magnitude below the SSALs. VOCs were not detected in the ground water samples. Based on the historic and current data, the extent of VOC impacts to soil and ground water are negligible.

3.4.3. SVOCs

SVOCs were detected in each of the surface soil and subsurface soil samples. The detected SVOCs are classified as PAHs, which are associated with incomplete combustion of coal, oil, gas, and other organic substances. Given the historic use of the property and the presence of miscellaneous fill containing cinders and ash, the presence of PAHs is not unexpected. Although SVOCs were encountered site-wide, in general the concentrations are low. The SSAL for total SVOCs is 500 mg/Kg. Total SVOC concentrations detected in the surface soil samples ranged between 0.094 mg/Kg at SB-30 to 65.19 mg/Kg at SB-07. Total SVOC concentrations detected in the subsurface soil samples ranged between 0.209 mg/Kg at SB-34 (2.0 to 2.5 ft) to 64.44 mg/Kg at SB-18 (2.0 to 4.0 ft). These analytical data, when compared to the SSAL, indicate that SVOC impacts to soil are negligible.

The concentration of total SVOCs (2,794 mg/Kg) detected in the surface soil sample from SB-01 exceeded the SSAL. Although additional surface soil samples could not be collected, the total SVOC concentration of a subsurface sample collected from this area was less than 0.5 mg/Kg. This suggests that the occurrence of elevated SVOCs in the SB-01 surface soil sample was isolated. Furthermore, SB-01 is located away from the main operations and in the vicinity of the former office building therefore the presence of SVOCs would not be expected to be extensive.

SVOCs were detected in ground water samples collected from two of the seven monitoring wells and one of the two test pits. Concentrations detected in the ground water are low and do not exceed Class GA ground water standards, indicating that SVOC impacts to ground water are negligible.

3.4.4. PCBs

PCBs were detected in each of the six surface soil samples analyzed. Concentrations ranged between 0.0173 mg/Kg of Aroclor 1260 at TP-US-13 to 0.29 mg/Kg of Aroclor 1260 at SB-18. The range in PCB concentrations is two to three orders of magnitude lower than the SSAL of 1 mg/Kg for surface soil.

One PCB congener (Aroclor 1260) was detected in two of the five subsurface soil samples analyzed. The detected concentrations are three orders of magnitude lower than the recommended SSAL of 10 mg/Kg for subsurface soil.

PCBs were not detected in the ground water samples.

Based on the historic and current data, the extent of PCB impacts to soil and ground water are negligible.

3.4.5. Inorganics

Inorganic constituents were detected at concentrations exceeding SSALs in eight of the 35 surface soil samples. The constituents exceeding SSALs in the surface soil and subsurface soil samples (Figures 6 and 7, respectively) are sporadically distributed among sample locations that did not contain concentrations exceeding SSALs. This indicates that the locations of metals that exceed SSALs are not representative of contiguous area associated with specific sources, but rather are sporadically distributed throughout Parcel 2. The sporadic distribution of metals in soil samples is considered to be typical of areas containing a variety of hard fill and used as for industrial purposes. such as the former Hanna Furnace site.

A total of six metal constituents were detected above Class GA ground water standards in the ground water samples collected from the monitoring wells. Monitoring well MW-006 is located upgradient of Parcel 2 based on the ground water flow directions recorded during August and September 2001. The only metal constituent detected above Class GA standards in MW-006 was sodium. Sodium was also detected above its Class GA standard in five of the other six monitoring well samples. This indicates that sodium likely occurs naturally at these concentrations and the concentrations are not indicative of site-related impacts. Iron was also detected above its Class GA standard as frequently as sodium. Manganese, arsenic, cyanide, and lead were detected above their Class GA standards at no more than two locations. Therefore, the occurrence of these constituents within the ground water system is not considered to represent a migrating plume, but rather a localized occurrence due to the variety of fill that has been placed on site.

4. Summary and conclusions

Numerous environmental investigations have been completed at the former Hanna Furnace site. Each investigation served to fill data gaps from previous investigations. To date, the site environmental media (*i.e.* surface soil, subsurface soil, and ground water) have been comprehensively characterized regarding potential impacts associated with past uses of the property.

The conclusion of previous investigations, as well as this investigation, is that while impacts to surface soil, subsurface soil, and ground water have been detected, the magnitude of the impacts are considered to be minimal and consistent with the historic industrial use and type of fill that is present on the site. Of the constituents detected in soil and ground water within Parcel 2 during the prior and current investigation, SVOCs (PAHs in particular), and metals were the most prevalent. VOCs and PCBs were sporadically detected and when encountered, were detected at concentrations well below SSALs and regulatory soil and ground water standards or guidance.

PAHs were found to be present in soil across the site. However, the concentrations are well below the SSALs with the exception of one location, which is considered to be localized. The ground water samples contained fewer PAH compounds at lower concentrations. This is to be expected, as the mobility of PAHs in the environment is relatively low due to relatively low water solubilities and relatively high organic carbon partition coefficients.

In the case of inorganics, constituents were detected at concentrations that exceeded the SSALs at eight surface soil and four subsurface soil locations. Constituents exceeding the SSALs in one or more soil samples included barium, chromium, lead, and mercury. The distribution is generally considered to be sporadic and likely fill-related. In ground water, inorganic constituents were detected sporadically at concentrations exceeding Class GA standards in ground water, suggesting that they may be related to the fill present at the individual locations and not migrating with the ground water.

Petroleum-related NAPL was found to be present within the shallow soils in two general areas: north of the 2-story brick building and north and east of the former Oil Shack. In the vicinity of the Oil Shack, information suggests that there may be two separate areas containing NAPL-impacted soils. The estimated volume of impacted soil is as follows:

North of 2-Story brick	883 cu yds
Oil Shack-Area A	250 cu yds
Oil Shack-Area B	255 cu yds
Total estimated volume	1,388 cu yds

Table 1

Hanna Furnace - Parcel 2
Buffalo, New York

Ground Water Elevations

Well I.D.	Top of Well Riser Elevation (ft m.s.l.)	8/14/01 Elevation	11/12/01 Elevation	3/25/02 Elevation
MW-003	582.83	578.76	578.92	No Data
MW-004	586.12	575.20	575.34	571.72
MW-005	584.99	576.55	575.24	575.35
MW-006	584.13	576.29	576.40	572.93
MW-007	583.38	577.04	577.28	574.09
MW-106	585.11	576.86	576.86	574.00
MW-107	581.52	572.80	572.81	572.27

Table 2

Site-Specific Action levels

Hanna Furnace - Parcel 2
Buffalo, NY

Parameter	Highest Value At Parcel 2 Surface Soil	Highest Value At Parcel 2 Subsurf Soil	TAGM 4046	Eastern Background	Site Specific Action Levels
Total VOCs (ppm)					
Total VOCs	0.278 (3)	0.777 (5)	NA		**10**
Individual VOCs	0.14	0.42	NA		**1**
SVOC (ppm)					
Total SVOCs	**2,772**	63.92	500		**500**
Pesticides/PCBs (ppm)					
Total Pesticides	No Data	No Data			**10**
Total PCBs (surface to 1 ft)	0.443		1		**1**
Total PCBs (greater than 1 ft)		0.031	10		**10**
Metals (ppm)					
Aluminum	33500	66500	SB	33000	
Antimony	51.5	48.2	SB	NA	
Arsenic	29.3	59.8	7.5 or SB		**70**
Barium	381	722	300 or SB		**500**
Beryllium	6.7	12.5	0.016 or SB	0-1.75	
Cadmium	10.8	7.5	(10)		**20**
Calcium	205000	266000	SB	130-35000	
Chromium	416	88.8	(50)		**200**
Cobalt	10.2	9.9	30 or SB	2.5-60	
Copper	4310	1530	25 or SB	1-50	
Iron	163000	189000	1000 or SB	2000-550000	
Lead	1480	1890	(1000)		**1000**
Magnesium	44100	37500	SB	100-5000	
Manganese	6670	4560	SB	50-5000	
Mercury	4.4	0.54	0.1		**1**
Nickel	56.6	21.5	13 or SB	0.5-25	
Potassium	3380	5280	SB	8500-43000	
Selenium	12.4	41.9	2 or SB		**50**
Silver	5.3	2.7	SB		**1170**
Sodium	1300	1400	SB	6000-8000	
Thallium	10.9	12.2	SB	NA	
Vanadium	67.5	98.5	150 or SB	1-300	
Zinc	1460	982	20 or SB	9-50	
Cyanide	1.5	32.3	1600**	NA	**50**

NOTES:
Bold - Site-specific action levles (SSALs)
NC - No Criteria Established
NA - Not available
NO - Naturally occurring compound.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 3
Union Ship Canal Parcel #2
Surface Soil Samples
Volatile Organic Compound Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level	SB-09 0.0 - 0.5 ft 07/31/2001 mg/Kg SOLID	SB-13 0.0 - 0.5 ft 07/30/2001 mg/Kg SOLID	SB-18 0.0 - 0.5 ft 07/30/2001 mg/Kg SOLID
1,1,1-Trichloroethane		1*	0.014 U	0.011 U	0.013 U
1,1,2,2-Tetrachloroethane		1*	0.014 U	0.011 U	0.013 U
1,1,2-Trichloro-1,2,2-trifluoroethane		1*	0.014 U	0.011 U	0.013 U
1,1,2-Trichloroethane		1*	0.014 U	0.011 U	0.013 U
1,1-Dichloroethane		1*	0.014 U	0.011 U	0.013 U
1,1-Dichloroethene		1*	0.014 U	0.011 U	0.013 U
1,2,4-Trichlorobenzene		1*	0.014 U	0.011 U	0.013 U
1,2-Dibromo-3-chloropropane		1*	0.014 U	0.011 U	0.013 U
1,2-Dibromoethane (EDB)		1*	0.014 U	0.011 U	0.013 U
1,2-Dichlorobenzene		1*	0.014 U	0.011 U	0.013 U
1,2-Dichloroethane		1*	0.014 U	0.011 U	0.013 U
1,2-Dichloropropane		1*	0.014 U	0.011 U	0.013 U
1,3-Dichlorobenzene		1*	0.014 U	0.011 U	0.013 U
1,4-Dichlorobenzene		1*	0.014 U	0.011 U	0.013 U
2-Butanone (MEK)		1*	0.04	0.011 U	0.027
2-Hexanone		1*	0.014 U	0.011 U	0.013 U
4-Methyl-2-pentanone (MIBK)		1*	0.014 U	0.011 U	0.013 U
Acetone		1*	0.14	0.04	0.12
Benzene		1*	0.014 U	0.011 U	0.013 U
Bromodichloromethane		1*	0.014 U	0.011 U	0.013 U
Bromoform		1*	0.014 U	0.011 U	0.013 U
Bromomethane		1*	0.014 U	0.011 U	0.013 U
Carbon disulfide		1*	0.016	0.002 J	0.005 J
Carbon tetrachloride		1*	0.014 U	0.011 U	0.013 U
Chlorobenzene		1*	0.014 U	0.011 U	0.013 U
Chloroethane		1*	0.014 U	0.011 U	0.013 U
Chloroform		1*	0.014 U	0.011 U	0.013 U
Chloromethane		1*	0.014 U	0.011 U	0.013 U
Cyclohexane		1*	0.014 U	0.011 U	0.013 U
Dibromochloromethane		1*	0.014 U	0.011 U	0.013 U
Dichlorodifluoromethane		1*	0.014 U	0.011 U	0.013 U
Ethylbenzene		1*	0.009 J	0.011 U	0.013 U
Isopropylbenzene		1*	0.014 U	0.011 U	0.013 U
Methyl acetate		1*	0.014 UJ	0.011 UJ	0.013 UJ
Methyl tert butyl ether		1*	0.014 U	0.011 U	0.013 U

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level.

Date Printed: 06/12/2002 11:54:05

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 3
Union Ship Canal Parcel #2
Surface Soil Samples
Volatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-09	SB-13	SB-18
	Sample Depth		0 0 - 0 5 ft	0 0 - 0 5 ft	0 0 - 0 5 ft
	Sample Date		07/31/2001	07/30/2001	07/30/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID
Methylcyclohexane		1*	0 014 U	0 011 U	0 013 U
Methylene chloride		1*	0 014 U	0 011 U	0 013 U
Styrene		1*	0 014 U	0 011 U	0 013 U
Tetrachloroethene		1*	0 014 U	0 011 U	0 013 U
Toluene		1*	0 024	0 011 U	0 001 J
Trichloroethene		1*	0 014 U	0 011 U	0 013 U
Trichlorofluoromethane		1*	0 014 U	0 011 U	0 013 U
Vinyl chloride		1*	0 014 U	0 011 U	0 013 U
Xylene (total)		1*	0 049	0 011 U	0 013 U
cis-1,2-Dichloroethene		1*	0 014 U	0 011 U	0 013 U
cis-1,3-Dichloropropylene		1*	0 014 U	0 011 U	0 013 U
trans-1,2-Dichloroethene		1*	0 014 U	0 011 U	0 013 U
trans-1,3-Dichloropropene		1*	0 014 U	0 011 U	0 013 U
Total VOCs		10*	0 278	0 042	0 153

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level

Date Printed: 06/12/2002 11:54:05
DBF File: N:\10569\25466\TEMPDATA.DBF
File Number: 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07	SB-08	SB-09
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		07/31/2001	08/10/2001	08/01/2001	08/09/2001	08/09/2001	08/01/2001	08/09/2001	08/02/2001	07/31/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
1,1'-Biphenyl		NC	1.1 J	0.34 U	0.39 U	0.14 J	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2,2'-oxybis(1-Chloropropane)		NC	10 U	0.34 U	0.39 UJ	0.34 U	0.33 U	0.37 UJ	0.38 U	0.33 UJ	1.1 UJ
2,4,5-Trichlorophenol		NC	26 U	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 U	2.7 U
2,4,6-Trichlorophenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2,4-Dichlorophenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2,4-Dimethylphenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2,4-Dinitrophenol		NC	26 UJ	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 U	2.7 U
2,4-Dinitrotoluene		NC	10 UJ	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2,6-Dinitrotoluene		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2-Chloronaphthalene		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2-Chlorophenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2-Methylnaphthalene		NC	5 J	0.087 J	0.13 J	0.97	0.33 U	0.19 J	0.11 J	0.33 U	0.12 J
2-Methylphenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
2-Nitroaniline		NC	10 U	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 U	2.7 U
2-Nitrophenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
3,3-Dichlorobenzidine		NC	10 U	0.34 U	0.39 U	0.34 UJ	0.33 U	0.37 U	0.38 UJ	0.33 U	1.1 U
3-Nitroaniline		NC	26 U	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 U	2.7 U
4,6-Dinitro-2-methylphenol		NC	26 U	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 U	2.7 U
4-Bromophenyl phenyl ether		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
4-Chloro-3-methylphenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
4-Chloroaniline		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
4-Chlorophenyl phenyl ether		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
4-Methylphenol		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
4-Nitroaniline		NC	26 U	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 U	2.7 U
4-Nitrophenol		NC	26 U	0.84 U	0.98 U	0.86 U	0.83 U	0.92 U	0.95 U	0.83 UJ	2.7 U
Acenaphthene		NC	7.5 J	0.062 J	0.39 U	0.21 J	0.33 U	0.37 U	0.18 J	0.33 U	0.2 J
Acenaphthylene		NC	17 J	0.11 J	0.45	0.43	0.33 U	0.59	0.96	0.33 U	1.5
Acetophenone		NC	1.5 J	0.34 U	0.068 J	0.34 U	0.33 U	0.079 J	0.38 U	0.33 U	1.1 U
Anthracene		NC	34 J	0.19 J	0.46	1.4	0.33 U	0.66	0.99	0.33 U	1.4
Atrazine		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Benzo(a)anthracene		NC**	270 J	0.89	0.68	1.2 J	0.33 U	0.64	5.7 J	0.086 J	3.3
Benzaldehyde		NC	10 U	0.34 U	0.39 U	0.34 UJ	0.33 U	0.37 U	0.38 UJ	0.33 U	1.1 U
Benzo(a)pyrene		NC**	240 J	0.91 J	0.6 J	1.4 J	0.034 J	0.56 J	5.6 J	0.077 J	3.2
Benzo(b)fluoranthene		NC**	270 J	1.2 J	0.62 J	2.2 J	0.065 J	0.66 J	5.9 J	0.11 J	3
Benzo(ghi)perylene		NC	75 J	0.27 J	0.47 J	0.7 J	0.33 U	0.35 J	1.7 J	0.045 J	1.8

NOTES:
U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed 06/12/2002 11:55:04
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07	SB-08	SB-09
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		07/31/2001	08/10/2001	08/01/2001	08/09/2001	08/09/2001	08/01/2001	08/09/2001	08/02/2001	07/31/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Benzo(k)fluoranthene		NC**	330 J	1 J	0.57 J	1.2 J	0.049 J	0.56 J	7.6 J	0.13 J	2.9
Bis (2-chloroethoxy) methane		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Bis (2-chloroethyl) ether		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Bis(2-ethylhexyl)phthalate		NC	2.9 J	0.61	0.048 J	0.13 J	0.48	0.26 J	1.1 J	0.25 J	0.3 J
Butyl benzyl phthalate		NC	10 U	0.34 U	0.39 U	0.34 UJ	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Caprolactam		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Carbazole		NC	6.6 J	0.074 J	0.081 J	0.16 J	0.33 U	0.19 J	0.42	0.33 U	0.36 J
Chrysene		NC**	270 J	1	0.78	1.1 J	0.053 J	0.68	6.1 J	0.11 J	3.5
Di-n-butyl phthalate		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Di-n-octyl phthalate		NC	10 U	0.34 UJ	0.39 UJ	0.34 UJ	0.33 U	0.37 UJ	0.38 UJ	0.33 U	1.1 U
Dibenzo(a,h)anthracene		NC**	37 J	0.34 UJ	0.25 J	0.34 UJ	0.33 U	0.18 J	1.1 J	0.33 U	1.6
Dibenzofuran		NC	9.2 J	0.058 J	0.081 J	0.85	0.33 U	0.074 J	0.15 J	0.068 J	0.13 J
Diethyl phthalate		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Dimethyl phthalate		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Fluoranthene		NC	460 J	1.6	1.2	1.5	0.084 J	0.7	8.8	0.19 J	5.5
Fluorene		NC	7.9 J	0.061 J	0.39 U	0.18 J	0.33 U	0.37 U	0.17 J	0.054 J	0.17 J
Hexachlorobenzene		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Hexachlorobutadiene		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Hexachlorocyclopentadiene		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 UJ
Hexachloroethane		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Indeno(1,2,3-cd)pyrene		NC**	110 J	0.48 J	0.64 J	0.94 J	0.036 J	0.47 J	2.9 J	0.068 J	4.3
Isophorone		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
N-Nitrosodipropylamine		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
N-Nitrosodiphenylamine		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Naphthalene		NC	8.1 J	0.084 J	0.11 J	1.1	0.33 U	0.17 J	0.11 J	0.33 U	0.11 J
Nitrobenzene		NC	10 U	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.33 U	1.1 U
Pentachlorophenol		NC	26 U	0.84 U	0.98 UJ	0.86 U	0.83 U	0.92 UJ	0.95 U	0.83 U	2.7 U
Phenanthrene		NC	170 J	0.77	0.48	1.8	0.034 J	0.36 J	4.6	0.2 J	2.2
Phenol		NC	1.2 J	0.34 U	0.39 U	0.34 U	0.33 U	0.37 U	0.38 U	0.097 J	1.1 U
Pyrene		NC	460 J	1.6 J	0.92	2.2 J	0.065 J	0.71	11 J	0.29 J	4.7
Total carcinogenic PAHs		NC	1527	5.48	4.14	8.04	0.237	3.75	34.9	0.581	21.8
Total PAHs		NC	2771.5	10.314	8.36	18.53	0.42	7.48	63.52	1.36	41.5
Total SVOCs		500*	[2794]	11.056	8.638	19.81	0.9	8.083	65.19	1.775	42.29

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Data Printed: 06/12/2002 11:55:04
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5569.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level	SB-10 0.0 - 0.5 ft 07/31/2001 mg/Kg SOLID	SB-11 0.0 - 0.5 ft 08/02/2001 mg/Kg SOLID	SB-12 0.0 - 0.5 ft 08/02/2001 mg/Kg SOLID	SB-13 0.0 - 0.5 ft 07/30/2001 mg/Kg SOLID	SB-14 0.0 - 0.5 ft 07/31/2001 mg/Kg SOLID	SB-15 0.0 - 0.5 ft 08/02/2001 mg/Kg SOLID	SB-17 0.0 - 0.5 ft 08/01/2001 mg/Kg SOLID	SB-18 0.0 - 0.5 ft 07/30/2001 mg/Kg SOLID	SB-19 0.0 - 0.5 ft 08/02/2001 mg/Kg SOLID
1,1'-Biphenyl		NC	0.36 U	0.33 U	0.15 J	0.35 U	0.04 J	0.33 U	0.061 J	0.056 J	0.33 U
2,2'-oxybis(1-Chloropropane)		NC	0.36 UJ	0.33 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.33 UJ	0.38 UJ	0.37 UJ	0.33 UJ
2,4,5-Trichlorophenol		NC	0.92 U	0.83 U	0.89 U	0.89 U	0.89 U	0.83 U	0.95 U	0.92 U	0.83 U
2,4,6-Trichlorophenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2,4-Dichlorophenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2,4-Dimethylphenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2,4-Dinitrophenol		NC	0.92 U	0.83 U	0.89 U	0.89 U	0.89 U	0.83 U	0.95 U	0.92 U	0.83 U
2,4-Dinitrotoluene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2,6-Dinitrotoluene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2-Chloronaphthalene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2-Chlorophenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2-Methylnaphthalene		NC	0.12 J	0.33 U	1.2	0.094 J	0.21 J	0.07 J	0.37 J	0.2 J	0.066 J
2-Methylphenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
2-Nitroaniline		NC	0.92 U	0.83 U	0.89 U	0.89 U	0.89 U	0.83 U	0.95 U	0.92 U	0.83 U
2-Nitrophenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
3,3-Dichlorobenzidine		NC	0.36 UJ	0.33 U	0.35 UJ	0.35 U	0.35 UJ	0.33 U	0.38 UJ	0.37 U	0.33 U
3-Nitroaniline		NC	0.92 U	0.83 U	0.89 U	0.89 U	0.89 U	0.83 U	0.95 U	0.92 U	0.83 U
4,6-Dinitro-2-methylphenol		NC	0.92 U	0.83 U	0.89 U	0.89 U	0.89 U	0.83 U	0.95 U	0.92 U	0.83 U
4-Bromophenyl phenyl ether		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
4-Chloro-3-methylphenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
4-Chloroaniline		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
4-Chlorophenyl phenyl ether		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
4-Methylphenol		NC	0.36 U	0.33 U	0.045 J	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
4-Nitroaniline		NC	0.92 U	0.83 U	0.89 U	0.89 U	0.89 U	0.83 U	0.95 U	0.92 U	0.83 U
4-Nitrophenol		NC	0.92 U	0.83 UJ	0.89 UJ	0.89 U	0.89 U	0.83 UJ	0.95 U	0.92 U	0.83 UJ
Acenaphthene		NC	0.065 J	0.034 J	0.082 J	0.071 J	0.11 J	0.33 U	0.09 J	0.37 U	0.041 J
Acenaphthylene		NC	1.8	0.33 U	0.1 J	0.15 J	1.2	0.33 U	1.3	0.46	0.051 J
Acetophenone		NC	0.063 J	0.034 J	0.35 U	0.043 J	0.077 J	0.043 J	0.079 J	0.1 J	0.047 J
Anthracene		NC	2.1	0.33 U	0.26 J	0.22 J	1.3	0.052 J	1.4	0.48	0.07 J
Atrazine		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Benzo(a)anthracene		NC**	2.9 J	0.099 J	1.3 J	0.64	1.3 J	0.19 J	1.3 J	0.5	0.46
Benzaldehyde		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Benzo(a)pyrene		NC**	2.3 J	0.16 J	1.6 J	0.55 J	1.5 J	0.19 J	1.4 J	0.5 J	0.51
Benzo(b)fluoranthene		NC**	2.4 J	0.14 J	2.2 J	0.54 J	2.2 J	0.27 J	2.2 J	0.66 J	0.83
Benzo(ghi)perylene		NC	0.65 J	0.066 J	1.9 J	0.6 J	0.43 J	0.088 J	0.56 J	0.43 J	0.1 J

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed: 06/12/2002 11:55:04
DBF File: N:\10569\25466\TEMPDATA.DBF
File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-10	SB-11	SB-12	SB-13	SB-14	SB-15	SB-17	SB-18	SB-19
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		07/31/2001	08/02/2001	08/02/2001	07/30/2001	07/31/2001	08/02/2001	08/01/2001	07/30/2001	08/02/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Benzo(k)fluoranthene		NC**	2.3 J	0.16 J	2.1 J	0.48 J	1.9 J	0.21 J	1.3 J	0.55 J	0.65
Bis (2-chloroethoxy) methane		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Bis (2-chloroethyl) ether		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Bis(2-ethylhexyl)phthalate		NC	0.36 UJ	1.2	0.35 UJ	0.073 J	0.076 J	0.66	0.27 J	0.079 J	0.28 J
Butyl benzyl phthalate		NC	0.36 UJ	0.33 U	0.35 UJ	0.35 U	0.35 UJ	0.33 U	0.38 UJ	0.37 U	0.33 U
Caprolactam		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Carbazole		NC	0.16 J	0.33 U	0.12 J	0.093 J	0.23 J	0.33 U	0.25 J	0.064 J	0.046 J
Chrysene		NC**	3.1	0.11 J	1.5 J	0.72	1.6 J	0.23 J	1.5 J	0.58	0.65
Di-n-butyl phthalate		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.2 J	0.33 U	0.38 U	0.37 U	0.33 U
Di-n-octyl phthalate		NC	0.36 UJ	0.33 U	0.35 UJ	0.35 UJ	0.35 UJ	0.33 U	0.38 UJ	0.37 UJ	0.33 U
Dibenzo(a,h)anthracene		NC**	0.48 J	0.33 U	0.35 UJ	0.26 J	0.32 J	0.059 J	0.33 J	0.17 J	0.13 J
Dibenzofuran		NC	0.064 J	0.33 U	0.23 J	0.062 J	0.11 J	0.033 J	0.14 J	0.055 J	0.33 U
Diethyl phthalate		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Dimethyl phthalate		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Fluoranthene		NC	4.1	0.11 J	0.63	1.2	1.9	0.33 J	1.8	0.62	0.59
Fluorene		NC	0.048 J	0.33 U	0.11 J	0.06 J	0.095 J	0.33 U	0.38 U	0.37 U	0.33 U
Hexachlorobenzene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Hexachlorobutadiene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Hexachlorocyclopentadiene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Hexachloroethane		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Indeno(1,2,3-cd)pyrene		NC**	1.1 J	0.12 J	2 J	0.68 J	0.8 J	0.14 J	0.81 J	0.51 J	0.19
Isophorone		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
N-Nitrosodipropylamine		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
N-Nitrosodiphenylamine		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.35
Naphthalene		NC	0.094 J	0.33 U	0.65	0.082 J	0.22 J	0.056 J	0.33 J	0.11 J	0.062 J
Nitrobenzene		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Pentachlorophenol		NC	0.92 U	0.83 U	0.89 U	0.89 UJ	0.89 U	0.83 U	0.95 UJ	0.92 UJ	0.83 U
Phenanthrene		NC	1.1	0.057 J	1.1	0.75	1.2	0.27 J	0.77	0.25 J	0.33
Phenol		NC	0.36 U	0.33 U	0.35 U	0.35 U	0.35 U	0.33 U	0.38 U	0.37 U	0.33 U
Pyrene		NC	1.8 J	0.11 J	1.8 J	0.93	0.97 J	0.31 J	0.76 J	0.43	0.79
Total carcinogenic PAHs		NC	14.58	0.789	10.7	3.87	9.62	1.289	8.84	3.47	3.62
Total PAHs		NC	26.457	1.166	18.532	8.027	17.255	2.465	16.22	6.45	5.92
Total SVOCs		500*	26.744	2.4	19.077	8.298	17.988	3.201	17.02	6.804	6.643

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed: 06/12/2002 11:55:04

File Number 5502.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level mg/Kg	SB-20 0.0 - 0.5 ft 08/09/2001 mg/Kg SOLID	SB-21 0.0 - 0.5 ft 08/09/2001 mg/Kg SOLID	SB-22 0.0 - 0.5 ft 08/09/2001 mg/Kg SOLID	SB-23 0.0 - 0.5 ft 08/09/2001 mg/Kg SOLID	SB-24 0.0 - 0.5 ft 08/09/2001 mg/Kg SOLID	SB-25 0.0 - 0.5 ft 08/07/2001 mg/Kg SOLID	SB-26 0.0 - 0.5 ft 08/08/2001 mg/Kg SOLID	SB-27 0.0 - 0.5 ft 08/08/2001 mg/Kg SOLID	SB-28 0.0 - 0.5 ft 08/08/2001 mg/Kg SOLID
1,1'-Biphenyl		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
2,2'-oxybis(1-Chloropropane)		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
2,4,5-Trichlorophenol		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
2,4,6-Trichlorophenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
2,4-Dichlorophenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
2,4-Dimethylphenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
2,4-Dinitrophenol		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
2,4-Dinitrotoluene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
2,6-Dinitrotoluene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
2-Chloronaphthalene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
2-Chlorophenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
2-Methylnaphthalene		NC	0.061 J	0.079 J	0.12 J	0.19 J	0.04 J	0.33 U	0.38 U	0.39 U	0.36 UJ
2-Methylphenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
2-Nitroaniline		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
2-Nitrophenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
3,3-Dichlorobenzidine		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 UJ	0.38 UJ	0.39 UJ	0.36 UJ
3-Nitroaniline		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
4,6-Dinitro-2-methylphenol		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
4-Bromophenyl phenyl ether		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
4-Chloro-3-methylphenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
4-Chloroaniline		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
4-Chlorophenyl phenyl ether		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
4-Methylphenol		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 U
4-Nitroaniline		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
4-Nitrophenol		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
Acenaphthene		NC	0.4 U	0.34 U	0.34 U	0.07 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Acenaphthylene		NC	0.4 U	0.052 J	0.064 J	0.2 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Acetophenone		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Anthracene		NC	0.048 J	0.06 J	0.087 J	0.18 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Atrazine		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Benzo(a)anthracene		NC**	0.14 J	0.35	0.49	0.85	0.14 J	0.052 J	0.082 J	0.1 J	0.076 J
Benzaldehyde		NC	0.4 UJ	0.34 U	0.34 U	0.37 UJ	0.4 U	0.33 U	0.38 U	0.048 J	0.36 UJ
Benzo(a)pyrene		NC**	0.12 J	0.39 J	0.41	1.2 J	0.19 J	0.07 J	0.098 J	0.14 J	0.08 J
Benzo(b)fluoranthene		NC**	0.21 J	0.68 J	0.66	1.6 J	0.23 J	0.087 J	0.11 J	0.27 J	0.12 J
Benzo(ghi)perylene		NC	0.051 J	0.15 J	0.12 J	0.41 J	0.07 J	0.039 J	0.38 U	0.096 J	0.054 J

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level

Date Printed: 06/12/2002 11:55:04
DBF File: N:\10569\25466\TEMPDATA.DBF
File Number 5509 28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25	SB-26	SB-27	SB-28
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/07/2001	08/08/2001	08/08/2001	08/08/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Benzo(k)fluoranthene		NC**	0.12 J	0.46 J	0.64	1.5 J	0.22 J	0.079 J	0.15 J	0.22 J	0.088 J
Bis (2-chloroethoxy) methane		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Bis (2-chloroethyl) ether		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Bis(2-ethylhexyl)phthalate		NC	0.15 J	0.5	0.41	0.77	0.48	0.33 U	0.39 U	0.39 U	0.45 UJ
Butyl benzyl phthalate		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Caprolactam		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Carbazole		NC	0.4 U	0.036 J	0.052 J	0.083 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Chrysene		NC**	0.17 J	0.46	0.68	1.2	0.19 J	0.078 J	0.12 J	0.16 J	0.11 J
Di-n-butyl phthalate		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Di-n-octyl phthalate		NC	0.4 UJ	0.34 UJ	0.34 U	0.37 UJ	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Dibenzo(a,h)anthracene		NC**	0.4 UJ	0.091 J	0.064 J	0.22 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Dibenzofuran		NC	0.4 U	0.035 J	0.04 J	0.082 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Diethyl phthalate		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Dimethyl phthalate		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Fluoranthene		NC	0.21 J	0.55	0.57	1	0.22 J	0.091 J	0.14 J	0.13 J	0.098 J
Fluorene		NC	0.4 U	0.34 U	0.34 U	0.044 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Hexachlorobenzene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Hexachlorobutadiene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Hexachlorocyclopentadiene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Hexachloroethane		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Indeno(1,2,3-cd)pyrene		NC**	0.073 J	0.23 J	0.18 J	0.65 J	0.1 J	0.061 J	0.06 J	0.13 J	0.072 J
Isophorone		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
N-Nitrosodipropylamine		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
N-Nitrosodiphenylamine		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Naphthalene		NC	0.047 J	0.061 J	0.089 J	0.2 J	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Nitrobenzene		NC	0.4 U	0.34 U	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.36 UJ
Pentachlorophenol		NC	1 U	0.84 U	0.85 U	0.93 U	1 U	0.83 U	0.95 U	0.99 U	0.89 UJ
Phenanthrene		NC	0.21 J	0.31 J	0.18 J	0.75	0.12 J	0.041 J	0.074 J	0.063 J	0.074 J
Phenol		NC	0.4 U	0.86	0.34 U	0.37 U	0.4 U	0.33 U	0.38 U	0.39 U	0.085 J
Pyrene		NC	0.27 J	0.73	0.81	1.8	0.23 J	0.071 J	0.12 J	0.14 J	0.11 J
Total carcinogenic PAHs		NC	0.833	2.663	3.124	7.22	1.07	0.427	0.62	1.02	0.546
Total PAHs		NC	1.73	4.655	5.164	12.064	1.75	0.669	0.954	1.449	0.882
Total SVOCs		500*	1.88	6.086	5.666	12.999	2.23	0.669	0.954	1.497	0.967

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed: 06/12/2002 11:55:04
DBF File: N:\10569\25466\TEMPDATA.DBF
EXP File: N:\10569\25466\TABLE8B5.EXP

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-29	SB-30	SB-31	SB-32	SB-33	TP-US-13	TP-US-14
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft		
	Sample Date		08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/15/2001	08/15/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
1,1'-Biphenyl		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2,2'-oxybis(1-Chloropropane)		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2,4,5-Trichlorophenol		NC	0.89 U	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
2,4,6-Trichlorophenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2,4-Dichlorophenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2,4-Dimethylphenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2,4-Dinitrophenol		NC	0.89 U	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
2,4-Dinitrotoluene		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2,6-Dinitrotoluene		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2-Chloronaphthalene		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2-Chlorophenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2-Methylnaphthalene		NC	0.36 U	0.35 U	0.35 U	0.091 J	0.085 J	0.33 J	0.26 J
2-Methylphenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
2-Nitroaniline		NC	0.89 U	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
2-Nitrophenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
3,3-Dichlorobenzidine		NC	0.36 UJ	0.35 U	0.35 UJ	0.34 UJ	0.38 UJ	0.58 UJ	0.53 UJ
3-Nitroaniline		NC	0.89 U	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
4,6-Dinitro-2-methylphenol		NC	0.89 UJ	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
4-Bromophenyl phenyl ether		NC	0.36 UJ	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
4-Chloro-3-methylphenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
4-Chloroaniline		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
4-Chlorophenyl phenyl ether		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
4-Methylphenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
4-Nitroaniline		NC	0.89 U	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
4-Nitrophenol		NC	0.89 U	0.88 UJ	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
Acenaphthene		NC	0.045 J	0.35 U	0.35 U	0.036 J	0.38 U	0.58 U	0.53 U
Acenaphthylene		NC	0.36 U	0.35 U	0.35 U	0.061 J	0.38 U	0.58 U	0.056 J
Acetophenone		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Anthracene		NC	0.19 J	0.35 U	0.35 U	0.15 J	0.044 J	0.58 U	0.058 J
Atrazine		NC	0.36 UJ	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Benzo(a)anthracene		NC**	1.2 J	0.35 U	0.053 J	0.5 J	0.19 J	0.13 J	0.18 J
Benzaldehyde		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 UJ	0.53 UJ
Benzo(a)pyrene		NC**	1.1 J	0.35 U	0.051 J	0.46 J	0.2 J	0.15 J	0.2 J
Benzo(b)fluoranthene		NC**	1.4 J	0.055 J	0.075 J	0.59 J	0.36 J	0.15 J	0.32 J
Benzo(ghi)perylene		NC	0.36 J	0.35 U	0.35 U	0.18 J	0.38 UJ	0.082 J	0.1 J

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level

Data Printed 06/12/2002 11:55:04
DBF File N:\10569\25466\TEMPDATA.DBF
File Number 3569.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 4
Union Ship Canal Parcel #2
Surface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-29	SB-30	SB-31	SB-32	SB-33	TP-US-13	TP-US-14
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft		
	Sample Date		08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/15/2001	08/15/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Benzo(k)fluoranthene		NC**	1.2 J	0.039 J	0.07 J	0.59 J	0.27 J	0.18 J	0.3 J
Bis (2-chloroethoxy) methane		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Bis (2-chloroethyl) ether		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Bis(2-ethylhexyl)phthalate		NC	0.36 UJ	0.35 U	0.35 U	0.34 UJ	0.38 U	0.58 U	0.53 U
Butyl benzyl phthalate		NC	0.36 UJ	0.35 U	0.35 U	0.34 UJ	0.38 U	0.14 J	0.53 U
Caprolactam		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.19 J
Carbazole		NC	0.097 J	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Chrysene		NC**	1.4 J	0.35 U	0.074 J	0.51 J	0.28 J	0.15 J	0.21 J
Di-n-butyl phthalate		NC	0.36 UJ	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.06 J
Di-n-octyl phthalate		NC	0.36 UJ	0.35 U	0.35 U	0.34 UJ	0.38 UJ	0.58 U	0.53 U
Dibenzo(a,h)anthracene		NC**	0.24 J	0.35 U	0.35 U	0.34 UJ	0.047 J	0.58 U	0.53 U
Dibenzofuran		NC	0.36 U	0.35 U	0.35 U	0.04 J	0.38 U	0.58 U	0.53 U
Diethyl phthalate		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Dimethyl phthalate		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Fluoranthene		NC	2.2 J	0.35 U	0.095 J	0.59	0.31 J	0.21 J	0.27 J
Fluorene		NC	0.043 J	0.35 U	0.35 U	0.054 J	0.38 U	0.082 J	0.53 U
Hexachlorobenzene		NC	0.36 UJ	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Hexachlorobutadiene		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Hexachlorocyclopentadiene		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Hexachloroethane		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Indeno(1,2,3-cd)pyrene		NC**	0.61 J	0.35 U	0.35 U	0.28 J	0.11 J	0.12 J	0.18 J
Isophorone		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
N-Nitrosodipropylamine		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
N-Nitrosodiphenylamine		NC	0.36 UJ	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Naphthalene		NC	0.36 U	0.35 U	0.35 U	0.041 J	0.06 J	0.58 U	0.13 J
Nitrobenzene		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Pentachlorophenol		NC	0.89 UJ	0.88 U	0.89 U	0.86 U	0.97 U	1.5 U	1.3 U
Phenanthrene		NC	0.93 J	0.35 U	0.059 J	0.57	0.23 J	0.29 J	0.17 J
Phenol		NC	0.36 U	0.35 U	0.35 U	0.34 U	0.38 U	0.58 U	0.53 U
Pyrene		NC	2.5 J	0.35 U	0.082 J	1.3 J	0.37 J	0.19 J	0.31 J
Total carcinogenic PAHs		NC	7.15	0.094	0.323	2.93	1.457	0.88	1.39
Total PAHs		NC	13.418	0.094	0.559	6.003	2.556	2.064	2.744
Total SVOCs		500*	13.515	0.094	0.559	6.043	2.556	2.204	2.994

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed: 06/12/2002 11:55:04
DBF File: N:\10569\75466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 5
Union Ship Canal Parcel #2
Surface Soil Samples
PCB Data

Compound	Sample ID	Proposed Screening Level	SB-09	SB-13	SB-14	SB-18	TP-US-13	TP-US-14
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft		
	Sample Date		07/31/2001	07/30/2001	07/31/2001	07/30/2001	08/15/2001	08/15/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aroclor 1016		NC	0.109 U	0.0215 U	0.105 U	0.11 U	0.0349 U	0.032 U
Aroclor 1221		NC	0.217 U	0.043 U	0.211 U	0.219 U	0.0697 U	0.0641 U
Aroclor 1232		NC	0.109 U	0.0215 U	0.105 U	0.11 U	0.0349 U	0.032 U
Aroclor 1242		NC	0.109 U	0.0995 J	0.105 U	0.11 U	0.0349 U	0.032 U
Aroclor 1248		NC	0.109 U	0.0215 U	0.105 U	0.11 U	0.0349 U	0.032 U
Aroclor 1254		NC	0.109 U	0.0597 J	0.0894 J	0.153 J	0.0349 U	0.032 U
Aroclor 1260		NC	0.0939 J	0.142 J	0.187 J	0.29 J	0.0173 J	0.0321
Total PCBs		1	0.0939	0.3012	0.2764	0.443	0.0173	0.0321

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level.

Date Printed: 06/12/2002 11:55:58
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 6
Union Ship Canal Parcel #2
Surface Soil Samples
Inorganic Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07	SB-08	SB-09
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		07/31/2001	08/10/2001	08/01/2001	08/09/2001	08/09/2001	08/01/2001	08/09/2001	08/02/2001	07/31/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	26500	8260	30800	19800	2010	28500	25200	3320	31600
Antimony		NC	8.0 J	1.1 J	11.2 J	12.6 UJ	10.6 UJ	19.7 J	13.4 UJ	12.5 UJ	6.2 J
Arsenic		70*	13.8 J	9.0	12.0 J	17.6	1.8 U	12.8 J	5.3	1.3	18.3 J
Barium		500*	225	87.9	272	150	26.1	265	238	28.9	284
Beryllium		NC	5.1	1.1	5.8	3.6	0.077	5.5	4.7	0.20	6.7
Cadmium		20*	2.0	0.46	2.1	1.0 U	0.14	2.7	1.1 U	0.35	2.1
Calcium		NC	161000 J	47600 J	169000 J	82700 J	1130 J	159000 J	149000 J	5330	185000 J
Chromium		200*	17.0	20.8 J	17.0	20.9 J	6.8 J	19.6	27.4 J	10.6	18.2
Cobalt		NC	3.7	2.4	5.1	5.2	0.52	5.4	2.9	1.9	4.2
Copper		NC	61.0 J	64.5 J	32.1 J	90.0 J	5.1 J	60.2 J	69.9 J	23.1 J	96.6 J
Cyanide		50*	—	—	—	—	—	—	—	—	—
Iron		NC	30100 J	28800	41200 J	78600	1800	59400 J	41800	12000	28700 J
Lead		1000*	152 J	190	68.9 J	119	21.8	109 J	117	41.5 J	169 J
Magnesium		NC	17200 J	9230 J	15400 J	5920 J	647 J	19900 J	16300 J	2410	30200 J
Manganese		NC	2450 J	1180	1810 J	2610	33.5	2680 J	4240	189	2530 J
Mercury		1*	0.14	0.29	0.089	0.093	0.099 U	0.094 U	0.17	0.070	0.47
Nickel		NC	8.1	13.1	7.1	41.4	2.1	7.2	47.2	8.6	8.2
Potassium		NC	1570	2320 J	1410	870 J	1700 J	2160	1910 J	1180	2110
Selenium		50*	0.83 UJ	1.1 UJ	0.96 UJ	1.0 UJ	0.89 UJ	10.5 J	1.1 UJ	1.0 UJ	2.4 J
Silver		1170*	1.5	2.1 U	1.4	2.1 U	1.8 U	1.6	2.2 U	2.1 U	2.1
Sodium		NC	827	543	601	242	134	916	601	161	914
Thallium		NC	1.7 UJ	2.1 UJ	1.9 UJ	2.1 UJ	1.8 UJ	2.0 UJ	2.2 UJ	1.6 J	2.1 UJ
Vanadium		NC	8.3 U	17.4	9.6 U	41.3	3.3	10.0 U	25.9	11	10.6 U
Zinc		NC	230 J	304 J	170 J	483 J	96.8 J	289 J	296 J	88.0 J	196 J

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring
* - Site-specific action level

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 6
Union Ship Canal Parcel #2
Surface Soil Samples
Inorganic Data

Compound	Sample ID	Proposed Screening Level	SB-10	SB-11	SB-12	SB-13	SB-14	SB-15	SB-16	SB-17	SB-18
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		07/31/2001	08/02/2001	08/02/2001	07/30/2001	07/31/2001	08/02/2001	08/01/2001	08/01/2001	07/30/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	12000	2030	9100	8540	8650	2390	23000	11700	27900
Antimony		NC	30.2 J	10.8 UJ	51.5 J	25.8 J	31.1 J	33.8 J	21.3 J	49.8 J	8.3 J
Arsenic		70*	14.7 J	1.8 U	22.4	1.9 U	2.9 J	3.3	17.2 J	11.5 J	16.7 J
Barium		500*	145	20.9	299	82.4	177	35.9	247	182	248
Beryllium		NC	1.9	0.16	1.3	1.6	1.5	0.48	4.2	2.0	5.9
Cadmium		20*	6.6	0.38	9.1	2.0	6.0	3.1	5.7	10.8	3.6
Calcium		NC	47900 J	7110	66000	58900 J	35600 J	30000	145000 J	47200 J	157000 J
Chromium		200*	27.1	9.5	[416]	11.7	41.6	32.0	32.8	52.8	19.5
Cobalt		NC	6.9	1.1	10.2	6.2	7.1	4.2	5.5	8.7	3.4
Copper		NC	150 J	16.4 J	4310 J	158 J	1130 J	69.1 J	664 J	816 J	758 J
Cyanide		50*	---	---	---	---	---	---	1.5 J	---	---
Iron		NC	94600 J	10500	125000	84100 J	87600 J	110000	66700 J	163000 J	29200 J
Lead		1000*	408 J	49.4 J	[1120 J]	51.1 J	463 J	353 J	326 J	435 J	264 J
Magnesium		NC	5610 J	906	13900	3430 J	4490 J	6980	30900 J	12000 J	30600 J
Manganese		NC	3860 J	148	3000	1610 J	2700 J	1730	3170 J	3920 J	2100 J
Mercury		1*	[3.1]	0.072	0.67	0.30	[1.8]	0.090 U	[4.4]	[1.8]	[1.9]
Nickel		NC	19.0	2.2	33.6	1.3	31.5	17.4	14.6	21.8	10.0
Potassium		NC	1910	333	679	886	1050	281	2580	1230	1650
Selenium		50*	0.98 UJ	0.90 UJ	1.1 UJ	0.96 UJ	0.90 UJ	0.95 UJ	1.9 J	0.96 UJ	3.3 J
Silver		1170*	2.0	1.8 U	5.3	1.9 U	1.1	1.9 U	2.3	2.0	1.7
Sodium		NC	432	359	326	215	247	113	956	488	771
Thallium		NC	1.5 J	1.5 J	9.4 J	7.5 J	4.1 J	10.9 J	2.1 UJ	9.5 J	1.8 UJ
Vanadium		NC	9.8 U	0.30	11.1 U	9.6 U	9.0 U	9.5 U	10.6 U	9.6 U	8.8 U
Zinc		NC	1340 J	67.3 J	1150 J	342 J	1140 J	991 J	892 J	1460 J	430 J

NOTES:
U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring
* - Site-specific action level.

Date Printed: 06/12/2002 11:56:18
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 55092860

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 6
Union Ship Canal Parcel #2
Surface Soil Samples
Inorganic Data

Compound	Sample ID	Proposed Screening Level	SB-19	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25	SB-26	SB-27
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft
	Sample Date		08/02/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/07/2001	08/08/2001	08/08/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	8750	29700	19500	22100	9210	30800	16300	11100	33500
Antimony		NC	23.2 J	14.1 UJ	10 UJ	9.7 UJ	13.8 UJ	11.6 UJ	11.7 UJ	10.1 UJ	13.0 UJ
Arsenic		70*	8.0	16.3	9.4	6.1	28.7	6.1	7.9	29.3 J	25.0 J
Barium		500*	193	381	190	192	107	159	124	103 J	268 J
Beryllium		NC	1.9	4.7	3.9	5.0	1.8	6.0	2.0	2.3	5.2
Cadmium		20*	2.8	4.0	1.8	0.80 U	1.2	0.28	0.83	0.84 U	1.1 U
Calcium		NC	43800	111000 J	108000 J	149000 J	47100 J	164000 J	76400	54900 J	170000 J
Chromium		200*	47.5	57.6 J	24.5 J	29.4 J	35.7 J	10.7 J	13.5	41.3 J	16.5 J
Cobalt		NC	7.2	6.6	3.3	2.1	5.3	2.5	4.9	5.3 J	3.4 J
Copper		NC	164 J	247 J	592 J	39.9 J	125 J	316 J	106 J	105	31.2
Cyanide		50*	—	—	—	—	—	—	—	—	—
Iron		NC	65800	85100	43500	41900	91800	25900	24000	131000	59400
Lead		1000*	[1480 J]	290	404	59.3	419	125	45.6 J	167	77.3
Magnesium		NC	7330	19200 J	14600 J	26500 J	5890 J	13400 J	9030	4610	12500
Manganese		NC	3900	6670	2050	3570	2800	2400	1060	3340 J	2530 J
Mercury		1*	0.81	[4.4]	0.70	0.098 U	0.40	0.12 U	0.20	0.071 J	0.11 UJ
Nickel		NC	20.1	56.6	14.3	11.6	23.5	9.8	9.9	25.2 J	12.9 J
Potassium		NC	749	2280 J	1520 J	1500 J	1140 J	3380 J	1770	1220	1970
Selenium		50*	0.96 UJ	1.2 UJ	0.83 UJ	0.80 UJ	1.1 UJ	9.9 J	0.97 UJ	0.84 UJ	1.1 UJ
Silver		1170*	1.3	2.3 U	1.7 U	1.6 U	2.3 U	1.9 U	1.9 U	1.7 U	2.2 U
Sodium		NC	309	702	499	1190	198	530	312	327	528
Thallium		NC	1.9 UJ	2.3 UJ	1.7 UJ	1.6 UJ	2.3 UJ	1.9 UJ	1.9 UJ	1.7 UJ	2.2 UJ
Vanadium		NC	9.6 U	43.5	22.0	23.6	47.0	17.5	9.7 U	63.8	35.5
Zinc		NC	368 J	1330 J	436 J	192 J	871 J	279 J	505 J	534 J	284 J

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring.
* - Site-specific action level.

Date Printed: 06/12/2002 11:56:18
DBF File: N:\10569\25466\TEMPDATA.DBF
FXP File: N:\10569\25466\TABLEPRS.FXP

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 6
Union Ship Canal Parcel #2
Surface Soil Samples
Inorganic Data

Compound	Sample ID	Proposed Screening Level	SB-28	SB-29	SB-30	SB-31	SB-32	SB-33	TP-US-13	TP-US-14
	Sample Depth		0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft	0.0 - 0.5 ft		
	Sample Date		08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/15/2001	08/15/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	24500	28900	8770	28900	28000	21100	12100 J	32400
Antimony		NC	13.1 UJ	13.3 UJ	11.5 UJ	11.8 UJ	11.5 UJ	13.2 J	17.6 UJ	20.8 UJ
Arsenic		70*	5.3 J	2.9 J	2.0 J	27.7	24.9	26.9	9.2 J	23.4 J
Barium		500*	231 J	161 J	76.8 J	236	209	177	62.5 J	216
Beryllium		NC	3.7	4.0	1.5	6.3	6.3	4.3	2.5 J	6.6
Cadmium		20*	1.1 U	1.1 U	0.96 U	1.1	0.65	2.7	1.5 U	1.7 U
Calcium		NC	168000 J	180000 J	54900 J	179000	205000	153000	51500 J	147000
Chromium		200*	16.1 J	13.7 J	1.9 J	11.4	8.7	19.8	4.7 J	27.7 J
Cobalt		NC	4.5 J	3.5 J	0.46 J	2.6	2.0	5.4	1.5	3.0
Copper		NC	31.1	23.2	1.9	13.0 J	14.1 J	38.0 J	12.7 J	965
Cyanide		50*	—	—	—	—	—	—	—	—
Iron		NC	40700	24600	2370	16700	13500	49200	25300	111000
Lead		1000*	109	67.4	3.8	39.4 J	64.2 J	162 J	2.5 J	133 J
Magnesium		NC	28300	13900	7400	27900	44100	20100	4360 J	17700
Manganese		NC	2670 J	1520 J	884 J	3040	1660	2850	650 J	2780 J
Mercury		1*	0.12 J	0.36 J	0.055 J	0.098 U	0.10 U	0.058	0.22 J	0.70 J
Nickel		NC	12.0 J	9.8 J	1.1 J	2.9	2.6	7.2	3.3 J	15.9 J
Potassium		NC	1880	2600	600	1930	1210	1680	605 J	2060
Selenium		50*	1.6 J	12.4 J	0.96 UJ	0.98 UJ	2.9 J	0.89 UJ	1.5 UJ	1.7 UJ
Silver		1170*	2.2 U	2.2 U	1.9 U	2.0 U	1.2	1.4	2.9 U	3.5 U
Sodium		NC	716	683	242	1300	998	759	264	774
Thallium		NC	2.2 UJ	2.2 UJ	1.9 UJ	2.0 UJ	1.9 UJ	1.8 UJ	2.9 UJ	3.5 UJ
Vanadium		NC	29.4	26.7	2.1	9.8 U	9.6 U	8.9 U	18.6	67.5
Zinc		NC	321 J	172 J	47.3 J	64.3 J	19.1 UJ	336 J	28.9 J	831

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring.
* - Site-specific action level.

Date Printed: 06/12/2002 11:56:18
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 7
Union Ship Canal Parcel #2
Subsurface Soil Samples
Volatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-09	SB-13	SB-14	SB-16	SB-18
	Sample Depth		6.0 - 8.0 ft	0.5 - 2.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft
	Sample Date		07/31/2001	07/30/2001	07/31/2001	08/01/2001	07/30/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID
1,1,1-Trichloroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,1,2,2-Tetrachloroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,1,2-Trichloro-1,2,2-trifluoroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,1,2-Trichloroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.002 J
1,1-Dichloroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,1-Dichloroethene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,2,4-Trichlorobenzene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,2-Dibromo-3-chloropropane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,2-Dibromoethane (EDB)		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,2-Dichlorobenzene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,2-Dichloroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,2-Dichloropropane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,3-Dichlorobenzene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
1,4-Dichlorobenzene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
2-Butanone (MEK)		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 UJ
2-Hexanone		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
4-Methyl-2-pentanone (MIBK)		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.004 J
Acetone		1*	0.06	0.033	0.07 J	0.035	0.079
Benzene		1*	0.025 U	0.018 U	0.028 U	0.002 J	0.013 U
Bromodichloromethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Bromoform		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.001 J
Bromomethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Carbon disulfide		1*	0.024 J	0.003 J	0.028 U	0.015 U	0.031
Carbon tetrachloride		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Chlorobenzene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Chloroethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Chloroform		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Chloromethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Cyclohexane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Dibromochloromethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Dichlorodifluoromethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Ethylbenzene		1*	0.025 U	0.018 U	0.017 J	0.015 U	0.013 U
Isopropylbenzene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Methyl acetate		1*	0.025 UJ	0.018 UJ	0.028 UJ	0.015 UJ	0.013 UJ
Methyl tert butyl ether		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level.

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 7
Union Ship Canal Parcel #2
Subsurface Soil Samples
Volatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-09	SB-13	SB-14	SB-16	SB-18
	Sample Depth		6.0 - 8.0 ft	0.5 - 2.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft
	Sample Date		07/31/2001	07/30/2001	07/31/2001	08/01/2001	07/30/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID
Methylcyclohexane		1*	0.025 U	0.018 U	0.18 J	0.006 J	0.013 U
Methylene chloride		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Styrene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Tetrachloroethene		1*	0.025 U	0.018 U	0.42 J	0.015 U	0.013 U
Toluene		1*	0.025 U	0.018 U	0.005 J	0.004 J	0.002 J
Trichloroethene		1*	0.025 U	0.018 U	0.004 J	0.015 U	0.013 U
Trichlorofluoromethane		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Vinyl chloride		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Xylene (total)		1*	0.025 U	0.018 U	0.081 J	0.003 J	0.013 U
cis-1,2-Dichloroethene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
cis-1,3-Dichloropropylene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
trans-1,2-Dichloroethene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
trans-1,3-Dichloropropene		1*	0.025 U	0.018 U	0.028 U	0.015 U	0.013 U
Total VOCs		10*	0.084	0.036	0.777	0.05	0.119

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level

Date Printed: 06/12/2002 11:56:51
DBF File: N:\10560\25466\TEMPDATA.DBF
File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 8
Union Ship Canal Parcel #2
Subsurface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	COMP-38-39	COMP-40-41	SB-06	SB-08	SB-09	SB-10	SB-13	SB-14	SB-16
	Sample Depth		1.0 - 1.5 ft	1.5 - 2.0 ft	4.0 - 6.0 ft	4.0 - 6.0 ft	6.0 - 8.0 ft	0.5 - 2.0 ft	0.5 - 2.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft
	Sample Date		03/26/2002	03/26/2002	08/01/2001	08/02/2001	07/31/2001	07/31/2001	07/30/2001	07/31/2001	08/01/2001
	Units	mg/Kg	mg/kg	mg/kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
1,1'-Biphenyl		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
2,2'-oxybis(1-Chloropropane)		NC	0.39 UJ	0.45 UJ	0.55 UJ	0.36 UJ	0.63 UJ	0.37 UJ	0.48 UJ	0.66 UJ	0.49 UJ
2,4,5-Trichlorophenol		NC	0.39 U	0.45 U	1.4 U	0.91 U	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 U
2,4,6-Trichlorophenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
2,4-Dichlorophenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
2,4-Dimethylphenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
2,4-Dinitrophenol		NC	0.95 UJ	1.1 UJ	1.4 U	0.91 U	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 U
2,4-Dinitrotoluene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 UJ
2,6-Dinitrotoluene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
2-Chloronaphthalene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
2-Chlorophenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 UJ
2-Methylnaphthalene		NC	0.04 J	0.071 J	0.55 U	0.36 U	0.63 U	0.063 J	0.48 U	2.3	0.49 U
2-Methylphenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
2-Nitroaniline		NC	0.95 U	1.1 U	1.4 U	0.91 U	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 U
2-Nitrophenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
3,3-Dichlorobenzidine		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
3-Nitroaniline		NC	0.95 U	1.1 U	1.4 U	0.91 U	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 U
4,6-Dinitro-2-methylphenol		NC	0.95 U	1.1 U	1.4 U	0.91 U	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 U
4-Bromophenyl phenyl ether		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
4-Chloro-3-methylphenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 UJ
4-Chloroaniline		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
4-Chlorophenyl phenyl ether		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
4-Methylphenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
4-Nitroaniline		NC	0.95 U	1.1 U	1.4 U	0.91 U	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 U
4-Nitrophenol		NC	0.95 UJ	1.1 UJ	1.4 U	0.91 UJ	1.6 U	0.94 U	1.2 U	1.7 UJ	1.2 UJ
Acenaphthene		NC	0.39 U	0.015 J	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 UJ
Acenaphthylene		NC	0.39 U	0.45 U	0.067 J	0.36 U	0.63 U	0.28 J	0.48 U	0.66 UJ	0.49 U
Acetophenone		NC	0.39 U	0.45 U	0.056 J	0.045 J	0.12 J	0.37 U	0.055 J	0.66 U	0.051 J
Anthracene		NC	0.39 U	0.04 J	0.55 U	0.36 U	0.63 U	0.21 J	0.48 U	0.66 UJ	0.49 U
Atrazine		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Benzo(a)anthracene		NC**	0.025 J	0.11 J	0.11 J	0.064 J	0.14 J	0.45	0.48 U	0.66 UJ	0.089 J
Benzaldehyde		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Benzo(a)pyrene		NC**	0.015 J	0.052 J	0.14 J	0.076 J	0.1 J	0.43	0.48 U	0.66 UJ	0.093 J
Benzo(b)fluoranthene		NC**	0.015 J	0.053 J	0.17 J	0.1 J	0.1 J	0.44	0.48 U	0.66 UJ	0.1 J
Benzo(ghi)perylene		NC	0.01 J	0.037 J	0.12 J	0.038 J	0.63 U	0.52	0.48 U	0.66 UJ	0.056 J

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed: 06/12/2002 11:57:32
DBF File: N:\10569\25466\TEMPDATA.DBF
File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 8
Union Ship Canal Parcel #2
Subsurface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	COMP-38-39	COMP-40-41	SB-06	SB-08	SB-09	SB-10	SB-13	SB-14	SB-16
	Sample Depth		1.0 - 1.5 ft	1.5 - 2.0 ft	4.0 - 6.0 ft	4.0 - 6.0 ft	6.0 - 8.0 ft	0.5 - 2.0 ft	0.5 - 2.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft
	Sample Date		03/26/2002	03/26/2002	08/01/2001	08/02/2001	07/31/2001	07/31/2001	07/30/2001	07/31/2001	08/01/2001
	Units	mg/Kg	mg/kg	mg/kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Benzo(k)fluoranthene		NC**	0.015 J	0.058 J	0.15 J	0.095 J	0.11 J	0.44	0.48 U	0.66 UJ	0.083 J
Bis (2-chloroethoxy) methane		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Bis (2-chloroethyl) ether		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Bis(2-ethylhexyl)phthalate		NC	0.017 J	0.15 J	0.35 J	1	0.33 J	0.12 J	0.48 U	0.66 UJ	0.17 J
Butyl benzyl phthalate		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Caprolactam		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Carbazole		NC	0.39 U	0.014 J	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Chrysene		NC**	0.036 J	0.12 J	0.14 J	0.1 J	0.14 J	0.52	0.48 U	0.66 UJ	0.1 J
Di-n-butyl phthalate		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Di-n-octyl phthalate		NC	0.017 J	0.02 J	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Dibenzo(a,h)anthracene		NC**	0.39 U	0.026 J	0.55 U	0.36 U	0.63 U	0.28 J	0.48 U	0.66 UJ	0.49 U
Dibenzofuran		NC	0.016 J	0.068 J	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Diethyl phthalate		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Dimethyl phthalate		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Fluoranthene		NC	0.037 J	0.31 J	0.14 J	0.12 J	0.21 J	0.47	0.058 J	0.66 UJ	0.16 J
Fluorene		NC	0.39 U	0.019 J	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Hexachlorobenzene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Hexachlorobutadiene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Hexachlorocyclopentadiene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Hexachloroethane		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Indeno(1,2,3-cd)pyrene		NC**	0.39 U	0.031 J	0.13 J	0.042 J	0.63 U	0.67	0.48 U	0.66 UJ	0.064 J
Isophorone		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
N-Nitrosodipropylamine		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 UJ
N-Nitrosodiphenylamine		NC	0.39 U	0.026 J	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 UJ	0.49 U
Naphthalene		NC	0.02 J	0.043 J	0.55 U	0.36 U	0.63 U	0.043 J	0.48 U	0.66 U	0.49 U
Nitrobenzene		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 U
Pentachlorophenol		NC	0.95 UJ	1.1 UJ	1.4 UJ	0.91 U	1.6 UJ	0.94 UJ	1.2 UJ	1.7 UJ	1.2 UJ
Phenanthrene		NC	0.086 J	0.56	0.55 U	0.096 J	0.16 J	0.18 J	0.055 J	0.66 UJ	0.49 U
Phenol		NC	0.39 U	0.45 U	0.55 U	0.36 U	0.63 U	0.37 U	0.48 U	0.66 U	0.49 UJ
Pyrene		NC	0.031 J	0.24 J	0.13 J	0.16 J	0.18 J	0.43	0.06 J	0.66 UJ	0.15 J
Total carcinogenic PAHs		NC	0.106	0.45	0.84	0.477	0.59	3.23	---	---	0.529
Total PAHs		NC	0.33	1.785	1.297	0.891	1.14	5.426	0.173	2.3	0.895
Total SVOCs		500*	0.38	2.063	1.703	1.936	1.59	5.546	0.228	2.3	1.116

NOTES:
U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level.

Date Printed: 06/12/2002 11:57:32
DBF File: N:\10569\25466\TEMPDATA.DBF
File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 8
Union Ship Canal Parcel #2
Subsurface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-18	SB-34	SB-36	SB-42	SB-45	SB-48	SB-53
	Sample Depth		2.0 - 4.0 ft	2.0 - 2.5 ft	2.0 - 2.5 ft	5.5 - 6.5 ft	6.0 - 7.0 ft	4.0 - 6.0 ft	7.0 - 8.0 ft
	Sample Date		07/30/2001	03/26/2002	03/26/2002	03/26/2002	03/26/2002	03/27/2002	03/27/2002
	Units	mg/Kg	mg/Kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
1,1'-Biphenyl		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.57 J
2,2'-oxybis(1-Chloropropane)		NC	1.2 UJ	0.47 UJ	0.46 UJ	29 UJ	28 UJ	0.67 UJ	0.66 UJ
2,4,5-Trichlorophenol		NC	2.9 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2,4,6-Trichlorophenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2,4-Dichlorophenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2,4-Dimethylphenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2,4-Dinitrophenol		NC	2.9 U	1.1 UJ	1.1 UJ	70 UJ	67 UJ	1.6 UJ	1.6 UJ
2,4-Dinitrotoluene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2,6-Dinitrotoluene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2-Chloronaphthalene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2-Chlorophenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2-Methylnaphthalene		NC	1.2 U	0.47 U	0.027 J	29 U	0.99 J	0.67 UJ	5.2
2-Methylphenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
2-Nitroaniline		NC	2.9 U	1.1 U	1.1 U	70 U	67 U	1.6 UJ	1.6 U
2-Nitrophenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
3,3-Dichlorobenzidine		NC	1.2 UJ	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
3-Nitroaniline		NC	2.9 U	1.1 U	1.1 U	70 U	67 U	1.6 UJ	1.6 U
4,6-Dinitro-2-methylphenol		NC	2.9 U	1.1 U	1.1 U	70 U	67 U	1.6 UJ	1.6 U
4-Bromophenyl phenyl ether		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
4-Chloro-3-methylphenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
4-Chloroaniline		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
4-Chlorophenyl phenyl ether		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
4-Methylphenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
4-Nitroaniline		NC	2.9 U	1.1 U	1.1 U	70 U	67 U	1.6 UJ	1.6 U
4-Nitrophenol		NC	2.9 U	1.1 UJ	1.1 UJ	70 UJ	67 UJ	1.6 UJ	1.6 UJ
Acenaphthene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.9
Acenaphthylene		NC	3.3	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Acetophenone		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Anthracene		NC	1.9	0.47 U	0.46 U	29 U	28 UJ	0.67 UJ	1
Atrazine		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Benzo(a)anthracene		NC**	7.3 J	0.015 J	0.038 J	29 U	28 UJ	0.67 UJ	0.046 J
Benzaldehyde		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Benzo(a)pyrene		NC**	6.6 J	0.47 U	0.028 J	29 U	28 U	0.67 UJ	0.66 U
Benzo(b)fluoranthene		NC**	7.2 J	0.021 J	0.031 J	29 U	28 U	0.67 UJ	0.021 J
Benzo(ghi)perylene		NC	1.6 J	0.47 U	0.034 J	29 U	28 U	0.67 UJ	0.66 U

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level

Date Printed: 06/12/2002 11:57:32
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 8
Union Ship Canal Parcel #2
Subsurface Soil Samples
Semivolatile Organic Compound Data

Compound	Sample ID	Proposed Screening Level	SB-18	SB-34	SB-36	SB-42	SB-45	SB-48	SB-53
	Sample Depth		2.0 - 4.0 ft	2.0 - 2.5 ft	2.0 - 2.5 ft	5.5 - 6.5 ft	6.0 - 7.0 ft	4.0 - 6.0 ft	7.0 - 8.0 ft
	Sample Date		07/30/2001	03/26/2002	03/26/2002	03/26/2002	03/26/2002	03/27/2002	03/27/2002
	Units	mg/Kg	mg/Kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Benzo(k)fluoranthene		NC**	5.3 J	0.47 U	0.033 J	29 U	28 U	0.67 UJ	0.66 U
Bis (2-chloroethoxy) methane		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Bis (2-chloroethyl) ether		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Bis(2-ethylhexyl)phthalate		NC	1.2 UJ	0.022 J	0.02 J	2.6 J	28 U	0.041 J	0.075 J
Butyl benzyl phthalate		NC	1.2 UJ	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Caprolactam		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Carbazole		NC	0.52 J	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Chrysene		NC**	7.3 J	0.017 J	0.056 J	0.88 J	2.2 J	0.67 UJ	0.1 J
Di-n-butyl phthalate		NC	1.2 U	0.47 U	0.46 U	29 U	28 UJ	0.67 UJ	0.66 U
Di-n-octyl phthalate		NC	1.2 UJ	0.026 J	0.021 J	2.8 J	28 U	0.064 J	0.094 J
Dibenzo(a,h)anthracene		NC**	0.97 J	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Dibenzofuran		NC	1.2 U	0.47 U	0.014 J	29 U	28 U	0.67 UJ	0.75
Diethyl phthalate		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Dimethyl phthalate		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Fluoranthene		NC	14	0.044 J	0.082 J	0.92 J	1.7 J	0.018 J	0.2 J
Fluorene		NC	1.2 U	0.47 U	0.46 U	29 U	28 UJ	0.67 UJ	1.3
Hexachlorobenzene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Hexachlorobutadiene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Hexachlorocyclopentadiene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Hexachloroethane		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Indeno(1,2,3-cd)pyrene		NC**	2.4 J	0.47 U	0.026 J	29 U	28 U	0.67 UJ	0.66 U
Isophorone		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
N-Nitrosodipropylamine		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
N-Nitrosodiphenylamine		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Naphthalene		NC	0.2 J	0.47 U	0.017 J	29 U	28 U	0.67 UJ	0.98
Nitrobenzene		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Pentachlorophenol		NC	2.9 U	1.1 UJ	1.1 UJ	70 UJ	67 UJ	1.6 UJ	1.6 UJ
Phenanthrene		NC	0.55 J	0.035 J	0.091 J	0.8 J	3.3 J	0.67 UJ	4.5
Phenol		NC	1.2 U	0.47 U	0.46 U	29 U	28 U	0.67 UJ	0.66 U
Pyrene		NC	5.3 J	0.029 J	0.069 J	1.1 J	1 J	0.67 UJ	0.42 J
Total carcinogenic PAHs		NC	37.07	0.053	0.212	0.88	2.2	---	0.167
Total PAHs		NC	63.92	0.161	0.532	3.7	9.19	0.018	14.667
Total SVOCs		500*	64.44	0.209	0.587	9.1	9.19	0.123	16.156

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
** - Carcinogenic PAH
* - Site-specific action level

Date Printed: 06/12/2002 11:57:32
DBF File: N:\10569\25466\TEMPDATA.DBF
SYB File: N:\10569\25466\STABLE8B.SYB

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 9
Union Ship Canal Parcel #2
Subsurface Soil Samples
PCB Data

Compound		Proposed Screening Level	SB-09	SB-13	SB-14	SB-16	SB-18
	Sample ID		SB-09	SB-13	SB-14	SB-16	SB-18
	Sample Depth		6.0 - 8.0 ft	0.5 - 2.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft	2.0 - 4.0 [illegible]
	Sample Date		07/31/2001	07/30/2001	07/31/2001	08/01/2001	07/30/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID
Aroclor 1016		NC	0.0373 U	0.0281 U	0.0398 UJ	0.0282 U	0.112 U
Aroclor 1221		NC	0.0746 U	0.0562 U	0.0795 UJ	0.0564 U	0.223 U
Aroclor 1232		NC	0.0373 U	0.0281 U	0.0398 UJ	0.0282 U	0.112 U
Aroclor 1242		NC	0.0373 U	0.0281 U	0.0398 UJ	0.0282 U	0.112 U
Aroclor 1248		NC	0.0373 U	0.0281 U	0.0398 UJ	0.0282 U	0.112 U
Aroclor 1254		NC	0.0373 U	0.0281 U	0.0398 UJ	0.0282 U	0.112 U
Aroclor 1260		NC	0.0373 U	0.0281 U	0.0306 J	0.0156 J	0.112 UJ
Total PCBs		10	---	---	0.0306	0.0156	---

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level

Date Printed: 06/12/2002 11:58:09
DBF File: [illegible]
File Number [illegible]

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 10
Union Ship Canal Parcel #2
Subsurface Soil Samples
Inorganic Data

Compound	Sample ID	Proposed Screening Level	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07	SB-08	SB-09
	Sample Depth		4.0 - 6.0 ft	6.0 - 8.0 ft	4.0 - 6.0 ft	2.0 - 4.0 ft	4.0 - 6.0 ft	4.0 - 6.0 ft	4.0 - 6.0 ft	4.0 - 6.0 ft	6.0 - 8.0 ft
	Sample Date		07/31/2001	08/10/2001	08/01/2001	08/09/2001	08/09/2001	08/01/2001	08/09/2001	08/02/2001	07/31/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	56000	13500 J	47900	40300	5120	36900	39000	10200	38200
Antimony		NC	24.2 UJ	23.0 UJ	24.5 UJ	16.3 UJ	0.96 J	19.6 UJ	18.1 UJ	24.7 J	20.2 UJ
Arsenic		70*	17.2 J	11.0 J	16.4 J	2.5	3.8 J	19.6 J	3.0 U	7.5	15.4 J
Barium		500*	500	97.3 J	[658]	291	64.1	[722]	214	133	348
Beryllium		NC	10.1	2.5 J	11.4	7.5	0.75	8.0	6.8	1.1	7.4
Cadmium		20*	0.90	1.9 UJ	0.42	1.4 U	0.53	0.27	1.5 U	3.2	0.56
Calcium		NC	266000 J	83700 J	263000 J	236000 J	22700 J	184000 J	197000 J	53100	220000 J
Chromium		200*	10.6	11.1 J	6.9	2.6 J	8.0 J	5.2	3.9 J	32.2	10.2
Cobalt		NC	4.3	5.1 J	3.5	1.4	0.80	2.2	1.8	9.0	3.0
Copper		NC	10.1 UJ	26.2 J	10.2 UJ	14.0 J	31.2 J	8.2 UJ	4.0 J	73.4 J	8.4 UJ
Cyanide		50*	13.2 J	7.7 J	30.5 J	32.3	7.8 J	18.1 J	0.28	14.0 J	1.5 J
Iron		NC	24500 J	16500 J	4260 J	11900	9580	5690 J	13500	80500	11600 J
Lead		1000*	27.3 J	25.1 J	7.9 J	18.9	10.2	5.1 J	55.2	200 J	12.8 J
Magnesium		NC	16800 J	7620 J	16900 J	20800 J	3690 J	14600 J	13300 J	12000	15900 J
Manganese		NC	1650 J	670 J	1940 J	2120	428	1410 J	2520	2350	3600 J
Mercury		1*	0.20 U	0.083 UJ	0.20 U	0.13 U	0.19	0.15 U	0.16 U	0.072	0.19 U
Nickel		NC	2.1	12.9 J	0.52	2.4	4.5	4.3	1.0	15.1	13.4 U
Potassium		NC	975	1390 J	748	2090 J	1260 J	1110	1600 J	1340	3090
Selenium		50*	6.8 J	41.9 J	2.0 UJ	32.1 J	1.1 UJ	1.6 UJ	24.2 J	1.0 UJ	3.0 J
Silver		1170*	2.7	3.8 UJ	4.1 U	2.7 U	2.2 U	3.3 U	3.0 U	1.1	2.3
Sodium		NC	468	206 J	293	601	196	416	622	376	897
Thallium		NC	4.0 UJ	3.8 UJ	4.1 UJ	2.7 UJ	2.2 UJ	3.3 UJ	3.0 UJ	3.8 J	3.4 UJ
Vanadium		NC	20.2 U	18.1 J	9.8	11.4	8.7	4.1	14.0	10.5 U	6.4
Zinc		NC	40.3 UJ	87.5 J	40.8 UJ	53.1 J	55.9 J	32.7 UJ	32.1 J	41.5 J	33.6 UJ

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring
* - Site-specific action level.

Date Printed: 06/12/2002 11:58:29
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 10
Union Ship Canal Parcel #2
Subsurface Soil Samples
Inorganic Data

Compound		Proposed Screening Level									
	Sample ID		SB-10	SB-11	SB-12	SB-13	SB-14	SB-15	SB-16	SB-17	SB-18
	Sample Depth		0.5 - 2.0 ft	4.0 - 6.0 ft	2.0 - 4.0 ft	0.5 - 2.0 ft	6.0 - 8.0 ft	4.0 - 6.0 ft	2.0 - 4.0 ft	4.0 - 6.0 ft	2.0 - 4.0 ft
	Sample Date		07/31/2001	08/02/2001	08/02/2001	07/30/2001	07/31/2001	08/02/2001	08/01/2001	08/01/2001	07/30/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	10300	13400 J	14100	29500	47800	25900	24700	66500 J	10800
Antimony		NC	40.4 J	16.1 UJ	48.2 J	17.5 J	24.1 UJ	24.5 J	5.2 J	23.9 UJ	32.9 J
Arsenic		70*	10.3 J	6.6 J	16.6	8.4 J	20.7 J	59.8	16.2 J	20.7 J	2.3 UJ
Barium		500*	200	77.6 J	226	256	324	144	156	406 J	100
Beryllium		NC	1.7	2.2 J	2.3	5.5	8.4	4.4	4.1	12.5 J	2.0
Cadmium		20*	4.5	0.40 J	7.5	1.7	0.47	3.2	0.77	0.83 J	2.7
Calcium		NC	36900 J	55600 J	57500	182000 J	211000 J	160000	153000 J	246000 J	64700 J
Chromium		200*	24.2	6.3 J	88.8	9.3	7.1	39.3	7.5	27.8 J	14.5
Cobalt		NC	7.4	2.9 J	8.4	5.7	3.5	9.9	5.1	5.2 J	6.6
Copper		NC	88.7 J	8.7 UJ	1530 J	165 J	17.2 J	72.2 J	62.7 J	14.2 J	66.1 J
Cyanide		50*	0.90 J	0.96 J	5.0 J	12.3 J	8.6 J	3.3 J	2.2 J	4.4 J	6.8 J
Iron		NC	129000 J	21800 J	133000	57200 J	7120 J	79600	23300 J	14500 J	107000 J
Lead		1000*	146 J	10.5 J	[1890 J]	37.6 J	15.9 J	92.0 J	56.7 J	6.5 J	44.5 J
Magnesium		NC	3320 J	6060 J	9820	10500 J	16600 J	11000	37500 J	20300 J	3590 J
Manganese		NC	2900 J	809 J	2480	1790 J	2070 J	3660	1080 J	2580 J	1720 J
Mercury		1*	0.44	0.13 UJ	0.54	0.11	0.17 U	0.12 U	0.23	0.18 UJ	0.12
Nickel		NC	10.0	10.7 UJ	15.4	10.6 U	18	18.6	6.0	16.0 UJ	9.2 UJ
Potassium		NC	1160	1080 J	1010	703	1700	2030	2230	2510 J	829
Selenium		50*	0.97 UJ	1.3 UJ	1.1 UJ	2.1 J	6.8 J	1.3 UJ	1.5 UJ	2.0 UJ	1.2 UJ
Silver		1170*	1.9 UJ	2.7 UJ	2.6	2.6 U	4.0 UJ	2.7 U	3.0 U	1.7 J	2.3 U
Sodium		NC	273	203 J	295	284	1200	500	370	1400 J	157
Thallium		NC	9.0 J	2.7 UJ	12.2 J	2.6 UJ	4.0 UJ	2.7 UJ	3.0 UJ	4.0 UJ	11.0 J
Vanadium		NC	9.7 U	13.4 UJ	10.6 U	13.2 U	15.0	13.3 U	14.9 U	3.1 J	11.5 U
Zinc		NC	982 J	90.1 J	849 J	53.9 J	40.2 UJ	242 J	259 J	39.9 UJ	369 J

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring
* - Site-specific action level

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 10
Union Ship Canal Parcel #2
Subsurface Soil Samples
Inorganic Data

Compound	Sample ID	Proposed Screening Level	SB-19	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25	SB-26	SB-27
	Sample Depth		2.0 - 4.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft
	Sample Date		08/02/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/07/2001	08/08/2001	08/08/2001
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Aluminum		NC	12600	18000	15000	40700	37000	29500	9810	41100 J	35700
Antimony		NC	3.4 7 J	18.3 UJ	13 2 UJ	13 2 UJ	18.4 UJ	16.2 UJ	9.8 UJ	23.4 UJ	14 0 UJ
Arsenic		70*	13 5	3 8	28 1	2.3	3.1 U	2.7 U	7.4	3.9 UJ	8 8 J
Barium		500*	135	167	146	323	129	130	75.9	209 J	259 J
Beryllium		NC	2 2	2 8	2 6	6 8	6 9	5.1	0 99	7 5 J	5 7
Cadmium		20*	5 2	1 5 U	1.1 U	1.1 U	0.092	1.4 U	0.83	0.075 J	1 2 U
Calcium		NC	60100	83100 J	78600 J	218000 J	244000 J	149000 J	63600	228000 J	177000 J
Chromium		200*	42 8	4 0 J	31 5 J	8 1 J	5.4 J	7.3 J	11.9	5.1 J	16 3 J
Cobalt		NC	7 5	1 4	5 7	2.5	1 7	2 2	4 8	2 2 J	4 8 J
Copper		NC	131 J	12 8 J	22 7 J	59.7 J	3.9 J	78.5 J	104 J	9.7 J	29 8
Cyanide		50*	4 5 J	3 5	0 46	31 6	9 2	28 3	8 0 J	0 30 J	19 5
Iron		NC	111000	9610	189000	18600	2810	18500	21200	12300 J	51700
Lead		1000*	217 J	3 6	15 4	24 6	0 92 U	26 9	58 4 J	10 1 J	50 8
Magnesium		NC	6850	6170 J	11300 J	18000 J	16400 J	10500 J	11600	14700 J	13000
Manganese		NC	3370	977	2930	3620	2930	1190	640	2160 J	2280 J
Mercury		1*	0 13	0 17 U	0 11 U	0 057	0 15 U	0 17 U	0 16	0 19 UJ	0 11 UJ
Nickel		NC	21 5	4 3	9 1	5 0	0 91	3 8	10 4	2 2 J	12 7 J
Potassium		NC	1090	2140 J	1460 J	3450 J	5280 J	2300 J	1210	2750 J	2240
Selenium		50*	1 1 UJ	3 6 J	1 1 UJ	31 6 J	34 4 J	8 3 J	0 82 UJ	23 2 J	1 2 UJ
Silver		1170*	1.5	3.0 U	2.2 U	2.2 U	3.1 U	2.7 U	1.6 U	3.9 UJ	2.3 U
Sodium		NC	279	478	299	880	775	485	193	898 J	575
Thallium		NC	4 6 J	3.0 UJ	2.2 UJ	2.2 UJ	3.1 UJ	2.7 UJ	1.6 UJ	3.9 UJ	2.3 UJ
Vanadium		NC	10 8 U	9 5	98 5	20 7	9 6	16 8	8 2 U	14 5 J	37 0
Zinc		NC	753 J	28.4 J	221 J	112 J	6 1 U	55.7 J	411 J	62.4 J	205 J

NOTES:
U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring.
* - Site-specific action level.

Date Printed: 06/12/2002 11:58:29
DBF File: N:\10549\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 10
Union Ship Canal Parcel #2
Subsurface Soil Samples
Inorganic Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level mg/Kg	SB-28 2 0 - 4 0 ft 08/08/2001 mg/Kg SOLID	SB-29 8 0 - 10 0 ft 08/08/2001 mg/Kg SOLID	SB-30 2 0 - 4 0 ft 08/08/2001 mg/Kg SOLID	SB-31 4 0 - 6 0 ft 08/08/2001 mg/Kg SOLID	SB-32 4 0 - 6 0 ft 08/08/2001 mg/Kg SOLID	SB-33 2 0 - 4 0 ft 08/08/2001 mg/Kg SOLID	SB-68 2 0 - 3 0 ft 03/28/2002 mg/kg SOLID	SB-69 2 0 - 4 0 ft 03/28/2002 mg/kg SOLID	SB-70 1.0 - 3 0 ft 03/28/2002 mg/kg SOLID
Aluminum		NC	30100	7930	37200	5030	52900 J	34900	21400 J	27100 J	15800 J
Antimony		NC	13 0 UJ	12.1 UJ	13.5 UJ	13.7 UJ	24.7 UJ	13.4 UJ	1.7 UJ	1.7 UJ	12 3 J
Arsenic		70*	8 3 J	13 5 J	2 2 UJ	5 3	19 3 J	14 8	14 1 J	10 J	15 8 J
Barium		500*	237 J	64.2 J	313 J	45.0	260 J	168	188 J	213 J	223 J
Beryllium		NC	4 7	1 3	5 7	0 30	10.2 J	6 6	3 6 J	4 7 J	2 6 J
Cadmium		20*	1 1 U	1 0 U	0 29	0.33	0.51 J	0.52	0 06 UJ	0.06 UJ	1.4 J
Calcium		NC	157000 J	96600 J	223000 J	82000	233000 J	159000	99100	158000	105000
Chromium		200*	16 6 J	16 4 J	15 8 J	9 7	3.3 J	4 6	26.2 J	7 J	53 5 J
Cobalt		NC	4 5 J	5 5 J	1 7 J	6 2	3 2 J	3 1	5 7 J	2 9 J	7 4 J
Copper		NC	34 1	36 6	25 7	14 8 J	10 3 UJ	5.6 UJ	72.7	27.2 U	2070
Cyanide		50*	0 57 U	1 5	1 9	0 51 UJ	4.1 J	25 3 J	1 88	6 49	4 08
Iron		NC	42200	20100	17200	13300	9940 J	15400	127000 J	84900 J	84800 J
Lead		1000*	39 7	39 1	46 8	11 4 J	8 4 J	14 6 J	51 2 J	21 2 J	[1770 J]
Magnesium		NC	23600	11100	28600	20100	12300 J	11700	7280 J	6890 J	12600 J
Manganese		NC	3350 J	627 J	4560 J	324	1450 J	1130	1630	1290	2160
Mercury		1*	0.12 UJ	0 10 J	0 11 UJ	0.11 U	0.22 UJ	0.15 U	0 066 J	0 023 J	1 J
Nickel		NC	11 8 J	15 2 J	6 9 J	13 4	16 5 UJ	0 98 U	12 4 J	5 8 J	25 6 J
Potassium		NC	2460	913	2170	1110	794 J	1050	1770	1540	1640
Selenium		50*	1 1 UJ	1 0 UJ	30 6 J	1 1 UJ	5 9 J	4 6 J	5 2 J	4 1 J	5 7 J
Silver		1170*	2 2 U	2.0 U	2.2 U	2 3 U	4.1 UJ	2.2 U	0.1 U	0.11 U	0 95
Sodium		NC	954	343	885	175	343 J	338	206 J	197 J	403 J
Thallium		NC	2.2 UJ	2 0 UJ	2 2 UJ	1 8 J	4 1 UJ	2.2 UJ	0.59 UJ	0.63 UJ	0 5 UJ
Vanadium		NC	28 9	17 1	12 4	5 7	0 38 J	11 2 U	24 1 J	19 J	16 9 J
Zinc		NC	205 J	276 J	115 J	49.2 J	41.2 UJ	25 3 J	280 J	167 J	1160 J

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring
* - Site-specific action level.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 10
Union Ship Canal Parcel #2
Subsurface Soil Samples
Inorganic Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level (mg/Kg)	SB-71 / 2 0 - 3 0 ft / 03/28/2002 / mg/kg / SOLID
Aluminum		NC	10400 J
Antimony		NC	1 4 UJ
Arsenic		70*	28 5 J
Barium		500*	145 J
Beryllium		NC	2 2 J
Cadmium		20*	0 05 UJ
Calcium		NC	42700
Chromium		200*	50 1 J
Cobalt		NC	15 7 J
Copper		NC	59 8
Cyanide		50*	18 7
Iron		NC	280000 J
Lead		1000*	47 3 J
Magnesium		NC	4110 J
Manganese		NC	2830
Mercury		1*	0 128 J
Nickel		NC	24 4 J
Potassium		NC	1070
Selenium		50*	12 7 J
Silver		1170*	0 11
Sodium		NC	115 J
Thallium		NC	0 58 UJ
Vanadium		NC	47 2 J
Zinc		NC	486 J

NOTES:
U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
NO - naturally occuring
* - Site-specific action level

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 11
Union Ship Canal Parcel #2
Subsurface Soil Samples
Other Data

	Sample ID	Proposed Screening	COMP-38-39	COMP-40-41	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07
	Sample Depth	Level	10 - 15 ft	15 - 20 ft	40 - 60 ft	60 - 80 ft	40 - 60 ft	20 - 40 ft	40 - 60 ft	40 - 60 ft	40 - 60 ft
	Sample Date		03/26/2002	03/26/2002	07/31/2001	08/10/2001	08/01/2001	08/09/2001	08/09/2001	08/01/2001	08/09/2001
	Units										
Compound	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Percent moisture (%)		NC	17.4	28.2	50.4	54.6	51.9	35.5	8.08	42.3	45.6
pH (su)		NC	9.78	9.83	—	—	—	—	—	11	—

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
* - Site-specific action level

Date Printed 06/12/2002 11:59:02
DBF File: N:\1054\25466\TEMPDATA.DBF
File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 11
Union Ship Canal Parcel #2
Subsurface Soil Samples
Other Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	Proposed Screening Level	SB-08 4.0 - 6.0 ft 08/02/2001 SOLID	SB-09 6.0 - 8.0 ft 07/31/2001 SOLID	SB-10 0.5 - 2.0 ft 07/31/2001 SOLID	SB-11 4.0 - 6.0 ft 08/02/2001 SOLID	SB-12 2.0 - 4.0 ft 08/02/2001 SOLID	SB-13 0.5 - 2.0 ft 07/30/2001 SOLID	SB-14 6.0 - 8.0 ft 07/31/2001 SOLID	SB-15 4.0 - 6.0 ft 08/02/2001 SOLID	SB-16 2.0 - 4.0 ft 08/01/2001 SOLID
Percent moisture (%)		NC	12.4	50.0	11.7	35.0	13.4	30.6	51.2	32.5	33.0
pH (su)		NC	10	11	8.2	---	---	11	10	---	8.3

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level

Date Printed 06/12/2002 11:59:02
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 11
Union Ship Canal Parcel #2
Subsurface Soil Samples
Other Data

Compound		Proposed Screening Level									
	Sample ID		SB-17	SB-18	SB-19	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25
	Sample Depth		4.0 - 6.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	6.0 - 8.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft
	Sample Date		08/01/2001	07/30/2001	08/02/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/07/2001
	Units										
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Percent moisture (%)		NC	57.5	15.6	19.6	45.3	18.2	22.8	42.2	40.3	50.1
pH (su)		NC	—	7.6	—	—	—	—	—	—	—

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level

Date Printed: 06/12/2002 11:59:02
DBF File: [illegible]TEMPDATA.DBF

File Number 5507.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 11
Union Ship Canal Parcel #2
Subsurface Soil Samples
Other Data

	Sample ID	Proposed Screening	SB-26	SB-27	SB-28	SB-29	SB-30	SB-31	SB-32	SB-33	SB-34
	Sample Depth	Level	2.0 - 4.0 ft	2.0 - 4.0 ft	2.0 - 4.0 ft	8.0 - 10.0 ft	2.0 - 4.0 ft	4.0 - 6.0 ft	4.0 - 6.0 ft	2.0 - 4.0 ft	2.0 - 2.5 ft
	Sample Date		08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	08/08/2001	03/26/2002
	Units										
Compound	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Percent moisture (%)		NC	52.0	23.4	20.0	20.8	13.5	12.1	59.9	36.1	30.2
pH (su)		NC	—	—	—	—	—	—	—	—	11.7

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value

* - Site-specific action level

Date Printed: 06/12/2002 11:59:02
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 11
Union Ship Canal Parcel #2
Subsurface Soil Samples
Other Data

Compound	Sample ID	Proposed Screening Level	SB-36	SB-42	SB-45	SB-48	SB-53	SB-68	SB-69	SB-70	SB-71
	Sample Depth		2.0 - 2.5 ft	5.5 - 6.5 ft	6.0 - 7.0 ft	4.0 - 6.0 ft	7.0 - 8.0 ft	2.0 - 3.0 ft	2.0 - 4.0 ft	1.0 - 3.0 ft	2.0 - 3.0 ft
	Sample Date		03/26/2002	03/26/2002	03/26/2002	03/27/2002	03/27/2002	03/28/2002	03/28/2002	03/28/2002	03/28/2002
	Units										
	Matrix		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Percent moisture (%)		NC	29.4	44.3	41.4	51.2	50.4	28	34	17	30
pH (su)		NC	10.7	8.41	10.8	11.4	10.2	8.09	8.2	8.23	7.93

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value
* - Site-specific action level

Date Printed: 06/12/2002 11:59:02
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 12
Union Ship Canal Parcel #2
Ground Water Samples
Volatile Organic Compound Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	NYS Class GA Standards (3/98)	MW-003 08/14/2001 ug/L WATER	MW-004 08/14/2001 ug/L WATER	MW-005 08/14/2001 ug/L WATER	MW-006 08/14/2001 ug/L WATER	MW-007 08/13/2001 ug/L WATER	MW-106 08/14/2001 ug/L WATER	MW-107 08/13/2001 ug/L WATER
1,1,1-Trichloroethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane		0 04	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane (EDB)		0 0006	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene		3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane		0 6	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene		3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene		3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone (MEK)		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone		NC	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzene		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform		7	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl acetate		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl tert butyl ether		10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value.

Date Printed 06/12/2002 11 59 22
DBF File: N:\10569\25466\TEMPDATA DBF

File Number 5509 28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 12
Union Ship Canal Parcel #2
Ground Water Samples
Volatile Organic Compound Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	NYS Class GA Standards (3/98)	MW-003	MW-004	MW-005	MW-006	MW-007	MW-106	MW-107
	Sample Date		08/14/2001	08/14/2001	08/14/2001	08/14/2001	08/13/2001	08/14/2001	08/13/2001
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER
Methylcyclohexane		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride		2	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropylene		0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene		0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value

Date Printed 06/12/2002 11:59:22
DBF File: N:\10569\25466\TEMPDATA.DBF

File Number 5509.28602

O'BRIEN & GERE ENGINEERS, INC.

DRAFT
Table 13
Union Ship Canal Parcel #2
Ground Water Samples
Semivolatile Organic Compound Data

Compound	Sample ID	NYS Class GA Standards (3/98)	MW-003	MW-004	MW-005	MW-006	MW-007	MW-106	MW-107	TP-US-13	TP-US-14
	Sample Depth										
	Sample Date		08/14/2001	08/14/2001	08/14/2001	08/14/2001	08/13/2001	08/14/2001	08/13/2001	08/15/2001	08/15/2001
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
1,1'-Biphenyl		5	10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 UJ	10 U
2,2'-oxybis(1-Chloropropane)		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol		NC	26 U	26 U	25 U	26 U	25 U	26 U	25 U	25 UJ	25 U
2,4,6-Trichlorophenol		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
2,4-Dichlorophenol		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
2,4-Dimethylphenol		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
2,4-Dinitrophenol		1	26 U	26 U	25 UJ	26 U	25 UJ	26 UJ	25 UJ	25 UJ	25 U
2,4-Dinitrotoluene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
2,6-Dinitrotoluene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
2-Chloronaphthalene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
2-Chlorophenol		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene		NC	10 U	10 U	10 U	10 U	2 J	10 U	10 U	360 J	10 UJ
2-Methylphenol		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline		5	26 U	26 U	25 U	26 U	25 U	26 U	25 U	25 UJ	25 U
2-Nitrophenol		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
3,3-Dichlorobenzidine		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
3-Nitroaniline		5	26 U	26 U	25 U	26 U	25 U	26 U	25 U	25 UJ	25 U
4,6-Dinitro-2-methylphenol		NC	26 U	26 U	25 U	26 U	25 U	26 U	25 U	25 UJ	25 U
4-Bromophenyl phenyl ether		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
4-Chloro-3-methylphenol		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
4-Chloroaniline		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
4-Chlorophenyl phenyl ether		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
4-Methylphenol		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline		5	26 U	26 U	25 U	26 U	25 U	26 U	25 U	25 UJ	25 U
4-Nitrophenol		NC	26 U	26 U	25 U	26 UJ	25 U	26 U	25 U	25 UJ	25 U
Acenaphthene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Acenaphthylene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Acetophenone		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Atrazine		7.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(a)anthracene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U
Benzaldehyde		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U
Benzo(b)fluoranthene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U
Benzo(ghi)perylene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U

NOTES:
U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value.
** - Carcinogenic PAH

Date Printed: 06/12/2002 11:59:56
DBF File: [illegible]
File Number 5509 28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 13
Union Ship Canal Parcel #2
Ground Water Samples
Semivolatile Organic Compound Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	NYS Class GA Standards (3/98)	MW-003	MW-004	MW-005	MW-006	MW-007	MW-106	MW-107	TP-US-13	TP-US-14
	Sample Date		08/14/2001	08/14/2001	08/14/2001	08/14/2001	08/13/2001	08/14/2001	08/13/2001	08/15/2001	08/15/2001
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Benzo(k)fluoranthene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U
Bis (2-chloroethoxy) methane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Bis (2-chloroethyl) ether		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate		5	10 U	1 J	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Butyl benzyl phthalate		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Caprolactam		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Carbazole		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Chrysene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	3 J	10 U
Di-n-butyl phthalate		50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Di-n-octyl phthalate		NC	10 U	10 U	10 UJ	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Dibenzo(a,h)anthracene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Dibenzofuran		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Diethyl phthalate		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Dimethyl phthalate		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Fluoranthene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Fluorene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	38 J	10 U
Hexachlorobenzene		0 04	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Hexachlorobutadiene		0 5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Hexachlorocyclopentadiene		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Hexachloroethane		5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene		NC**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Isophorone		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
N-Nitrosodipropylamine		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
N-Nitrosodiphenylamine		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Naphthalene		NC	10 U	1 J	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Nitrobenzene		0 4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
Pentachlorophenol		1	26 U	26 U	25 U	26 U	25 U	26 U	25 U	25 UJ	25 U
Phenanthrene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	150 J	10 UJ
Phenol		1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene		NC	10 U	10 U	10 U	10 U	10 U	10 U	10 U	15 J	10 U
Total carcinogenic PAHs		NC	—	—	—	—	—	—	—	7	—
Total PAHs		NC	—	1	—	—	2	—	—	570	—
Total SVOCs		NC	—	2	—	—	4	—	—	570	—

NOTES: U - not detected, J - estimated value.
NC - no screening value available, [ ] - Exceeds screening value.
** - Carcinogenic PAH

Date Printed: 06/12/2002 11:59:56

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 14
Union Ship Canal Parcel #2
Ground Water Samples
PCB Data

Compound	Sample ID	NYS Class GA Standards (3/98)	MW-003	MW-004	MW-005	MW-006	MW-007	MW-106	MW-107	TP-US-13	TP-US-14
	Sample Depth										
	Sample Date		08/14/2001	08/14/2001	08/14/2001	08/14/2001	08/13/2001	08/14/2001	08/13/2001	08/15/2001	08/15/2001
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Aroclor 1016		0.09**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Aroclor 1221		0.09**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Aroclor 1232		0.09**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Aroclor 1242		0.09**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Aroclor 1248		0.09**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Aroclor 1254		0.09**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Aroclor 1260		0.09**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value
** - for total PCBs

Date Printed: 06/12/2002 12:00:25
DBF File: N:\110549\25466\TEMPDATA.DBF
File Number: 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 15
Union Ship Canal Parcel #2
Ground Water Samples
Inorganic Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	NYS Class GA Standards (3/98)	MW-003	MW-004	MW-005	MW-006	MW-007	MW-106	MW-107	TP-US-13	TP-US-14
	Sample Date		08/14/2001	08/14/2001	08/14/2001	08/14/2001	08/13/2001	08/14/2001	08/13/2001	08/15/2001	08/15/2001
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Aluminum		NC	200 UJ	435 J	734 J	665 J	310 J	624 J	200 UJ	77100	14200
Antimony		3	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U
Arsenic		25	12.3	6.9	11.3	10.1	9.3	6.8	[29.1]	[44.4 J]	21.5 J
Barium		1000	59.1	27.7	242	59.3	34.6	10.1	137	508	135
Beryllium		NC	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	12.3	2.2
Cadmium		5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	[15.0]	4.0
Calcium		NC	150000	82200	166000	132000	89300	79900	182000	473000 J	198000 J
Chromium		50	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	[60.2]	18.4
Cobalt		NC	0.74	0.54	2.4	0.53	0.65 J	50.0 U	2.9	15.6	4.4
Copper		200	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	63.0	25.0 U	[2670]	[1470]
Cyanide		200	8.2	[628]	18.9	6.6	[284]	100	20.1	---	---
Iron		300	[2940]	[440]	[1340]	100 U	[763]	[404]	[1730]	[79600]	[37200]
Lead		25	3.3	3.0 U	5.7	3.0 U	4.2 J	3.0 U	4.5	[1080 J]	[314 J]
Magnesium		NC	25900	1520	27900	5000 U	10100	5000 U	28800	41800	10800
Manganese		300	[781]	5.4	289	15.0 U	129	5.5	128	[5950]	[1450]
Mercury		0.7	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	[5.3 J]	[1.9 J]
Nickel		100	40.0 U	40.0 U	5.3	40.0 U	40.0 U	89.7	11.7	33.6	10.8
Potassium		NC	70300	50000	24000	15900	16600	19300	40700	22200	12300
Selenium		10	5.0 U	5.0 U	5.0 U	7.2	5.0 U	7.0	5.0 U	[10.8 J]	10.0 J
Silver		50	2.8	1.7	1.4	1.3	1.2	0.89	1.6	3.9	3.2
Sodium		20000	[86100]	[34700]	[38800]	[23400]	17400	[33100]	[44500]	[40900]	[38000]
Thallium		NC	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 UJ	10.0 UJ
Vanadium		NC	50.0 U	50.0 U	2.0	3.7	50.0 U	1.0	50.0 U	1.7	50.0 U
Zinc		NC	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	12.30	20.0 U	2300 J	843 J

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value.

Date Printed: 06/12/2002 12:00:44
DBF File: N:\10569\25466\TEMPDATA.DBF
EXP File: N:\10569\25466\TABLE5B.EXP

File Number 5509.28602

O'BRIEN & GERE
ENGINEERS, INC.

DRAFT
Table 16
Union Ship Canal Parcel #2
Ground Water Samples
Other Data

Compound	Sample ID / Sample Depth / Sample Date / Units / Matrix	NYS Class GA Standards (3/98)	MW-004	MW-005	MW-006	MW-007	MW-106	MW-107
	Sample Date		03/25/2002	03/25/2002	03/25/2002	03/25/2002	03/25/2002	03/25/2002
	Matrix		WATER	WATER	WATER	WATER	WATER	WATER
pH (su)		NC	7 0	6 0	8.5	6 0	6.5	7.5

NOTES: U - not detected, J - estimated value
NC - no screening value available, [ ] - Exceeds screening value

Date Printed 06/12/2002 12:12:17
DBF File: N:\10569\25466\TEMPDATA DBF
FXP File: N:\10569\25466\TABLEPR FXP

File Number 5509.28602

DRAWING PATH: I:/DIV83/PROJECTS/10569/25466/8 DWG/UNION/003.DWG

FIGURE 2

LEGEND

PROPERTY LINE

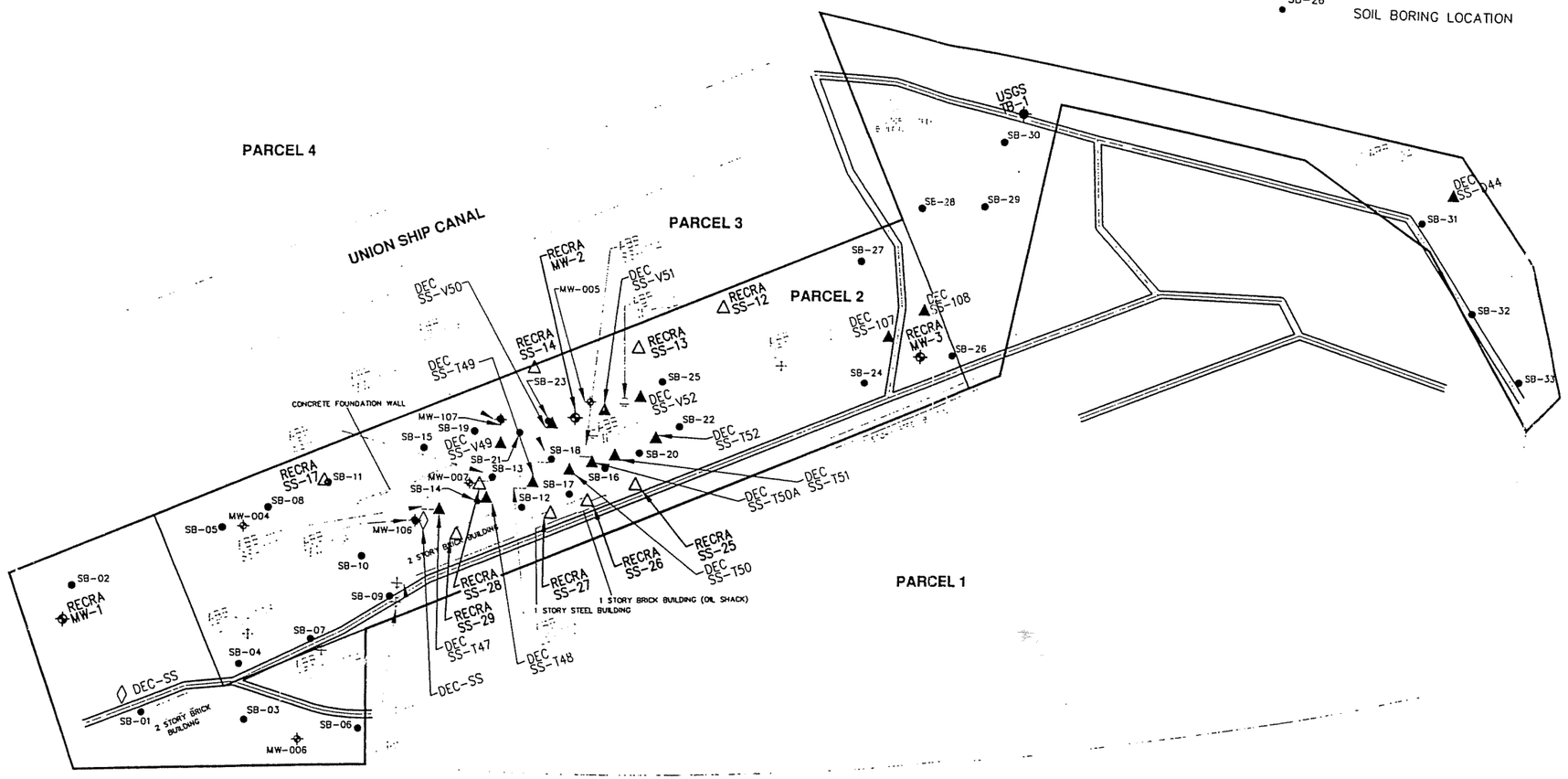
PARCEL BOUNDARY

EXISTING BUILDING

ACCESS ROADS

MW-004 EXISTING MONITORING WELL

SB-26 SOIL BORING LOCATION



NOTE:

ALL SAMPLING LOCATIONS ARE ESTIMATED EXCEPT FOR MALCOLM PIRNIE, 2000 INVESTIGATION LOCATIONS.

LEGEND

US GEOLOGICAL SURVEY

USGS TB- = SOIL BORING, 1982

RECRA ENVIRONMENTAL, INC.

RECRA SS- = SURFACE SOIL SAMPLE, 1988

RECRA SW/SD- = SURFACE WATER/SEDEMENT SAMPLE PAIR, 1988

RECRA P- = POND WATER/SEDEMENT SAMPLE PAIR, 1988

RECRA MW- = MONITORING WELL (DESTROYED), 1988

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC SS- = SURFACE SOIL SAMPLE, 1990

DEC SS- = SURFACE SOIL SAMPLE, 1994

ARMY CORP OF ENGINEERS

ACOE USC- = SEDIMENT SAMPLE, 1999

HANNA FURNACE SITE
BUFFALO, NEW YORK
REBUILD NOW, NEW YORK

SAMPLING LOCATIONS BY INVESTIGATION

1"=300' 300 0 300

FILE NO. 10569.25466.003
APRIL 2002

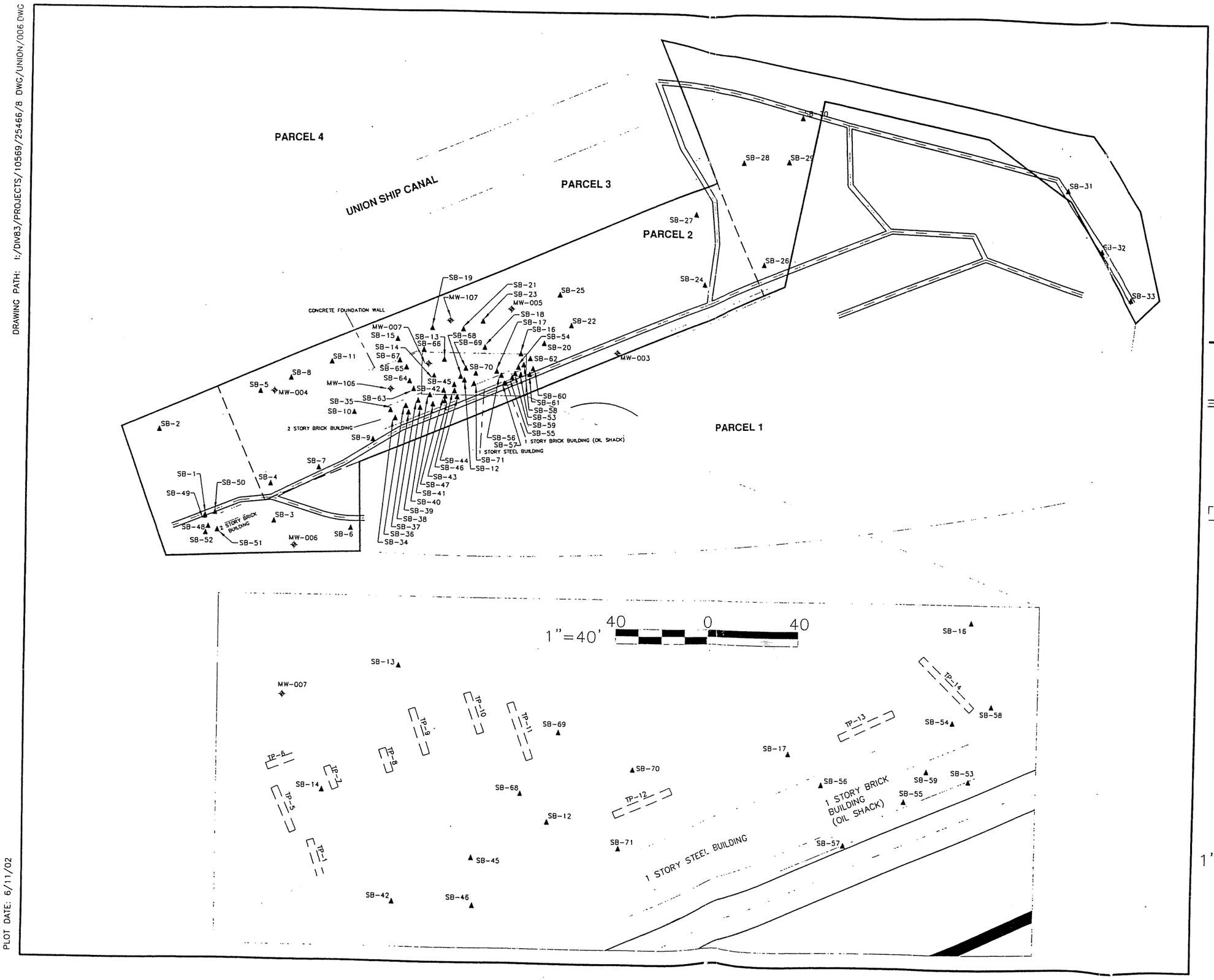
O'BRIEN & GERE ENGINEERS INC.

6:01 DATE: 6/11/02

DRAWING PATH: I:/DIV83/PROJECTS/10569/25466/8 DWG/UNION/006.DWG

PLOT DATE: 6/11/02

FIGURE 3



LEGEND

- PROPERTY LINE
- PARCEL BOUNDARY
- EXISTING BUILDING
- ACCESS ROADS
- SB-10▲ SOIL BORING LOCATION
- MW-106 ⊕ MONITORING WELL LOCATION
- TEST PIT LOCATIONS

HANNA FURNACE SITE
BUFFALO, NEW YORK
REBUILD NOW, NEW YORK

SITE INVESTIGATION SAMPLING LOCATIONS

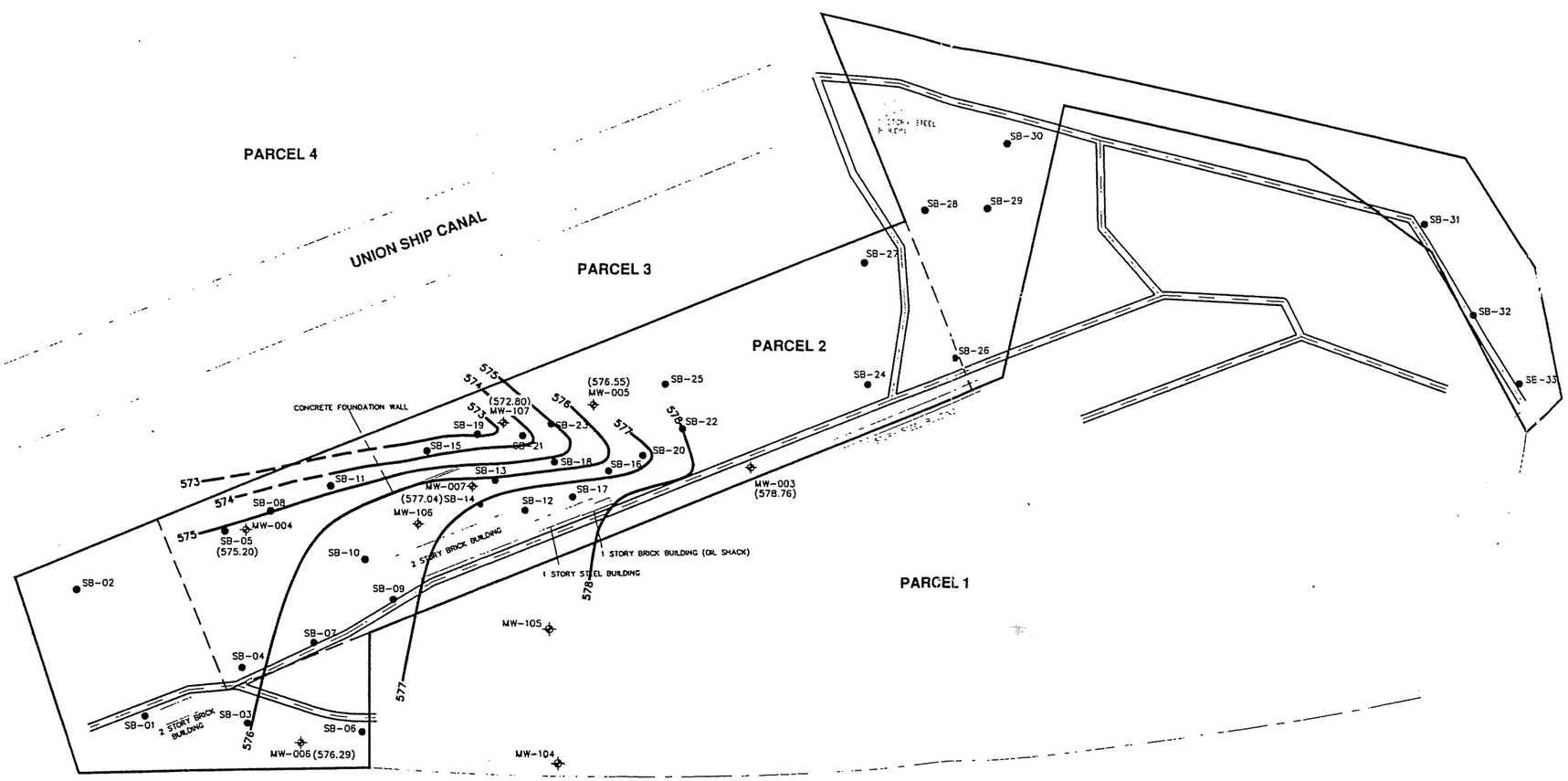
1"=300' 300 0 300

FILE NO. 10569.25466.006
APRIL 2002

OBRIEN & GERE
ENGINEERS INC.

DRAWING PATH: I:/DIV83/PROJECTS/10569/25466/8 DWG/UNION/005.DWG

FIGURE 4



LEGEND

- PROPERTY LINE
- PARCEL BOUNDARY
- EXISTING BUILDING
- ACCESS ROADS
- MW-004 — MONITORING WELL
- SB-26 — SOIL BORING LOCATION
- 573 — CONTOUR LINES (DASHED WHERE INFERRED)
- (578.76) — GROUNDWATER ELEVATION

HANNA FURNACE SITE
BUFFALO, NEW YORK
REBUILD NOW, NEW YORK

GROUND WATER FLOW MAP (8/14/01)

1"=300' 300 0 300

FILE NO. 10569.25466.005
APRIL 2002

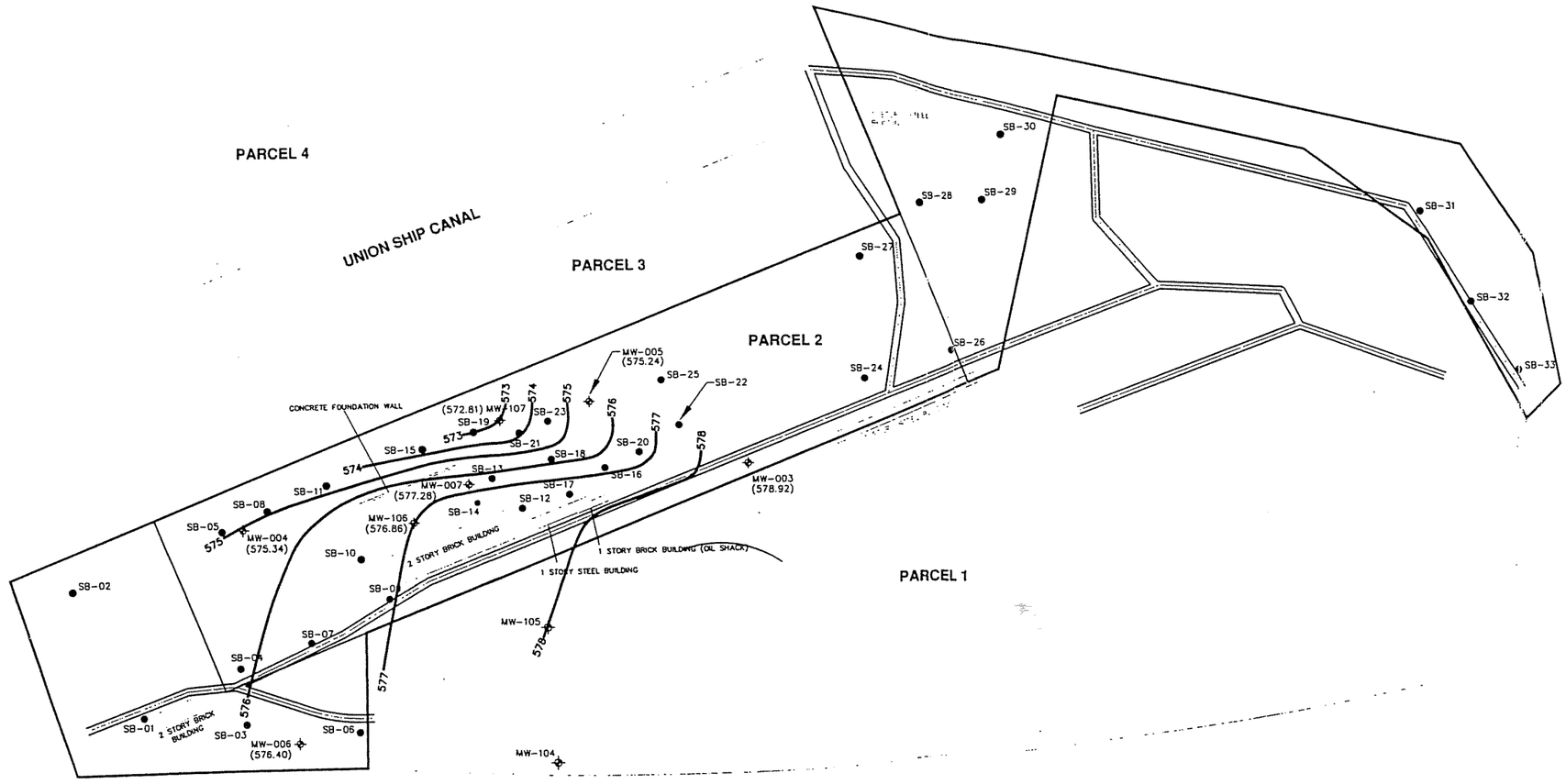
O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 6/11/02

DRAWING PATH: I:/DIV83/PROJECTS/10569/25466/8 DWG/UNION/004.DWG

PLOT DATE: 6/11/02

FIGURE 5



LEGEND

- PROPERTY LINE
- PARCEL BOUNDARY
- EXISTING BUILDING
- ACCESS ROADS
- MW-004 — MONITORING WELL
- SB-26 — SOIL BORING LOCATION
- 573 — CONTOUR LINES (DASHED WHERE INFERRED)
- (578.92) — GROUNDWATER ELEVATION

HANNA FURNACE SITE
BUFFALO, NEW YORK
REBUILD NOW, NEW YORK

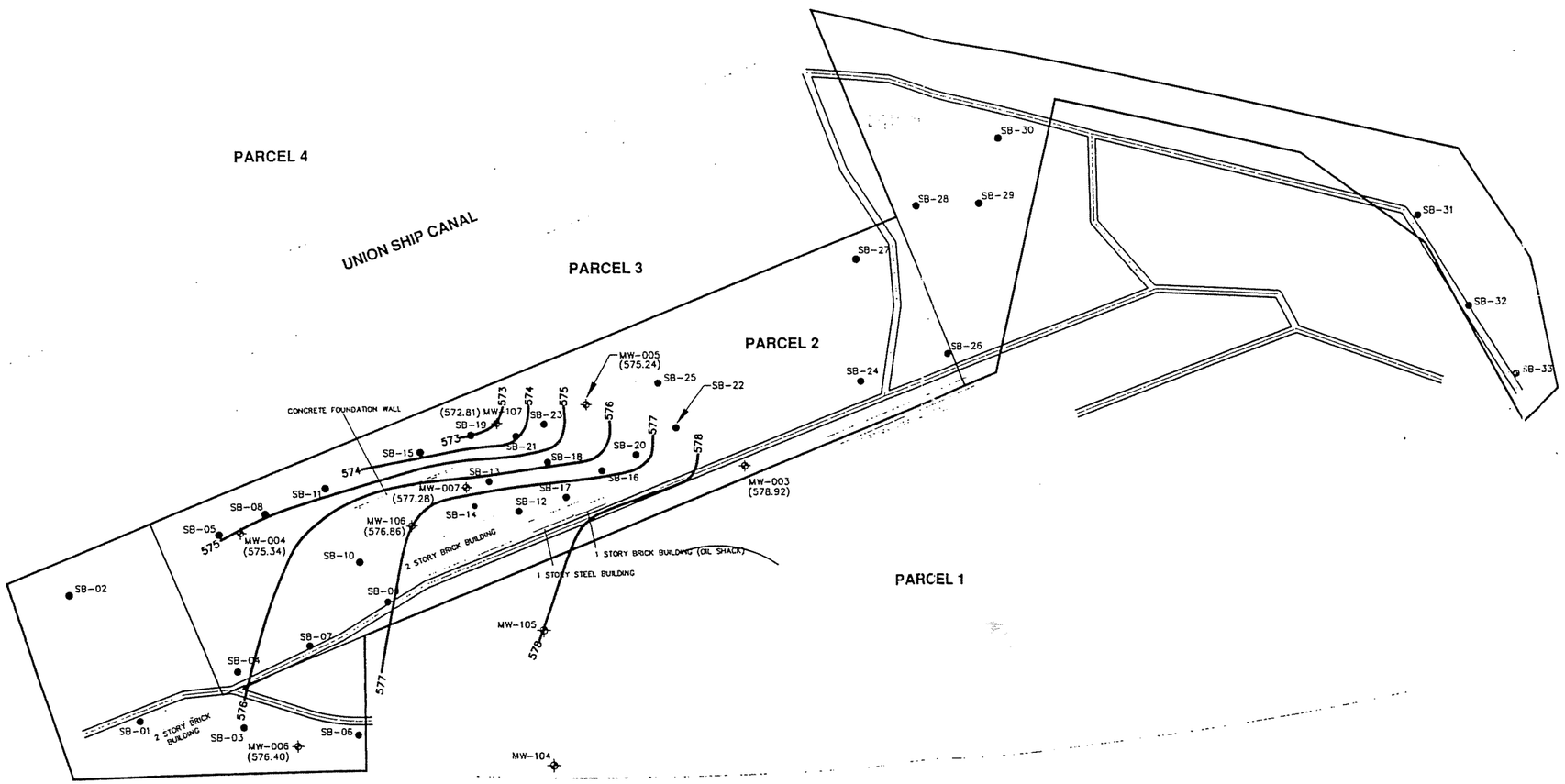
GROUND WATER FLOW MAP (11/12/01)

1"=300' 300 0 300

FILE NO. 10569.25466.004
APRIL 2002

O'BRIEN & GERE ENGINEERS INC.

FIGURE 6



LEGEND

- PROPERTY LINE
- PARCEL BOUNDARY
- EXISTING BUILDING
- ACCESS ROADS
- MW-004 — MONITORING WELL
- SB-26 — SOIL BORING LOCATION
- 573 — CONTOUR LINES (DASHED WHERE INFERRED)
- (578.92) — GROUNDWATER ELEVATION

HANNA FURNACE SITE
BUFFALO, NEW YORK
REBUILD NOW, NEW YORK

GROUND WATER FLOW MAP (3/25/02)

1"=300' 300 0 300

FILE NO. 10569.25466.007
JUNE 2002

O'BRIEN & GERE ENGINEERS INC.

DRAWING PATH: I:/DW83/PROJECTS/10569/25466/8 DWG/UNION/007.DWG

PLOT DATE: 6/11/02

SS_EXCEED.MXD

FIGURE 7

PARCEL 2

CONCRETE FOUNDATION WALL

SB-19

SB-16

SB-20

SB-18

SB-12

SB-17

SB-14

SB-10

1 STORY STEEL BUILDING

2 STORY BRICK BUILDING

1 STORY BRICK BUILDING (OIL SHACK)

1 STORY STEEL BUILDING

PARCEL 1

3 STORY BRICK BUILDING

LEGEND

ACTION LEVEL EXCEEDANCES

LEAD

CHROMIUM

MERCURY

HANNA FURNACE - PARCEL 2
REBUILD NOW - N.Y.
EMPIRE STATE DEVELOPMENT

0 100 200 400 600

Feet

N

W E

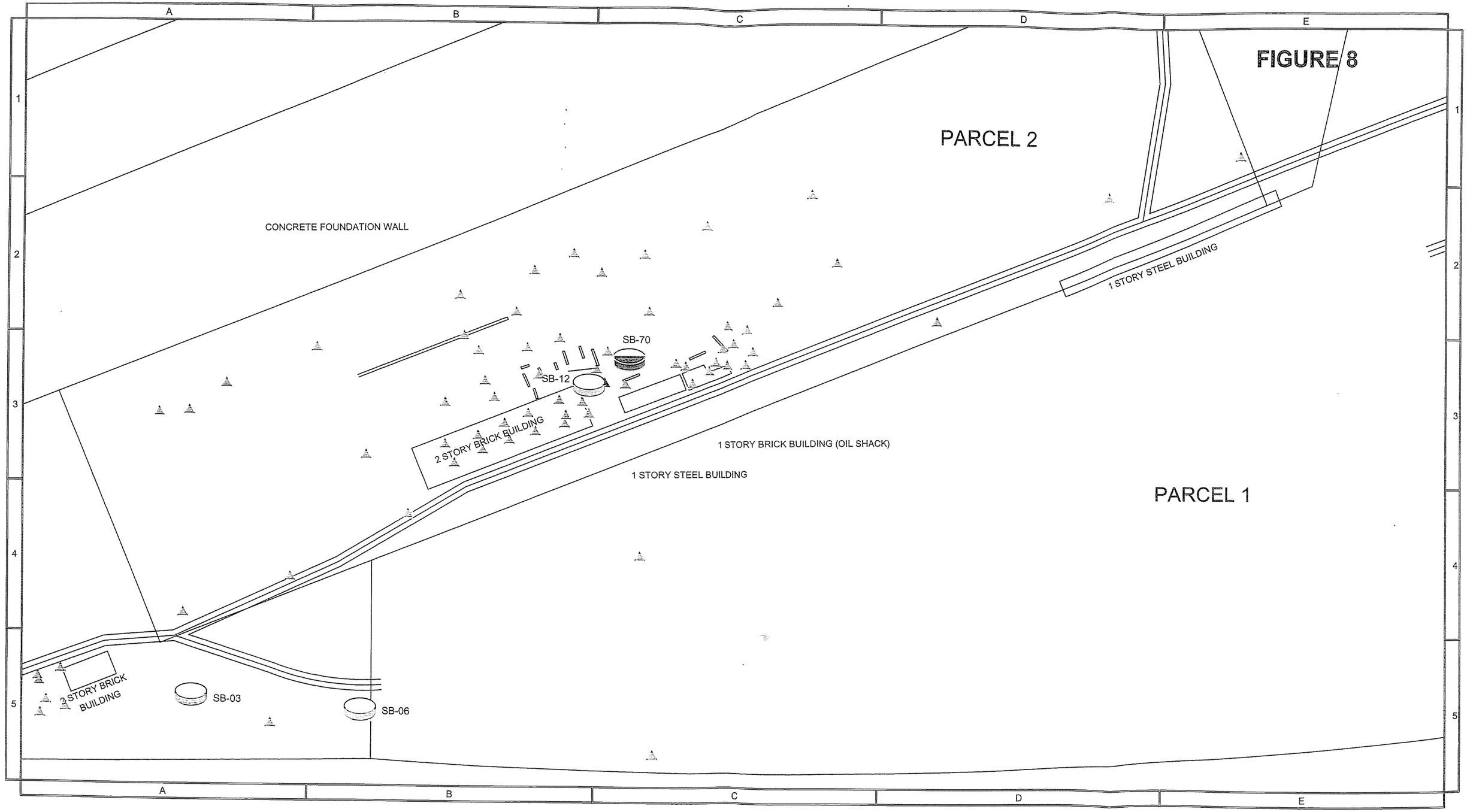
S

EXCEEDANCES IN SURFACE SOIL SAMPLES

JUNE 2002
10569.25466.001

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 8



Legend

ACTION LEVEL EXCEEDANCES

BARIUM LEAD MERCURY

HANNA FURNACE - PARCEL 2
REBUILD NOW - N.Y.
EMPIRE STATE DEVELOPMENT

0 100 200 400 600
Feet

N
W E
S

EXCEEDANCES IN SUBSURFACE SOIL SAMPLES

JUNE 2002
10569.25466.001

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 9

PARCEL 4

UNION SHIP CANAL

PARCEL 3

PARCEL 2

PARCEL 1

CONCRETE FOUNDATION WALL

1 STORY STEEL BUILDING

1 STORY STEEL BUILDING

1 STORY BRICK BUILDING (OIL SHACK)

1 STORY STEEL BUILDING

2 STORY BRICK BUILDING

1 STORY BRICK BUILDING (OIL SHACK)

1 STORY STEEL BUILDING

2 STORY BRICK BUILDING

SB-01 SB-02 SB-03 SB-04 SB-05 SB-06 SB-07 SB-08 SB-09 SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-19 SB-20 SB-21 SB-22 SB-23 SB-25 SB-26 SB-27 SB-28 SB-29 SB-30 SB-31 SB-32 SB-33 SB-35 SB-36 SB-37 SB-38 SB-39 SB-40 SB-41 SB-42 SB-43 SB-44 SB-45 SB-46 SB-47 SB-48 SB-49 SB-50 SB-51 SB-52 SB-53 SB-54 SB-55 SB-56 SB-57 SB-58 SB-59 SB-60 SB-61 SB-62 SB-63 SB-64 SB-65 SB-66 SB-67 SB-68 SB-69 SB-70 SB-71

MW-003 MW-004 MW-005 MW-006 MW-007 MW-104 MW-105 MW-106 MW-107

TP-6 TP-7 TP-8 TP-9 TP-10 TP-11 TP-12 TP-13 TP-14

Feet
0 25 50 100 150

Legend

TEST PIT

SAMPLE TYPE

MONITORING WELL

SOIL BORING

ELEVATED pH IN GROUNDWATER

APPROXIMATE LOCATION OF NAPL

HANNA FURNACE - PARCEL 2
REBUILD NOW - N.Y.
EMPIRE STATE DEVELOPMENT

0 100 200 400 600 800 1,000
Feet

N W E S

EXTENT OF NAPL AND ELEVATED pH IN GROUND WATER

JUNE 2002
10569.25466.001

O'BRIEN & GERE ENGINEERS, INC.

Appendix A

Boring Logs

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-01

BORING LOG

Project Name & Location	Project Number	Date & Time Started 7/31/01 1345	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 07/31/01 1445	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: South West area of Parcel 2				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Fill	1'10"	8.0	2	10YR(4/2) Dark Grayish Brown, Fine to med sand and some gravel, Industrial Debris and slag.	Dry
1	SM/ Fill		3.1	15	10YR(5/3) Brown slag with Fine medium and coarse sand.	Dry
	SM/ Fill		4.2	19	10YR(5/3) Brown Slag Very fine to fine medium sand and silts.	Dry
2	SM/ Fill		1.8	10	10YR(4/2) Dark Grayish Brown, Fine to med sand with slag and industrial debris	Dry
	SM	1'4"	5.5	12	10YR(4/2) Dark Grayish Brown, Fine to medium sand and silt.	Dry
3	SP		2.2	17	10YR(7/2) Light Gray, Coarse gravely sand with yellow ash approximately 6 inches thick	Dry
	SP		3.7	38	10YR(4/2) Dark Grayish Brown, highly compacted medium sand	Dry
4	Slag		0.2	25	10YR(4/2) Dark Grayish Brown, highly compacted slag.	Dry
	SP/ Slag	2'	5	10	10YR(7/2) Light Gray grannular medium sand with mixed blackish gray slag, no odors detected.	Dry
5	SP/ Slag		3.5	10	10YR(7/2) Light Gray grannular medium sand with mixed blackish gray slag, no odors detected.	Dry
	SP/ Slag		2.9	9	10YR(7/2) Light Gray grannular medium sand with mixed blackish gray slag, no odors detected.	Dry
6	SP/ Slag		1.6	11	10YR(7/2) Light Gray grannular medium sand with mixed blackish gray slag, no odors detected.	Dry
	NR	0'			NO RECOVERY	Ground water at 6ft BGS
7	NR				NO RECOVERY	
	NR				NO RECOVERY	
8	NR				NO RECOVERY	
	GC	8"		8	10YR(4/2) Dark Grayish Brown, gravely clays with some slag.	
9			4.6	1	10YR(4/2) Dark Grayish Brown, gravely clays with some slag.	
	PT		2.2	2	10YR(2/2) Very Dark Brown, Peat very light and spongy.	
10				2	10YR(2/2) Very Dark Brown, Peat very light and spongy.	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-01

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 7/31/01 1343
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 07/31/01 1445
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes / 250 lb Hydraulic Hammer
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
CME 75	Split Spoon	16 ft
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2 1/4" HAS	2"X2'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: South West area of Parcel 2				SURFACE DESCRIPTION: Soil/Debris	
10	OL	2'	0.0	5	10YR(4/2) Very Dark Brown, Peat very moist organic silty clay with vegetation and trace of gravel	
11	OL		0.0	4	10YR(4/2) Very Dark Brown, Peat very moist organic silty clay with vegetation and trace of gravel	
	OL		0.0	4	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
12	OL		0.0	3	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
	PT/OL	2'	0.0	5	10YR(2/2) Very Dark Brown Peat, and ogranic clays of high plasticity, minor lavers of organic material	
13	OL		0.0	4	10YR(2/2) Very Dark Brown Peat, and ogranic clays of high plasticity, minor lavers of organic material	
	OL		0.0	4	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
14	OL		0.0	5	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
	OL	2'	0.0	11	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
15	OL		0.0	12	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
	OL		0.0	12	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
16	OL		0.0	14	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-02

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 8/10/01 0805	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/10/01 0853	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Western edge of Pacel 2, North of SB-01				SURFACE DESCRIPTION: Soil/Debris	
0	SM/iron pellets	1'	0.0	9	10YR(6/2) Light brownish gray, silty fine to medium sand and gravel w/taconite pellets (iron ore)	
1			0.0	19		
		1'	0.0	26	10YR (4/4) Dark yellowish brown, silty fine medium sand/w gravel and slag	
2	SM/ Slag		0.0	38	5YR(3/4) Dark reddish Brown, silty fine sand trace gravel	
	SM/ Slag	1'	0.0	9		
3			0.0	11	5YR(3/4) Dark reddish Brown w/coal fragments and slag.	
	SM/ Coal	1'	0.0	12		
4			0.0	10	10YR(8/1) white, slage and ash material granular loose compaction, still dry	
	Slag	1'	0.0	4		
5			0.0	3	10YR(8/1) white, slag and ash material	
	Slag	1'	0.0	4		
6			0.0	4	10YR(2/2) very dark brown, slag grading into PT clay	
	Slag	1'	0.0	3		
7	PT		0.0	2	10YR(2/2) very dark brown, peaty clay	
	PT/OL	1'	0.0	1		
8	PT/OL		0.0	1	10YR(2/2) very dark brown, soft peaty clay	
	PT	1'	0.0	1	10YR(2/2) very dark brown, soft peat	
9	PT		0.0	WH	10YR(2/2) very dark brown, soft peat	
	PT	6"	0.0	WH	10YR(2/2) very dark brown, soft peat	
10	PT		0.0	WH	10YR(2/2) very dark brown, soft peat	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-02

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 7/31/01	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Samplers(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Western edge of Pacel 2, North of SB-01				SURFACE DESCRIPTION:	
10	PT	1'	0 0	WH	10YR(2/2) very dark brown	
11	PT		0 0	WH		
	WOOD	1'	0 0	2	10YR(2/2) very dark brown	
12	OH		0 0	4		
	OH	1'	0 0	1		
13	OH		0 0	3	Glev1(4/10Y) dark greenish gray clay, trace fine sand and organics	
	OH	1'	0 0	4	Glev1(4/10Y) dark greenish gray clay, trace fine	
14	OH		0 0	6	sand and organics	
					END OF BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-03

BORING LOG

Project Name & Location	Project Number	Date & Time Started 08/01/01 0723	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/1/01 1005	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Adjacent to MW-006				SURFACE DESCRIPTION: Soil/Debris	
0 0.5		.5'	4.2	NA	10YR(3/2) Very Dark Grayish brown silty gravely sand with slag and debris	
1	SM	5'	3 8	NA		
1.5	SM	.5'		NA	10YR(3/2) Very Dark Grayish brown, silty gravely sands with some concrete and debris, a piece of wood RR tie at 1 5	
2	SP	5'	26.7	NA		
2.5	SP	.5'		NA	10YR(3/2) Very dark grayish brown, silty gravely sands with slag and ash, unconsolidated	
3	GM	.5'	26.8	NA		
3.5	GM	.5'		NA	10YR(6/3) Light yellowish brown poorly sorted sand silt gravely mixtures	
4	SP/ Slag	.5'	7.2	11	Gley1(3/1) greenish gray coarse crushed rock with a bluish green color	
4.5	SP/ Slag	.5"	1 8	15	10YR(8/31) very pale brown slag w/coarse granular medium to coarse sand, very coarse gravel and sh	
5	SP/ Slag	.5'	0 8	19	Gley1 (4/10BG) Dark greenish gray, slag composed at coarse sand and gravel w/fines that appear to be ash	
5 5	SP/ Slag	.5'	0 0	14	Gley1 (4/10BG) Dark greenish gray, slag composed at coarse sand and gravel w/fines that appear to be ash	
6	SP/ Slag	.5'	0.0	12	Gley1(4/10BG) color (bluish greenish gray, sag xxxxxxxx at coarse sand and gravel w/fines that appear to be ash	
6.5	SP/ Slag	.5'	0.0	9	Gley(4/10GB) dark bluish green gray, slag composed of coarse sand and gravel. Appears wet.	
7	SP/ Slag	.5'	0.0	9	Gley(4/10GB) dark bluish green gray, slag composed of coarse sand and gravel Appears wet	
7.5	SP/ Slag	.5'	0 0	9	Gley(4/10GB) dark bluish green gray, slag composed of coarse sand and gravel. Appears wet	
8	SP/ Slag	.5'	0 0	4	Gley1(4/10GB) dark bluish green gray, slag composed of coarse sand and gravel Very wet soupy	
8.5	SP/ Slag	.5'	0 0	1	Gley1(4/10GB) dark bluish green gray, slag composed of coarse sand and gravel Very wet soupy	
9	PP	.5'	0.0	1	10YR(2/2) very dark, peat composed at organs of vegetation	
9 5	OL	5'	0 0	4	Gley1(4/N) dark gray, medium stiff clay w/some fine sands and silts, trace organics	
10	SC		0 0	4	Gley1(4/10GB) dark bluish green gray, slag and water clay material, w / coarse sand and gravel (v soft)	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-03

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/01/01 0723 Date & Time Completed: 8/1/01 1005	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer / Drop: 250 lb Hydraulic Hammer
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft / Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Adjacent to MW-006				SURFACE DESCRIPTION: Soil/Debris	
10 10.5	OL	5'	0.0	1	Gley1(4/10GB) dark bluish green gray, slag and clay material, w/coarse sand and gravel (v soft)	
11	OL	5'	0.0	5	Gley1(5/N) gray, clay, of low plasticity, medium stiff w/trace fine sands, some silts, frame organizer	
11.5	OL	5'	0.0	4	Gley1(5/N) gray, clay of low plasticity, some silts and very fine sands, trace organics (m stiff)	
12	OL	5'	0.0	6	Gley1(5/N) gray/clay of low plasticity, some silts trace fine sands, v stiff)	
12.5	OL	5'	0.0	7	Gley1(5/N) gray, clay of low plasticity, some silts trace fine sand, m stiff)	
13	OL	5'	0.0	9	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
13.5	OL	5'	0.0	9	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
14	OL	5'	0.0	8	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
14.5	OL	5'	0.0	10	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
15	OL	5'	0.0	11	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
15.5	OL	5'	0.0	10	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
16	OL	5'	0.0	11	Gley1(5/N) gray, clay, composed of some silts, and fine sands trace organics, medium stiff	
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-04

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/9/01 1455	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/9/01 1530	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Located North of SB-03				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Gravel	1'	0.0	6	10YR(3/2) very dark greyish brown, top spill,fine to med. sand gravel and slag	3"X2' Split Spoon used
1	SM/ Gravel		0.0	4		
2	Slag	1'	0.0	5	10YR(5/4) yellowish brown, medium to coarse gravely dry sandy and slag unconsolidated	
	Slag		0.0	7		
3	Slag	1'	0.0	4	10YR(4/6) dark yellowish brown consolidaed slag, granular texture (coarse gravel)	
	Slag		0.0	7		
4	Slag	1'	0.0	6	10YR(4/6) dark yellowish brown consolidaed slag, granular texture (coarse gravel)	
	Slag		0.0	5		
5	Slag	1'	0.0	9	10YR(4/6) dark yellowish brown consolidated slag	Groundwater at 4 5 ft
	Slag		0.0	7		
6	Slag	1'	0.0	6	10YR(2/2) very dark brown, silty fine to medium sand	
	Slag		0.0	5		
8	Slag	1'	0.0	9	Gley2(3/5B) very dark bluish gray, slag material very compacted and hard (wet)	
	Slag		0.0	7		
10	Slag	1'	0.0	4	Gley2(3/5B) very dark bluish gray, slag material very compacted and hard (wet)	
	Slag		0.0	3		
11	Clay (OH)	1'	0.0	3	10YR(4/1) dark gray clay, w/gravel and slag	
			0.0	2		
12	Clay (OH)	1'	0.0	1	10YT(4/1) dark gray clay, w/trace organics trace fine sands	
				1		

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-05

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 8/9/01 1330	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/9/01 1405	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		14 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of SB-4 Adjacent to MW-004				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Slag	1'	0.0	4	10YR(5/2) grayish brown, top soil, silt, and slag/gravel.	
1			0.0	11		
	Slag/ Brick	1'	0.0	20	5YR(8/6) yellow, furnace blast brick	
2			0.0	25		
	Slag/ Brick	1'	0.0	9,16	10YR(5/2) grayish brown soil w/silt and yellow furnace brick.	
4			0.0	18/24		
	Slag/ Brick	1'	0.0	24	10YR(5/2) grayish brown soil w/silt and yellow blast furnace brick	
5			0.0	46		
	Slag/ Brick	1'	0.0	49	10YR(2/1) black, slag/coal debris w/mixed yellow furnace brick below and black slaggy coal below	
6			0.0	23		
	Slag	1'	0.0	35	2.5YR(3/3) dark reddish brown pelletized iron ore, with reddish brown wet silts, and metalic irridescence	
8			0.0	50/3		
	iron/ ore	1'	0.0	16	2.5YR(3/3) dark reddish brown pelletized iron ore	
9			0.0	15	10YR(3/1) Very dark gray metalic slag	
		1'	0.0	12	Gley2(8/5BG) light bluish gray wet compacted slag	
10	Slag		0.0	11		
	Slag	1'	0.0	4.3	Gley 2(6/5B) bluish gray wet compacted Slag w/speckled white slag white granular	
12			0.0	4.4		
	OH/PT	6"	0.0	4.2	10YR(2/2) very dark brown well clayey PT high organics	
14			0.0	1.1		

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-06

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/01/01 1009 Date & Time Completed: 8/01/01 1120	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer / Drop: 250 lb Hydraulic Hammer
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft / Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Located adjacent to MW-006				SURFACE DESCRIPTION: Soil/Debris	
0				1	10YR(3/2) very dark, grayish brown, fine to medium sand and silt some	
0.5	SM	.5'	0.0		gravel, top soil	
1	SM	.5'	0.0	4	10YR(3/2) very dark, grayish brown, fine to medium sand and silt some gravel, top soil	
1.5	SP		0.0	4	10YR (3/3) pale brown, medium to coarse sand and gravel w/slag. Dry.	
2	SP/Slag	.5'	0.0	5	10YR (3/3) pale brown, medium to coarse sand and gravel w/slag. Dry.	
2.5	SP/Slag	.5'	0.0	9	10YR(6/3) pale brown, specled w/dark gray, med to coarse sand and gravel little to fine, and slag. Dry loosely compacted	
3	SP/Slag	5'	0.0	14	10YR(6/3) pale brown, specled w/dark gray, med to coarse sand and gravel little to fine, and slag. Dry loosely compacted	
3.5	SP/Slag	.5'	0.0	12	10YR(6/3) pale brown, specled w/dark gray, med to coarse sand and gravel little to fine, and slag. Dry loosely compacted	
4	SP/Slag	.5'	0.0	13	10YR(7/2) light gray, coarse sand, med. Sand and gravels w/ash, flecks of darker grays (ash) Dry loose compaction	
4.5	SP/Slag	.5"	0.0	9	10YR(7/2) light gray, coarse sand, med. Sand and gravels w/ash, flecks of darker grays (ash). Dry loose compaction.	
5	SP/Slag	.5'	0.0	9	10YR(8/2) very pale, brown to light gray, granular medium to coarse sand and gravel w/blackish gray flecks of ash/slag moist.	
5.5	SM	5'	0.0	8	10YR(8/2) very pale brown to light gray, granular medium to coarse sand and gravel , moderate compaction Wet @5 5, flecks of darker ash/slag	Groundwater at 5 5 ft
6	SM	5'	0.0	7	Gley2(6/10GB) greenish gray, very coarse sand and gravel w/fines.	
6.5	SM	5'	0.0	9	Gley2(6/10GB) greenish gray, very coarse sand and gravel w/fines, flecks of white sand (ash?)	
7	GM	5'	0.0	9	Gley2(6/10GB) greenish gray, very coarse sand and gravel w/fines, flecks of white sand (ash?)	
7.5	GM	.5'	0.0	8	Gley2(6/10GB) greenish gray, very coarse sand and gravel w/fines, flecks of white sand (ash?)	
8	GM	5'	0.0	7	Gley2(6/10GB) Greenish gray , very coarse sand and gravel w/fines, increase silts and fine sands	
8.5	GM	.5'	0.0	2	Gley2(6/10GB) Greenish gray , very coarse sand and gravel w/fines, increase silts and fine sands	
9	GM	.5'	0.0	2	10YR(2/2) very dark brown, peat, w/high organic content	
9.5	PT	5'	0.0	2	10YR3/1) very dark gray, organic clay, soft w/organic water present	
10	OL	5'	0.0	5	Giey1(4/1) 5GY dark greenish gray, very fine silty sand (wet)	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-06

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/01/01 1009 Date & Time Completed: 8/01/01 1120	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer / Drop: 250 lb Hydraulic Hammer
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft / Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Located adjacent to MW-006				SURFACE DESCRIPTION: Soil/Debris	
10 10.5	SM	5'	0.0	1	Gley1(4/1) 5GY Dark greenish gray, very fine silty sand, wet	
11	SM	5'	0.0	2	Gley1(4/1) 5GY Dark greenish gray, very fine silty sand, wet	
11.5	OL	5'	0.0	9	Gley1(4/1) 5GY Dark greenish gray, stiff clay w/trace fine sands and organic matter	
12	OL	5'	0.0		Gley1(4/1) 5GY Dark greenish gray, stiff clay w/trace fine sands and organic matter	
12.5	SM	5'	0.0	9	Gley1(4/1) 5GY dark greenish gray, very silty fine sand, v wet	
13	SM	5'	0.0	15	Gley1(4/1) 5GY dark greenish gray, very silty fine sand, v wet	
13.5	OL	5'	0.0	9	2.5Y(5/3) light olive brown, stiff dry competent clay w/organics	
14	OL	5'	0.0	8	2.5Y(5/3) light olive brown, stiff dry competent clay w/organics and some gravels	
14.5	OL	5'	0.0	9	2.5Y(5/3) light olive brown, stiff dry, some gravels	
15	OL	5'	0.0	13	2.5Y(5/3) light olive brown, stiff dry, some gravels	
15.5	OL	5'	0.0	15	2.5Y(5/3) light olive brown, stiff dry, some gravels	
16	OL	5'	0.0	19	2.5Y(5/3) light olive brown, stiff dry, some gravels	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-07

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/9/01 1419	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/9/01 1450	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Located North of SB-6				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Slag	1'	0.0	6	10YR(5/2) grayish brown, silty dry fine to med sand with trace of gravel, some slag present	
1			0.0	4		
	SM/ Slag	1'	0.0	5	10YR(5/2) grayish brown, silty dry fine to med sand with trace of gravel, some slag present	
2			0.0	7		
	SM/ Slag	1'	0.0	4	10 YR(4/2) Dark grayish brown, silty fine to med sand and gravel	
3			0.0	7		
	slag	1'	0.0		10YR(6/4) Light yellowish brown gravely slag material	
4	slag		0.0	6		Groundwater at 4ft
	slag	1'	0.0		10YR(4/2) Dark grayish brown, granular gravely slag material previously crushed	
5	slag		0.0	9		
	slag	1'	0.0		Gley2(5/5B) bluish gray slag very wet.	
6	slag		0.0	7		
	slag	1'	0.0		10YR(4/2) Dark grayish brown, granular gravely slag material previously crushed	
7	slag		0.0	6		
	slag	1'	0.0		Gley2(3/5B) Very Dark bluish gray slag very compacted and wet.	
8	slag		0.0	5		
	PT/OH	1'	0.0	9	10YR(3/2) Very Dark grayish brown Peat material with clayey texture, high organics, moist	
10	PT/OH		0.0			
	PT/OH	6"	0.0	7	10YR(2/1) Very dark peaty clay, very rich in organics	
12	PT/OH		0.0	4	5Y(5/1) Gray silty fine sandy clay, soft	

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-08

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/02/01 1320 Date & Time Completed: 8/2/01 1420	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW section of Parcel 2 Located adjacent to MW-004				SURFACE DESCRIPTION: Soil/Debris	
0.5	SM		0.3	31	10YR(6/4) light yellowish brown, top soil, fine silty sand w/gravel and debris, cindes ash, furnace brick	
1	SM		1.2	119	10YR(6/4) light yellowish brown, top soil, fine silty sand w/gravel and debris, cindes ash, furnace brick	
1.5	SM	2'3"	1.1	240	10YR(6/4) light yellowish brown, top soil, fine silty sand w/gravel and debris, cindes ash, furnace brick	
2	SM		1.2	311	10YR(6/4) light yellowish brown, top soil, fine silty sand w/gravel and debris, cindes ash, furnace brick	
2.5	Brick		0.8	38	10YR(8/4)/5YR(6/6) very pale brown/reddish yellow furnace refractory brick/weathered	
3	Brick	5'	0.2		10YR(8/4)/5YR(6/6) very pale brown/reddish yellow furnace refractory brick/weathered	
3.5	Brick	5'	0.3	0.3	10YR(8/4)/5YR(6/6) very pale brown/reddish yellow furnace refractory brick/weathered	
4	Brick	5'	0.4	0.4	10YR(8/4)/5YR(6/6) very pale brown/reddish yellow furnace refractory brick/weathered	
4.5	Brick	5"	0.3	0.3	10YR(8/4) very pale brown, furnace brick	
5	SM	5'	0.2	0.2	5YR(3/2) dark reddish brown, fine sandy silt w/metal irrodescence and gravel	
5.5	SM	5'	0.4	0.4	5YR(3/2) dark redish brown, fine sandy silt w/metal irrodescence and gravel	
6	Slag	5'	1.1	1.1	Giey2(4/10GB) dark greenish gray, slag w/coarse sand and gravel	
6.5	Brick	5'	0.2	0.2	5YR(6/6) reddish yellow brick, very wet	
7	Slag	3"	0.0	0.0	5YR(2.5/2) dark reddish brown wet slag and debris	
7.5	Slag	3"	0.0	0.0	5YR(2.5/2) dark reddish brown wet slag and debris	
8	Slag	2"	0.0	0	Giey2(4/10GB) dark greenish gray, slag and debris	
10	Slag				Minimal Recovery 5YR(2.5/2 dark reddish brown, probably stuff	

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-09

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 07/31/01 1139	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 7/31/01 1319	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Mid SW section of P. 2 South of SB-10				SURFACE DESCRIPTION: Soil/Debris	
0	SM/		3.2	11	10YR(4/2) dark grayish brown, fine to medium sand and some gravel,	
0.5	Fill				industrial debris, & slag deposits.	
	SM/		4.0		10YR(5/3) brown, slag and ash very granular.	
1	Fill			12		
	SM/	2'	10.8		10YR(5/3) brown, slag and medium sand, very granular w/1 inch layer	
1.5	Fill Slag			9	of white ash	
	SM/		6.2		10YR(4/2) dark grayish brown, fine to medium sand w/slag deposits,	
2	Fill Slag			7	industrial wastes	
	SP/Slag		2.4		10YR(2/2) very dark brown, coarse gravely sand and slag w/industrial	
2.5	Fill			12	debris.	
	SP/Slag		3.5		10YR(2/2) very dark brown, coarse gravely sand and slag w/industrial	
3	Fill	2'		15	debris.	
	SP/Slag		2.8		10YR(2/2) very dark brown, coarse gravely sand and slag w/industrial	
3.5	Fill			35	debris.	
	SP/Slag		9.3		10YR(2/2) very dark brown, coarse gravely sand and slag w/industrial	
4	Fill			7	debris.	
	SP/Fill		4.2		10YR(4/2) dark grayish brown, medium sand and granular debris w/slag	
4.5	Debris			5	and ash	
	SP/Fill		5.9		10YR(4/2) dark grayish brown, medium sand and granular debris w/slag	
5	Debris	2'		7	and ash	
	SP/Fill		2.0		10YR(7/2) light gray granular, medium sand mixed w/dark blackish slag	
5.5	Debris			9	slight odor	
	SP/		4.0		10YR(7/2) light gray granular, medium sand mixed w/dark blackish slag	
6	Slag			5	slight odor	
	SP/		7.9		10YR(8/2) gley2(5pb) gravely to coarse sands, w/slag and ash Ash	
6.5	Slag			6	odor, highly compactor (wet)	
	SP/		8.4		10YR(8/2) gley2(5pb) gravely to coarse sands, w/slag and ash Ash	
7	Slag	2'		7	odor, highly compactor (wet)	
	SP/		8.4		10YR(8/2) very pale, brown, gravely to coarse sands w/slag and ash,	
7.5	Slag			8	ash odor, (bluish staining green), wet, high compaction	
	SM/		11.1		Gley2(5/5pb) bluish gray/green, gravely to coarse sands w/slag and ash,	
8	Slag			8	ash odor (bluish staining green) wet High compaction	
	SP/		2.8		Gley2(5/5pb) silty gravels, w/some sand and some clay very softy and	
8.5	Slag			5	slag Bluish grav/greenish blue/wet	
	SP/	2'	4.2		10YR(8/4) very pale brown, gravely to carse sands w/slag and ash (wet)	
9	Slag			4		
	SP/		34.6		Gley 2(5/5pb) silty gravels w/some sand and some very coarse gravely	
9.5	Slag			2	material slag & ash (odor?)	
			11.8		10YR(2/2) very dark brown, organic silty	
10				1		

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-09

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 07/31/01 1139 Date & Time Completed: 7/31/01 1319	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Mid SW section of P. 2 South of SB-10				SURFACE DESCRIPTION: Soil/Debris	
10	PT	1'10"	0.0	3	10YR (2/1) black, organic clays soft, w/high organic contents	
10.5					Moist to wet	
	OL		0.8	2	10YR(2/1) black, organic peat material very silty and moist	
11						
	PT		1.2	2	10YR(2/2) very dark brown, peat high organics w/wood and	
11.5					vegetation	
	PT		2.4	2	10YR(4/2) dark grayish brown, silty brown clays w/organics	
12						
	OL	2'	1.7	2	10YR(2/1) black, very soft silty fine sandy peat, very wet.	
12.5						
	PT		2.5	2	10YR(2/2) very dark brown, very soft silty fine sandy peat,	
13					very wet	
	PT		2.5	3	10YR(2/2) very dark brown, organic silty clay, very soft	
13.5						
	OL		2.5	3	10YR(5/1) gray, fine silty sand, wet. No odors or staining	
14						
	SM		2.4	2	10YR (gray) silty fine sand, wet, no odors or staining defeated	
14.5						
			2.0	3		
15						
	CH	2'	2.6	4	5YR(4/1) dark gray, clay trace organics, medium stiff clay	
15.5						
			2.2	4		
16						

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-10

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 07/31/01 1005 Date & Time Completed: 7/31/01 1130	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW mid section of P.2 Located North of SB-9				SURFACE DESCRIPTION: Soil/Debris	
0	SM/		0.0	9	10YR(4/2) dark grayish brown, fine to medium sand and some gravel,	
0.5	Fill				top soil 0-6"	
	SM/		0.0	12	10YR(2/2) very dark brown, fine to medium sand and silt w/some gravel,	
1	Fill				metal fragments and slag debris	
	SM/	2'	0.0	15	10YR(2/2) very dark brown, fine to medium sand and silt w/some gravel,	
1.5	Fill				metal fragments and slag debris	
	SM/		0.0	12	10YR(2/2) very dark brown, fine to medium sand and silt w/some gravel,	
2	Fill				metal fragments and slag debris, dry	
	SM/		0.0	12	5YR(3/2) dark reddish brown, slag, ash and demo debris (brick) with silty	
2.5	Fill				fine to medium sands some gravel.	
	SM/		0.0	9	5YR(3/2) dark reddish brown, slag, ash and demo debris (brick) with silty	
3	Fill	4"			fine to medium sands some gravel w/more slag deposits	
	SM/		0.0	8	Slag w/greenish high (5Y5/4) olive colored slag deposits	
3.5	Fill					
	SM/		0.0	9		
4	Fill					
	SM/		0.0	9	10YR(2/2) very dark brown, silty fine sand/top soil wood pieces	
4.5	Fill					
	SM/		0.0	5	10YR(2/2) very dark brown, silty fine sand/top soil w/gravel	
5	PT	1'				
	PT/		0.0	2	10YR(2/2) very dark brown, silty fine sand/top soil very rich moist, peat	
5.5	Loam					
	OH/Fill		0.0	5	10YR(2/2) very dark brown, loam/fine peat material	
6						
	OH/		0.0	2	Gley1 3/N very dark gray Soft clay w/trace organics grading into fill	
6.5	PT				debris coarse gravely silty loam soft clay	
	PT/		0.0	2	Gley1(4N) very dark gray soft clay w/organics	
7	Loam	1'8"				
	OH/		0.0	2	Gley(3/10Y) very dark greenish gray peaty loam w/clay high organics	
7.5	PT					
	OH		0.0	2	10YR(2/1) black peat w/high organics such as wood flakes, and small	
8				WH	sticks and vegetation	
			0.0		Gley1(5/N) gray very soft clay (very wet) organic odors defeated	
8.5	OH			WH		
		2'	0.0		10YR(2/2) very dark brown, peat material w/high organics and organic	
9	OH			1	odors	
			0.0		Gley1(5/N) gray very soft clay (moist) w/silty texture	
9.5	PT			2		
			0.0			
10	OL			1		

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-10

BORING LOG

Project Name & Location	Project Number	Date & Time Started 07/31/01 1005	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 7/31/01 1130	
Drilling Company	**Foreman**	**Sampler(s)**	**Sampler Hammer / Drop**
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	**Method**	**Elevation & Datum**	**Completion Depth / Rock Depth**
CME 75	Split Spoon		16 ft
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW mid section of P.2 Located North of SB-9				SURFACE DESCRIPTION: Soil/Debris	
10 10.5	OL	2'	1.0	1	Gley1(5/N) gray soft clay w/high organics, some silts.	
11	PT		1.0	1	10YR(2/1) black, organic layers of moist peat w/organic odors	
11.5	PT		1.0	1	10YR(2/2) very dark brown, moist peat/loam & organics	
12	OL		2.0	2	Gley1(5/N) gray soft silty clays w/organics & twigs	
12.5	PT	2'	0.0	1	10YR(2/1) black, very soft peaty material, rich in organics light organic odor, no staining, very wet	
13	PT/OH		0.0	2	10YR(2/2) very dark brown, high water content peat w/organic clays, very soft, very wet	
13.5	OL		0.0	3	Gley1(4/108) dark greenish gray, silky clay w/organics present. Soft clay lower water content	
14	PT/Wood		0.0	3	10YR(2/1) black, peat/loam very rich in organics vegetation.	
14.5	OL	2'	0.0	2	10YR(3/2) very dark grayish brown, very high organics silty soft clays	
15	PT		0.0	2	Very wet soupy organics (10YR(3/2) very dark grayish brown	
15.5	CL		0.0	4	Gley1(5/10Y) greenish gray, clay w/trace of organics	
16	CL		0.0	4	Gley1(5/10Y) greenish gray w/some clay w/trace organics.	
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-11

BORING LOG

Union Ship Canal Parcel 2 Site	Project Number 72705	Date & Time Started 08/02/01 1200 Date & Time Completed 8/2/01 1302	
SJB Services, Inc.	Foreman Anthony Jakubczak	Sampler(s) Michael Mendes	Sampler Hammer 250 lb Hydraulic Hammer — Drop
CME 75	Method Split Spoon	Elevation & Datum	Completion Depth 16 ft — Rock Depth
2 1/4" HAS	Core Barrel(s) 2"X2'	Geologist(s) Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: SW mid section of P.2 Located to the North of SB-10				SURFACE DESCRIPTION: Soil/Debris	
0	SM	1'	0.0	5	10YR(7/3) very pale brown, silty fine to medium sand and some gravel	
1	SM		0.0	10	10YR(7/3) very pale brown, silty fine to medium sand and some gravel	
	SM		0.0	6	10YR(7/3) very pale brown, silty fine to medium sand and some gravel	
2	SM		0.0	9	10YR(7/3) very pale brown, silty fine to medium sand and some gravel	
	Debris	1'		7	10YR(7/1) light gray, debris, rocks	
3	Debris/ Slag		0.0	9	10YR(311) dark reddish gray, slag w/rounded slag fragments	
	Debris		0.4	8		
4	Debris			8	10YR(5/3) brown, rock and debris, sand silt debris mixtures.	
	SM/ Slag	1.5'	0.8	4	5YR(3/4) dark reddish brown fine to medium silty sand w/metals	
5	SM/ Slag		0.2	2	5YR(3/4) dark reddish brown fine to medium silty sand w/metals fragments	
	SM/ Slag			3	10YR(8/2) very pale brown, slag and ash	
6	Slag		0.8	4	10YR(8/1) white, slag and ash material, mixed w/coarse gravely sand.	
	NR	NR	0.3	4	NO RECOVERY	
8	NR				NO RECOVERY	
	PT/ OL	2.0'	1.6	2	10YR(2/1) black, boggy organics strong organic odor, very wet	
10	PT/ OL		0.8	3	10YR(2/1) black, boggy organics strong organic odor, very wet	
	PT/ OL	2.0'			10YR(2/1) black, boggy organics strong organic odor, very wet	
12	PT/ OL		0.3	4	10YR(2/1) black, boggy organics strong organic odor, very wet	

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-12

BORING LOG

Union Ship Canal Parcel 2 Site	Project Number 72705	Date & Time Started 08/02/01 0746 Date & Time Completed 8/2/01 0845	
SJB Services, Inc.	Foreman Anthony Jakubczak	Sampler(s) Michael Mendes	Sampler Hammer Drop 250 lb Hydraulic Hammer
CME 75	Method Split Spoon	Elevation & Datum	Completion Depth 16 ft / Rock Depth
2 1/4" HAS	Core Barrel(s) 2"X2'	Geologist(s) Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Descripsoo	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: NW of the oil shack				SURFACE DESCRIPTION: Soil/Debris	
0	SM	20"	1.8	5	10YR(3/1) very dark gray, fine to medium sand and silt w/gravel (high compaction, dry)	
1	SM		1.4	9	10YR(3/1) very dark gray, fine to medium sand and silt w/gravel (high compaction, dry)	
2	SM		1.4	7	10YR(3/1) very dark gray, fine to medium sand and silt w/gravel (high compaction, dry) metallic appearance, high iradescence	
	SM		1.2	9	10YR(3/1) very dark gray, fine to medium sand and silt w/gravel (high compaction, dry) metallic appearance, high iradescence	
3	SM/ Debris	19"	1.1	7	10YR(2/2) very dark brown, silty sand w/debris, brick slag and metals Some gravels	
	SM/ Debris		0.6	9	10YR(2/2) very dark brown, silty sand w/debris, brick slag and metals Some gravels	
4	SM/ Debris		0.8	8	10YR(2/2) very dark brown, silty sand w/debris, brick slag and metals Some gravels	
	SM/ Debris		0.5	8	10YR(2/2) very dark brown, silty sand w/debris, brick slag and metals Some gravels	
5	OL	2"	0.5	4	Gley1(6/5gy) greenish gray, medium stift clay, trace fine sand and clay	
	OL		0.5	3	Gley1(6/5gy) greenish gray, medium stift clay, trace fine sand and silt	
6	OL/PT		0.8	3	10YR(3/4) dark yellowish brown, peat w/wood	
	OL		2.0	3	Gley1(5/N) gray clay, soft clay	
7	OL	2"	0.6	4	Gley1(5/N) gray, soft clay, w/fine sand and silt, trace organics	
	SM/ PT		0.0	3	10YR(2/2) very dark brown, silty fine to medium sand and some peaty material high organics	
8	OL		0.8	2	Gley2(4/5pb) dark bluish gray, silty clay wtrace fine sand and trace organics	
	OL		0.4	2	Gley2(4/5pb) dark bluish gray, silty clay wtrace fine sand and trace organics	
9	OL/ PT	2"	0.3	1	10YR(3/1) very dark gray, peaty clay w/very high organics	
	OL/ SC		0.3	1	Gley2(6/10B) Bluish gray medium stift, clay w/trace organics	
10	OL/ SC		0.0	1	10YR(2/2) very dark brown, peat w/high organics 1/4" layer at coal & ash	
	OL/ PT		0.0	1	10YR(2/2) very dark brown, peat very spongy and fibrous w/high organics	

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-13

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 7/30/01 1403 Date & Time Completed: 7/30/01 1645	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Mid section Parcel 2				SURFACE DESCRIPTION: Soil/Debris	
0	GM	2.0'	0.0	19	2.5Y(5/1) gray loose gravely sand w/slag	
1	GM		3.4	33	(2/5Y(7/2) light gray ash compacted w/slag	
	GM		8.6	23	2.5Y(3/1) very dark gray, highly compacted w/slag	
2	GM		3.2	31	2.5Y(6/4) light yellowish brown ash highly compacted into Gley1(5/2)5G (Grayish green) slag.	
	Slag	2'	0.0	19	Gley1(4/1)5G-dark greenish gray, slag loose in compaction, cinder ash, dry	
3	Slag		0.0	33	Gley1(4/1)5G-dark greenish gray, slag loose in compaction.	
	CL		0.0	23	10YR(5/4)-Yellowish brown slag different metal compaction	
4	CL		0.0	31	10YR(4/2)-dark grayish brown, soft clay, moist w/rounded gravel (brown silty clay)	
	GM	6"	0.0	4	10YR(4/1) dark gray fine to medium sand and some gravel-loosely compacted, dry (no staining) 3" of this material	
5	GM		0.0	4		
	GM		0.0	4	10YR(4/1)-dark gray gravely silt, gravel subrounded. Very stift. No odors 3" of this material	
6	GM		0.0	5		
	SM	6"	0.0	4	10YR(4/2)-dark grayish brown clayey silts of gravel and some sand. No staining present.	
7	SM		0.0	4	10YR(4/2)-dark grayish brown clayey silts of gravel and some sand No staining present.	
	SM		0.0	5	10YR(4/2)-dark grayish brown clayey silts of gravel and some sand No staining present	
8	SM		0.0	7	10YR(4/2)-dark grayish brown clayey silts of gravel and some sand No staining present	
	SM	1.5'	0.0	1	10YR2(4/2)-dark grayish brown, sand silt and clay mixture, no staining present	
9	GC		0.0	2	10YR(5/1) gray, soft moist clay w/rounded gravel 1 inch in diameter, no staining Some coarse sand	
	GC		0.0	2	10YR(5/1) gray, soft moist clay w/rounded gravel 1 inch in diameter, w/some coarse sand No staining	
10	GC		0.0	2	10YR(5/1) gray soft.	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-13

BORING LOG

Project Name & Location	Project Number	Date & Time Started 7/30/01 1403
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 7/30/01 1645
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes / 250 lb Hydraulic Hammer
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
CME 75	Split Spoon	16 ft
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2 1/4" HAS	2"X2'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: PID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Mid section Parcel 2				SURFACE DESCRIPTION: Soil/Debris	
10	GC	1'10"	0 0	1	10YR(4/1) dark gray, soft, gravely clay, w/some coarse sand No staining present moist, organic odor	
11	GC		0 0	1	10YR(4/1) dark gray, soft gravely clay, w/some coarse sand 11 ft mark 1 inch laver of peat	
	GC		0 0	2	10YR(4/1) dark gray, medium stift clean clay, no staining present, (1 ft thick)	
12	GC		0 0	4	Brown organic peat layer w/coal fragments	
	PT	1'	0 0	3	10YR(5/1) gray gravely clay w/some coarse sand.	
13	GC		0 0	4	10YR(3/2) very dark grayish brown, very soft wet, organic material, silty peats	
	OH/PT		0 0	4	10YR(3/3) dark brown silty peat w/wood and organics. No staining, no odors (moist)	
14	PT		0 0	5	10YR(3/3) dark brown silty peat w/wood and organics. No staining, no odors (moist)	
	PT		0 0	3	10YR(3/3) dark brown silty peat with high organic contents clay first 2 inches	
15	PT		0 0	3	10YR(3/3) dark brown silty peat with high organic content moist to wet	
	PT		0 0	4	10YR(3/3) dark brown silty peat with high organic content moist to wet	
16	PT		0 0	3	10YR(3/3) dark brown silty peat with high organic content moist to wet	
					END OF BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-14

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 07/31/01 0739	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 7/31/01 0935	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: South of MW-007				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Fill	20"	0.7	6	10YR(2/2) very dark brown, top soil, silty medium sand w/ some gravel, dry soil	
1	SM/ Fill		1.2	9	10YR(2/2) very dark brown, top soil, silty medium sand w/ some gravel, dry soil	
	SM/ Fill		2.6	16	10YR(2/2) very dark brown, slag and cinder ash grinding into 10YR(6/4) slag and cinder ash	
2	SM/ Slag		2.5	19	Bluish green, slag and ash highly compacted breaks apart easily.	
	NR	0"	NR	12	NO RECOVERY	
3	NR		NR	17	NO RECOVERY	
	NR		NR	19	NO RECOVERY	
4	NR		NR	11	NO RECOVERY	
	SP/ Fill	2'	2.6	5	10YR(7/2) light gray, granular medium sand with mixed w/ blackish slag, hydrocarbon odors present (wet)	
5	SP/ Fill		2.8	4	10YR(7/2) light gray, granular medium sand with mixed w/ blackish slag, hydrocarbon odors present (wet)	
	SP/ Fill		8.7	5	10YR(7/2) light gray, granular medium sand with mixed w/ blackish slag, hydrocarbon odors present (wet)	
6	SP/ Fill		14.4	11	10YR(7/2) light gray, granular medium sand with mixed w/ blackish slag	
	SP/ Fill	17"	27.8	5	10YR(8/3)/10YR(4/10 very pale brown/dark gray slag w/ coarse granular medium to coarse sand (strong hydrocarbon odors	
7	SP/ Fill		19.4	4	10YR(8/3)/10YR(4/10 very pale brown/dark gray slag w/ coarse granular medium to coarse sand (strong hydrocarbon odors	
	SP/ Fill		59.4	2	10YR(8/3)/10YR(4/1) very pale brown/dark gray slag w/coarse granular medium to coarse sand strong hydrocarbon odors	
8	SP/ Fill		35.8	2	10YR(8/3) very pale brown to yellow/medium to coarse granulars sand (strong hydrocarbons)	
	GM/ Fill	2'	26.5	2	10YR(5/1) gray, granular coarse sand and gravel w/silts, very wet, Sheen present (hydrocarbon odors)	
9	GM/ Fill		15.6	1	10YR(5/1) gray, granular coarse sand and gravel w/silts, very wet, Sheen present (hydrocarbon odors)	
	GM/ Fill		29.4	1	10YR(5/1) gray, granular coarse sand and gravel w/silts, very wet, Sheen present (hydrocarbon odors)	
10	GM/ Fill		16.5	1	10YR(5/1) gray, granular coarse sand and gravel w/silts, very wet, Sheen present (hydrocarbon odors)	

 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-14

BORING LOG

Project Name & Location	Project Number	Date & Time Started 07/31/01 0739	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 7/31/01 0935	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: South of MW-007				SURFACE DESCRIPTION: Soil/Debris	
10	SP/ Fill	1'	4 2	WH	Gley1(7/1) 10Y light greenish gray, coarse to gravely sands w/ little silts, very wet	
11	SP/ Fill		6 3	WH	Gley1(7/1) 10Y light greenish gray, coarse to gravely sands w/ little silts, very wet	
	SM/ Fill		7 2	1	Gley1(3/1) 10Y very dark greenish gray, coarse gravely sand and silt	
12	PT		1 9	1	10YR(3/3) dark brown peat and organics, moist w/wood fragments	
	GM	2'	0 0	1	Gley1(3/1) 5GY very dark greenish gray silty coarse sand and gravels	
13	GM		0 0	1	Gley1(3/1) 5GY very dark greenish gray silty coarse sand and gravels	
	PT		0 0	1	10YR(2/2) very dark brown peat and organics, very moist	
14	OH		0 0	2	10YR(2/2) very dark brown peat and organics which grades into silty clays	
	PT	1 5'	1 3	1	10YR(3/2) very dark grayish brown, peat very high organic contents	
15	PT		3 0	1	10YR(3/2) very dark grayish brown, peat very high organic contents	
	PT/OH		3 8	1	10YR(3/2) very dark grayish brown, peat high organics with organic clays of high organics	
16	PT/OH		3 8	1	10YR(3/2) very dark grayish brown, peat high organics with organic clays of high organics	
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-15

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/02/01 1035	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/2/01 1145	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of MW-007				SURFACE DESCRIPTION: Soil/Debris	
0	SM/				5YR(3/1) very dark gray, silty fine sand and gravel w/circular slag	
0.5	Slag		9.0	0.8		
	SM/				5YR(3/1) very dark gray, silty fine sand and gravel w/circular slag	
1	Slag	1.5'	31.0	0.1		
	SM/				5YR(3/1) very dark gray, silty fine sand and gravel w/circular slag	
1.5	Slag		50.0	0.4		
	SM/				5YR(3/1) very dark gray, silty fine sand and gravel w/circular slag	
2	Slag		50/0	0.6		
					10YR(4/1) dark gray soft gravely clay, no odors, no staining	
2.5	OL		0.0	11		
	SP/	2'			10YR(5/4) yellowish brown/slag, broken furnace brick & debris	
3	Debris		0.0	15		
	SM/				10YR(3/3) dark brown, silty fine to medium sand w/gravel w/	
3.5	Debris		0.0	12	irrodescent metal fragments	
	Sm/				10YR(3/3) dark brown, silty fine to medium sand w/gravel w/	
4	Slag		0.0	13	irrodescent metal fragments	
	Slag				Gley2(3/5)B) very dark bluish gray slag deposits, wet organics	
4.5			1.4	9	decomposition odor	
	Slag				Gley2(3/5B) very dark bluish gray, slag deposits wet w/organics	
5		1.5'	1.5	3	odors, w/brown silts	
	Slag				Gley2(3/5B) very dark bluish gray, slag, with lighter brown ash and	
5.5			0.4	4	greenish blue slag	
	Slag				Gley2(3/5B) very dark bluish gray, slag, with lighter brown ash and	
6			0.0	50/1	greenish blue slag	
	PT				10YR(2/2) very dark brown, peat w/high organics not spongy. No odors	
6.5			0.0	5		
	OL				Gley1(5/N) gray, clay stift w/trace organics	
7		19"	0.0	6		
	PT				10YR(2/2) very dark brown, peat material moist w/high organics,	
7.5			0.0	8	fibrous & spongy	
	PT				10YR(2/2) very dark brown, peat material moist w/high organics,	
8			0.0	4	fibrous & spongy	
					10YR2/2) very dark brown, peat w/high organics, very spongy	
8.5	PT		0.0	1		
					10YR(2/1) black peaty organics w/ a gray clay	
9	PT	1.5'	0.0	1		
	PT/				10YR(7/6) yellow, wood 6"	
9.5	OH		0.0	2		
	PT/				10YR(7/6) yellow, wood 6"	
10	Wood		0.0	2		

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-15

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/02/01 1035 Date & Time Completed: 8/2/01 1145	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of MW-007				SURFACE DESCRIPTION: Soil/Debris	
10	PT/				10YR(4/1) dark gray, peaty clays very soft w/high organics soft.	
10.5	OH		0.0	WH		
	PT				10YR(2/2) peat, very dark brown, high organics, very spongy.	
11		1.75'	0.0	WH		
	PT				10YR(2/2) peat, very dark brown, high organics, very spongy	
11.5			0.0	WH		
	PT				10YR(2/2) peat, very spongy	
12			0.0	WH		
	OL				10YR(2/2) very dark brown, spongy peat, w/high organics	
12.5			0.0	WH		
	PT				10YR(2/2) very dark brown, spongy peat, w/high organics	
13		2'	0.0	1		
	SM				10YR(6/1) gray silty sand	
13.5			0.0	1		
	OH				Gley1(6/N) gray plastic clay, trace organics, very stiff.	
14				2		
					END OF BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-16

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/1/01 1140 Date & Time Completed: 8/1/01 1250	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum	Completion Depth: 16 ft — Rock Depth
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Mid section of Parcel two				SURFACE DESCRIPTION: Soil/Debris	
0	SM	2'	3.9	3	10 YR (3/2) Very dark brown, fine to medium sand and gravel, top soil dry	
1	SM		3.8	4	10 YR (3/2) Very dark brown, fine to medium sand and gravel, with silt. (top soil dry, traces of slag	
2	SM		3.0	4	10 YR (3/2) Very dark brown, fine to medium sand and gravel, top soil dry	
	sm/slag		3.1	5	10 YR (3/2) Very dark brown, fine to medium sand and gravel, top soil dry.	
3	sp/slag	2'	1.9	4	10 YR (6/3) Pale Brown medium to coarse sand w/flecks of blackish slag and ash	
	sp/slag		1.5	5	10 YR (3/2) Very dark greyish brown, silty stiff clay,(fill) Coarse sand and gravel	
4	sp/slag		1.3	3	10 YR (3/2) Very dark greyish brown, silty stiff clay w/slag and Coarse sand and gravel	
	sp/slag		0.9	3	10 YR (3/2) Very dark brown, fine to medium sand and gravel, top soil dry.	
5	GM/slag	2'	3.2	3	10 YR (2/2) Very dark brown, silty coarse sands and gravels, darkish Black Slag material	
	GM/slag		1.8	3	10 YR (2/2) Very dark brown, silty coarse sands and gravels, darkish Black Slag material	
6	GM/slag		1.6	12	Gley 2(3/5B) Very dark Blueish gray, Slag material Very gravely w/medium Sand.	
	GM/slag		1.8	19	Gley 2(3/5B) Very dark Blueish gray, Slag material Very gravely w/medium Sand	
7	DL/PT	2'	0.0	38	10 YR (3/4) Dark yellowish Brown, Very coarse Sand and gravel. Some fines very wet.	
	sp/slag		0.0	40	10 YR (3/4) Dark yellowish Brown, Very coarse Sand and gravel Some fines,(lare slag pieces. Very Compacted	
8	sp/slag		0.9	50	Gley 2(3/16B) Very dark Blueish gray, Very solid Slag of coarse granular sand and gravel Very compacted	
	sp/slag		4.2	27	Gley 2(3/10B) Very dark Blueish gray, Very solid Slag of coarse granular sand and gravel Very compacted	
9	GM/slag	2'	0.0	5	Gley 2(2.5/10B) Silty Gravel mixed w/ the bluish Black Slag Very Soft and Wet, Very dark Strong Septic Organic odor	
	PT		0.0	4	10 YR (2/2) Very dark Brown/ Peat meterial, very fibrous,high organic contents	
10	PT		0.0	2	10 YR (2/2) Very dark Brown/ Peat meterial, very fibrous,high organic contents	
	PT		0.0	1	10 YR (2/2) Very dark Brown/ Peat meterial, very fibrous,high organic contents	
11	OL/PT	2'	0.0	4	10 YR (2/1) Black, Very soft organic silty clays, septic to organic type odor, very wet	
	OL/PT		0.0	3	10 YR (2/1) Black, Very soft wet organic clay w/ high organic content, fibrous	
12	PT		0.0	1	10 YR (2/2) Very Dark Brown, Peat, very spongy, Very wet	
	PT		0.0	1	10 YR (2/2) Very Dark Grayish Brown, fibrous spongy Peat	
13	PT/OL	2'	0.0	2	10 YR (2/2) Very Dark Brown , Peat, w/ Very Soft organic clay, high organics	
	PT/OL		0.0	1	10 YR (2/2) Very Dark Brown , Peat, w/ Very Soft organic clay, high organics	
14	PT		0	1	10 YR (2/2) Very Dark Brown , Peat, w/ Very Soft organic clay, high organics	
	PT		0	1	10 YR (5/19) gray silty Very fine Sand	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-16

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/1/01 1140	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/1/01 1250	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: Mid section of Parcel two				SURFACE DESCRIPTION: Soil/Debris	
10	OL	2'	0.0	5	10YR(4/2) Very Dark Brown, Peat very moist organic silty clay with vegetation and trace of gravel	
11	OL		0.0	4	10YR(4/2) Very Dark Brown, Peat very moist organic silty clay with vegetation and trace of gravel	
	OL		0.0	4	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
12	OL		0.0	3	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
	PT/OL	2'	0.0	5	10YR(2/2) Very Dark Brown Peat, and ogranic clays of high plasticity, minor layers of organic material	
13	OL		0.0	4	10YR(2/2) Very Dark Brown Peat, and ogranic clays of high plasticity, minor layers of organic material	
	OL		0.0	4	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
14	OL		0.0	5	Gley1(5/1) 10Y Greenish Gray medium stiff clay with trace medium sand and gravels	
	OL	2'	0.0	11	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
15	OL		0.0	12	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
	OL		0.0	12	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	
16	OL		0.0	14	Gley1(4/1)10Y Dark Greenish Gray, silty clays with trace medium sand and gravels	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-17

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/01/01 1310	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/01/01 1420	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: N of one story steel building				SURFACE DESCRIPTION: Soil/Debris	
0	SM	2'	6.0	5	10YR(2/2) very dark brown, silty fine medium sand, and gravel (trace gravel).	
1	SM		2.3	5	10YR(2/2) very dark brown, silty fine medium sand, and gravel (trace gravel)	
	SM		1.8	6	10YR(2/2) very dark brown, silty fine medium sand, and gravel 1" layer at very pale brown slag	
2	SM		0.9	8	10YR(2/2) very dark brown, silty fine medium sand, and gravel 1" layer at very pale brown slag	
	SM	8"	1.8	8	10YR(2/2) very dark brown, silty medium to coarse sand and gravel	
3	SM		3.1	8	10YR(2/2) very dark brown, silty medium to coarse sand and gravel	
	SM			5		
4	SM		0.8	6	10YR(7/2) light gray, medium to coarse sand & gravel mixed w/ blue green slag, no odors, white ash (silts)	
	SP/ Slag	2'	0.9	3	10YR(7/2) light gray, medium to coarse sand & gravel and slag w/ash & industrial debris	
5	SP/ Slag		1.1	2	10YR(7/2) light gray, medium to coarse sand & gravel and slag w/ash & industrial debris	
	SP/ Slag		1.5	6	Gley2(4BG) dark greenish gray, blue green slag w/medium coarse sand and gravel (ash?)	
6	SP/ Slag		3.0	9		
	SP/ Slag	2'	0.0	10	Gley 2(4/BG) dark greenish gray, blue green very wet, slag,med to coarse gravely sand	
7	SP/ Slag		0.0	10	Gley2(4BG) dark greenish gray blue green very compacted slag mixed w/coarse gravely sand	
	SP/ Slag		0.0	7	Gley2(4BG) dark greenish gray blue green very compacted slag mixed w/coarse gravely sand	
8	SP/ Slag		2.7	5	Gley2(4BG) dark greenish gray blue green very compacted slag mixed w/coarse gravely sand	
	OL/ Slag	2'	2.2	WH	10YR(3/4) dark yellowish brown, silty organic clays	
9	SP		3.6	WH	10YR(4/3) brown, very gravely sand and silt	
	GM		2.9	1	10YR(2/1) black silty gravely clay	
10	PT		0.8	1	10YR(2/2) black, peat and high organics wood	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

ERM

Boring Number SB-1

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/01/01 1310	Date & Time Completed: 8/01/01 1420
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: N of one story steel building				SURFACE DESCRIPTION: Soil/Debris	
10	PT/OL	2'	16	WH	10YR(2/1) black, very soft silty organic clays w/peat high organics	
11			13	WH	10YR(2/2) very dark brown, very soft silty organic clays w/ peat high organics	
	PT/OL		15	WH	10YR(2/2) very dark brown, very spongy fibrous peat, w/high organic contents	
12	PT		15	WH	10YR(2/2) very dark brown, very spongy fibrous peat, w/high organic contents	
	PT	2'	17	WH	10YR(2/2) black, very soft, peat w/high organics content trace gravel	
13			14	WH	10YR(2/2) black, very soft, peat w/high organics content trace gravel, very fibrous and spongy	
	PT		12	1	10YR(2/2) very dark brown, peat, spongy, high organics content, very wet	
14	PT		14	1	10YR(2/2) very dark brown, peat, spongy, high organics content, very wet	
	PT/OL	2'	12	WH	10YR silty organic clays and peat. Very wet, very soft	
15	PT/OH		31	WH	10YR silty organic clays and peat. Very wet, very soft	
	PT/OH		31	1	10YR silty organic clays and peat. Very wet, very soft	
16	PT/OH			1	10YR silty organic clays and peat. Very wet, very soft	
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-18

BORING LOG

Project Name & Location	Project Number	Date & Time Started 07/30/01 1640	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 7/30/01 1845	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of SB-17				SURFACE DESCRIPTION: Soil/Debris	
0	GM	2'	0.0	4	10YR(2/2) very dark brown, silty medium to coarse sand and angular gravel, fill material, dry, no staining, sweet odor detected.	
1	GM		0.0	9	10YR(2/2) very dark brown, silty medium to coarse sand and angular gravel, fill material, dry, no staining, sweet odor detected.	
	GM		0.0	15	10YR(2/2) very dark brown, silty medium to coarse sand and angular gravel, fill material, dry, no staining, sweet odor detected.	
2	GM		0.0	21	10YR(2/2) very dark brown, silty medium to coarse sand and angular gravel, fill material, dry, no staining, sweet odor detected.	
	SM	1.5'	0.0	12	7.5YR(4/4) brown, silty medium grained sand and gravel, w/some slag deposits, dry, no staining, fill	
3	SM		0.0	15	7.5YR(4/4) brown, silty medium grained sand and gravel, w/some slag deposits, dry, no staining, fill	
	SM		0.0	19	7.5YR(4/4) brown, silty medium grained sand and gravel, w/some slag deposits, dry, no staining, fill	
4	SM		36.8	20	7.5YR(4/4) brown, silty brown medium to coarse sand and gravel gray staining, hydrocarbon staining, fill	
		3"		3	10YR(3/1) very dark gray, silty clays, w/anguiar gravels, fill material dry	
5	SC		1.4	2	10YR(3/1) very dark gray, silty clays, w/angular gravels, fill material dry	
				3	10YR(3/1) very dark gray, silty clays, w/anguiar gravels, fill material dry.	
6	SC		0.0	2	10YR(3/1) very dark gray, silty clays, w/angular gravels, fill material dry	
	OH	2'	0.0	3	10YR(4/1) dark gray, clay w/medium sand and gravel, no odors no staining, organic layers of peat layered in the clay	
7	OH		0.0	2	10YR(4/1) dark gray, clay w/medium sand and some gravels layers of peat organics, soft moist clay	
	OH		0.0	3	10YR(4/1) dark gray, w/medium sand and some gravels, layers of peat (organics), soft moist clay	
8	OH		0.0	2	10YR(4/1) dark gray, w/medium sand and some gravels, layers of peat (organics), soft moist clay	
	OH	2'	0.0	WH	Gley1(4/1)N dark greenish gray, clay w/some coarse sand and gravel layers of peat (organics) moist, no staining	
9	OH		0.0	WH	Gley1(4/1)N dark greenish gray, clay w/some coarse sand and gravel layers of peat (organics) moist, no staining	
	OH		0.0	2	Gley1(4/1)N dark greenish gray, clay w/some coarse sand and gravel layers of peat (organics) moist, no staining	
10	OH		0.0	3	Gley1(4/1)N dark greenish gray, clay w/some coarse sand and gravel layers of peat (organics) moist, no staining	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-18

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 07/30/01 1640	
		Date & Time Completed: 7/30/01 1845	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer Drop: 250 lb Hydraulic Hammer
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft / Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FLD PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of SB-17				SURFACE DESCRIPTION: Soil/Debris	
10	OH	2'	0.0	WH	Gley1(5/1) 10Y Greenish gray, clay, w/some intermittent layers of peaty lenses moist clay medium stiff	
11	PT		0.0	1	Gley1(5/1) 10Y Greenish gray, clay, w/some intermittent layers of peaty lenses moist clay medium stiff	
	PT		0.0	3	10YR(2/2) very dark brown, peat and organics, no odors on staining appears dry	
12			0.0	4	10YR(2/2) very dark brown, peat and organics, no odors on staining appears dry	
		2'	0.0	3	Gley1(5/1)10Y greenish gray, clay w/trace gravel and organics. Moist soft clay	
13	PT		0.0	7	10YR(2/2) dark brown peat w/silt and organics, wood leaves, moist peat	
	PT		0.0		10YR(2/2) dark brown peat, moist, no staining	
14	PT/OH		0.0		10YR(2/2) dark brown peat, moist, no staining.	
	PT	2'	0.0		10YR(2/2) dark brown, peat, very soft, organics w/silts, organic odor No staining Wet	
15	PT		0.0		10YR(2/2) dark brown, peat, very soft, organics w/silts, organic odor No staining Wet	
	PT		0.0		10YR(2/2) dark brown, peat, very soft, organics w/silts, organic odor No staining Wet	
16	PT				10YR(2/2) dark brown, peat, very soft, organics w/silts, organic odor No staining Wet	
					END OD BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-19

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/02/01	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	GM	1'	0.0	30	10YR(4/4) reddish brown, silty fine sand w/gravels and slag/ furnace brick debris	
1	GM		0.0	50/3		
	GM		0.0	NR	10YR(4/4) reddish brown, silty fine sand w/gravels and slag/ furnace brick debris	
2	GM		0.0	NR		
	OL	1.5'	0.5	17	10YR(4/1) dark gray, soft gravely clay, no odors, no staining.	
3	SP/ Debris		0.5	16	10YR(5/4) yellowish brown, slag, broken brick furnace debris	
	SM/ Slag		0.8	19	10YR(3/3) dark brown, silty fine to med sand and gravel w/ irodescent metal fragments	
4	SM/ Slag		1.1	11	10YR(3/3) dark brown, silty fine to med sand and gravel w/ irodescent metal fragments	
	SM/ Slag	1'	1.4	9	Brown silty fine sand w/gravels (10YR3/3) silty brown sand	
5	Debris		0.5	4	10YR5/4 Yellowish brown, slag, broken furnace brick	
	OL		2.0	5	10YR(2/1) black organic clay w/gravels	
6	OL		1.1	4	10YR(2/1) black organic clay w/gravels	
	PT	1.5'	1.0	4	10YR(2/1) black organic clay, most soft clay w/gravels and organics	
7	PT		1.2	3	10YR(2/2) very dark brown, peat spongy w/high organic content	
	PT		2.0	2	10YR(2/2) very dark brown, peat spongy w/high organic content	
8	PT/ OL		1.4	2	10YR(2/2) very dark brown, peat w/organics, that is very spongy w/wood fragments	
	PT/ OL	1'	0.8	1	10YR(2/2) very dark brown, clayey peats w/high organic contents Semi spongy rebound	
9	OL		1.1	WH	10YR(2/2) very dark brown, clayey peats w/high organic contents Semi spongy rebound	
	OL		1.4	WH	10YR(4/1) dark gray, peaty clays w/high organic contents, trace sands medium	
10	PT/ OL		1.5	1	10YR(5/1) gray, clay silty clay w/trace organics	

Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-19

BORING LOG

Project Name & Location	Project Number	Date & Time Started 08/02/01	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed	
Drilling Company	**Foreman**	**Sampler(s)**	**Sampler Hammer** / **Drop**
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	**Method**	**Elevation & Datum**	**Completion Depth** / **Rock Depth**
CME 75	Split Spoon		16 ft
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	PT/OL	1'	NR	0.2	10YR(2/2) very dark brown, peaty clays of high organic composition, trace medium sands	
11	PT/OL		NR	0.3		
	PT/OL		NR	0.4	10YR(2/2) very dark brown, peaty clays of high organic composition, trace medium sands	
12	PT/OL		NR	0.2		
	PT/OL	2'	NR	0.6	10YR(2/2) very dark brown peat clays, high organics, and semi-spongy	
13	PT/OL		NR	0.3	Gley1(5/N) gray stiff clay, trace organics, trace fine sand & silts	
	OL					
14	OL					
					END OF BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-20

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 8/9/01 840	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/9/01 0910	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: East of SB-16				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Debris	1'	0.0	6	10YR(5/2) grayish brown top soil w/fine medium sand & gravel and concrete pieces	
1			0.0	16		
	SM/ Slag	1'	0.0	23	10YR(3/3) dark brown silty fine to medium sand w/gravel & slag pieces	
2			0.0	19		
	Slag	6"	0.0	50/2	Gley2(4/5B) dark bluish gray, very solid slag. Not wet.	
4			0.0	3.2		
	PT	1'	0.0	3.2	10YR(2/2) very dark brown, organic peat w/wood fibrous and moist	
6			0.0	2.1		
	PT	6"	0.0	3.2	10YR(2/2) very dark brown, organic peat w/wood fibrous and moist.	
8			0.0	1.9		
	PT	1'	0.0	2.4	10YR(2/2) very dark brown, organic peat w/wood fibrous and moist	
10			0.0	1.2		
	PT	1'	0.0	3.2	10YR(2/2) very dark brown, organic peat w/wood fibrous and moist	
12			0.0			
		1'	0.0			
14	OH		0.0		2.5Y*4/2) dark grayish brown clay w/trace silts fine sand and organic matter	
					END OF BORING	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-21

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/9/01 1046 Date & Time Completed: 8/9/01 1105	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: East of SB-16				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Slag	1'	0.0	4 6	10YR (3/3) Dark Brown, Silty Sand and greavel w/slag, and debris 10YR (3/3) Dark Brown, Silty Sand and gravel chunk of railroad tire	
1	RR Tire		0.0	21 50/4	10YR(3/2) very dark grayish brown, silty gravely sand Gley 2(5/5B) Bluish gray slag w/gravely sand and slag	
	SM/ Slag	1'	0.0	19 20	10YR(2/2) very dark brown, slag and metallic fragments Gley 2(3/1) very dark gray, coal metals, and slag	
2	SM/ Slag		0.0	26 28	Gley 2(3/1) very dark gray, coal metals, and slag Gley 1(5/10) greenish gray granular, slag	
	SM/ Slag	6"	0.0	12 4	Gley1(2/5/10Y) greenish black, gley w/organics, trace fine sand Gley1(2/5/10Y) greenish black, gley w/organics, trace fine sand	
4	Re/Coal Slag	6"	0.0	3	10YR(2/2) very dark brown peaty cleay high organics trace fine sand	
	Slag	6"	0.0	3	10YR(2/2) very dark brown peaty cleay high organics trace fine sand	
6	OH OH	6"	0.0	4	2.5Y(4/1) dark gray clay w/organics trace fine sand and silt	
	PT/OH	1'	0.0	4	2.5Y(4/1) dark gray clay w/organics trace fine sand and silt	
8	OH		0.0	6	10YR(2/2) organic peat very dark brown moist 25Y(4/1) dark gray clay plastucy, trace fine sand	
	OH	6"	0.0	8 6	25Y(4/1) dark gray clay plastucy, trace fine sand 10YR(2/2) very dark brown, peaty clay high organics soft	
10	OH	6"	0.0	12 11	2.5Y(4/1) dark gray silt and fine sandy clay 10Y(2/2) very dary brown peat fibrous soft, high organics	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-22

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/9/01 0815	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/9/01 0830	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: East of SB-16				SURFACE DESCRIPTION: Soil/Debris	
0	SM/Slag	6"	0.0	3 4	10YR(2/2) Very dark brown, silty fine to medium sand and gravel wslag pieces	
1	SM/Slag	6"	0.0	3 6	10YR(2/2) Very dark brown, silty fine to medium sand and gravel wslag pieces	
			0.0			
2	SM	1'	0.0	4 11	10YR(4/4) Dark yellowish brown fine to medium sand and gravel	
4	GM	1'	0.0	12 16	10YR(4/4) Dark yellowish brown fine to medium sand and gravel	
	PT	1'	0.0	4 3	10YR(2/2) very dark brown, peaty material	
6	OH	1'	0.0	3 2	5Y(4/1) Dark gray soft clay trace organics trace silt sand and gravel	
	OH	1'	0.0	1 2	5Y(4/1) Dark gray soft clay trace organics trace silt sand and gravel	
8	OH	1'	0.0	3 6	5Y(4/1) Dark gray soft clay trace organics trace silt sand and gravel	
			0.0			

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-23

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/9/01 1003 Date & Time Completed: 8/9/01 1010	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer / Drop: 250 lb Hydraulic Hammer
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft / Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of SB-18				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Slag	1'	0.0	4	10YR(2/2) very dark brown, sandy fine to medium silt w/metal fragments and slag loose compaction	
1			0.0	8		
	SM/ Slag	1'	0.0	9	10YR(2/2) very dark brown, fine to med. Silty sand w/trace gravel, metal fragments w/metallic irradescence	
2			0.0	12		
	Slag	1'	0.0	6	10YR(8/1) white, slag/ash material granular texture w/med sand loose sand and gravels	
3			0.0	8		
	Slag/ OH	1'	0.0	24	10YR(8/1) white, slag/ash	
4			0.0	12	10YR(5/1) gray clay soft and maluable	
	OH	1'	0.0	3.3	10YR(4/1) dark gray, clay crumbly trace organics trace fine sand	
6			0.0	4.5		
	OH	1'	0.0	3.5	10YR(4/1) dark gray clay plastics trace fine sand trace organics	
8			0.0	6.6	10YR(4/1) dark gray clay plastics trace fine sand trace organics	
	OH	1'	0.0	1.1	10YR(2/2) very dark brown peat, fibrous, spongy	
10	PT			2.2		
					END OF BORING	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-25

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/07/01 1330	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/7/01 1455	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM	4"	0.0	NA	10YR(6/2) light brownish gray, top soil dry w/gravel fine to medium sand (dry)	
1	SM	4"	0.0	NA	10YR(8/4) very pale brown furnace brick and gravel (dry)	
	SM	4"	0.0	NA	10YR(6/2) very pale brown furnace brick that has been weathered fine to medium sand & gravel	
2	SM	4"	0.0	NA	10YR(6/2) very pale brown furnace brick that has been weathered fine to medium sand & gravel, dry	
	Brick	4"	0.0	NA	10YR(6/2) very pale brown furnace brick that has been weathered fine to medium sand & gravel, dry	
3	Wx/ Brick	4"	0.0	NA	10YR(6/2) very pale brown furnace brick that has been weathered fine to medium sand & gravel, dry	
	Wx/ Brick		0.0	NA	10YR(6/2) very pale brown furnace brick that has been weathered fine to medium sand & gravel, dry	
4	Wx/ Brick		0.0	NA	10YR(6/2) very pale brown furnace brick that has been weathered fine to medium sand & gravel, dry	
	NR		0.0	NA	NO RECOVERY	
5		6"	0.0	NA	NO RECOVERY	
			0.0	NA	NO RECOVERY	
6	Debris		0.0	NA	NO RECOVERY	
			0.0	NA	Debris, brick and slag	
7	Debris/ Slag	4"	0.0	NA	Debris, brick and slag	
	Debris/ Slag		0.0	NA	Debris, brick and slag	
8	Debris/ Slag		0.0	NA	Debris, brick and slag	
	Debris/ Slag		0.0	NA	Gley2(4/10GB) dark greenish gray, very hard slag and debris (dry)	
9	Debris/ Slag	4"	0.0	NA	Gley2(4/10GB) dark greenish gray, very hard slag and debris (dry)	
	Debris/ Slag		0.0	NA	Gley2(4/10GB) dark greenish gray, very hard slag and debris (dry)	
10	Debris/ Slag		0.0	NA	Gley2(4/10GB) dark greenish gray Very gard solid slag (dry)	

Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-25

BORING LOG

Project Name & Location	Project Number	Date & Time Started 08/07/01 1330
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/7/01 1455
Drilling Company	**Foreman**	**Samplers(s)** / **Sampler Hammer** / **Drop**
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes / 250 lb Hydraulic Hammer
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
CME 75	Split Spoon	16 ft
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2 1/4" HAS	2"X2'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	Debris/ Slag	1'	0.0			
11			0.0			
			0.0			
12	Slag/ Silt		0.0			
			0.0		Wet slag and silt 5Y(4/1) dark gray	
13	Wood		0.0		Wood umber organic odor	
	Wood		0.0			
14			0.0		Wood umber organic odor	
	NR		0.0		NO RECOVERY	
15			0.0			
			0.0			
16	slag/ Fill		0.0		Wet silt and wood, strong decay odor Glev2(5/5B) bluish gray	
18						
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-26

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/08/01 1425	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 08/08/01 1510	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM	1'	0.0	4	10YR(3/2) very dark grayish brownfine to medium silty fine sand w/gravel metallic appearance, irradescence	
1	SM		0.0	8	10YR(6/6) brownish yellow, compacted slag at granular texture w/gley 2(3/1) green blue slag	
	Slag	1'	1.7	9	10YR(5/6) yellowish brown granular (coarse sand) slag material, very compacted	
2	Slag		0.4	11		
	Slag	1'	0.0	6	10YR(5/6) yellowish brown granular (coarse sand) slag material, very compacted	
3	Slag		0.0	8		
	Slag	1'	0.0	4		
4	Slag		0.0	3	2.5YR(8/2) pale yellow to white slag speckled w/bluish green slag, black and yellowish brown areas	
		1'	0.0	4	2.5YR(8/2) pale yellow to white slag speckled w/bluish green slag, black and yellowish brown areas	
6	SM		0.0	4		
	SM		0.0	4	10YR(2/1) black fine sandy silt, wet w/metal appearance irradescence, soft	
8	PT	1'	0.0	4	10YR(2/1) black, fine sandy silt, wet w/metal appearance irradescence, soft (bottom 2" feet)	
	PT		0.0	4	10YR(2/2) very dark brown peat, w/organics and wood very wet soft material	
10	PT	1'	0.0	32	10YR(2/2) very dark brown peat, w/organics and wood	
			0.0	4	5YR(5/1) gray fine sandy silt	
12	SM	1'	0.0	3		
				3,3		
				4,4		
				6,8		
				3,2		

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

ERM

BORING LOG

Boring Number SB-27

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/08/01 1351	
		Date & Time Completed: 08/08/01 1400	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID / PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	Soil/ Slag	6"	0 0	4 8	10YR(3/3), Dark brown top soil, w/slag and metal fragments	
1		6"	0 0	6 8	10YR(3/3) Dark brown top soil, w/slag debris w/metal fragments	
	Soil/ Slag	6"	0 0	8 9	10YR(3/3) Dark brown top soil w/slag debris and metal fragments	
2		6"	0 0	11 8	10YR(4/4) Dark yellowish brown, silty sand w/slag and ash (dry)	
	SM/ Slag	6"	0 0	4 8	Yellowish brown wood	
3		6"	0 0	6 4	5YR(2.5/2) Dark reddish brown pelletized iron ore	
	SM/ Slag		0 0	6 4	5YR(2.5/2) Dark reddish brown pelletized iron ore	
4	Wood	2"	0 0	4 4	5YR(2.5/2) silty crush/ore	
	iron ore	10"	0 0	4 2	5YR(2.5/2) silty crushed ore/and silts	
6	iron ore	0"	0 0	2 2	Same clay 1" layer at clay brown clay	
	SP/iron ore	4"	0 0	2	10YR(2/2) very dark brown, very fibrous spongy peat High organics	
8	iron ore/ OH	6"	0 0	4	10YR(2/2) very dark brown, fibrous peat	
	PT	1'	0 0	3	10YR(2/2) very dark grayish brown, peaty clay	
10	PT OH/PT	1'	0 0	3	5YR(5/1) gray clay w/trace organics	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-28

BORING LOG

Project Name & Location	Project Number	Date & Time Started 08/08/01 1205	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 08.08/01 1244	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Debris	1'	0.0	20 98	10YR(5/2) grayish brown, fine silty sand w/gravel and gravely stones. W/some concrete	
1		1'	0.0		10YR(3/2) very dark grayish brown silty medium sand (dry)	
	SM/ Debris		0.0		10YR(3/2) very dark grayish brown silty sand w/slag. 1-2" diameter slag chunks (dry)	
2			0.0		10YR(6/1) gray slag very granulary silts	
	SM/ Slag	1'	0.0		10YR(6/1) gray slag very granulary silts (strong septic, sulfur odor)	
3			0.0		10YR(5/8) red, brick wet	
	SM/ Slag	6"	0.0		10YYR(5/1) gray slag, very gravely, angular w/silts	
4		6"	0.0		10YR(5/1) gray slag, 1" pieces of slag and brick debris, very wet some fines, unconsolidated	
	Brick	1'	0.0		10YR(5/1) gray slag, 1" pieces of slag and brick debris, very wet some fines, unconsolidated (wet)	
6	Slag		0.0		10YR(5/1) gray fine to medium sand w/slag and med grained pieces of pulverized brick wet	
	Slag	1'	0.0		10YR(5/1) gray fine to medium sand w/slag and med grained pieces of pulverized brick wet, very strong of pulverized brick wet	
8	Slag		0.0			
	Slag	8"	0.0		10YR(5/1) gray fine to medium sand w/slag and med grained pieces of pulverized brick wet, very strong of pulverized brick wet, sulfur odor	
10	PT	4"	0.0			
	PT	1"			10YR(2/2) very dark brown organic, PT septic odor	
11	PT				10YR(2/2) very dark brown peat w/strong septic odor	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-28

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/08/01 1205 Date & Time Completed: 8/8/01 1244	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer; Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Excavation & Datum:	Completion Depth: 16 ft; Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
11	SC	1'	0.0	2 2	10YR(5/1) gray, silty clayey fine sand w/strong septic sulfur odor	
			0.0			
12	SC	1'	0.0	2 2	10YR(5/1) gray silty clayed fine sand w/strong septic odor	
	SC		0.0			
13	OH	1'	0.0	4 6	10YR(5/1) gray clay w/trace silts and fine sands, stiff and plastic	
	OH		0.0			
14						
					END OF BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-20

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/08/01 1030 Date & Time Completed: 08/08/01 1045	
Drilling Company: SJB Services. Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum	Completion Depth: 16 ft — Rock Depth
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Slag	0.5	3.6 3.6	11 20	10YR(5/2) grayish brown, top soil w/gravel and debris some slag	
1						
	SM/ Slag	1	15.7 18.8	28 31	10YR(3/3) dark brown, fine to medium sand w/brick and gravel	
2						
	SM/ Slag	1'	4.4 0.3	19 23	10YR(2/1) black, fine to medium, sand traces of gravel w/slag and metal frags (irrodescence) dry	
3						
		10"	3.7 3.7	28 30	2.5YR(3/6) dark red iron ore very wet w/silts same color	
4	iron/ ore	6"	0.0 0.0	17, 19 20, 12	2.5YR(3/6) dark red iron ore very wet w/silts	
6	iron/ ore					
	SP					
	SP	1'	0.0 0.0	12 7	2.5YR(2.5/1) reddish black medium to coarse sand, very little silts, wet (sand cast sand)	
8						
	Slag	0.1	0.0 0.0	4 4	10YR(6/2) light brownish gray slag material iron ore 2.5YR(3/6)	
	SP/ Slag	1'	1.4 4.4	6 5	2.5YR(2.5/1) reddish black sand	
10						
	SP	6"	7.7 22.3	8 4	Gley 2(3/10GB) very dark greenish gray slag, very granular	
	SP	6"	0.0 0.0	9 11	5Y(7/1) light gray granular slag 2.5YR(2.5/1) reddish black medium to coarse sand, very little silts	
11						

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-29

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/03/01 1030 Date & Time Completed: 08/03/01 1045	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer; Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft; Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
11	SP/ Slag	6"	0.0	8	2.5YR(2.5/1) reddish black medium sand casting sand Gley 2(10/GB) dark greenish gray slag very compact	
		6"	0.0			
12	SC	6"	0.0	7	Gley 2(10/GB) Dark greenish gray slag, into dark brown	
	SC	1'	0.0	6	10YR(2/2) very dark brown, very soft clay w/organics	
13	OH		0.0	8	10YR(2/2) very dark brown, spongy clayey pt	
	OH	6"	0.0	8	10YR(2/2) very dark brown, spongy clayey pt	
14				8	10Y(5/12) gray stiff plastic clay.	
					END OF BORING	

Page 2 of 2 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-30

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/8/01 1250	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/8/01 1318	
Drilling Company	**Foreman**	**Sampler(s)**	**Sampler Hammer** / **Drop**
SJB Services. Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	**Method**	**Elevation & Datum**	**Completion Depth** / **Rock Depth**
CME 75	Split Spoon		16 ft
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: North of SB-18				SURFACE DESCRIPTION: Soil/Debris	
0	SM/ Debris	6"	0.0	4 6	10YR(4/3) brown top soil, w/some grass	
1			0.0	9 12	10YR(6/1) gray gravely slag dry material	
	SM/ Slag	6"	0.0	4 6	10YR(6/1) gray gravely slag dry material ash/concrete	
2			0.0	6 8	10YR(6/1) gray gravely slag dry material ash/concrete	
	Slag	6"	0.0	4	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
3			0.0	5	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
	Slag/ OH	6"	0.0	8	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
4			0.0	5	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
	OH	6"	0.0	4	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
6			0.0	5	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
	OH	6"	0.0	5	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
8			0.0	4	10YR(4/1) dark gray gravely clays w/shales and organics and organics, very stift plasticv clav	
					END OF BORING	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-31

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/08/01 0915 Date & Time Completed: 08/08/01 0942	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM	6"	1.8	4	10YR(5/2) grayish brown, light grayish brown gravely dry topsoil, fine to medium sand	
1			2.0	5		
		6"		6	10YR(2/2) very dark brown, silty fine to medium, sand and gravel	
2	SM/ Slag		1.7	8	10YR(5/6) yellowish brown, wood, solid wood w/decay odor	
		2"	0.0	5.3	Gley 1(4/10Y) dark greenish gray, soft clay easily molded very plastic w/organics	
4	Wood		0.0	2.2		
		1.5'	0.0	4.3	10YR(4/1) dark gray, soft clay w/wood and gravels organics appears wet	
6			0.0	2.5		
	OH	1'	0.0	5	10YR(2/2) very dark brown fibrous spongy peat, w/organics	
7	OH		0.0	4		
	OH	1'	0.0	4	Gley 1(4/1) 10Y dark greenish gray clay soft w/organics	
8	PT	0.5	0.0	1	10YR(2/2) very dark brown fibrous spongy PT	
	OH	0.5	0.0	2	5Y(4/1) dark gray, silty fine sand wet	
9	PT			2	5Y(4/1) dark gray, silty fine sand wet	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-29

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/08/01 1030	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/8/01 1043	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	SM	0.5	0.0	1	5Y(4/1) dark gray, silty fine sand wet, native material	
		1'	0.0	2,2	5Y(4/1) dark gray, silty fine sand wet, native material	
		1'	0.0	2,2	5Y(4/1) dark gray, silty fine sand wet	
12		1'	0.0	3,4	5Y(4/) dark gray stift clay, very plastucy, trace silts & fine sample	
		1'	0.0	5,7		
14						
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-32

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/08/01 0820 Date & Time Completed: 08/08/01 0902	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer; Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft; Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris Just of gravelv dirtv road	
0	SM	1'	1 5		10YR(5/2) grayish brown, light gray gravelv top soil w/fine to medium sand	
1			3 5			
	SM/ Slag	1'	5 2		10YR(2/2) very dark brown, silty fine to medium sand w/gravel	
2			7 1			
	SM/ Slag	1'	1 9		10YR(3/2) very dark grayish brown, medium to fine silty sand w/metal frags Irrodescence	
3			2.0			
	SM/ Slag	1'	3 1		10YR(2/1) black very moist fine to medium sand very silty w/irrodescence	
4			3 2			
	SM/ Slag	1'	0 5			
6		X	0 6		Gley 2(3/5B) very dark bluish gray Slag, consistent w/that found around the site (very compact) hard wet @5 5	
	NR	X	X		NO RECOVERY	
8		2'	1 1			
	OL/ Slag		0 0		Gley2(3/5B) very dark bluish gray, very soft clay w/slag material, gravelv texture	
10		1'	0 0		Gley1(3/10Y) very dark greenish gray fine silty sand very wet and very soft	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-32

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/08/01 0820	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/8/01 0902	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	SM	2"	0.0	2,2 5	Gley1(3/10Y) very dark greenish gray fine silty sand very wet and very soft	
11		1'	0.0	4 7		
	SM	1'	0.0	8 6	Gley1(3/10Y) very dark greenish gray fine silty sand very wet and very soft wet silty sand into dryer silty sand	
12		1'	0.0	4 3		
	SM	1'	0.0	8	Gley1(4/1)10Y, dark greenish gray clay, very stiff, trace silty and fine sand	
14						
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-33

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 08/08/01 0720 Date & Time Completed: 08/08/01 0810	
Drilling Company: SJB Services, Inc.	Foreman: Anthony Jakubczak	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft Rock Depth:
Bit Size(s): 2 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM	1'	0 0 0 0	5 9	10YR(4/1) dark gray, top soil medium to fine sand and gravel	
1						
	SM	1'	0 0 0 0	11 10	10YR(2/2) very dark brown, compacted ume to medium sand gravel & slag	
2						
	SM/ Slag	1'	0 0 0 0	12 15	Gley2(6/10GB) greenish gray, slag material w/fine to medium sand some coarse and gravel	
3						
	SM/ Slag		0 0 0 0	19 15	Gley2(6/10GB) greenish gray, slag material w/fine to medium sand some coarse and gravel layers of dark brown sandy soil	
4		1'				
	Slag	1'	0 0 0 0	10 8	Gley2(5/10GB) greenish gray slag, speckled w/whites gravely texture compacted and hard	
5						
	Slag	1'	0 0 0 0	7 6	Gley2(5/10GB) greenish gray slag, speckled w/whites gravely texture compacted and hard	
6						
	Slag	1'	0 0 0 0	5		
7				9 5		
	Slag	1'		7	Gley1(4/10GB) dark greenish gray wet slag and ash deposits	
8	Slag			3		
		1'		4	Gley2(3/1)5B- very dark bluish gray slag angular unconsolidated wet	
9	OH			5		
				5		
10						

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-33

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 08/08/01 0720	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed: 8/8/01 0810	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
Zebra Environmental	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Direct Push		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
2 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	OH	1'	0.0	5 2	10YR(4/2) dark grayish brown, organic stiff, plastic clay, trace silts and fine sands	
11	OH		0.0	9 8	10YR(4/2) dark grayish brown, organic stiff plastic clay trace silt and fine sands	
		1'	0.0	6 7	10YR(4/2) dark grayish brown, organic stiff plastic clay	
12	OH		0.0	6 6	10YR(4/2) dark grayish brown	
	OH		0.0			
14						
					END OF BORING	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-34

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/26/02 0700
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Date & Time Completed: 03/26/02 0830
Drilling Equipment: Geoprobe		Method: Direct Push	Logged by: Michael Mendes
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Examined & Checked by: Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: PID/FID (ppm)	SAMPLES: Bore Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr(2/1)	1	0.0		Dark Brown to Black Loose granular soil w/Brick and metal fragments	
1	10yr(2/1)				slury ortodescence	
2	10yr(3/1)	1	0.0		Same as above	
	10yr (3/4)				Same as above. Grading into a Brownish yellow slag and ash compacted layer	
3	10yr (6/6)	1	0.0		GW encountered @ 25 ft. Granular ash and slag material	
	10yr (6/6)				medium to coarse sand No odors	
4	10yr (6/6)	1	0.0		Same as above. Coarse sand W/ Brownish yellow Wet	
	10yr (6/6)					
5	10yr (4/3)	1	0.0		Brown ash and slag that is wet matrix is med To coarse sand	
					Speckled appearance lighter colors	
6	10yr (4/3)	1	0.0		Brown ash and slag that is wet matrix is med. To coarse sand	
					Speckled appearance lighter colors	
7	Glev 2(4/1)	1	0.0		Dark greenish gray - ash and slag Saturated No odors detected material	
					is medium to coarese sand	
8	10yr (4/3)	1	0.0		Dark greenish gray - ash and slag Saturated No odors detected material	
					is medium to coarese sand	
9	Glev 2(3/1)5B	1	0.0		Very dark bluetsh gray slag and ash deposits in a med to coarse	
					sand matrix No odors Saturated	
10	Glev 2(3/1)5B	1	0.0		Very dark bluetsh gray slag and ash deposits in a med to coarse	
					sand matrix No odors Saturated	

Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-34

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/26/02 0700	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Date & Time Completed: 03/26/02 0820	
		Sampler(s): Michael Mendes	Sampler Hammer: Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth: Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	Grey 2/3/1)5B	1	0.0		Very dark blueish grav slag and	
11					ash deposits in a med to coarse sand matrix. No odors Saturated	
					E.O.B.	

Page 2 of 2 Signature: _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-35

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started:	Date & Time Completed:
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Supervisor: Michael Mendes	Sampler Hammer: / Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth: / Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below ground)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris:	
0	10yr(3/1)	1	0.0		Brown soil w/Brick, and coal pieces. No odors dry	
1						
	10yr(3/1)	1	0.0		Brown lighter fill material dry ash layer. No odors dry	
2						
	10yr(3/2)	1	0.0		Brown fine to medium Sand w/ a reddish tint. No odors	
3					GW encountered @ 2.5 ft.	
	10yr(3/2)	1	0.0		Brown fine to medium Sand w/ a reddish tint. No odors	
4					GW encountered @ 2.5 ft.	
	10yr(3/2)	1	0.0		Brown fine to medium sand w/ reddish tint. No odor very	
5					wet. Very soft	
	10yr(3/2)	1	0.0		Brown fine to medium sand w/ reddish tint. No odor very	
6					wet. Very soft	
	10yr(3/2)	1	0.0		Brown fine to medium sand w/ reddish tint. No odor very	
7					wet. Very soft	
	10yr(3/2)	1	0.0		Brown fine to medium sand w/ reddish tint. No odor very	
8					wet. Very soft	
					E.O.B.	

Page 1 of 1 Signature _____ Date _____

ERM

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number SB-36

Project Name & Location: **Union Ship Canal Parcel 2 Site**	Project Number: **72707.04.01**	Date & Time Started: 03/25/02 0800 Date & Time Completed: 03/26/02 0845
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes; Sampler Hammer: ; Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum: ; Completion Depth: ; Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION SB-36(2.0-2.5)(DT): for SVOCs	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris:	
0–1	10yr (3/2)	1	0.0		Dark Brown soil w/ Brick and metal fragments, shinny/irrodescent	
1–2	10yr (4/3)	1	0.0		Brown soil dry no odors, pieces at Slag and coke	
2–3	10yr (4/3) 10yr (6/3)	1	0.0		Brown soil dry no odors, pieces Slag and coke dry. GW @ 2.5 ft. BGS Pale brown wet slag and coke	
3–4	10yr (6/3)	1	0.0		Wet brown slag and coke. In medium sand matrix	
4–5	10yr (8/1)	1	0.0		Wet white Coarse, granular slag and ash, occasional septic odors.	
5–6	10yr (8/1)	1	0.0		Wet white coarse, granular slag and ash	
6–7	Gley2 (4/1)5GB	1	0.0		Wet dark greenish gray slag and ash, fairly compacted and wet occasional septic odor.	
7–8	Gley2 (4/1)5GB	1	0.0		Wet dark greenish gray slag and ash, fairly compacted and wet occasional septic odor.	
					E.O.B	

Page 1 of 1 Signature: Date:

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-37

ERM

BORING LOG

Project Name & Location: **Union Ship Canal Parcel 2 Site**	Project Number: **72707.04.01**	Date & Time Started: [illegible] Date & Time Completed: [illegible]
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Geologist: Michael Mendes / Sampler Hammer: / Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum: / Completion Depth: / Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist: Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: FID/PID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0–1		0.5	0.0		Concrete	
2	10yr (3/2)	0.5	0.0		Very dark grayish brown soil w/ coal Bulk and metal fragments shiny	
3	10yr (3/2)	0.5	0.0		Refusals melted ends of plastic core limited Sample Recovery	
4	10yr (3/2)	0.5	0.0		Refusals melted ends of plastic core limited Sample Recovery	
5	10yr (3/4)	1	0.0		Pack yellowish Brown Saturated core, No odors, slight septic odor	
	10yr (8/3)				Very pale brown , fine sand and slag ash	
6	10yr (8/3)	1	0.0		Same as 45-50	
	Gley2(3/1)SB				Dark bluish green material slag and ash wet med to coarse gravel	
7	Gley2(3/1)SB	1	0.0		Sand very granular.	
8	Gley2(3/1)SB	1	0.0		Same as above.	
9					Note no composite @ this location Because of limited Recovery from 0-4 ft. E.O.B	
10						

 Signature ______________ Date ______________

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-38

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03/26/02 0925
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/26/02 0955
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: FID PID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION (CO&P-3839 depth of (1-1.5)ft for SVOCs)	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris:	
0		1	0.0		Concrete	
1	10yr (3/1)				Very Dark gray soil w/ Brick and metal fragments. Dry in nature	
2	10yr (4/4)	1	0.0		Redish Brown fine to medium sand very wet. GW @ ~1.5 ft.	
3	10yr (4/4)	1	0.0		Redish Brown fine to medium sand very wet. GW @ ~1.5 ft.	
4	10yr (6/6)	1	0.0		Brownish yellow - granular slag and ash No odors.	
5	10yr (8/1)	1	0.0		White - coarse sand slag and ash material (Saturated material)	
6	10yr (8/1)	1	0.0		White - coarse sand slag and ash material (Saturated material)	
7	Glev 2(4/1)5B	1	0.0		Dark bluish gray - slag and ash spectaled w/ lighter colors in a medium to coarse brown matrix.	
8	Glev 2(4/1)5B	1	0.0		Dark bluish gray - slag and ash spectaled w/ lighter colors in a medium to coarse brown matrix.	
9					E.O.B	
10						

Page 1 of 1 Signature _____ Date _____

ERM

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

BORING LOG

Boring Number SB-39

Project Name & Location	Project Number	Date & Time Started 03/26/02 0953		
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/26/02 1005		
Drilling Company	Foreman	Sampler(s)	Sampler Hammer	Drop
Zebra Environmental	Kenny Eager	Michael Mendes		
Drilling Equipment	Method	Elevation & Datum	Completion Depth	Rock Depth
Geoprobe	Direct Push			
Bit Size(s)	Core Barrel(s)	Geologist(s)		
2" x 4'	2" X 4'	Michael Mendes		

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: FID PID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION COMP-3839 [illegible]	REMARKS
	LOCATION				SURFACE DESCRIPTION Soil/Debris	
0		0.5			Concrete	
1	10yr (3/1)	0.5	0.0		Very dark gray soil w/ Brick and metal fragments dry no odors	
	10yr (3/1)	1	0.0		Same as above GW @ ~1.5 ft	
2	10yr (4/4)				Reddish Brown fine to medium Sand Very wet	
3	10yr (4/4)	1	0.0		Same as above	
4	10yr (6/6)	1	0.0		Brownish yellow, granular slag and ash material wet	
5	10yr (8/1)	1	0.0		White - coarse sand slag and ash material very wet	
6	10yr (8/1)	1	0.0		White - coarse sand slag and ash material very wet	
7	Grey 2(4/1)5B	1	0.0		Dark bluish gray slag and ash speckled w/ lighter colors in medium to coarse brown matrix	
8	Grey 2(4/1)5B	1	0.0		Dark bluish gray slag and ash speckled w/ lighter colors in medium to coarse brown matrix	
9					E O B	
10						

Page 1 of 1 Signature ______________ Date ______________

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-41

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 03/26/02 1015
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed: 03/26/02 1030
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris:	
0	Concrete		0.0		Concrete	
1	10YR (3/1)	0.5	0.0		Dark gray soil w/ brick and metal fragments dry no odors	
	10YR (3/1)	1	0.0		Same as above GW @ 2:0	
2	10YR (4/4)					
	10YR (4/4)	1	0.0		Same as above	
3						
	10YR (6/6)	1	0.0		Brownish yellow granular slag and ash in fine to medium matrix	
4						
	10YR (8/1)	1	0.0		White Coarse Sand slag and ash speckled w/ dark colors	
5						
	10YR (8/1)	1	0.0		Same as above	
6						
	Grey 2(4/1)5B	1	0.0		Dark Blueish gray slag and ash speckled w/ darkened colors	
7						
	Grey 2(4/1)5B	1	0.0		Same as above	
8						
					E.O.B	
9						
10						

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

ERM

Boring Number
SB-42

BORING LOG

Project Number & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/26/02 1030 Date & Time Completed: 03/26/02 1100
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Supervisor(s): Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Completion Depth:
			Consultant(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION Soil/Debris	
0			Concrete		Concrete	
1	10yr (3/1)	0.5	0.5		Dark gray soil w/ Brick and metal fragments dry no odors	
2	10yr (3/1) 10yr (4/4)	0 0	1		Same as above GW @ 2.5	
3	10yr (4/4)	0 0	1		Same as above	
4	10yr(6/6)	0 0	1		Brownish yellowish granular slag and ash infume to med. Matrix	
5	10yr(6/1)	0 0	1		White coarse sand slag and ash speckled w/ dark colors	
6	10yr(6/2)	0 0	1		Very dark gravish brown, stony hydrocarbon odors detected @ this depth w/ sheen on water highly stained zone 5 5-6 5	
7	Grey 2(3/1) 10	0 0	1		Very dark bluish gray clay very moist & soft (Native) with hydro Carbon odors	
8	10yr(3/2)	0 0	1		Very dark gravish brown Peatel w/ high organics None to slight hydro carbon odor	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-44

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/26/02 1135 Date & Time Completed: 03/26/02 1150
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Sampler(s): Michael Mendes Sampler Hammer: Drop:
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum: Completion Depth: Rock Depth:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/1)	1	0.0		Very dry grey soil w/ Brick, metal fragments and Coal	
1						
2	10yr (4/4)	1	0.0		Dark yellowish brown slag and ash in a granular med to coarse sand matrix	
3	10yr (7/2)	1	0.0		Pinkish gray slag and ash appears moist	
4	10yr (7/2)	1	0.0		Pinkish granular slag and ash and coarse angular matrix	
5	10yr (7/2)	1	0.0		Pinkish granular slag and ash and coarse angular matrix	
6	10yr (7/2)	1	0.0		Pinkish granular slag and ash and coarse angular matrix	
7	10yr (7/2)	1	0.0		Pinkish granular slag and ash and coarse angular matrix	
8	10yr (7/2)	1	0.0		Pinkish granular slag and ash and coarse angular matrix	
9					E.O.B	
10						

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-45

BORING LOG

Project Number & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/26/02 1130	Date & Time Completed: 03/26/02 1325
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Supervisor(s): Michael Mendes	Sampler Hammer:	Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Construction Depth:	Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes		

DEPTH (ft below grade)	SAMPLES: USCS Designation	SAMPLES: Recovery (feet)	SAMPLES: PID/FID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				DUP 032602@0800 for SVOCs Samples SB-45 (7-8 ft)(12-13 ft) for SVOCs SURFACE DESCRIPTION Soil/Debris	
0	10yr (3/1)	1	0.0		Very dark gray soil Brick and metal fragments some coal pieces, dry, no odors	
1						
	10yr (4/4)	1	0.0		Very dark gray soil Brick and metal fragments, some coal pieces, dry, no odors GW @ 25ft.	
2						
	10yr (4/4)	1	0.0		Very dark gray soil Brick and metal fragments some coal pieces, dry no odors GW @ 25ft	
3						
	10yr (6/6)	1	0.0		Brownish yellow granular slag and ash in fine to medium	
4						
	10yr (2/1)	1	0.0		Black oil stained hydrocarbon odors w/ Sand matrix	
5					strong	
	10yr (3/2)	1	0.0		Very dark grayish brown soil w/ old product staining	
6						
	10yr (3/2)	1	0.0		Very dark grayish brown soil w/ old product staining	
7						
	10yr (6/6)	1	0.0		Brownish yellow material slag and ash w/ oil product globule oozing	
8					from the matrix (free product) Strong odor no PID - Hits	
	10yr (5/1)	1	0.0		Gray slag material w/ch is very wet slight hydrocarbon odor	
9					present	
	10yr (5/1)	1	0.0		Gray - Same as above	
10						

Page 1 of 2 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-45

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/26/07 1150 Date & Time Completed: 03/26/07 1325	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer / Drop
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum	Casing Depth / Rock Depth
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
10	10yr (5/1)	1	0.0		Gray - Same as above	
11						
	Grey 2(4/1)10B	1	0.0		Dark Bluish Gray, slag ash material in a coarse grained matrix.	
12						
					E.O.B.	

DUP 032602@0800 for SVOCs
Sample-SB-45 (7-8 ft)@1215 for SVOCs

Signature: _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

ERM

Boring Number SB-46

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03/26/02 1330
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/26/02 1345
Drilling Company	Foreman	Sampler(s) / Sampler Hammer / Drop
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	Method	Elevation & Datum / Completion Depth / Rock Depth
Geoprobe	Direct Push	
Bit Size(s)	Core Barrel(s)	Consultant(s)
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2)	1	0.0		Very dark brown soil w/ metal fragments brick and coal	
1	Grey 2(4/1)5B				small layer of greenish dry slag	
2	10yr (5/4)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
3	10yr (5/4)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
4	10yr (5/4)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
5	10yr (6/6)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
6	10yr (6/6)	1	0.0		Yellowish brown slag and ash material w/ slight hydrocarbon odor present	
					small product globules present Consistent depth w/ SB-45	
7	10yr (6/6)	1	0.0		Yellowish brown slag and ash material w/ slight hydrocarbon odor present	
					small product globules present Consistent depth w/ SB-45	
8	10yr (6/6)	1	0.0		Yellowish brown slag and ash material w/ slight hydrocarbon odor present	
					small product globules present Consistent depth w/ SB-45 No staining evident at all	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-47

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/26/02 1344 Date & Time Completed: 03/26/02 1405	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer: / Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth: / Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION Soil/Debris:	
0	10yr (3/2)	1	0.0		Very dark brown soil w/ metal fragments brick and coal	
1	Grey 2(4/1)5B				small layer of greenish dry slag	
2	10yr (5/4)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
3	10yr (5/4)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
4	10yr (5/4)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
5	10yr (6/6)	1	0.0		Yellowish brown slag and ash material GW@ 2.5 ft.	
6	10yr (6/6)	1	0.0		Yellowish brown slag and ash material w/ slight hydrocarbon odor present small product globules present Consistent depth w/ SB-45	
7	10yr (6/6)	1	0.0		Yellowish brown slag and ash material w/ slight hydrocarbon odor present small product globules present Consistent depth w/ SB-45	
8	10yr (6/6)	1	0.0		Yellowish brown slag and ash material w/ slight hydrocarbon odor present small product globules present Consistent depth w/ SB-45. No staining evident at all	
9					E.O.B.	
10						

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

Boring Number SB-48

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03-27-02 0800 Date & Time Completed: 03-27-02 0870	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Supervisor(s): Michael Mendes	Driller
Drilling Equipment: Geoprobe	Method: Direct Push	Excavation & Backfill	Completion Depth / Rock Depth
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Bore Comm.	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris:	
0	10yr (2/1) SP	1	0.0		Black, soil w/ coal fragments	
1						
	10yr (6/4) SP	1	0.0		light yellowish Brown, slag material in a medium to coarse sand matrix	
2	Grey 2/4/1135B SP				Thin greenish Blue layers of slag material dry, loose granular sands	
	10yr (6/4)	1	0.0		light yellowish Brown, slag material in a medium to coars sand matrix	
3					coke pieces	
	10yr (6/4)	1	0.0		Same as above w/ some greyish staining - No distinctive odor present	
4					Same as above. Coke pieces	
	10yr (6/4)	1	0.0		light yellowish Brown slag material in a medium to coarse sand matrix	
5	Grey 2/4/1135B				Thin greenish Blue layers of slag and ash Coke pieces	
	10yr (6/4)	1	0.0		Same as above, high compaction Possib staining (4-6)	
6	Grey 2/4/1135B				Same as above	
	10yr (6/4)	1	0.0		Same GW@ ~ 6ft	
7	Grey 2/4/1135B					
	10yr (6/4)	1	0.0		Same	
8	Grey 2/4/1135B					
	Grey 2/4/1135BG	1	0.0		Dark greenish gray, wet slag in a coarse grained sand	
9	Grey 2/4/1135BG				matrix	
	PEAT 10yr (3/1)	1	0.0		Very dark grey to black, Peat, high organics and spongy	
10	PEAT					

 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-48

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 03/27/02 0800
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed: 03/27/02 0820
Drilling Company	**Foreman**	**Sampler(s)** / **Surveyor Reference** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Groundwater Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: PID FID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
10	PEAT / Cl 10yr (3:1)	1	0.0		Very dark Grey to Black clay & Peat high organics w/ more clays	
11	PEAT / Cl 10yr (3:1)				Same as above	
	Grey 2/(6/1)	1	0.0		Bluish gray smooth medium stiff organic clay	
12						
					E.O.B	

Page 2 of 2 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-49

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/27/02 0830 Date & Time Completed: 03/27/02 0840
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Logged by: Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Checked by: Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Designation	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10 yr (3/1) SP	1	0.0		Very dark gray. Poorly sorted sands and gravels. No odors. dry material	
1	10 yr (3/1) SP				Same as above	
2	10 yr (6/4) SP	1	0.0		light yellowish brown slag material in a medium to coarse sand matrix	
	10 yr (6/4) SP				light yellowish brown slag material in a medium to coarse sand matrix	
3	10 yr (6/4) SP	1	0.0		light yellowish brown slag material in a medium to coarse sand matrix	
	10 yr (3/1) SP				fine to medium sand darkish brown in color	
4	10 yr (4/1) SP	1	0.0		Bluesh green slag and Ash material some coke pieces	
	10 yr (4/1) SP				Same as above	
5	10 yr (7/6) SP	1	0.0		Yellow slag and Ash material w/ medium to coarse sand matrix	
	10 yr (7/6) SP				Same as above. Appears clean no staining. No odors	
6	10 yr (7/6) SP	1	0.0		Same as above Mp staomomg mp poorly	
	10 yr (7/6) SP				GW encountered @ ~6 ft	
7	10 yr (4/1) SP	1	0.0		Bluish green slag and ash material highly compacted (hard)	
	10 yr (4/1) SP				No staining no odors	
8	10 yr (6/4) SP	1	0.0		light yellowish brown - coarse sand matrix w/ coke slag	
	10 yr (6/4) SP				Same as above	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-49

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/27/02 0830 Date & Time Completed: 03/27/02 0840	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer / Drop
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum / Completion Depth	Rock Depth
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: LSCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10 yr (3/1) SP	1	0.0		Very dark gray. Poorly sorted sands amd gravels No odors, dry material	
1	10 yr (3/1) SP				Same as above	
2	10 yr (6/4) SP	1	0.0		light yellowish brown slag material in a medium to coarse sand matrix	
	10 yr (6/4) SP				light yellowish brown slag material in a medium to coarse sand matrix	
3	10 yr (6/4) SP	1	0.0		light yellowish brown slag material in a medium to coarse sand matrix	
	10 yr (3/1) SP				fine to medium sand darkish brown in color	
4	10 yr (4/1) SP	1	0.0		Blueish green slag and Ash material some coke pieces	
	10 yr (4/1) SP				Same as above.	
5	10 yr (7/6) SP	1	0.0		Yellow slag and Ash material w/ medium to coarse sand matrix	
	10 yr (7/6) SP				Same as above. Appears clean no staining No odors	
6	10 yr (7/6) SP	1	0.0		Same as above Mp staomomg mp pdors/	
	10 yr (7/6) SP				GW encountered @ ~6 ft.	
7	10 yr (4/1) SP	1	0.0		Bluish green slag and ash material, highly compacted (hard)	
	10 yr (4/1) SP				No staining no odors	
8	10 yr (6/4) SP	1	0.0		light yellowish brown - coarse sand matrix w/ coke slag	
	10 yr (6/4) SP				Same as above.	
					E.O.B	

Page 1 of 1 Signature _____ Date. _____

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

ERM

BORING LOG

Boring Number SB-50

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03-27-02 0430	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Date & Time Completed: 03-27-02 0900	
Drilling Equipment: Geoprobe	Method: Direct Push	Sampler(s): Michael Mendes	Sampler Hammer: Drop:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Elevation & Datum:	Completion Depth: Rock Depth:
		Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0 0		Very dark grayish brown - soil w/ coal, coke, and Brick	
1	10yr (3/2) SP				Very dark grayish brown - soil w/ coal, coke and Brick	
2	10yr (3/2) SP	1	0 0		Same as above, dry no staining	
	10yr (3/2) SP				Same as above, dry no staining	
3	10yr (3/2) SP	1	0 0		Same as above, dry no staining	
	10yr (3/2) SP				Same as above, dry no staining	
4	10yr (3/2) SP	1	0 0		Same as above, w/ Some 1" layers of slag deposits	
	10yr (3/2) SP				Same as above	
5	10yr (6/4) SP	1	0 0		Yellow slag and ash material w/ medium to coarse sand matrix	
	10yr (6/4) SP				Same as above (possible stained zone) at this depth (SB-48, &52)	
6	10yr (7/6) SP	1	0 0		Same as above, apperas clean	
	10yr (7/6) SP				Same as above, apperas clean	
7	10yr (8/2) SP	1	0 0		GW @ ~ 6 ft BGS	
	10yr (8/2) SP				Same as above	
8	10yr (8/2) SP	1	0 0			
	2(5/1)10 SP				Dark greenish blue slag and ash very compacted in a sand coarse matrix	
					E.O.B.	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-51

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/27/02 0910	
		Date & Time Completed: 03/27/02 0925	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer: Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth: Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Consultant(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris.	
0	10 yr (3/1) SP	1	0.0		Very dark grey - soil w/ coal fragments Brick and debris	
1	10 yr (3/1) SP					
2	10yr (6/4) SP	1	0.0		light yellowish brown, slag material in a medium to coarse sand matrix	
	10yr (6/4) SP				Same as above	
3	10yr (6/4) SP	1	0.0		light yellowish Brown, slag material in a med. To coarse sand matrix	
	10yr (6/4) SP				Same as above	
4	Same as above	1	0.0		Same as above	
	Same as above				Same as above	
5	10yr (7/1) SP	1	0.0		light gray med. Coarse sand slag and ash very wet highly compacted	
	10yr (7/1) SP				and hardened.	
6	10yr (7/1) SP	1	0.0		light gray med. Coarse sand slag and ash very wet highly compacted	
	10yr (7/1) SP				and hardened.	
7	10yr (7/1) SP	1	0.0		light gray med. Coarse sand slag and ash very wet highly compacted	
	10yr (7/1) SP				and hardened.	
8	Glev 2(3/1) 10GB	1	0.0			
	PEAT 10 yr (3/1)				Dark brown PEAT.	
9					E.O.B	
10						

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-52

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/27/02 0932 Date & Time Completed: 03/28/02 1000
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Supervisor: Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10 yr (3/1) SP	1	0 0		Very dark brown soil w. Brick, coal and some	
1	10 yr (3/1) SP				metal fragments. Varying amounts of debris descending downward	
	10 yr (3/1) SP	1	0 0		Same as above dry, no odors. No staining	
2	10 yr (3/1) SP					
	10 yr (3/1) SP	1	0 0		dry, no odors. No staining	
3	10 yr (3/1) SP					
	10yr (6/4) SP	1	0 0		light yellowish brown, slag and ash, w/ coke, in a medium to coarse sand	
4	10yr (6/4) SP				matrix.	
	10yr (6/4) SP	1	0 0		light yellowish brown, slag and ash and coke, consolidated and	
5	10yr (6/4) SP				compacted, med to coarse sand matrix. Possible stained area	
	10yr (6/4) SP	1	0 0		Same as above SB-48 very similar @ this depth	
6	10yr (6/4) SP				Sample collected from SB-48 (4-6)	
	Grey 2/3/1 10GB	1	0 0		Dark Bluish green slag and ash material very hard and compact	
7	Grey 2/3/1 10GB				Dark Bluish green slag and ash material, very hard and compact	
	Grey 2/3/1 10GB	1	0 0		Dark Bluish green slag and ash material, very hard and compact	
8	Grey 2/3/1 10GB				Dark Bluish green slag and ash material, very hard and compact	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-53

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03/27/02 1021
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/27/02 1040
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID PID (ppm)	Blow Counts	SOIL DESCRIPTION (SB-53 (7-4') @ 1035 for SVOC)	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	0.5	0.0		Very dark grayish brown soil w/ brick slag and - Ash. This	
1	10yr (3/2) SP				material apperars saturated from surface.	
2	10yr (3/2) SP	0.5	0.0		Same as above w/ 1.5-2ft. Zone having blue green slag deposits	
	Gley 2(3/1)10GB				Blue green compacted slag material.	
3	10yr (7/2) SP	0.5	0.0		- light gray speckled slag of Bluegreen and lighter color sands	
	10yr (7/2) SP				of medium to coarse texture Very compact	
4	10yr (7/2) SP	0.5	0.0		- light gray speckled slag of Bluegreen and lighter color sands	
	10yr (7/2) SP				of medium to coarse texture Very compact	
5	10yr (7/2) SP	0.5	0.0		- light gray speckled slag of Bluegreen and lighter color sands	
	10yr (7/2) SP				of medium to coarse texture Very compact	
6	10yr (7/2) SP	0.5	0.0		- light gray speckled slag of Bluegreen and lighter color sands	
	10yr (7/2) SP				of medium to coarse texture Very compact	
7	10yr (7/2) SP	0.5	0.0		- light gray speckled slag of Bluegreen and lighter color sands	
	10yr (7/2) SP				of medium to coarse texture Very compact	
8	Black SP	0.5	0.0		Medium to Coarse sand & Slag Strong petroleum odor with sheen	
	Black SP				product globules Picture taken from this hole	
9	Gley 2(3/1)10GB	0.25	0.0		Very dark greenish gray slag w/ lighter color marble in/or Very compacted	
	Gley 2(3/1)10GB				w/ fine to medium reddish brown Sand above the slag	
10	Gley 2(3/1)10GB	0.25	0.0		Very dark greenish gray slag w/ lighter color marble in/or Very compacted	
	Gley 2(3/1)10GB				w/ fine to medium reddish brown Sand above the slag	

Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-53

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03-27-02 1021 / Date & Time Completed: 03-27-02 1040
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Supervisor(s): Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below ground)	SAMPLES: USCS Description	Recovery (feet)	PID/FID Upper'	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
10	GLEY 2(5/1)10GR	0.25	0.0		Very dark greenish gray slag w/ lighter color marble in/or Very compacted	
11	GLEY 2(5/1)10GR				w/ fine to medium reddish brown Sand above the slag	
	GLEY 2(5/1)10GR	0.25	0.0		Very dark greenish gray slag w/ lighter color marble in/or Very compacted	
12	GLEY 2(5/1)10GR				w/ fine to medium reddish brown Sand above the slag	
					E.O.B	

Page 1 of 2 Signature: _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-54

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03 27 02 1043
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03 27 02 1055
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Dark gray brown soil w/ slag and brick, and some coke.	
1	10yr (3/2) SP				Dark gray brown, silty clayey sand w/ dark brown/reddish appearance	
2	10yr (5/4) SP	1	0.0		Yellowish brown slag, granular medium to coarse sand matrix (Wet from Surface)	
	10yr (5/4) SP				Yellowish brown slag, granular medium to coarse sand matrix	
3	10yr (5/4) SP	1	0.0		Yellowish brown slag, granular medium to coarse sand matrix (Wet from Surface)	
	10yr (5/4) SP				Yellowish brown slag, granular medium to coarse sand matrix	
4	10yr (5/4) SP	1	0.0		Yellowish brown slag, granular medium to coarse sand matrix (Wet from Surface)	
	10yr (5/4) SP				Yellowish brown slag, granular medium to coarse sand matrix	
5	Grey 2(5/1) 5GB SP	1	0.0		Greenish gray slag Very compacted and granular, medium to coarse	
	Grey 2(5/1) 5GB SP				sand and gravel.	
6	Grey 2(5/1) 5GB SP	1	0.0		Greenish gray slag Very compacted and granular, medium to coarse	
	Grey 2(5/1) 5GB SP				sand and gravel.	
7	Grey 2(5/1) 5GB SP	1	0.0		Greenish gray slag Very compacted and granular, medium to coarse	
	Grey 2(5/1) 5GB SP				sand and gravel.	
8	Grey 2(5/1) 5GB SP	1	0.0		Greenish gray slag Very compacted and granular, medium to coarse	
	Grey 2(5/1) 5GB SP				sand and gravel.	
					E.O.B.	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-55

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03-27-02 1103 / Date & Time Completed: 03-27-02 1110
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Supervisor: Michael Mendes / Sampler Hammer: / Drop:
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum: / Completion Depth: / Rock Depth:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/3) SP	0.25	0.0		Dark Brown - Soil w/ large gravel brick, coal pieces and some metal	
1	10yr (3/3) SP				fragments.	
2	10yr (3/3) SP	0.25	0.0		Dark Brown - Soil w/ large gravel brick, coal pieces and some metal	
					fragments.	
3	10yr (3/3) SP	0.25	0.0		Dark Brown - Soil w/ large gravel brick, coal pieces and some metal	
					fragments.	
4	10yr (3/3) SP	0.25	0.0		Dark Brown - Soil w/ large gravel brick, coal pieces and some metal	
					fragments.	
5	10yr (3/3) SP	0.25	0.0		fine to medium sand well sorted (not native) most likely fill	
					w/ Reddish brown color (seen in thin layers across the site	
6	10yr (3/3) SP	0.25	0.0		fine to medium sand well sorted (not native) most likely fill	
					w/ Reddish brown color (seen in thin layers across the site	
7	10yr (3/3) SP	0.25	0.0		fine to medium sand well sorted (not native) most likely fill	
					w/ Reddish brown color (seen in thin layers across the site	
8	10yr (3/3) SP	0.25	0.0		fine to medium sand well sorted (not native) most likely fill	
					w/ Reddish brown color (seen in thin layers across the site	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number SB-56

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/27/02 1117 Date & Time Completed: 03/27/02
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes; Sampler Hammer: ; Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum: ; Completion Depth: ; Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION Soil/Debris:	
0	Concrete	1	0.0		Concrete	
1	Concrete				Concrete	
	10yr (3/3) SP	1	0.0		Dark Brown - fine to medium Sand well sorted Reddish brown	
2	10yr (3/3) SW				in color - Wet from beneath concrete No odors. No staining	
	10yr (3/3) SP	1	0.0		White speckled slag w. med to coarse grained sand	
3					Wet from beneath concrete No odors No staining	
	10yr (8/1) SP	1	0.0		Same as above	
4					No odors No staining	
	Gray 2(5/1)5BG SP	1	0.0		Greenish gray - slag deposits w/ medium to coarse granulated sand	
5	Same				No odors No staining	
	Gray 2(5/1)5BG SP	1	0.0		Same as above No odors No staining	
6	Same				Same as above ~	
	Gray 2(3/1)5BG SP	1	0.0		Dark greenish gray, slag speckled w/ lighter color slag, medium to	
7					coarse sand. No odors No staining	
	Gray 2(3/1)5BG SP	1	0.0		Dark greenish gray, Same as above	
8					No odors No staining	
					E.O.B	

Page 1 of 1 Signature ____________ Date ____________

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

Boring Number SB-57

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/27/02 Date & Time Completed: 03/27/02	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Supervisor(s): Michael Mendes	Datum:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth: Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2)	1	0		Brown, slag ash w/ coke in silty matrix	
1						
	"	1	0		Thick coke piece layer	
2	"					
	10yr (7/2) SP	1	0		light gray - coarse gravel slag	
3						
	10yr (7/2) SP	1	0		light gray - coarse gravel slag	
4						
	10yr (8/1) SP	1	0		White slag ash material in a coarse sand matrix, some flecks	
5					of darker blue green colors	
	10yr (8/1) SP	1	0		White slag ash material in a coarse sand matrix, some flecks	
6					of darker blue green colors	
	10yr (8/1) SP	1	0		White slag ash material in a coarse sand matrix, some flecks	
7					of darker blue green colors	
	10yr (8/1) SP	1	0		White slag ash material in a coarse sand matrix, some flecks	
8					of darker blue green colors	
					EOB	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-58

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/27/02 Date & Time Completed: 03/27/02	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer:	Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth:	Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes		

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Very dark grayish brown, soil w/ slag and coal pieces silty wet soil. Saturated from	
1	4				the surface No staining. No odors.	
2	10yr (3/2) SP	1	0.0		Very dark grayish brown, SAME AS ABOVE	
	4				No staining. No odors	
3	10yr (7/4) SP	1	0.0		Very Pale Brown, Slag and Ash in Medium to Coarse Sand matrix	
	4				No staining. No odors.	
4	10yr (7/4) SP	1	0.0		Very Pale Brown, slag and ash in medium to coarse sand matrix	
	4				No staining. no odors.	
5	10yr (7/3) SP	1	0.0		Very pale brown - slag and ash in a medium to coarse sand matrix	
					No staining No odors	
6	Giey 2(4/1) 10BG	1	0.0		Dark grayish green - slag ash material in a medium to coarse sand matrix	
7	Giey 2(4/1) 10BG	1	0.0		Dark grayish green - slag ash material in a medium to coarse sand matrix	
8	Giey 2(4/1) 10BG	1	0.0		Dark grayish green - slag ash material in a medium to coarse sand matrix	
					E.O.B	
	-					

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-59

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/27/02 Date & Time Completed: 03/27/02
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Supervisor: Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Consultant: Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (2/1) SP	1	0.0		Dark brown - Black silty sand w/ slag and coke pieces	
1					wet from the surface.	
	10yr (2/1) SP	1	0.0		Dark brown - Black silty sand w/ some oil staining evident old	
2					hydrocarbon odors	
	10yr (2/1) SP	1	0.0		Dark brown - black silty sand w/ sheen, oil stained material	
3					heavy staining	
	10yr (8/4) SP	1	0.0		Very Pale Brown - slag and ash material in a medium to coarse	
4					grained matrix	
	Grey 2/3/1) 10BG SP	1	0.0		Dark green slag and ash material	
5						
		1	0.0		Same as above	
6						
		1	0.0		Same as above	
7						
		1	0.0		Same as above	
8						
		1	0.0		Bluerish green slag ash Very wet	
9						
		1				
10	▼				▼	

Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-59

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/27/02	
		Date & Time Completed: 03/27/02	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer / Drop
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum	Completion Depth / Rock Depth
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
10	Glen 2/3/11 10BG SP	1			Blueish green slag ash Very wet	
11						
12		1				
					E.O.B.	

Page 2 of 2 Signature: _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

Boring Number SB-60

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03/27/02
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/27/02
Drilling Company	**Foreman**	**Inspector(s)** / **Inspector Number** / **Drug**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Designations	SAMPLES: Recovery (feet)	SAMPLES: PID/FID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		VOGB - Soil w/ slag & metal fragments shiny in appearance	
1					Dry	
	10yr (2/1) SP	1	0.0		Black, silty sand w/ some gravel and coke	
2						
	10yr (2/1) SP	1	0.0		Black silty sand w/ gravel Sand medium to coarse - heavily oil stained	
3						
	10yr (2/1) SP	1	0.0		Same as above heavily stained	
4						
	10yr (2/1) SP	1	0.0		Same as above heavily stained	
5						
	Grey 2/3/1 10GB SP	1	0.0		Blueish green slag and ash w/ medium to coarse sand and gravel	
6					No odor No staining	
	Grey 2/3/1 10GB SP	1	0.0		Same as above	
7						
	Grey 2/3/1 10GB SP	1	0.0		Same as above	
8						
					E.O.B	
9						
10						

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
SB-61

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03-27-02
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03-27-02
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Location on Roadway (oil shack) Soil/Debris	
0	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
1						
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
2					Same as above No odor, No staining	Wet @ 2 ft.
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
3					Same as above No odor, No staining	
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
4					Same as above No odor, No staining	
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
5					Same as above No odor, No staining	
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
6					Same as above No odor, No staining	
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
7					Same as above No odor, No staining	
	10YR (3/1) SP	1	0.0		Brown soil w/ slag and metal fragments some coke pieces	
8					Same as above No odor, No staining	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-62

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03-27-02 / Date & Time Completed: 03-27-02
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Supervisor(s): Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Elevation & Datum:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Designation	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION (Cont. Sheet)	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Dark Brown fine to medium sand w/ slag and coke Wet from the surface. No odors No staining	
1						
2	10yr (3/2) SP	1	0.0		Same as above	
3	10yr (3/2) SP	1	0.0		Same as above	
4	10yr (3/2) SP	1	0.0		Dark brown granular slag in medium mostly coarse to gravely sand	
5	10yr (7/3) SP	1	0.0		Very Pale brown wet slag - loose and unconsolidated	
6	10yr (7/3) SP	1	0.0		Very pale brown wet slag and loose and unconsolidated material	
7	10yr (3/2) SP	1	0.0		Very dark grayish brown - silty sand layer	
8	10yr (7/3) SP	1	0.0		Very pale brown wet slag and coarse to gravely sand some fines	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number: SB-63

ERM

Project Name & Location	Project Number	Date & Time Started / Completed		
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Started: 03/28/02 0700 Date & Time Completed: 03/28/02 1000		
Drilling Company	**Foreman**	**Sampler(s)**	**Sampler Hammer**	**Drop**
Zebra Environmental	Kenny Eager	Michael Mendes		
Drilling Equipment	**Method**	**Elevation & Datum**	**Completion Depth**	**Rock Depth**
Geoprobe	Direct Push			
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**		
2" x 4'	2" X 4'	Michael Mendes		

DEPTH (ft below grade)	SAMPLES USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris:	
0–1	10yr (3/2) SP	1	0.0		Very dark Grayish Brown - fine to medium Sand silt. W/ Brick and metal fragments No odors. No staining.	
2	10yr (3/2) SP	1	0.0		Very dark Grayish Brown. Fine to medium Sand silt w/Brick and metal fragments	
3	10yr (5/2) SP	1	0.0		Grayish Brown - slag and ash material w/ coke and metal fragments	
4	10yr (5/2) SP	1	0.0		Grayish Brown-Slag and ash material w/Coke and metal fragments GW @ 3 ft.	
5	10yr (5/2) SP	1	0.0		Same as above	
6	10yr (5/2) Cl	1	0.0		Grayish Brown - organic silty clay of high plasticity	
7	10yr (5/2) Pt	1	0.0		Grayish Brown to Brow Peat and Bog material Very soft & spongy	
8	10yr (6/6) SP	1	0.0		light yellowish Brown - medium to coars sand and consolidated slag - appears to have some hardened and crystallized cluster	
					E.O.B.	

Page 1 of 1 Signature: ____________ Date: ____________

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-64

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/28/02 0700	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Date & Time Completed: 03/28/02 1000	
Drilling Equipment: Geoprobe	Method: Direct Push	Samplers: Michael Mendes	Sampler Hammer: Drop:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Elevation & Datum:	Completion Depth: Rock Depth:
		Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (Feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris:	
0	10yr (3/2) SP	1	0.0		Very dark grayish brown - silty fine sand w/ brick and metal fragments	
1					Some large 7/" slag pieces.	
	10yr (3/2) SP	1	0.0		Very dark grayish brown - silty fine sand w/ brick and metal fragments	
2						
	10yr (3/2) SP	1	0.0		Very dark grayish brown - silty fine sand w/ brick and metal fragments	
3						GW encountered @ ~ 3 ft
	10yr (7/4) SP	1	0.0		Very pale brown silty medium to coarse sand w/ slag and Ash	
4						
	10yr (8/3) SP	1	0.0		Very pale brown silty medium to coarse sand w/ slag and Ash	
5						
	10yr (8/3) SP	1	0.0		Very pale brown silty medium to coarse sand w/ slag and Ash	
6						
	10yr (8/3) SP	1	0.0		Very pale brown silty medium to coarse sand w/ slag and Ash	
7						
	10yr (8/3) SP	1	0.0		Very pale brown silty medium to coarse sand w/ slag and Ash	
8						
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

ERM

Boring Number SB-65

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03/28/02 0700
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/28/02 1000
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Number** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Very dark grayish brown - wet silty Sand w/ Bricks and metal frags	
1					Very wet from surface to EOB	
2	Grey 2(8/1)10B SP	1	0.0		light Bluish gray - medium to coarse sand, slag and ash w/ some coke pieces	
3	Grey 2(8/1)10B SP	1	0.0		light Bluish gray - medium to coarse sand, slag and ash w/ some coke pieces	
4	Grey 2(8/1)10B SP	1	0.0		light Bluish gray - medium to coarse sand, slag and ash w/ some coke pieces	
5	10yr (8/2) SP	1	0.0		Very pale brown, slag and ash in a medium to coarse sand and gravel.	
6	Grey 2(8/1)10B SP	1	0.0		Same as above w/ varying colors	
7	SP Grey 2(8/1)	1	0.0		light Bluish gray medium to coarse Sand and gravel	
8	10yr (8/3)	1	0.0		Very pale Brown medium to caoarse sand	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-66

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site		Project Number: 72707.04.01	Date & Time Started: 03/28/02 0700
			Date & Time Completed: 03/28/02 1000
Drilling Company: Zebra Environmental		Foreman: Kenny Eager	Samplers: Michael Mendes
Drilling Equipment: Geoprobe		Method: Direct Push	Excavation & Depth:
Bit Size(s): 2" x 4'		Core Barrel(s): 2" X 4'	Checked by: Michael Mendes

DEPTH (ft below ground)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0 0		Very dark Grayish Brown- silty medium sand w/ slag and brick fragments	
1					Coal fragments	
2	10yr (3/2) SP	1	0 0		Same as above	
3	10yr (3/2) SP	1	0 0		Same as above	
4	10yr (3/2) SP	1	0 0		Same as above	
5	Grey 2(6/1)10B	1	0 0		Bluish Gray - Slag and Ash deposits in medium to coarse grained sand	
6	Grey 2(6/1)10B	1	0 0		Same as above	
7	10yr (6/1) SP	1	0 0		Grey stiff clay w/ some organics interbedded shale fragments	
8	10yr (3/2) SP	1	0 0		Very Dark Grey (Peat) Soft and clayey. Not very spongy	
					E.O.B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-67

BORING LOG

Project Name & Location	Project Number	Date & Time Started: 03/28/02 0700
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed: 03/28/02 1000
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Hammer** / **Drop**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION Soil/Debris	
0	2.5yr(3/4) GM	1	0.0		Reddish Brown silty gravel w/ Sand mixtures. , wet. No staining	
1					No odors. Brick and slag.	
	2.5yr(3/4) GM	1	0.0		Same as above	
2						
	Glev 2(4/1) 10BG SP	1	0.0		Very dark greenish gray slag and ash material Very compact	
3					GW @ 2.5 -3.0ft. BGS.	
	Glev 2(4/1) 10BG SP	1	0.0		Same as above	
4						
	2.5yr (3/4)	0.25	0.0		Reddish brown silty gravel w/ sand silt mixtures very wet	
5					only 1 ft. of	
	Same as above	0.25	0.0		Same as above	
6						
	Same as above	0.25	0.0		Same as above	
7						
	Same as above	0.25	0.0		Same as above	
8						
	Glev 2(8/1) 5BG	1	0.0		light greenish gray wet slag and ash in a medium to coarse sand	
9					matrix No odors No staining	
	Glev 2(8/1) 5BG	1	0.0		Same as above. No odors No staining	
10						

 Signature _____ Date _____

ERM

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-67

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/26/02 0700 Date & Time Completed: 03/26/02 0820
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes; Sampler Hammer: ; Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum: ; Completion Depth: ; Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION Soil/Debris	
10	Gley 2(8/1) 5BG	1	0.0		Same as above	
11						
	Gley 2(8/1) 5BG	1	0.0		Same as above	
12						
					EOB	

 Signature ______ Date ______

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

Boring Number SB-68

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03.28.02 1021	
		Date & Time Completed: 03.28.02 1040	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Sampler(s): Michael Mendes	Sampler Hammer: / Drop:
Drilling Equipment: Geoprobe	Method: Direct Push	Elevation & Datum:	Completion Depth: / Rock Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	PID/FID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Very dark grayish brown - silty soil w/ fine to medium grained sand / Brick and metal	
1					fragments some coal chips	
	10yr (3/2) SP	1	0.0		Same as above	
2						
	10yr (6/3) SP	1	0.0		Pale brown - slag and ash in a medium to coarse sand matrix	
3	Gley (4/1)5B SP				Blue green slag and ash material compacted and consoliated	
	10yr (5/1) CL/PT	1	0.0		Gray brown clay - with orgainics w/ insignificant Peat lavers lined	
4					thick. (Native)	
	10yr (5/1) CL/PT	1	0.0		Gray brown clay with high organic and Peat lavers. Peat high orgainics	
5					and very spongy. (Native)	
	10yr (3/2) PT	1	0.0		Very dark grayish brown - Peat. (Native)	
6						
	10yr (3/2) PT	1	0.0		Same as above (Native)	
7					Wood pieces	
	10yr (3/2) PT/Cl	1	0.0		Dark brown Peat and Clay	
8						
					E.O.B.	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

ERM

175 Froehlich Farm Blvd , Woodbury, New York 11797

BORING LOG

Boring Number SB-69

Project Name & Location	Project Number	Date & Time Started 03/25/02 1040		
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/25/02 1110		
Drilling Company	Foreman	Sampler(s)	Sampler number	Date
Zebra Environmental	Kenny Eager	Michael Mendes		
Drilling Equipment	Method	Elevation & Datum	Completion Depth	Rock Depth
Geoprobe	Direct Push			
Bit Size(s)	Core Barrel(s)	Geologist(s)		
2" x 4'	2" X 4'	Michael Mendes		

DL9012902 @ 0800 for TAL metals & cyanide

SB-69 (2-4) @ 140 for TAL metals & cyanide

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Very dark grayish brown silty fine to medium sand w/ metal fragments, bricks	
					Wet from be surface, No odors.	
1	10yr (3/2) SP	1	0 0		Very dark grayish brown - Same as above	
2	10yr (4/1) SP	1	0 0		Dark Gray - Brown granular slag and ash w/ Brick and debris	
3	10yr (4/1) SP	1	0 0		Dark Gray - Same as above	
4	10yr (4/1) SP	1	0 0		Same as above	
5	10yr (8/1) SP	1	0 0		White - Slag and ash material in a coarse grained Sand matrix	
6	10yr (8/1) SP	1	0 0		white Same as above	
7	Gley 2(5/1) 10B SP	1	0 0		Blue green - slag and ash	
8					E O B	

Page 1 of 1 Signature ______ Date ______

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-70

BORING LOG

Project Name & Location	Project Number	Date & Time Started 03/28/02 1110
Union Ship Canal Parcel 2 Site	72707.04.01	Date & Time Completed 03/28/02 1135
Drilling Company	**Foreman**	**Sampler(s)** / **Sampler Number** / **Date**
Zebra Environmental	Kenny Eager	Michael Mendes
Drilling Equipment	**Method**	**Elevation & Datum** / **Completion Depth** / **Rock Depth**
Geoprobe	Direct Push	
Bit Size(s)	**Core Barrel(s)**	**Geologist(s)**
2" x 4'	2" X 4'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	SAMPLES: Recovery (feet)	SAMPLES: PID (ppm)	SAMPLES: Blow Counts	SOIL DESCRIPTION (MS/MSD collected here; SB-70 (1'-3') @ 1110 for TAL metals & cyanide)	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0.0		Very dark grayish brown - Brown silty sand w/ Brick and metal fragments	
1						
	10yr (3/2) SP	1	0.0		Very dark grayish brown - Brown silty sand w/ Brick and metal fragments	
2						
	10yr (6/2) Cl / SP	1	0.0		Gray mangeled clay w/ slag and Brick fragments	
3						
	10yr (6/2) Cl	1	0.0		Clean native medium stiff clay w/ some organics	
4						
	10yr (3/2)	1	0.0		Brown Peat w/ organics	
5						
	10yr (6/2) Cl	1	0.0		Medium stiff clay w/ organics w/ semuround pebbles	
6						
	10yr (6/2) Cl	1	0.0		Medium stiff clay w/ organics w/ semuround pebbles	
7						
	10yr (6/2) Cl	1	0.0		Medium stiff clay w/ organics w/ semuround pebbles	
8						
					E.O.B.	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number SB-71

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72707.04.01	Date & Time Started: 03/28/02 1135	
Drilling Company: Zebra Environmental	Foreman: Kenny Eager	Date & Time Commenced: 03/28/02 1200	
Drilling Equipment: Geoprobe	Assisted: Direct Push	Logged by: Michael Mendes	Sampler Hammer: Depth:
Bit Size(s): 2" x 4'	Core Barrel(s): 2" X 4'	Examined & Dated:	Completion Depth: Rock Depth:
		Contractor(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID PID (ppm)	Blow Counts	SOIL DESCRIPTION SB-71 (2'-3') @ 1135 for TAL metals & cyanide	REMARKS
	LOCATION				SURFACE DESCRIPTION: Soil/Debris	
0	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
1					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
2					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
3					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
4					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
5					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
6					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
7					and shiny irridescence No odors No staining - Wet from surface	
	10yr (3/2) SP	1	0 0		Dark brown fine to medium sand and silt w/ metal fragments	
8					and shiny irridescence No odors No staining - Wet from surface	
					E O B	

Page 1 of 1 Signature _____ Date _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number
MW-004

BORING LOG

Project Name & Location	Project Number	Date & Time Started 08/07/01 0750	
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 08/08/01 1040	
Drilling Company	Foreman	Sampler(s)	Sampler Hammer / Drop
SJB Services, Inc.	Anthony Jakubczak	Michael Mendes	250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum	Completion Depth / Rock Depth
CME 75	Split Spoon		16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)	
4 1/4" HAS	2"X2'	Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION: MW-004 Between SB-8 & SB-5				SURFACE DESCRIPTION: Soil/Debris	
0	Debris	6"	0.0		2.54 (8/4) Pale Yellow. Furnace Brick and debris w/Topsoil Brown in color	
2	Debris	8"	0.0		10 YR (5/3) Brown topsoil fine to medium sand and gravel.	
2.5	Debris/slag	12"	0.0		10 YR (3/2) Very dark grayish Brown soil, w/ slag and metalic irrodscence, very compact, fine med. Sand.	
4	Debris/slag	12"	0.0		10 YR (3/2) Very dark grayish Brown soil, w/ slag and metalic irrodscence, very compact, w/ gravel, fine med. Sand.	
4.5	sm/slag	12"	0.0		10 YR (4/2) Dark grayish brown, weathered Brick fine to med. sand and slag/debris.	
6	sm/slag	12"	0.0		10 YR (2/2) Very dark brown moist to wet fill material w/ slag furnace Brick and coal.	
	slag/ash	12"	0.0		Gley2(4/10GB) Dark greenish gray,slag and ash very compacted moist, very granular, coarse to gravely.	
8	slag/ash	12"	0.0		Gley2(4/10GB) Dark greenish gray,slag and ash very compacted moist, very granular, coarse to gravely.	
	Rock/slag?	12"	0.0		....2(4/10GB) Dark greenish gray rock to weatherd rock.	
10	Rock/slag?	0.0	0.0		Sulfur Smell	
	Rock/slag?	2"	0.0		Sulfur Smell	
12	Ro	0.0	0.0		Sulfur Smell	
	Slag		0.0		Boring abandoned. Well attempt abandoned.	
14	Slag		0.0			
	Wood/ Concrete	12"	0.0		10 YR (2/1) Black wood w/ creosote very odorous of organics	
16		0.0	0.0		10 YR (2/1) Black wood w/ creosote very odorous of organics	
	Slag	6"	0.0		10 YR (2/1) Black very wet slag and fine med course sand	
18	OH	6"	0.0		5 Y (4/1) Dark gray clay.	

Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd , Woodbury, New York 11797

Boring Number MW-005

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/7/01 1111 Date & Time Completed: 8/7/01 1315	
Drilling Company:	Foreman:	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft Rock Depth:
Bit Size(s): 4 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	sm/slag	6"	0 0		10 YR (5/3) Brown top soil, silty brown, medium fine sand	
2	sm/slag	6"	0 0		10 YR (2/0) Very dark brown top soil, silty brown med fine sand w/ metals irrodescence	
	sm/fill	6"	0 0		7 5 YR (3/2) Dark brown, silty fine med Sand w/ slate, shale, Brick (Very Compact)	
4	sm/fill	6"	0 0		7.5 YR (3/2) Dark brown, silty fine med Sand w/ slate, shale, Brick (Very Compact), traces of Clavey silts as well	
	GC/fill	2"	0 0		10 YR (4/1) Dark Grey Clay and rounded gravel	
6	GC/fill	2"	0 0		Clay, Clavey Gravels w/med To coarse sand	
	GC/fill	4"	0 0		10 YR (4/1) Dark Grey Clay and Gravel , and med To fine sand	
8	GC/fill	4"	0 0		10 YR (4/1) Dark Grey Clay and Gravel , and med. To fine sand	
	OH	6"	0 0		10 YR (4/1) Dark Grey plastic Clay, Soft, trace Tounded gravel	
10	PT	6"	0 0		10 YR (2/2) Very Dark Brown Peaty organics	
	NR			NR	NO RECOVERY	
12	NR			NR	NO RECOVERY	
	PT/OL	1ft	0 0		10 YR (2/2) Very dark brown organic Peats, and Peaty Clays	
14	PT	1ft	0 0		10 YR (2/2) Very dark brown fibrous spongy peat	
	SM/OH	1ft	0 0		5 Y (5/1) Gray silty fine sand, stiff gray clay trace organics	
16	OH	1ft	0 0		5 Y (5/1) Gray clay trace organics, easily molded plasticy	

Page 1 of 1 Signature _____ Date: _____

rev 8/98
Boring Logs.xls

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number MW-006

BORING LOG

Project Name & Location: Union Ship Canal Parcel 2 Site	Project Number: 72705	Date & Time Started: 8/7/01 1355 Date & Time Completed: 8/7/01 1530	
Drilling Company:	Foreman:	Sampler(s): Michael Mendes	Sampler Hammer: 250 lb Hydraulic Hammer — Drop:
Drilling Equipment: CME 75	Method: Split Spoon	Elevation & Datum:	Completion Depth: 16 ft — Rock Depth:
Bit Size(s): 4 1/4" HAS	Core Barrel(s): 2"X2'	Geologist(s): Michael Mendes	

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	SM	1	0.0	WH1	10YR(7/4) Very pale brown slag ash and debris, weather dry	
2	SP	1	0.0	3,6	furnace brick, medium to coarse sand w/gravel	
		1	0.0	15,17	10YR(4/2) dark grayish brown, top soil,medium to coarse sand	
4	SM	1	0.0	13,11	dry w/gravel loose glev 2(6/1) greenish gray compacted slag ash brick	
		1	0.0	8,7	10YR(6/4) light yellowish brown, coarsse sand & slag/ash, furnace	
6	SP	1	0.0	6,6	brick	
	SP	1	0.0	4,5	10YR(7/2) pinkish gray, wet medium to coarse snd w/ash & slag	
8	SP/PT	1	0.0	2,2	Glev2(3/1) very dark bluish gray wet slag & ash material	
	SP	1	0.0	2,1	Coarse granular, cinder ash & debris. 1" at dark brown peat	
10	OH/PT	6"	0.0	1,2	Glev2(3/1) very dark bluish gray wet slag & ash matters	
		1'	0.0	4,5	10YR(2/2) very dark brown,clay, silt and organics	
12	OH	0.5	0.0	7,8	5Y(4/1) dark gray silty clay w/organics	
		1	0.0	6,5	5Y(4/1) dark gray silty clay w/organics	
14	OH	1	0.0		5Y(4/1) dark gray silty clay w/organics	

Page 1 of 1 Signature: _____ Date: _____

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number MW-007

BORING LOG

Project Name & Location	Project Number	Date & Time Started 8/3/01 0720
Union Ship Canal Parcel 2 Site	72705	Date & Time Completed 8/3/01 0858
Drilling Company	Foreman	Sampler(s) / Sampler Hammer / Drop
		Michael Mendes / 250 lb Hydraulic Hammer
Drilling Equipment	Method	Elevation & Datum / Completion Depth / Rock Depth
CME 75	Split Spoon	16 ft
Bit Size(s)	Core Barrel(s)	Geologist(s)
4 1/4" HAS	2"X2'	Michael Mendes

DEPTH (ft below grade)	SAMPLES: USCS Description	Recovery (feet)	FID/PID (ppm)	Blow Counts	SOIL DESCRIPTION	REMARKS
	LOCATION:				SURFACE DESCRIPTION: Soil/Debris	
0	Slag	1.5	0.0	31 28	2.5Y(5/1) gray loose gravely sand w/slag and 10YR weather furnace brick	
2	Core		0.0	30 77	2.5Y(5&4) light yellowish brown ash highly compacted	
		1	0.0	20 19	10YR(5/4) yellowish brownslag, medium to coarse sand and gravel	
4	Slag		0.0	15 11	10YR(5/4) yellowish brownslag, medium to coarse sand and gravel	
		2"	0.0	5 4	5Y(3/1) very dark gray, wet slag, medium to coarse sand and gravel	
6			0.0	2 2	5Y(3/1) very dark gray, wet slag, medium to coarse sand and gravel	
		6"	0.3	1 WH	5Y(3/1) very dark, very slag, w/3" layer at greenish gray clay	
8	Slag	1.5	1.9	1 1	10YR(2/2) very dark brown, rich organic peat, high organics very spongy	
	OL		0.0	1 1	10YR(2/2) very dark brown, rich organic peat, high organics moist soft	
10	PT	1.5	0.0	1 1	10YR(2/2) very dark brown, rich organic peat, high organics moist soft peat	
	PT/ OH		0.0	1 WH		
12	PT/ OH	2	0.0	1 1	10YR(2/2) very dark brown, rich peat and organics, moist	
	PT		0.0	1 1		
14	PT	2	0.0	1 1	10YR(2/2) very dark brown,r ich peat and organics, moist	
	PT		0.0	WH1		
16	PT OH		0.0	1 3	2.5Y(4/1) dark gray clay, w some silty & sand	

Page 1 of 1 Signature: _____ Date: _____

rev 9/98
Boring Logs.xls

Appendix B

Test Pit Logs

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-1

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location:

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	
Date:	########
Time Start:	11:00
Time Finish:	11:20
Note:	

WEATHER OBSERVATIONS
Temperature: 86' F
Precipitation: None
Wind: W 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Brown and white fine sand.	1. Test pit was left open for 2 to 3 hours.
1			Unified Soil Classification: SM	Water table detected at approximately 6 ft.
2			Muncell Soil Color #: 10YR 4/4 & 6/4.	2. Bedrock not detected.
3			DESCRIPTION:	3. PID readings: 0.0 PPM. No odors were
4			Brown fine sand with construction debris, bricks, concrete	detected during excavation.
5			and remnants of furnace activity.	4. Top 6 feet consist of fill material consisting of
6				building bricks concrete and furnace bricks.
7				Building foundation encountered at 4-5 ft.
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-2

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Blast Furnace #2. south side.

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	
Date:	########
Time Start:	11:25
Time Finish:	12:10
Note:	

WEATHER OBSERVATIONS
Temperature: 86' F
Precipitation: None
Wind: W 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Brown Fine Sand with bricks and gravel.	1. Test pit was backfilled.
1			Unified Soil Classification: GM	Water table was not encountered.
2			Muncell Soil Color #: 10YR 4/4 & 6/4.	2. Bedrock not detected.
3			DESCRIPTION:	
4			Brown fine & med. SAND with bricks and some gravel.	
5			No staining visible, no water, refusal at 3-4 ft below grade.	
6			Some oil or fuel oil staining noted.	
7			No water and refusal encountered at the concrete.	
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-3

Operator: Ron Klein PROJECT NAME. Union Ship Canal Parcel 2 Location: NW side of 2 Story Brick Building

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan Excavated Pit Perpendicular to brick Buildin

DATE/TIME	
Date:	########
Time Start:	12:15
Time Finish:	12:45
Note:	

WEATHER OBSERVATIONS
Temperature: 86' F
Precipitation: None
Wind: W 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Brown fine sand and slag material.	1. Test pit was backfilled
1			Unified Soil Classification: SM	2. Two six inch pipe lines were found running perpendicula
2			Muncell Soil Color #: 10YR 4/4 & 6/4.	to the excavated test pit area.
3			DESCRIPTION:	
4			Brown fine sand, white to grayish slag material ash and	
5			slag material.	
6				
7				
8			Total depth of test pit was 7-8 ft below grade	
9				
10				
11			Bottom of test pit: 12 feet below grade.	
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-4

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Adjacent to blast furnace #2. Up the hill to the elevated area adjacent to the furnace.

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	
Date:	5/7/2001
Time Start:	16:15
Time Finish:	17:00
Note:	

WEATHER OBSERVATIONS
Temperature: 86' F
Precipitation: None
Wind: W 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Brick, Ash and metal fragments.	1. Test pit was backfilled
1			Unified Soil Classification: GP	Water table not encountered.
2			Muncell Soil Color #: 10YR 4/4 & 6/4.	2. Mostly fill material found in the excavation.
3			DESCRIPTION:	
4			Brick, Ash, Metal Fragments	
5			No product or water encountered in the excavation.	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15			Bottom of test pit ~15-20 ft below grade	

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-5

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Next to the two story brick building.

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan Adjacent to test pit #1.

DATE/TIME	
Date:	########
Time Start:	8:30
Time Finish:	9:45
Note:	

WEATHER OBSERVATIONS
Temperature: 86' F
Precipitation: None
Wind: W 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Brown fine sand with ash and slag.	1. Test pit was back filled.
1			Unified Soil Classification: SM	Water table detected at approximately 4.0 ft.
2			Muncell Soil Color #: 10YR 4/4 & 6/4.	2. Top 10 ft is fill material
3			DESCRIPTION:	
4			Brown fine sand with ash and slag.	
5			Water at ~4ft below grade, Water has a slight trace of oil/sheen	
6			and odors.	
7				
8			Bottom of test pit ~10 feet below grade.	
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-6

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Next to two story building in the suspected

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan fuel oil area. Parallel to building.

DATE/TIME	WEATHER OBSERVATIONS
Date: ########	Temperature: 86' F
Time Start:	Precipitation: None
Time Finish:	Wind: W 0-5 MPH
Note:	Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Brown to dark brown fine sand with slag	1. Test pit was back filled.
1			Unified Soil Classification: GM	Water table not encountered'.
2			Muncell Soil Color #: 10YR 4/3 & 6/3.	2. Top 4 ft of material is fill.
3			DESCRIPTION:	3. Refusal encountered at 4 ft.
4			Brown to dark brown fine sand with slag and ash material.	
5			No ground water found within the excavation.	
6			4 ft to bottom of the excavation.	
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-7

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Next to the two story building, located in the

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan suspected fuel oil area.

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: ########	Temperature: 90' F	Date
Time Start:	Precipitation: None	Time
Time Finish:	Wind: SE 0-5 MPH	Water Level
Note:	Ground Conditions: Dry.	Note

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Dark fine sand with fill material.	1. Test pit was backfilled
1			Unified Soil Classification: GM	Water table detected at approximately 6.0'.
2			Muncell Soil Color #: 10YR 4/3 & 6/3.	2. No odors or staining present
3			DESCRIPTION:	
4			Brown fine SAND with some silt and fine to coarse	
5			gravel & fine & medium cobbles.	
6			Unsorted and compact material with depth.	
7				
8				
9				
10				
11			Bottom of test pit: 14 feet below grade.	
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER 72705.01.01 Pit No.: TP-8

Operator: Ron Klein PROJECT NAME Union Ship Canal Parcel 2 Location: In the suspected fuel oil area. East of TP-7

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS			
Date: ########	Temperature: 90' F	Date			
Time Start: 14:00:00 PM	Precipitation: None	Time			
Time Finish: 15:15:00 PM	Wind: W 0-5 MPH	Water Level			
Note:	Ground Conditions: Dry.	Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Coarse Grained Soil.	1. Test pit was backfilled.
1			Unified Soil Classification: GM	Water table detected at approximately 5-6 ft bgs.
2			Muncell Soil Color #: 10YR 4/4.	2. Oil product/Sheen found on the surface of the
3			DESCRIPTION:	water table.
4			Brown and Dark brown fine sand with slag and ash. \	
5			White to grayish white colored ash.	
6				
7				
8			Wet at 5-6 ft below ground surface.	
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-9

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Eastern portion of the two story building.

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS			
Date: ########	Temperature: 90' F	Date			
Time Start: 15:30:00 PM	Precipitation: None	Time			
Time Finish: 16:15:00 PM	Wind: W 0-5 MPH	Water Level			
Note:	Ground Conditions: Dry.	Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Coarse Grained Soil.	1. Test pit was backfilled.
1			Unified Soil Classification: GM	Water table detected at approximately 5.0'.
2			Muncell Soil Color #: 10YR 4/4.	2. Some oil product and sheen detected on the ground
3			DESCRIPTION:	water table.
4			Brwn fine to coarse SAND with some silt & some fine to	
5			coarse gravel, with some ash and slag	
6			Note: Less slag and ash then previous test pit locations.	
7			Water at ~ 5 ft bgs.	
8				
9			Bottom of the test pit is 6-8 feet.	
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-10

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Northeast of the two story building

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS			
Date: ########	Temperature: 90' F	Date			
Time Start:	Precipitation: None	Time			
Time Finish:	Wind: W 0-5 MPH	Water Level			
Note:	Ground Conditions: Dry.	Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Dark brown med to coarse sand and slag.	1. Test pit was backfilled.
1			Unified Soil Classification: GM	Water table detected at approximately 5.5'.
2			Muncell Soil Color #: 5YR 4/3 & 10YR 4/4.	2. Some oil sheen on the groundwater observed.
3			DESCRIPTION:	
4			Areas of dark brown native material, peat and clays,	
5			and areas of white ash, areas of yellowish brown slag	
6			and brown sand and clay lenses.	
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-11

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Suspected Fuel oil area.

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: ########	Temperature: 90' F	Date
Time Start:	Precipitation: None	Time
Time Finish:	Wind: W 0-5 MPH	Water Level
Note:	Ground Conditions: Dry.	Note

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Coarse Grained Soil.	1. Test pit was backfilled.
1			Unified Soil Classification: GM	Water table detected at approximately 5.0'.
2			Muncell Soil Color #: 5YR 4/3 & 10YR 4/4.	
3			DESCRIPTION:	
4			Top 2': Ash and fill material	
5			2'-7' Gray clay, dense and dry.	
6				
7				
8				
9				
10				
11			Bottom of test pit: 14 feet below grade.	
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-12

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Suspected fuel oil area

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	
Date: ########	
Time Start:	
Time Finish:	
Note:	

WEATHER OBSERVATIONS	
Temperature: 90' F	
Precipitation: None	
Wind: W 0-5 MPH	
Ground Conditions: Dry.	

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Ash, slag and gravel.	1. Test pit was backfilled.
1			Unified Soil Classification: GM	No water ponding at the base.
2			Muncell Soil Color #: 10YR 4/4.	
3			DESCRIPTION:	
4			Fill material, white ash and blue colored slag.	
5			2'-7.5ft gray clay, native material,	
6			moist in the area, no staining, and no odors.	
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-13

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Parallel and north of the oil shack.

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan

DATE/TIME	
Date:	5/9/2001
Time Start:	8:00
Time Finish:	9:00
Note:	

WEATHER OBSERVATIONS
Temperature: 65' - 80' F
Precipitation: Early showers.
Wind: NW 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Fill material	1. Test pit was left open for 5 to 6 hours.
1			Unified Soil Classification: GM	water accumulated at the base of the pit.
2			Muncell Soil Color #: 10YR 4/4.	2. Strong petroleum odor and product oil sheen on the
3			DESCRIPTION:	groundwater surface.
4			Top 1ft Dark brown fine sand and fill material.	3. Soil contamination on soil that has been excavated from
5			1 ft to base Fill material composed of slag and ash very	the pit.
6			compact.	
7				
8				
9				
10				
11			Bottom of test pit: 13.5 feet below grade.	
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor: SLC Environmental Svcs. PROJECT NUMBER: 72705.01.01 Pit No.: TP-14

Operator: Ron Klein PROJECT NAME: Union Ship Canal Parcel 2 Location: Northeast and perpendicular to the

Equipment: Excavator, John Deere 12 Geologist: John C. Sheehan oil shack.

DATE/TIME	
Date:	########
Time Start:	
Time Finish:	
Note:	

WEATHER OBSERVATIONS	
Temperature:	90' F
Precipitation:	Early showers.
Wind:	NW 0-5 MPH
Ground Conditions:	Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Fine Grained Soil.	1. Test pit was left open for 5 to 6 hours.
1			Unified Soil Classification: GM	Water table detected at approximately 4.0'.
2			Muncell Soil Color #: 10YR 4/4.	
3			DESCRIPTION:	
4			Dark brown fine sand with ash and slag fill material.	
5			Hard slag material very compact and solidified,	
6			No Sheen, oil mukation.	
7				
8			Bottom of the pit is 7-8 ft bgs.	
9				
10				
11				
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor:	PROJECT NUMBER: 72705.01.01	Pit No.: TP-15
Operator:	PROJECT NAME: Union Ship Canal Parcel 2	Location:
Equipment:	Geologist: John C. Sheehan	

DATE/TIME	
Date:	5/9/2001
Time Start:	11:15
Time Finish:	12:00
Note:	

WEATHER OBSERVATIONS
Temperature: 65' - 80' F
Precipitation: Early showers.
Wind: NW 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Coarse Grained Soil.	1. Test pit was left open for 5 to 6 hours.
1			Unified Soil Classification: GM	Water table detected at approximately 13.0'.
2			Muncell Soil Color #: 10YR 4/4.	2. Bedrock not detected.
3			DESCRIPTION:	3. PID readings: 2.0 PPM. No odors were
4			Brown fine to coarse SAND with silt and some fine to	detected during excavation.
5			coarse gravel with some cobbles and boulders.	4. Limited side wall seepage.
6			Weathered sandstone fragaments present.	
7			Unsorted and compact / dense material.	
8			Gravel and cobbles: angular to subangular	
9			Limited side wall seepage from 5 feet to base of pit.	
10				
11			Bottom of test pit: 13.0 feet below grade.	
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor:	PROJECT NUMBER: 72705.01.01	Pit No.: TP-16
Operator:	PROJECT NAME: Union Ship Canal Parcel 2	Location:
Equipment:	Geologist: John C. Sheehan	

DATE/TIME	
Date:	5/9/2001
Time Start:	12:15
Time Finish:	13:00
Note:	

WEATHER OBSERVATIONS
Temperature: 65' - 80' F
Precipitation: Early showers.
Wind: NW 0-5 MPH
Ground Conditions: Dry.

GROUND WATER OBSERVATIONS			
Date			
Time			
Water Level			
Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Coarse Grained Soil.	1. Test pit was left open for 5 to 6 hours.
1			Unified Soil Classification: GM	Water table detected at approximately 13.0'.
2			Muncell Soil Color #: 10YR 4/4 & 6/4.	2. Bedrock not detected.
3			DESCRIPTION:	3. PID readings: 2.0 PPM. No odors were
4			Brown fine to coarse SAND with silt and some fine to	detected during excavation.
5			coarse gravel with some cobbles and boulders.	4. Limited side wall seepage at 4 to 5 feet below
6			Weathered sandstone fragaments present.	grade.
7			Unsorted and compact / dense material.	
8			Gravel and cobbles angular to subangular	
9			Limited side wall seepage from 5 feet to base of pit.	
10				
11			Bottom of test pit: 14.0 feet below grade.	
12				
13				
14				
15				

Signature: _____ Date: _____

ERM

520 Broad Hollow Road, Suite 210, Melville, New York 11747

TEST PIT LOG

Contractor:	PROJECT NUMBER: 72705.01.01	Pit No.: TP-17
Operator:	PROJECT NAME: Union Ship Canal Parcel 2	Location:
Equipment:	Geologist: John C. Sheehan	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS			
Date: 5/9/2001	Temperature: 65' - 80' F	Date			
Time Start: 14:00:00 PM	Precipitation: Early showers.	Time			
Time Finish: 14:45:00 PM	Wind: NW 0-5 MPH	Water Level			
Note:	Ground Conditions: Dry.	Note			

DEPTH (ft below grade)	SAMPLE	FID / PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			General Description: Coarse Grained Soil.	1. Test pit was left open for 5 to 6 hours.
1			Unified Soil Classification: GM	Water table detected at approximately 14.0'.
2			Muncell Soil Color #: 10YR 4/4.	2. Bedrock not detected.
3			DESCRIPTION:	3. PID readings: 3.0 PPM. Some organic odors
4			Top 1.5 feet: Fill : Organic material and cobbles.	detected during excavation.
5			1.5'-14.0': Brown fine to coarse SAND with silt and some	4. Limited side wall seepage.
6			fine to coarse gravel with few cobbles.	5. Top 1.5': Fill material.
7			Finer material than previous test pits.	
8			Unsorted and compact / dense material.	
9			Gravel and cobbles: angular to subangular	
10			Limited side wall seepage from 3 feet to base of pit.	
11				
12			Bottom of test pit: 14.0 feet below grade.	
13				
14				
15				

Signature: _____ Date: _____

Appendix C

Monitoring Well Construction Diagrams

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, NY 11797

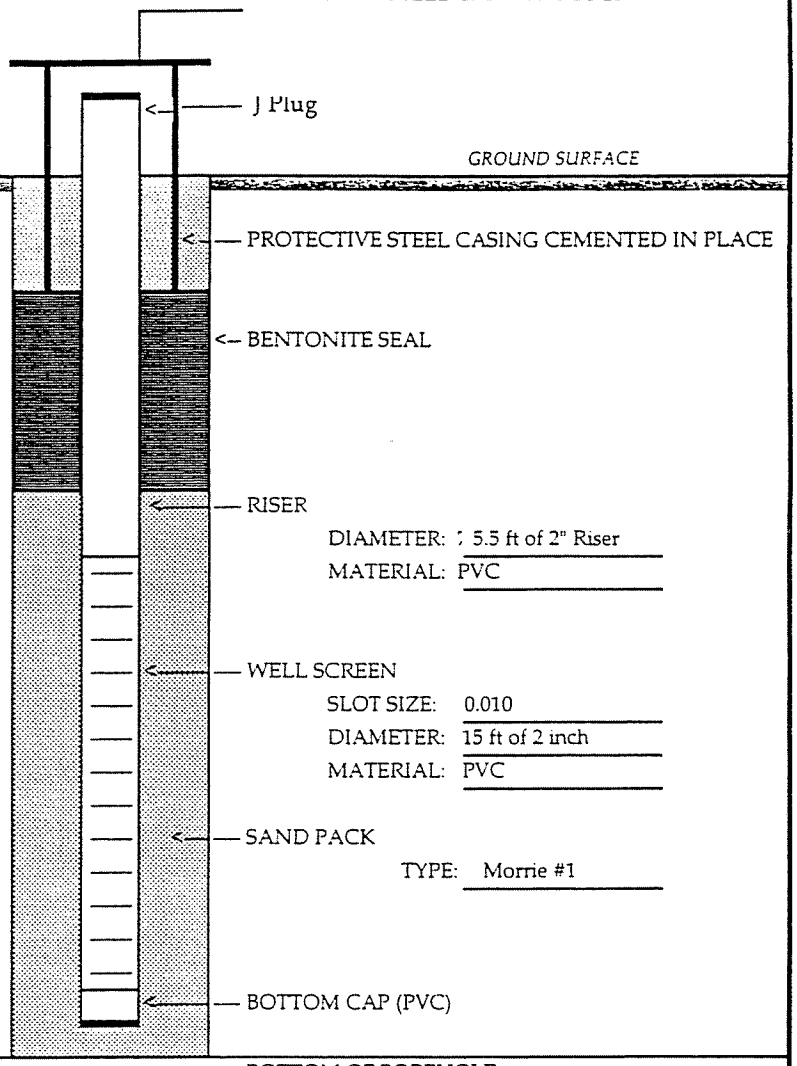
WELL : MW-004

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Level(s) (ft below top of PVC casing)			Site Elevation Datum
Union Ship Canal Parcel 2	72705.00.01				580 ft
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
SJB Services, Inc.	Tony Jakubczak				583.6
Surveyor		8/8/2001	15:40	10.77	Top of Protective Steel Cap Elevation
Foit-Albert Associates					586.51
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
08/07/01 @ 10:40	Mike Mendes				586.28

Generalized Soil Description	*Elevation	**Depth
	586.5	2.9
	586.3	2.5
	583.6	0.0
0-2' Pale Yellow, Furnace brick and debris with top soil Brown in color.	583.1	0.5
2-4' Very dark Grayish Brown with slag and a metalic irrodescence, very compact		
4-6' Dark Grayish brown, wx brick, fine to med sand and slag.	582.1	1.5
	580.6	3.0
6-8' Dark greenish gray slag and ash, very compacted coarse and granular.		
8-14' Very dark greenish blue compacted slag and ash. sulfur odor		
14-16' Black wood with Creosote		
16-18' Black very wet slag and fine to med sands.	565.6	18.0
	565.6	18.0

CONSTRUCTION DETAILS



REMARKS Well located at the Northwest limits of Parcel 2.

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

C:\SFORMS\well logs.xls
rev. 9/96

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, NY 11797

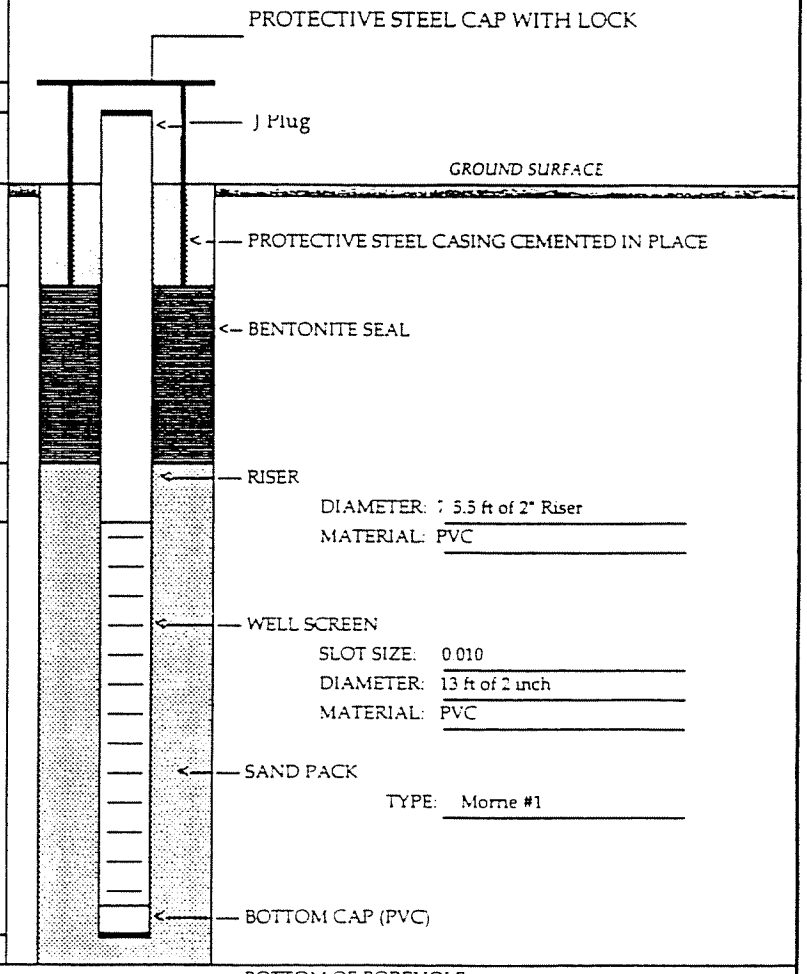
WELL : MW-005

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Levels (ft below top of PVC casing)			Site Elevation Datum
Union Ship Canal Parcel 2	72705.00.01				580 ft
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
SJB Services, Inc.	Tony Jakubczak				583.6
Surveyor		8/8/2001	16:50	9.75	Top of Protective Steel Cap Elevation
Foit-Albert Associates					586.51
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
08/07/01 @ 13:15	Mike Mendes				586.28

Generalized Soil Description	*Elevation	**Depth
	586.5	2.9
	586.3	2.5
	583.6	0.0
0-2' Brown Top Soil, silty med to fine sand with metalic urodescence.	583.1	0.5
2-4' Dark Brown silty fine med sand, slate and brick. Very compact.		
4-6' Dark gray clay, and round gravel, with med to coarse sand.	582.1	1.5
	580.6	3.0
6-8' Dark gray clay, and round gravel, with med to coarse sand.		
8-10' Dark Gray plastic clay, trace gravel.		
10-12' No recovery		
12-14' Very dark brown organ peats and peaty clays		
14-16' Gray silty fine sand grading into stiff gray clay trace organics.	567.6	16.0
	567.6	16.0

CONSTRUCTION DETAILS



REMARKS: Well located at the Northeast portion of Parcel 2

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

C:\SFORMS\well logs.xls
rev. 9/98

ERM Inc.

175 Froehlich Farm Blvd., Woodbury, NY 11797

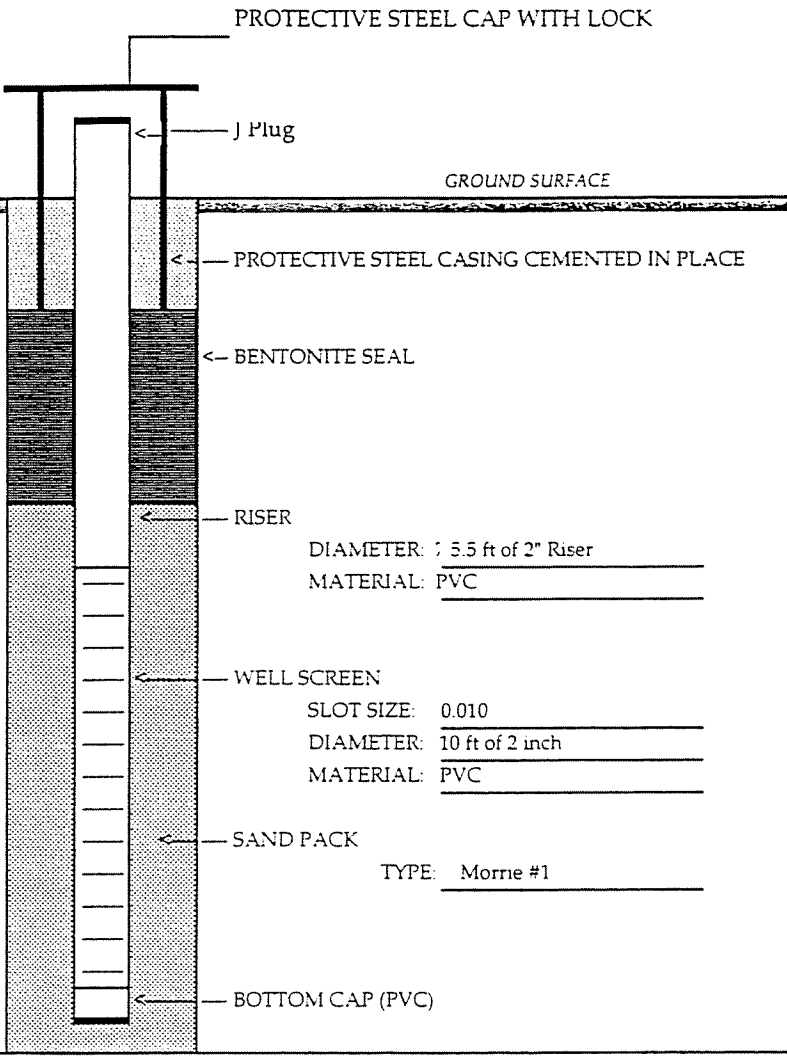
WELL : MW-006

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Level(s) (ft below top of PVC casing)			Site Elevation Datum
Union Ship Canal Parcel 2	72705.00.01				580 ft
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
SJB Services, Inc.	Tony Jakubczak				583.6
Surveyor		8/7/2001	15:27	7.73	Top of Protective Steel Cap Elevation
Foit-Albert Associates					586.51
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
08/06/01 @ 15:30	Mike Mendes				586.28

Generalized Soil Description	*Elevation	**Depth
	586.5	2.9
	586.3	2.5
	583.6	0.0
0-2' Brown fill material. Coarse slag and ash & weathered furnace brick.	583.1	0.5
2-4' Grayish Brown, top soil medium to coarse sand and gravel and slag.		
4-6' Light yellowish brown coarse sand slag and ash with furnace brick (Wet)	582.1	1.5
	580.6	3.0
6-8' Very dark bluish gray wet slag and ash, granular debris, and 1" Peat.		
8-10' Very dark bluish gray wet slag, followed by dark brown organic silty clay.		
10-12' Dark Gray silty clay with organics.		
12-14' Dark Gray silty clay with organics.	570.6	13.0
	570.6	13.0

CONSTRUCTION DETAILS



REMARKS Well located to the southern most portion of Parcel @

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM Inc.

WELL : MW-007

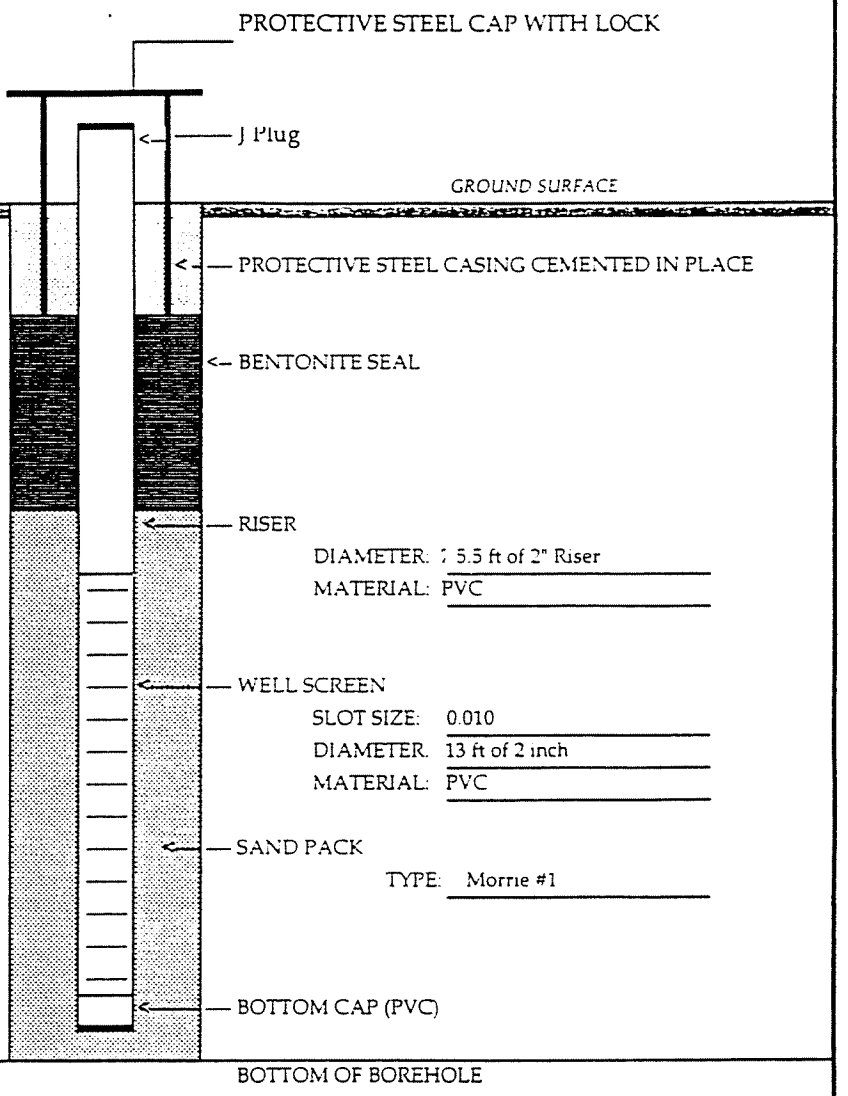
175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Level(s) (ft below top of PVC casing)			Site Elevation Datum
Union Ship Canal Parcel 2	72705.00.01				580 ft
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
SJB Services, Inc.	Tony Jakubczak				583.6
Surveyor		8/6/2001	12:06	6.10	Top of Protective Steel Cap Elevation
Foit-Albert Associates					586.51
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
08/03/01 @ 09:30	Mike Mendes				586.28

Generalized Soil Description	*Elevation	**Depth
	586.5	2.9
	586.3	2.5
	583.6	0.0
0-2' gray loose gravelly sand with slag and weathered furnace brick.	583.1	0.5
2-4' Yellowish brown slag, med to coarse sand and gravel.		
4-6' Greenish gray, gravel, with slag, large gravel and very Wet.	582.1	1.5
	580.6	3.0
6-8' Very dark gray wet slag med to coarse sand and gravel		
8-10' Very dark gray slag,with 3" layer of greenish gray clay.		
10-12' Very Dark brown, rich organic Peat.		
12-16' Very dark brown rich organic Peat.		
	567.6	16.0
	567.6	16.0

CONSTRUCTION DETAILS



Well located down gradient fromt the suspected NAPL area.

Three ballards placed around MW-007 for protective purposes.

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

C:\SFORMS\well logs xls
rev. 9/96

Appendix D

Well Development Records

WELL DEVELOPMENT RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/7/01

SAMPLE ID : MW-003
WELL ID : MW-003
SAMPLERS : J. Elder

		Time Onsite:	Time Offsite:
		7:00	
Depth of well (from top of casing)	15.91	Time:	7:32
DNAPL Level (from top of casing)	0	Time:	7:32
Static water level (from top of casing)	3.91	Time:	7:30
Water level after purging (from top of casing)	4.16	Time:	8:15
Water level before sampling (from top of casing)		Time:	

Purging Method:

- ____ Peristaltic
- ____ Bailer
- X Submersible
- ____ Centrifugal
- ____ Pos. Displ.
- ____ Ded. Pump

Well Volume Calculation:

			1 volume		3 volumes
2 in. well:	12.00	ft. of water x 0.16 =	1.9	gal. x 3 =	5.8 gal.
4 in. well:		ft. of water x 0.65 =		gal. x 3 =	gal.
6 in. well:		ft. of water x 1.47 =		gal. x 3 =	gal.

Depth of Pump: ____ Purge Start Time: 7:40 (hrs) Purge Duration: 35 (min)
Purge End Time: 8:15 (hrs) Purge Flow Rate: 1.9 (lpm)

Volume of water removed: 10 gal. >3 volumes: yes X no ____ purged dry? yes ____ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
Initial	6.15	0.172	ns	12.80	13.4	-49	4.02
1 Volume	7.15	0.168	400	9.00	14.8	-16	4.16
2 Volume	7.43	0.167	49	8.28	14.7	-190	4.16
3 Volume	7.53	0.167	17	7.12	14.8	-197	4.16
4 Volume	7.64	0.167	10	5.17	14.8	-205	4.16
5 Volume	7.71	0.167	10	4.89	14.8	-210	4.16

Sampling:
Time readings stabilized: NA
Sample Start Time: NA Chain of Custody sample time: NA
Sample End Time: NA Duration of sample time: NA min

Collection Method:
- ____ Stainless steel bailer
- ____ Teflon bailer
- ____ Pos. Disp. Pump
- ____ Disposable bailer
- X Dedicated pump
- ____ Other: ____

Analyses:
- ____ VOCs - 602 ____ 503 ____ Other 624
- ____ SVOCs
- ____ Metals
- ____ PCB/Pest
- ____ Physical
- ____ Other

Analytical Method:
- VOC OLM04.2
- SVOC OLM04.2
- Metals ILM04.1
- PCBs Method 8082
- CN- ILM04.1

Observations

Weather/Temperature: Clear, Sun and Wind ~5-10 mph, ~80° F

Sample Description: Turbidity: (circle one) HIGH MODERATE **LOW**

Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

Comments:
Bailer inside well (submerged). Surged well with pump. Evacuated turbid water.
Recharge rate very high.

WELL DEVELOPMENT RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/8/01

SAMPLE ID : MW-004

WELL ID : MW-004

SAMPLERS :	Time Onsite:	Time Offsite:
Mike Mendes	7:25	16:00
J. Elder	7:25	16:00

Depth of well (from top of casing)	19.90	Time:	15:42
DNAPL Level (from top of casing)	0	Time:	15:42
Static water level (from top of casing)	10.77	Time:	15:40
Water level after purging (from top of casing)	10.85	Time:	16:32
Water level before sampling (from top of casing)		Time:	

Purging Method:

	Peristaltic		Centrifugal	2 in. well:	9.13	ft. of water x 0.16 =	1.4608	gal.	x 3 =	4.3824 gal.
	Bailer		Pos. Displ.	4 in. well:		ft. of water x 0.65 =		gal.	x 3 =	gal.
X	Submersible		Ded. Pump	6 in. well:		ft. of water x 1.47 =		gal.	x 3 =	gal.

Well Volume Calculation: 1 volume 3 volumes

Depth of Pump: ~19.5 Purge Start Time: 15:45 (hrs) Purge Duration: 42 (min)

Purge End Time: 16.27 (hrs) Purge Flow Rate: 2 (lpm)

Volume of water removed: 44.5 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial 16:10	10.50	75.1	95	8.94	13.7	-230	10.77
16:15	10.06	68.8	31	0.00	11.9	-264	10.77
16:17	10.12	68.9	18	0.00	11.9	-277	10.77
16:20	10.17	68.9	12	0.00	11.9	-287	10.77
16:24	10.21	68.9	8.6	0.00	11.9	-294	10.77
16:27	10.28	68.9	7.5	0.00	11.9	-300	10.77

Sampling: Time readings stabilized: 16:17

Sample Start Time: NA Chain of Custody sample time: NA

Sample End Time: NA Duration of sample time: NA min

Collection Method:

	Stainless steel bailer
	Teflon bailer
	Pos. Disp. Pump
	Disposable bailer
X	Dedicated pump
	Other:

Analyses:

	VOCs -	602		503		624	
	SVOCs	VOC	OLM04.2				
	Metals	SVOC	OLM04.2				
	PCB/Pest	Metals	ILM04.1				
	Physical	PCBs	Method 8082				
	Other	CN-	ILM04.1				

Observations

Weather/Temperature: Clear, Humid, SW Wind 0-5 mph, ~90° F

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe ___

Sheen? yes ___ no X describe ___

Odor? yes ___ no X describe ___

Comments:

Well produces water pumping 2gpm initially (no drawdown observed)

Purged 37 gallons before parameters taken.

WELL DEVELOPMENT RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/8/01

SAMPLE ID : MW-005

WELL ID : MW-005

SAMPLERS :		Time Onsite:	Time Offsite:
	Mike Mendes	7:25	18:00
	J. Elder	7:25	18:00

Depth of well (from top of casing)	18.32	Time:	16:52
DNAPL Level (from top of casing).....	0	Time:	16:52
Static water level (from top of casing)	9.75	Time:	16:50
Water level after purging (from top of casing)	DRY	Time:	17:28
Water level before sampling (from top of casing)		Time:	

Purging Method:

				Well Volume Calculation:		1 volume		3 volumes
	Peristaltic		Centrifugal	2 in. well:	8.57 ft. of water x 0.16 =	1.3712 gal.	x 3 =	4.1136 gal.
	Bailer		Pos. Displ.	4 in. well:	ft. of water x 0.65 =	gal.	x 3 =	gal.
X	Submersible		Ded. Pump	6 in. well:	ft. of water x 1.47 =	gal.	x 3 =	gal.

Depth of Pump: ~19.5 Purge Start Time: 17:00 (hrs) Purge Duration: 28 (min)

Purge End Time: 17:28 (hrs) Purge Flow Rate: 0.2 (lpm)

Volume of water removed:

2.5 gal. >3 volumes: yes ___ no X purged dry? yes X no ___

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
17:00	6.19	0.2	800	10.65	17.2	113	13.51
17:10	6.26	0.1	306	10.41	17.4	119	16.68

Sampling:

Time readings stabilized: NA

Sample Start Time: NA Chain of Custody sample time: NA

Sample End Time: NA Duration of sample time: NA min

Collection Method:

				Analyses:				
	Stainless steel bailer		VOCs -	602	503	624	
	Teflon bailer		SVOCs		VOC	OLM04.2	
	Pos. Disp. Pump		Metals		SVOC	OLM04.2	
	Disposable bailer		PCB/Pest		Metals	ILM04.1	
X	Dedicated pump		Physical		PCBs	Method 8082	
	Other:		Other		CN-	ILM04.1	

Observations

Weather/Temperature: Clear, W Wind 5-10 mph,~ 95° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe

Sheen? yes ___ no X describe

Odor? yes ___ no X describe

Comments:

1710 Shut off pump allow to recharge. Recharge slow. Surge and Re-Purge dry.

1728 Well dry well development completed, parameters NA due low well recharge.

WELL DEVELOPMENT RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/7/01

SAMPLE ID : MW-006

WELL ID : MW-006

SAMPLERS : J. Elder

		Time Onsite:	Time Offsite:
		7:25	16:00
Depth of well (from top of casing)		14.97	Time: 15:27
DNAPL Level (from top of casing)		0	Time: 15:27
Static water level (from top of casing)		7.73	Time: 15:25
Water level after purging (from top of casing)		7.81	Time: 16:20
Water level before sampling (from top of casing)			Time:

Purging Method:

				Well Volume Calculation:			1 volume		3 volumes
	Peristaltic		Centrifugal	2 in. well:	7.24	ft. of water x 0.16 =	1.1584	gal. x 3 =	3.4752 gal.
	Bailer		Pos. Displ.	4 in. well:		ft. of water x 0.65 =		gal. x 3 =	gal.
X	Submersible		Ded. Pump	6 in. well:		ft. of water x 1.47 =		gal. x 3 =	gal.

Depth of Pump: ~14 Purge Start Time: 15:35 (hrs) Purge Duration: 45 (min)

Purge End Time: 16:20 (hrs) Purge Flow Rate: 0.8 (lpm)

Volume of water removed: 6.5 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	11.50	0.131	95	12.42	15.4	-86	7.81
1 Volume	11.40	0.137	55	9.42	14.2	-138	7.81
2 Volume	11.46	0.140	23	8.84	14.1	-158	7.81
3 Volume	11.52	0.140	7.4	8.30	14.1	-177	7.81
4 Volume	11.56	0.140	8	8.15	14.1	-181	7.81
5 Volume	11.58	0.140	7.9	8.01	14.0	-188	7.81

Sampling:

Time readings stabilized: NA

Sample Start Time: NA Chain of Custody sample time: NA

Sample End Time: NA Duration of sample time: NA min

Collection Method:

		Analyses:					
	Stainless steel bailer		VOCs -	602	503	624	
	Teflon bailer		SVOCs	VOC	OLM04.2		
	Pos. Disp. Pump		Metals	SVOC	OLM04.2		
	Disposable bailer		PCB/Pest	Metals	ILM04.1		
X	Dedicated pump		Physical	PCBs	Method 8082		
	Other:		Other	CN-	ILM04.1		

Observations

Weather/Temperature: Hazy, SW Wind 5-10 mph, ~85° F

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe

Sheen? yes ___ no X describe

Odor? yes ___ no X describe

Comments:

Surged well with the pump, evacuated silty groundwater ~ 4.0 gallons until turbidity decrease.

Well recharge rate very high.

WELL DEVELOPMENT RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/6/01

SAMPLE ID : MW-007

WELL ID : MW-007 Time Onsite: 7:25 Time Offsite: 16:00

SAMPLERS : Mike Mendes

Depth of well (from top of casing)	18.40	Time:	12:07
DNAPL Level (from top of casing)	0	Time:	12:07
Static water level (from top of casing)	6.1	Time:	12:06
Water level after purging (from top of casing)	6.33	Time:	14:10
Water level before sampling (from top of casing)		Time:	

Purging Method:

	Peristaltic		Centrifugal	2 in. well:	12.30	ft. of water x 0.16 =	1.968	gal.	x 3 =	5.904 gal.
	Bailer		Pos. Displ.	4 in. well:		ft. of water x 0.65 =		gal.	x 3 =	gal.
X	Submersible		Ded. Pump	6 in. well:		ft. of water x 1.47 =		gal.	x 3 =	gal.

Well Volume Calculation: 1 volume 3 volumes

Depth of Pump: ~17 Purge Start Time: 13:00 (hrs) Purge End Time: 14:10 (hrs) Purge Duration: 70 (min) Purge Flow Rate: 1.8 (lpm)

Volume of water removed: 34 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	6.82	87.7	er2	0.83	14	-46	
1 Volume	6.94	77.9	1100	7.42	15.1	-94	6.27
2 Volume	7.12	73.9	500	5.52	15.4	-137	6.26
3 Volume	7.29	69.5	130	4.40	15.4	-162	6.28
4 Volume	7.37	66.3	75	3.44	15.4	-178	6.29
5 Volume	7.42	64.7	45	2.88	15.4	-188	6.30
6 Volume	7.45	63.1	38	2.39	15.3	-197	6.31
7 Volume	7.48	62	33	1.90	15.3	-207	6.31
8 Volume	7.51	61.1	26	1.52	15.4	-215	6.31
9 Volume	7.53	60.4	23	1.20	15.3	-223	6.31
10 Volume	7.54	59.6	19	0.92	15.3	-230	6.32
11 Volume	7.56	59	20	0.69	15.3	-237	6.32
12 Volume	7.56	58.5	19	0.51	15.3	-241	6.32
13 Volume	7.57	58.3	12	0.37	15.3	-245	6.33
14 Volume	7.58	57.7	12	0.23	15.3	-250	6.33
15 Volume	7.6	57.1	11	0.11	15.3	-255	6.33
16 Volume	7.59	57	11	0.00	15.3	-258	6.33
17 Volume	7.59	56.8	11	0.00	15.3	-300	6.33

Sampling: Time readings stabilized: NA

Sample Start Time: NA Chain of Custody sample time: NA

Sample End Time: NA Duration of sample time: NA min

Collection Method:

	Stainless steel bailer		VOCs -	602	503	624	
	Teflon bailer		SVOCs	VOC	OLM04.2		
	Pos. Disp. Pump		Metals	SVOC	OLM04.2		
	Disposable bailer		PCB/Pest	Metals	ILM04.1		
X	Dedicated pump		Physical	PCBs	Method 8082		
	Other:		Other	CN-	ILM04.1		

Analyses:

Observations

Weather/Temperature: Clear, SW Wind 5-10 mph, ~90° F

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe

Sheen? yes ___ no X describe

Odor? yes ___ no X describe

Comments:

WELL DEVELOPMENT RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/6/01

SAMPLE ID : MW-107

WELL ID : MW-107 Time Onsite: 7:25 Time Offsite: 18:00

SAMPLERS : J. Elder

Depth of well (from top of casing)	17.55	Time:	15:02
DNAPL Level (from top of casing)	0	Time:	15:02
Static water level (from top of casing)	8.71	Time:	15:00
Water level after purging (from top of casing)	17.11	Time:	17:00
Water level before sampling (from top of casing)		Time:	

Purging Method:

	Peristaltic		Centrifugal	2 in. well:	8.84	ft. of water x 0.16 =	1.4144	gal.	x 3 =	4.2432 gal.
	Bailer		Pos. Displ.	4 in. well:		ft. of water x 0.65 =		gal.	x 3 =	gal.
X	Submersible		Ded. Pump	6 in. well:		ft. of water x 1.47 =		gal.	x 3 =	gal.

Well Volume Calculation: 1 volume 3 volumes

Depth of Pump: ~16.5 Purge Start Time: 15:10 (hrs) Purge Duration: 60 (min)

Purge End Time: 16:50 (hrs) Purge Flow Rate: 0.3-0.5 (lpm)

Volume of water removed: 7.5 gal. >3 volumes: yes X no ___ purged dry? yes X no ___

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	6.89	0.149	23	10.42	12.8	-121	10.76
1 Volume 15:15	6.88	0.149	18	5.26	14.2	-129	11.68
2 Volume 15:55	7.06	0.143	28	13.40	13.8	-90	15.79
3 Volume 16:50	7.18	0.141	35	2.79	16.0	-84	16.75
4 Volume 17:00	7.15	0.141	26	2.34	15.7	-83	17.11

Sampling:

Time readings stabilized: NA

Sample Start Time: NA Chain of Custody sample time: NA

Sample End Time: NA Duration of sample time: NA min

Collection Method:

	Stainless steel bailer
	Teflon bailer
	Pos. Disp. Pump
	Disposable bailer
X	Dedicated pump
	Other:

Analyses:

	VOCs -	602	503	624	
	SVOCs	VOC	OLM04.2		
	Metals	SVOC	OLM04.2		
	PCB/Pest	Metals	ILM04.1		
	Physical	PCBs	Method 8082		
	Other	CN-	ILM04.1		

Observations

Weather/Temperature: Humid, Clear, SW Wind 5-10 mph, ~90° F

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe ___

Sheen? yes ___ no X describe ___

Odor? yes ___ no X describe ___

Comments:

1520 Surge & pump until dry. 1550 Recharge resume development. 1615 Dry.

1645 Very slow recharge. Turn on pump. 1700 Dry again at 4.5 gals.

Ground Water Sampling Records

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/14/01

SAMPLE ID : MW-003

WELL ID : MW-003

SAMPLERS : Mike Mendes

		Time Onsite:	Time Offsite:
		7:25	16:00
Depth of well (from top of casing)	16.00	Time:	8:02
DNAPL Level (from top of casing)		Time:	
Static water level (from top of casing)	4.07	Time:	8:02
Water level after purging (from top of casing)	4.14	Time:	9:15
Water level before sampling (from top of casing)	4.14	Time:	9:15

Purging Method:

_ Peristaltic _ Centrifugal
_ Bailer _ Pos. Displ.
X Submersible _ Ded. Pump

Well Volume Calculation:

				1 volume		3 volumes
2 in. well:	11.93	ft. of water x 0.16 =	1.9088	gal.	x 3 =	5.7264 gal.
4 in. well:		ft. of water x 0.65 =		gal.	x 3 =	gal.
6 in. well:		ft. of water x 1.47 =		gal.	x 3 =	gal.

Depth of Pump: ~15 Purge Start Time: 8:02 (hrs) Purge Duration: 72 (min)

Purge End Time: 9:15 (hrs) Purge Flow Rate: 0.5 (lpm)

Volume of water removed: 8 gal. >3 volumes: yes X no _ purged dry? yes _ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	6.35	0.170	220	0.90	14.5	-108	4.18
8:15	7.43	0.165	13	0.00	15.1	-203	4.16
8:25	7.56	0.145	8.7	0.00	15.3	-207	4.14
8:35	7.62	0.164	4.9	0.00	15.5	-206	4.14
8:45	7.65	0.163	5.1	0.00	15.5	-207	4.14
8:55	7.67	0.163	3.9	0.00	15.6	-207	4.14
9:05	7.69	0.163	3.4	0.00	15.5	-208	4.14
9:15	7.69	0.163	3	0.00	15.5	-208	4.14
9:30	7.69	0.163	2.8	0.00	15.4	-207	4.14

Sampling:

Time readings stabilized: 9:15

Sample Start Time: 9:15 Chain of Custody sample time: 9:15

Sample End Time: 9:30 Duration of sample time: 15 min

Collection Method:

_ Stainless steel bailer
_ Teflon bailer
_ Pos. Disp. Pump
_ Disposable bailer
X Dedicated pump
_ Other: _____

Analyses:

X VOCs - 602 _ 503 _ 624 X
X SVOCs VOC OLM04.2
X Metals SVOC OLM04.2
X PCB/Pest Metals ILM04.1
_ Physical PCBs Method 8082
X Other CN- ILM04.1

Observations

Weather/Temperature: Sunny. no wind. Approximately 71° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes _ no X describe _____

Sheen? yes _ no X describe _____

Odor? yes _ no X describe _____

Comments:

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/14/01

SAMPLE ID : MW-004
WELL ID : MW-004
SAMPLERS : Mike Mendes

	Time Onsite:	Time Offsite:
	7:25	16:00

Depth of well (from top of casing)	20.74	Time:	11:33
DNAPL Level (from top of casing)		Time:	
Static water level (from top of casing)	10.92	Time:	11:33
Water level after purging (from top of casing)	10.98	Time:	12:33
Water level before sampling (from top of casing)	10.98	Time:	12:33

Purging Method:

				Well Volume Calculation:	1 volume	3 volumes
	Peristaltic		Centrifugal	2 in. well: 9.82 ft. of water x 0.16 =	1.5712 gal.	x 3 = 4.7136 gal.
	Bailer		Pos. Displ.	4 in. well: ft. of water x 0.65 =	gal.	x 3 = gal.
X	Submersible		Ded. Pump	6 in. well: ft. of water x 1.47 =	gal.	x 3 = gal.

Depth of Pump: ~19.5 Purge Start Time: 11:33 (hrs) Purge Duration: 22 (min)
Purge End Time: 11:55 (hrs) Purge Flow Rate: 0.1-0.5 (lpm)

Volume of water removed: 10 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	11.33	90.4	>1000	3.62	13.9	-283	10.98
11:41	11.22	86.6	190	1.57	13.3	-298	10.98
11:46	11.25	85.5	189	1.48	13.1	-306	10.98
11:53	11.21	82.0	60	0.21	13	-312	10.98
12:04	11.15	78.5	22	0.00	13.1	-317	10.98
12:14	11.10	77.2	13	0.00	13.1	-317	10.98
12:21	11.07	77.4	11	0.00	13.1	-315	10.98
12:26	11.07	77.1	9.8	0.00	13.1	-315	10.98
12:31	11.07	77.0	8.3	0.00	13.1	-315	10.98
12:33	11.08	76.9	7.8	0.00	13.1	-315	10.98
after sample	11.01	74.7	4.1	0.00	13.1	-314	10.98

Sampling:
Time readings stabilized: 12:33
Sample Start Time: 12:33 Chain of Custody sample time: 12:33
Sample End Time: 12:46 Duration of sample time: 13 min

Collection Method:

	Stainless steel bailer	X	VOCs -	602	503	624	X		
	Teflon bailer	X	SVOCs	VOC	OLM04.2				
	Pos. Disp. Pump	X	Metals	SVOC	OLM04.2				
	Disposable bailer	X	PCB/Pest	Metals	ILM04.1				
X	Dedicated pump		Physical	PCBs	Method 8082				
	Other:	X	Other	CN-	ILM04.1				

Observations

Weather/Temperature: Sunny. No wind. Approximately 71° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe
Sheen? yes ___ no X describe
Odor? yes X no ___ describe Hydrocarbon odor

Comments:
Hydrocarbon odor detected from purge water

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/14/01

SAMPLE ID : MW-005
WELL ID : MW-005 Time Onsite: 7:25 Time Offsite: 16:00
SAMPLERS : Mike Mendes

Depth of well (from top of casing) .... 18.22 Time: 13:05
DNAPL Level (from top of casing)............ Time:
Static water level (from top of casing) .... 8.44 Time: 13:05
Water level after purging (from top of casing) .... 13.12 Time: 14:00
Water level before sampling (from top of casing) ...... 13.12 Time: 14:00

Purging Method:

___ Peristaltic ___ Centrifugal
___ Bailer ___ Pos. Displ.
X Submersible ___ Ded. Pump

Well Volume Calculation: 1 volume 3 volumes

2 in. well: 9.78 ft. of water x 0.16 = 1.5648 gal. x 3 = 4.6944 gal.
4 in. well: ___ ft. of water x 0.65 = ___ gal. x 3 = ___ gal.
6 in. well: ___ ft. of water x 1.47 = ___ gal. x 3 = ___ gal.

Depth of Pump: ~19.5 Purge Start Time: 13:05 (hrs) Purge Duration: 70 (min)
Purge End Time: 14:15 (hrs) Purge Flow Rate: 0.3-0.5 (lpm)

Volume of water removed: 5 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
13:05	7.21	0.1	431	13.43	13.7	24	9.3
13:11	7.01	0.1	129	12.18	14.5	23	9.67
13:17	7.01	0.1	38	10.96	15.8	28	10.03
13:24	6.99	0.1	35	10.32	16	34	10.9
13:29	6.99	0.1	19	10.41	16.1	36	11.03
13:35	6.98	0.1	12	10.18	16.2	38	11.47
13:45	6.97	0.1	11	10.12	15.6	39	11.88
13:50	6.97	0.1	12	9.67	15.4	40	11.99
13:55	6.95	0.1	9.3	9.21	15.2	38	12.3
14:00	6.95	0.1	7.1	9.33	15.2	37	13.12
after sample	6.89	0.146	4.8	8.31	15.6	28	15.61

Sampling: Time readings stabilized: 14:00
Sample Start Time: 14:00 Chain of Custody sample time: 14:00
Sample End Time: 14:15 Duration of sample time: 15 min

Collection Method:

___ Stainless steel bailer
___ Teflon bailer
___ Pos. Disp. Pump
___ Disposable bailer
X Dedicated pump
___ Other: ___

Analyses:

X VOCs - 602 ___ 503 ___ 624 X
X SVOCs VOC OLM04.2
X Metals SVOC OLM04.2
X PCB/Pest Metals ILM04.1
___ Physical PCBs Method 8082
X Other CN- ILM04.1

Observations

Weather/Temperature: Sunny. No wind. Approximately 71° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE **LOW**

Free Product? yes ___ no X describe ___
Sheen? yes ___ no X describe ___
Odor? yes ___ no X describe ___

Comments:
FB081401 collected at 1430 for same parameters as sample

C:\SFORMS\Buffalo Sampling sheets6-01.xls
rev. 9/96

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/14/01

SAMPLE ID : MW-006

WELL ID : MW-006 Time Onsite: 7:25 Time Offsite: 16:00

SAMPLERS : Mike Mendes

Depth of well (from top of casing) .... 15.00 Time: 9:35

DNAPL Level (from top of casing)............................. Time:

Static water level (from top of casing) .... 7.84 Time: 9:35

Water level after purging (from top of casing) .... 7.89 Time: 10:35

Water level before sampling (from top of casing) ...... 7.89 Time: 10:35

Purging Method:

___ Peristaltic ___ Centrifugal

___ Bailer ___ Pos. Displ.

X Submersible ___ Ded. Pump

Well Volume Calculation: 1 volume 3 volumes

2 in. well: 7.16 ft. of water x 0.16 = 1.1456 gal. x 3 = 3.4368 gal.

4 in. well: ___ ft. of water x 0.65 = ___ gal. x 3 = ___ gal.

6 in. well: ___ ft. of water x 1.47 = ___ gal. x 3 = ___ gal.

Depth of Pump: ~14 Purge Start Time: 9:35 (hrs) Purge Duration: 85 (min)

Purge End Time: 10:35 (hrs) Purge Flow Rate: 0.35 (lpm)

Volume of water removed:

10 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	^{o}C	mV	Ft.
initial	11.54	0.134	290	4.61	14.9	-102	7.89
9:43	11.50	0.134	85	0.52	14.8	-154	7.89
9:50	11.57	0.139	17	0.21	14.9	-172	7.89
9:58	11.63	0.140	8.2	0.00	14.8	-185	7.89
10:06	11.70	0.141	5.2	0.00	14.4	-194	7.89
10:15	11.74	0.140	5.3	0.00	14.7	-203	7.89
10:20	11.77	0.140	3.6	0.00	14.9	-208	7.89
10:25	11.78	0.141	3.1	0.00	14.8	-215	7.89
10:30	11.79	0.141	3.1	0.00	14.8	-216	7.89
10:35	11.79	0.141	2.9	0.00	14.8	-217	7.89
11:00	11.80	0.143	1.3	0.00	14.8	-219	7.89

Sampling: Time readings stabilized: 10:35

Sample Start Time: 10:35 Chain of Custody sample time: 10:35

Sample End Time: 11:00 Duration of sample time: 25 min

Collection Method:

___ Stainless steel bailer

___ Teflon bailer

___ Pos. Disp. Pump

___ Disposable bailer

X Dedicated pump

___ Other: ___

Analyses:

X VOCs - 602 ___ 503 ___ 624 X

X SVOCs VOC OLM04.2

X Metals SVOC OLM04.2

X PCB/Pest Metals ILM04.1

___ Physical PCBs Method 8082

X Other CN- ILM04.1

Observations

Weather/Temperature: Sunny. no wind. Approximately 71° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE **LOW**

Free Product? yes ___ no X describe ___

Sheen? yes ___ no X describe ___

Odor? yes ___ no X describe ___

Comments:

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/13/01

SAMPLE ID : MW-007
WELL ID : MW-007
SAMPLERS : Mike Mendes

Time Onsite: 11:15 Time Offsite: 18:30

Depth of well (from top of casing)	18.10	Time:	12:15
DNAPL Level (from top of casing)		Time:	
Static water level (from top of casing)	6.34	Time:	12:15
Water level after purging (from top of casing)	6.37	Time:	14:20
Water level before sampling (from top of casing)	6.37	Time:	14:20

Purging Method:
- ___ Peristaltic
- ___ Bailer
- X Submersible
- ___ Centrifugal
- ___ Pos. Displ.
- ___ Ded. Pump

Well Volume Calculation:

			1 volume		3 volumes
2 in. well:	11.76	ft. of water x 0.16 =	1.8816 gal.	x 3 =	5.6448 gal.
4 in. well:		ft. of water x 0.65 =	gal.	x 3 =	gal.
6 in. well:		ft. of water x 1.47 =	gal.	x 3 =	gal.

Depth of Pump: ~17 Purge Start Time: 12:42 (hrs) Purge Duration: 98 (min)
Purge End Time: 14:20 (hrs) Purge Flow Rate: 0.5 (lpm)

Volume of water removed: 10.5 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	6.46	84.1	>1000	19.99	14.3	-60	6.45
12:49	7.07	67.6	>1000	16.81	16.4	-124	6.47
12:54	7.16	68.4	>1000	16.80	16.4	-136	6.47
13:03	7.36	66.4	45	15.67	16.8	-148	6.37
13:11	7.45	65.6	18	14.94	16.8	-153	6.37
13:24	7.53	63.9	60	7.05	16.1	-160	6.37
13:34	7.58	63.1	270	0.13	16.6	-166	6.37
13:52	7.62	63.5	8	0.00	16.2	-182	6.37
14:02	7.64	63.4	4.3	0.00	16.5	-190	6.37
14:12	7.65	62.9	7.2	0.00	16.5	-196	6.37
14:20	7.66	62.8	7	0.00	16.6	-199	6.37
After Sample	7.65	61.9	5.2	0.00	15.9	-206	6.37

Sampling: Time readings stabilized: 14:20
Sample Start Time: 14:20 Chain of Custody sample time: 14:20
Sample End Time: 14:54 Duration of sample time: 0:34 min

Collection Method:
- ___ Stainless steel bailer
- ___ Teflon bailer
- ___ Pos. Disp. Pump
- ___ Disposable bailer
- X Dedicated pump
- ___ Other: ___

Analyses:
- X VOCs - 602 ___ 503 ___ 624 ___
- X SVOCs — VOC OLM04.2
- X Metals — SVOC OLM04.2
- X PCB/Pest — Metals ILM04.1
- ___ Physical — PCBs Method 8082
- ___ Other — CN- ILM04.1

Observations

Weather/Temperature: Sunny. 0-5 mph wind. Approximately 86° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE **LOW**

Free Product? yes ___ no X describe ___
Sheen? yes ___ no X describe ___
Odor? yes ___ no X describe ___

Comments:
Blind Duplicate DUP081301 collected at this location with time 1000.

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/14/01

SAMPLE ID : MW-106

WELL ID : MW-106 Time Onsite: 7:25 Time Offsite: 16:00

SAMPLERS : Mike Mendes

Depth of well (from top of casing) ..... 14.60 Time: 14:50

DNAPL Level (from top of casing)..... Time:

Static water level (from top of casing) ..... 8.25 Time: 14:50

Water level after purging (from top of casing) ..... 8.28 Time: 15:55

Water level before sampling (from top of casing) ..... 8.28 Time: 15:55

Purging Method:

	Peristaltic		Centrifugal	Well Volume Calculation:				1 volume		3 volumes	
	Bailer		Pos. Displ.	2 in. well:	6.35	ft. of water x 0.16 =		1.016	gal. x 3 =	3.048	gal.
X	Submersible		Ded. Pump	4 in. well:		ft. of water x 0.65 =			gal. x 3 =		gal.
				6 in. well:		ft. of water x 1.47 =			gal. x 3 =		gal.

Depth of Pump: ~19.5 Purge Start Time: 14:50 (hrs) Purge Duration: 70 (min)

Purge End Time: 16:00 (hrs) Purge Flow Rate: 0.01 (lpm)

Volume of water removed: 5 gal. >3 volumes: yes X no ___ purged dry? yes ___ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
14:50	10.44	63.2	500	1.43	13	-101	8.26
15:00	10.69	66.4	394	0.76	11.9	-169	8.26
15:10	10.79	67.7	44	0.46	11.1	-196	8.26
15:20	10.87	68.0	7.5	0.00	11	-223	8.27
15:30	10.96	68.2	5.4	0.00	10.9	-243	8.28
15:40	10.98	68.3	5.2	0.00	10.8	-248	8.28
15:50	10.99	68.3	4.3	0.00	10.8	-253	8.28
15:55	10.99	68.4	4.1	0.00	10.9	-260	8.28
after sample	11.01	68.9	4	0.00	11.1	-263	8.28

Sampling:

Time readings stabilized: 15:55

Sample Start Time: 15:55 Chain of Custody sample time: 15:55

Sample End Time: 16:12 Duration of sample time: 17 min

Collection Method:

	Stainless steel bailer	X	VOCs -	602		503		624	X		
	Teflon bailer	X	SVOCs			VOC		OLM04.2			
	Pos. Disp. Pump	X	Metals			SVOC		OLM04.2			
	Disposable bailer	X	PCB/Pest			Metals		ILM04.1			
X	Dedicated pump		Physical			PCBs		Method 8082			
	Other:		Other			CN-		ILM04.1			

Observations

Weather/Temperature: Sunny. No wind. Approximately 71° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ___ no X describe

Sheen? yes ___ no X describe

Odor? yes ___ no X describe

Comments:

GROUND WATER SAMPLING RECORD

SITE Union Ship Canal Parcel 2, Buffalo, NY DATE 8/13/01

SAMPLE ID : MW-107

WELL ID : MW-107 Time Onsite: 11:15 Time Offsite: 18:30

SAMPLERS : Mike Mendes

Depth of well (from top of casing)	17.60	Time:	15:30
DNAPL Level (from top of casing)		Time:	
Static water level (from top of casing)	8.72	Time:	15:30
Water level after purging (from top of casing)	12.48	Time:	17:20
Water level before sampling (from top of casing)	12.48	Time:	17:20

Purging Method:

____ Peristaltic ____ Centrifugal
____ Bailer ____ Pos. Displ.
X Submersible ____ Ded. Pump

Well Volume Calculation:

				1 volume		3 volumes
2 in. well:	8.88	ft. of water x 0.16 =	1.4208	gal. x 3 =	4.2624	gal.
4 in. well:		ft. of water x 0.65 =		gal. x 3 =		gal.
6 in. well:		ft. of water x 1.47 =		gal. x 3 =		gal.

Depth of Pump: ~16.5 Purge Start Time: 15:30 (hrs) Purge Duration: 110 (min)

Purge End Time: 17:20 (hrs) Purge Flow Rate: 0.4 (lpm)

Volume of water removed: 11.5 gal. >3 volumes: yes X no ____ purged dry? yes ____ no X

Field Tests:

	PH	COND	Turb	D.O.	Temp	ORP	D.T.W.
units		mS/cm	NTU	mg/l	°C	mV	Ft.
initial	6.89	0.149	23	1.63	14.6	-60	9.63
15:35	6.95	0.147	22	0.72	15.4	-124	9.37
15:39	6.97	0.145	24	0.45	16.9	-136	9.39
15:49	7.01	0.146	24	0.19	18	-148	9.6
15:54	7.03	0.146	29	0.14	18.4	-153	9.75
16:06	7.03	0.146	27	0.00	18.3	-160	10.03
16:14	7.02	0.147	21	0.06	18.5	-166	10.14
16:21	7.01	0.147	19	0.00	17.8	-182	10.32
16:35	7.01	0.149	14	0.00	16.5	17.2	10.64
16:45	7	0.151	13	0.00	16.5	17	10.85
16:55	6.99	0.153	12	0.00	16.6	17.4	11.05
17:05	6.98	0.152	14	0.00	16.6	17	11.36
17:15	6.98	0.15	15	0.00	15.9	17	12.46

Sampling:

Time readings stabilized: 17:20

Sample Start Time: 17:20 Chain of Custody sample time: 17:20

Sample End Time: 17:30 Duration of sample time: 0:10 min

Collection Method:

____ Stainless steel bailer
____ Teflon bailer
____ Pos. Disp. Pump
____ Disposable bailer
X Dedicated pump
____ Other: ____

Analyses:

X	VOCs -	602 ____	503 ____	624	X
X	SVOCs	VOC	OLM04.2		
X	Metals	SVOC	OLM04.2		
X	PCB/Pest	Metals	ILM04.1		
	Physical	PCBs	Method 8082		
X	Other	CN-	ILM04.1		

Observations

Weather/Temperature: Sunny. 0-5 mph wind. Approximately 86° F.

Sample Description: Turbidity: (circle one) HIGH MODERATE LOW

Free Product? yes ____ no X describe ____

Sheen? yes ____ no X describe ____

Odor? yes ____ no X describe ____

Comments:

____ FB081401 Collected at this location by pouring lab supplied DI water through pump to glassware