Department of Environmental Conservation

Division of Environmental Remediation

Supplemental Site Investigation Report

Former Barker Chemical Site, Village of Barker, Niagara County, New York

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New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

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1.0 INTRODUCTION

In 2003 the NYSDEC conducted a Site Investigation at the Former Barker Chemical Site in the Village of Barker, Town of Somerset, Niagara County, New York (Figure 1-1). The principle objective of that investigation was to evaluate areas of the Site not remediated by EPA in 2000 and 2001 to determine if hazardous wastes or hazardous substances were present, and if present, to determine if there was a consequential amount. A secondary objective was to determine the areal extent of waste in the Filled Lagoon (Figure 1-2), which was not remediated by EPA, and to determine the degree to which waste and sludge have contaminated Site soil, groundwater, surface water and sediment. The third objective was to evaluate the EPA removal action to ensure that it continued to adequately protect public health.

The Site Investigation determined that a consequential amount of hazardous substances are present at the Site. The presence of hazardous substances, combined with low pH surface water and contaminants at concentrations that exceed NYSDEC cleanup objectives for soil, sediment and surface water indicated that the Site presented a continued threat to human health and the environment. As a result, the Site Investigation report recommended that the Former Barker Chemical Site be listed in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in New York State.

The Site Investigation report also recommended that the pH of surface water throughout the Site be monitored on a periodic basis to (1) document trends in the pH of surface water in the Low pH Trough and Ponded Water Area (Figure 1-2), and (2) document trends in the high pH surface water in the North Lagoon (Figure 1-2). It was suspected that the high pH conditions in the North Lagoon resulted from the leaching of weathered lime and Portland cement utilized by EPA to stabilize sludge in the South Lagoon, while the acidic surface water in the Low pH Trough and Ponded Water Area likely resulted from the formation of sulfuric acid from the very high concentrations of sulfur in the waste materials throughout the Site.

The Site Investigation report further recommended that groundwater at the Site be sampled and analyzed for TCL volatile organic compounds, TCL semivolatile organic compounds, pesticides, herbicides, metals, sulfate, sulfide and pH to determine the degree to which waste and sludge have contaminated Site groundwater. Although eight micro-wells were installed during the Site Investigation, they were not sampled during the 2003 Site Investigation because four of them went dry during the summer and fall months.

In order to make a proper decision regarding Site classification, a Supplemental Site Investigation was completed in 2008. During this investigation, three surface water samples were collected for chemical

analysis to compare with the analytical results obtained in 2003. Groundwater samples from seven of the eight micro-wells were also collected for analysis. In addition, pH of surface water was measured throughout the year to evaluate the current pH conditions at the Site.

Analytical results from soil, waste and sludge samples collected during the 2003 Site Investigation were compared to the soil cleanup objectives in the NYSDEC publication entitled "*Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels*", Division of Environmental Remediation, October 1995. In December 2006, however, the NYSDEC promulgated new soil cleanup objectives (*6NYCRR Part 375: Environmental Remediation Programs*) to replace those of TAGM 4046. As a result, the analytical results from the 2003 Site Investigation report are now compared to the Part 375 soil cleanup objectives, with the data summary tables included in the Supplemental Site Investigation report. Environmental and public health impacts from the Site are also re-evaluated.

1.1 Report Organization

Following this introductory section (Section 1.0), the remaining sections of this report are organized as follows:

- **Section 2.0, Site Description and Remedial History:** This section describes the salient features of the Former Barker Chemical Site, and presents a brief summary of investigations, sampling events and remedial activities completed at the Site;

- **Section 3.0, Investigation Objectives and Scope of Work:** This section describes the objectives of the Supplemental Site Investigation and the activities that were completed during the study;

- **Section 4.0, Supplemental Site Investigation Results:** This section presents the results of the Supplemental Site Investigation, including general observations and a summary of the analytical results obtained on surface water and groundwater samples;

- **Section 5.0, Comparison of Surface Water and Ph Results:** This section compares the results of surface water samples and pH measurements obtained prior to the EPA removal action, from the Site Investigation completed in 2003 and from the Supplemental Site Investigation completed in 2008;

- **Section 6.0, Site Investigation Results Compared to Part 375 SCOs:** This section presents the analytical results from the 2003 Site Investigation with the results compared to the Part 375 soil cleanup objectives;

- **Section 7.0, Discussion and Recommendation:** This section discusses the results of the Supplemental Site Investigation as they relate to the objectives presented in Section 3.0. Recommendations for future activities regarding the Site are also discussed; and

- **Section 8.0, References:** This section contains a list of references utilized or cited in this report.

Figures, tables and appendices, in that order, follow Section 8.0.

2.0 SITE DESCRIPTION AND REMEDIAL HISTORY

2.1 Site Description

The Former Barker Chemical Site is located at 8473 West Somerset Road in the Village of Barker, Town of Somerset, Niagara County, New York (Figure 1-1). The total area of the property is approximately 10 acres. The Site is located in a mixed agricultural and residential setting, and is bordered to the north and east by woodlands, to the south by West Somerset Road and to the west by a vacant field (Figure 1-2). Residences are located near the Site to the west, south and east, with eleven residences located within 1/4 mile of the property. The property was formerly operated as a fungicide/herbicide manufacturing, warehousing and distribution facility by the Barker Chemical Corporation from 1930 to the early 1970s. The property has remained largely vacant since that time.

Historically, the Site contained five abandoned buildings, an above ground storage tank, two lagoons (the North and South Lagoons), one filled lagoon (the Filled Lagoon), a ditch containing low pH water (Low pH Trough), and two large areas void of vegetation (the Barren Strip and Lime Waste Area; Figure 1-2). The Barren Strip contained a brownish-gray, fine-grained waste material, while the Lime Waste Area contained a whitish-gray, lime-like waste material with large quantities of sulfur. An open drainage ditch (the Eastern Boundary Ditch) parallels the eastern boundary of the Site from West Somerset Road to the north end of the South Lagoon, where it makes a sharp eastward turn (Figure 1-2). This ditch ultimately feeds Golden Hill Creek (Figure 1-1), a tributary to Lake Ontario.

2.2 Previous Investigations and Remedial Activities

A number of investigations have been completed at the Site including: (1) waste, lagoon sludge and surface water sampling by the NYSDEC in 1999, (2) pH measurements of Site surface water by the NYSDEC in 1999 and 2000, (3) the completion of a Removal Site Evaluation (RSE) by EPA in 2000 to determine the nature and extent of contamination requiring remediation, and (4) the 2003 Site Investigation completed by the NYSDEC. Details concerning these investigations and sampling events can be found in the NYSDEC Site Investigation report dated March 2007.

In late January 2000, based upon the presence of low pH surface water, the Niagara County Health Department (NCHD) issued a public health advisory to nearby residents cautioning against entry onto the Site. In response to this advisory the NYSDEC implemented an emergency Site security action by placing warning signs across the front of the property and installing high visibility fencing around the direct contact areas of concern. In May 2000 the NYSDEC made a request to the United States Environmental Protection

Agency (EPA) to evaluate the Site and perform removal actions, as appropriate, to address the public health threats from low pH surface waters, and to identify, contain, control and/or remediate any other hazardous wastes or hazardous substances found at the Site. Due to the public health threat that existed, EPA agreed to this request.

Following the completion of a Removal Site Evaluation investigation, the EPA removal action was authorized on September 29, 2000. During this removal action, the EPA remediated the Barren Strip, the Low pH Trough, the Ponded Water Area, the South Lagoon, the North Lagoon, the Lime Waste Area, the above ground storage tank, and the Chip Area (Figure 1-2). Four building were demolished as part of the removal action to gain access to contaminated soils. Details concerning the EPA removal action can also be found in the March 2007 Site Investigation report.

3.0 INVESTIGATION OBJECTIVES AND SCOPE OF WORK

3.1 Objectives

The principle objective of the Supplemental Site Investigation was to obtain additional data from the Former Barker Chemical Site to make a proper decision regarding Site classification. A secondary objective was to further evaluate the EPA removal action to ensure that it continues to adequately protect public health. These objectives were determined through the analysis of groundwater and surface water samples collected from the Site, and by periodically measuring the pH of Site surface water.

3.2 Scope of Work

To meet the study objectives, the following activities were completed during the Supplemental Site Investigation: (1) water level measurements in the micro-wells, (2) collection of surface water samples for chemical analysis, (3) collection of groundwater samples for chemical analysis, and (4) pH measurements of surface water. These activities are briefly described in the following subsections.

3.2.1 *Water Level Measurements*

Water levels were measured four times in the eight micro-wells installed at the Site between April 16, 2008 and June 25, 2008. The water level data obtained during this study were utilized to further evaluate groundwater flow patterns across the Site.

3.2.2 *Surface Water Samples*

Three surface water samples were collected from various locations throughout the Former Barker Chemical Site. These samples were collected from the following locations for the following reasons:

- surface water sample SW-7 (Figure 3-1) was collected to evaluate current conditions in the Ponded Water Area east of the South Lagoon and to document changes, if any, from the 2003 surface water sample collected from this water body;

- surface water sample SW-8 (Figure 3-1) was collected to evaluate current conditions in the North Lagoon and to document changes, if any, from the 2003 surface water sample collected from this water body; and

- surface water sample SW-9 (Figure 3-1) was collected to evaluate current conditions in the Central Drainage Ditch and Low pH Trough and to document changes, if any, from the 2003

surface water sample collected from this water body.

All samples were collected by NYSDEC personnel utilizing Department owned equipment, and submitted to the TestAmerica laboratory in Amherst, New York for chemical analysis. Information concerning sample collection and analysis is given in Table 3-1.

3.2.3 *Groundwater Samples*

Groundwater samples were collected from seven of the eight micro-wells installed at the Site in 2003. Micro-well MW-11 was not sampled due to the closer proximity of micro-wells MW-6 and MW-12 to the North Lagoon. The locations of all micro-wells are shown on Figure 3-2. All samples were collected by NYSDEC personnel utilizing Department owned equipment, and submitted to the TestAmerica laboratory in Amherst, New York for chemical analysis. Information concerning sample collection and analysis is given in Table 3-1.

3.2.4 *pH Measurements*

The pH of surface water at various locations throughout the Site (Figure 3-3) was measured four times between April 16, 2008 and June 25, 2008 to evaluate current pH conditions of on-Site surface water and to document changes, if any, from the pH measurements recorded in 2003 following the EPA removal action. All pH measurements were made by NYSDEC personnel utilizing Department owned equipment.

3.2.5 *Report Preparation*

This report was prepared to describe the activities completed during the Supplemental Site Investigation of the Former Barker Chemical Site; present the analytical results of the samples collected during the investigation; present the analytical results of the samples collected during the 2003 Site Investigation in comparison to the Part 375 soil cleanup objectives; discuss the results as they relate to the objectives of the investigation; and present recommendations for future activities regarding the Site.

4.0 SUPPLEMENTAL SITE INVESTIGATION RESULTS

A brief description of the activities completed during the Supplemental Site Investigation of the Former Barker Chemical Site was presented in Section 3.0. In this section, a detailed evaluation of the observations made during the investigation and the analytical results obtained from the samples are presented.

4.1 General Observations

During the 2003 Site Investigation stressed and dead vegetation (Figure 4-1) was observed in the former Lime Waste Area remediated by the EPA. The presence of crystallized sulfur in the dead vegetation area suggests that sulfuric acid leached into the Central Drainage Ditch from this area, thereby killing the vegetation. This area was not observed during the field activities completed in 2008. During the 2008 field activities, however, a white powder was observed along the edges of the Ponded Water Area when the water level receded, while the bottom of the Ponded Water Area contained a gray-white sediment. The powder and gray-white sediment could be the weathered lime and/or Portland cement utilized by the EPA to stabilize sludge in the South Lagoon that has leached into the Ponded Water Area.

4.2 Water Level Measurements

Water levels were measured four times in the eight micro-wells installed at the Site between April 6, 2008 and June 25, 2008 (Table 4-1). This table reveals that groundwater elevations during this period ranged from 489.94 to 496.20 feet amsl. The hydrographs constructed from these data are shown as Figure 4-2, and show decreasing water levels as the drier summer months approached. This pattern is consistent with that observed from the 2003 water level data (Figure 4-3), and it is suspected that some wells would have been found dry in 2008 if continued water level measurements had been completed.

The water level data obtained from the micro-wells were also utilized to construct groundwater contour maps. A representative map is shown as Figure 4-4, and reveals that shallow groundwater under the Former Barker Chemical Site flows to the east toward the Eastern Boundary Ditch. The North Lagoon does not appear to influence groundwater flow across the Site. This finding is consistent with the groundwater flow pattern determined from the water level data obtained in 2003.

4.3 Surface Water

Three surface water samples were collected from the Former Barker Chemical Site during the Supplemental Site Investigation to evaluate current conditions in the North Lagoon, Ponded Water Area, and Central Drainage Ditch and Low pH Trough, and to document changes, if any, since 2003 when these surface

water bodies were last sampled. The locations of the historic and 2008 samples are shown on Figure 3-1. The 2008 samples were submitted to TestAmerica for chemical analysis of Target Compound List (TCL) volatile organic compounds, TCL semivolatile organic compounds, TCL pesticides, Target Analyte List (TAL) metals, sulfate and sulfide. The analytical results are summarized in Table 4-2, while information concerning sample collection and analysis is given in Table 3-1. The laboratory data are contained in Appendix B.

Analytical results were evaluated against the water quality standards and guidance values contained in the NYSDEC publication entitled "*Technical and Operational Guidance Series (TOGS) 1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*", Division of Water, June 1998. The surface water standards and guidance values for individual contaminants were taken directly from Table 1 of that document.

The results of the surface water samples collected from the Former Barker Chemical Site during the Supplemental Site Investigation reveal the presence of both volatile and semivolatile organic compounds (Table 4-2). Four volatile organic compounds were detected in these samples including acetone (2 samples), 2-butanone (1 sample), carbon disulfide (2 samples) and toluene (1 sample). None of these compounds, however, were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values (Table 4-2).

Two semivolatile organic compounds were detected in the 2008 surface water samples including pentachlorophenol (1 sample) and phenol (1 sample). Both contaminants were detected in the sample collected from the Central Drainage Ditch and Low pH Trough (SW-9), and both compounds were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values (Table 4-2).

Pesticides, including BHC, chlordane, DDD, DDE, DDT, dieldrin, endosulfan, endrin ketone and heptachlor, were also detected in the surface water samples collected from the Former Barker Chemical Site during the Supplemental Site Investigation (Table 4-2). The concentrations of alpha-BHC (1 sample), beta-BHC (1 sample), delta-BHC (1 sample), gamma-BHC (1 sample), dieldrin (2 samples), endosulfan II (1 sample) and heptachlor (1 sample) exceeded the NYSDEC surface water standards or guidance values (Table 4-2). With the exception of dieldrin in sample SW-7 (Ponded Water Area), all of the exceedances were associated with sample SW-9, which was collected from the Central Drainage Ditch and Low pH Trough.

Eighteen metals were detected in the surface water samples collected in 2008 (Table 4-2). Of these compounds, eight were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values, with three of these metals being EPA priority pollutant metals. USEPA priority pollutant metals are toxic metals for which technology-based effluent limitations and guidelines are required by Federal law. The priority pollutant metals exceeding the NYSDEC surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: arsenic (1 sample; 106 µg/L), beryllium (1 sample; 5.8 µg/L) and nickel (1 sample; 144 µg/L). Other metals that significantly exceeded the NYSDEC surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: aluminum (3 samples; 57,400 µg/L), cobalt (2 samples; 92.3 µg/L), iron (3 samples; 104,000 µg/L), magnesium (2 samples; 102,000 µg/L) and manganese (3 samples; 14,100 µg/L). Calcium was also detected at significant concentrations in all three surface water samples, with the highest concentrations detected in the Ponded Water Area (281,000 µg/L) and the Central Drainage Ditch and Low pH Trough (291,000 µg/L). There is no NYSDEC surface water standard or guidance value for this contaminant.

The surface water samples collected from the Former Barker Chemical Site during the Supplemental Site Investigation also contained significant concentrations of sulfate, ranging from 118,000 to 2,600,000 µg/L (Table 4-2). Sulfide was also detected at significant concentrations in two of the three samples, ranging from 1,200 to 3,200 µg/L (Table 4-2). Concentrations of both contaminants exceeded the NYSDEC surface water standards. Neither compound, however, exceeded the surface water standards in the sample collected from the North Lagoon. The pH of the surface water samples ranged from 3.21 (Central Drainage Ditch and Low pH Trough) to 7.02 (North Lagoon) standard pH units, with the values from the Low pH Trough and Ponded Water Area exceeding the NYSDEC surface water standard (Table 4-2).

4.4 Groundwater

Seven groundwater samples were collected from the Former Barker Chemical Site during the Supplemental Site Investigation. The locations of these wells are shown on Figure 3-2. Micro-well MW-11 was not sampled due to the closer proximity of micro-wells MW-6 and MW-12 to the North Lagoon. The samples were submitted to TestAmerica for chemical analysis of TCL volatile organic compounds, TCL pesticides, TAL metals, sulfate and sulfide. Micro-wells MW-4 and MW-12 were also analyzed for TCL semivolatile organic compounds. The analytical results for these samples are summarized in Table 4-3, while information concerning sample collection and analysis is given in Table 3-1. The micro-well purge and sample logs are included in Appendix A, while the laboratory data are contained in Appendix B.

Analytical results were evaluated against the water quality standards and guidance values contained in the NYSDEC publication entitled "*Technical and Operational Guidance Series (TOGS) 1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*", Division of Water, June 1998. The groundwater standards and guidance values for individual contaminants were taken directly from Table 1 of that document.

The results of the groundwater samples collected from the Former Barker Chemical Site reveal the presence of volatile organic compounds including acetone, benzene, 2-butanone, carbon disulfide, chlorobenzene, cis-1,2-dichloroethene, toluene and 1,2,4-trichlorobenzene (Table 4-3). Of these compounds, the concentrations of acetone (1 sample), 2-butanone (1 sample) and chlorobenzene (1 sample) were detected at concentrations that exceeded the NYSDEC groundwater standards or guidance values (Table 4-3). Semivolatile organic compounds were not detected in the two groundwater samples analyzed for these contaminants.

Pesticides, including BHC, chlordane, DDD, DDE, dieldrin, endosulfan, endrin ketone, heptachlor and heptachlor epoxide, were detected in the groundwater samples collected from the Former Barker Chemical Site (Table 4-3). Of these compounds, only the concentrations of alpha-BHC (1 sample) and dieldrin (2 samples) exceeded the NYSDEC groundwater standards (Table 4-3). No pesticides were detected in micro-well MW-12.

Twenty metals were detected in the groundwater samples collected from the Former Barker Chemical Site (Table 4-3). Of these compounds, twelve were detected at concentrations that exceeded the NYSDEC groundwater standards or guidance values, with seven of these metals being EPA priority pollutant metals. The priority pollutant metals exceeding the groundwater standards or guidance values (with the number of exceedances and maximum concentrations) included: arsenic (4 samples; 365 µg/L), beryllium (4 samples; 11.7 µg/L), chromium (5 samples; 435 µg/L), copper (2 samples; 467 µg/L), lead (5 samples; 107 µg/L), mercury (2 samples; 2.5 µg/L) and nickel (2 samples; 388 µg/L). Other metals that significantly exceeded the NYSDEC groundwater standards or guidance values (with the number of exceedances and maximum concentrations) included: iron (7 samples; 381,000 µg/L), magnesium (7 samples; 376,000 µg/L), manganese (7 samples; 16,400 µg/L) and sodium (4 samples; 139,000 µg/L). Aluminum and calcium were also detected at significant concentrations, ranging from 586 to 269,000 µg/L, and 238,000 to 6,870,000 µg/L, respectively. There are no NYSDEC groundwater standards or guidance values for these contaminants.

The groundwater samples collected from the Former Barker Chemical Site during the Supplemental Site Investigation also contained significant concentrations of sulfate, ranging from 32,100 to 2,570,000 µg/L (Table 4-3). Sulfate was detected in every well sampled, and exceeded the NYSDEC groundwater standard in six of the seven samples (Table 4-3). Sulfide was also detected at significant concentrations, ranging from 1,200 to 2,470,000 µg/L (Table 4-3). Sulfide was detected in four of the seven samples, and exceeded the NYSDEC groundwater standard in all four samples. The pH of the groundwater samples ranged from 6.53 (MW-5) to 7.85 (MW-4) standard pH units, with none of the values exceeding the NYSDEC groundwater standard for pH (Table 4-3).

4.5 pH Measurements

During the Supplemental Site Investigation, the pH of surface water at fifteen locations throughout the Former Barker Chemical Site (Figure 3-3) was measured four times between April 16, 2008 and June 26, 2008 to evaluate current pH conditions of on-site surface water and to document changes, if any, from the pH measurements recorded in 2003 following the EPA removal action. The 2008 data are summarized in Table 4-4, and show that surface water in the former Spill Area (pH-1 and pH-2) had pH values ranging from 6.77 to 7.21 standard pH units. The values remained relatively constant at each location (Table 4-4).

The pH of surface water in the Central Drainage Ditch and Low pH Trough (pH-3, pH-4, pH-13 and pH-15) had pH values ranging from 3.04 to 6.55 standard pH units (Table 4-4). The values remained relatively constant at each location, and generally increased with distance from the Filled Lagoon and former Lime Waste Area (Table 4-4). The lowest pH values were associated with location pH-15 (3.04 to 3.21 standard pH units), which was located in the Central Drainage Ditch near the Filled Lagoon and former Lime Waste Area (Figure 3-3).

Some of the lowest pH values measured at the Former Barker Chemical Site were associated with the Ponded Water Area (pH-5 and pH-14), with pH values ranging from 3.15 to 3.75 standard pH units (Table 4-4). The values remained relatively constant at each location (Table 4-4).

The pH of surface water in the Eastern Boundary Ditch (pH-6 and pH-12) remained relatively constant during the Spring of 2008, with pH values ranging from 6.74 to 7.37 standard pH units (Table 4-4). In contrast, the pH of surface water in the Chip Area (pH-10) varied during the Spring of 2008, with pH values of 5.92 and 7.81 standard pH units measured during the two times in which surface water was present in this area (Table 4-4).

The pH of surface water in the North Lagoon (pH-7, pH-8, pH-9 and pH-11) had pH values ranging from 6.90 to 7.49 standard pH units (Table 4-4). The values remained relatively constant at each location (Table 4-4).

5.0 COMPARISON OF PRE- AND POST-REMEDIATION RESULTS

5.1 Surface Water

5.1.1 *North Lagoon*

Surface water from the North Lagoon was sampled on two occasions prior to the EPA removal action, once in 2003 during the Site Investigation and once in 2008 during the Supplemental Site Investigation (Tables 3-1 and 5-1). Only herbicides, metals, boron, chloride and sulfate were analyzed in surface water samples collected both before and after the EPA removal action, with pesticides and sulfide analyzed in the samples collected in 2003 and 2008. As a result, comparison of the surface water results from the North Lagoon are limited to these contaminants.

Pesticides were not detected in the surface water sample collected in 2003, while several pesticides, including gamma-BHC, DDD, DDE, endrin ketone and heptachlor were detected in the surface water sample collected in 2008 (Table 5-2). These results suggest an increasing trend. None of the pesticides detected in the 2008 sample, however, exceeded the NYSDEC surface water standards or guidance values (Table 5-2).

Herbicides were detected in North Lagoon surface water prior to the EPA removal action, but at concentrations well below the NYSDEC surface water standards or guidance values (Table 5-2). Herbicides were not detected in the 2003 sample, and were not analyzed in the sample collected in 2008.

Eighteen metals were detected in the surface water samples collected from the North Lagoon prior to the EPA removal action (Table 5-2). Of these compounds, thirteen were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values, with seven of these metals being EPA priority pollutant metals. The priority pollutant metals exceeding the surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: arsenic (1 sample; 259 µg/L), beryllium (1 sample; 5.1 µg/L), cadmium (1 sample; 8.6 µg/L), chromium (1 sample; 157 µg/L), copper (2 samples; 1,280 µg/L), lead (2 samples; 374 µg/L) and nickel (2 samples; 355 µg/L). Other metals that significantly exceeded the NYSDEC surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: aluminum (2 samples; 109,000 µg/L), cobalt (2 samples; 199 µg/L), iron (2 samples; 181,000 µg/L) and manganese (2 samples; 6,600 µg/L). Calcium was also detected at significant concentrations (307,000 and 296,000 µg/L) in both pre-remediation samples (Table 5-2). There is no NYSDEC surface water standard or guidance value for this contaminant. It is interesting to note that the concentrations of each of these metals decreased between the December 1999 and June 2000 sampling events (Table 5-2). While the exact cause of this decrease is unknown, it may be related

to the time of year in which the samples were collected. Since the North Lagoon has no overflow, water levels are higher during periods of increased precipitation and snow melt, and lower during the drier summer and early fall months. The higher concentrations in the December 1999 sample, therefore, may have been caused by a greater flow of precipitation through the fill materials before discharge to the North Lagoon.

Eleven metals were detected in the surface water sample collected in 2003 from the North Lagoon following the EPA removal action (Table 5-2). None of these compounds, however, were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values (Table 5-2). In 2008, nine metals were detected in the surface water sample collected from the North Lagoon, with the concentrations of aluminum, iron and manganese exceeding the NYSDEC surface water standards or guidance values (Table 5-2). Table 5-2 also indicates that the concentrations of all detected compounds increased between 2003 and 2008. In some cases this increase was substantial (e.g., aluminum (67.5 to 1,030 µg/L); calcium (24,000 to 91,100 µg/L); iron (216 to 1,520 µg/L); manganese (48.4 to 476 µg/L); potassium (235 to 8,620 µg/L)). These results suggest an increasing trend.

The North Lagoon surface water samples collected prior to the EPA removal action contained sulfate at a concentration well above the NYSDEC surface water standard (Table 5-2). Although sulfate was detected in both post-remediation samples, the concentrations did not exceed the surface water standard for this contaminant. The concentration of sulfate in the 2008 sample, however, increased substantially from the concentration detected in 2003 (Table 5-2), and like the metals results, suggests an increasing trend. Boron (pre- and post-remediation samples) and chloride (post-remediation sample) were also detected in the surface water samples collected from the North Lagoon but at concentrations that did not exceed the NYSDEC surface water standards (Table 5-2). Boron and chloride were not analyzed in the 2008 sample.

Surface water samples collected from the North Lagoon in 2003 and 2008 suggest that the EPA removal action was effective in lowering concentrations of metals, boron and sulfate in this surface water body (Table 5-2). On closer inspection, however, Table 5-2 indicates that concentrations of pesticides, metals and sulfate increased between 2003 and 2008, although not to pre-remediation concentrations. The results from the post-remediation samples, therefore, suggest that the EPA removal action was only partially effective at addressing contamination in the North Lagoon.

5.1.2 *Central Drainage Ditch and Low pH Trough*

Surface water from the Central Drainage Ditch and Low pH Trough was sampled once prior to the EPA removal action, once in 2003 during the Site Investigation and once in 2008 during the Supplemental Site Investigation (Tables 3-1 and 5-1). Only herbicides, metals, boron, chloride and sulfate were analyzed in surface water samples collected both before and after the EPA removal action, with pesticides and sulfide analyzed in the samples collected in 2003 and 2008. As a result, comparison of the surface water results from the Central Drainage Ditch and Low pH Trough are limited to these contaminants.

Pesticides were detected in both post-remediation surface water samples collected from the Central Drainage Ditch and Low pH Trough (Table 5-2). In 2003, five pesticides were detected in the surface water sample collected from this water body, with concentrations of alpha-BHC, delta-BHC, gamma-BHC and DDT exceeding the NYSDEC surface water standards or guidance values (Table 5-2). In 2008, nine pesticides were detected in the Central Drainage Ditch and Low pH Trough, with concentrations of alpha-BHC, beta-BHC, delta-BHC, gamma-BHC, dieldrin, endosulfan II and heptachlor exceeding the NYSDEC surface water standards or guidance values (Table 5-2). These results suggest an increasing trend, although some concentrations decreased between 2003 and 2008.

Herbicides were detected in surface water from the Central Drainage Ditch and Low pH Trough prior to the EPA removal action, but at concentrations well below the NYSDEC surface water standards (Table 5-2). The only herbicide detected in 2003 was 2,4-D at a concentration well below the NYSDEC surface water standard (Table 5-2). Herbicides were not analyzed in the sample collected in 2008.

Nineteen metals were detected in the surface water sample collected from the Central Drainage Ditch and Low pH Trough prior to the EPA removal action (Table 5-2). Of these compounds, nine were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values, with three of these metals being EPA priority pollutant metals. The priority pollutant metals exceeding the surface water standards or guidance values (with maximum concentrations) included: arsenic (204 µg/L), copper (355 µg/L) and lead (222 µg/L). Other metals that significantly exceeded the NYSDEC surface water standards or guidance values (with maximum concentrations) included: aluminum (30,200 µg/L), iron (67,400 µg/L) and manganese (2,050 µg/L). Calcium was also detected at a significant concentration (470,000 µg/L) in the pre-remediation sample (Table 5-2). There is no NYSDEC surface water standard or guidance value for this contaminant.

Numerous metals were detected in the surface water samples collected from the Central Drainage Ditch and Low pH Trough following the EPA removal action, seventeen in 2003 and fifteen in 2008 (Table 5-2). Of these compounds, eight were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values, with two of these metals being EPA priority pollutant metals. The priority pollutant metals exceeding the surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: arsenic (2 samples; 115 µg/L) and lead (1 sample; 57.9 µg/L). Other metals that significantly exceeded the NYSDEC surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: aluminum (2 samples; 9,570 µg/L), iron (2 samples; 49,400 µg/L), magnesium (2 samples; 124,000 µg/L) and manganese (2 samples; 4,510 µg/L). Calcium was also detected at significant concentrations (335,000 and 291,000 µg/L) in both post-remediation samples (Table 5-2). There is no NYSDEC surface water standard or guidance value for this contaminant. Table 5-2 also indicates that the concentrations of all detected compounds, with the exception of copper, nickel, sodium and zinc, decreased between 2003 and 2008. In some cases this decrease was substantial (e.g., aluminum (9,570 to 2,970 µg/L); iron (49,400 to 17,900 µg/L); manganese (4,510 to 2,340 µg/L)). These results suggest a decreasing trend.

The surface water sample collected from the Central Drainage Ditch and Low pH Trough prior to the EPA removal action contained sulfate at a concentration well above the NYSDEC surface water standard (Table 5-2). Sulfate was also detected in both post-remediation samples at concentrations well above the NYSDEC surface water standard (Table 5-2), but at concentrations lower than that detected prior to the EPA removal action. The concentration of sulfate increased slightly between 2003 and 2008 (Table 5-2). Sulfide was also detected in both post-remediation samples at concentrations that significantly exceeded the NYSDEC surface water standard (Table 5-2). The concentration of sulfide also increased slightly between 2003 and 2008 (Table 5-2). Boron (pre- and post-remediation samples) and chloride (pre- and post-remediation samples) were also detected in the surface water samples collected from the Central Drainage Ditch and Low pH Trough but at concentrations that did not exceed the NYSDEC surface water standards (Table 5-2). Boron and chloride were not analyzed in the 2008 sample.

Surface water samples collected from the Central Drainage Ditch and Low pH Trough in 2003 and 2008 suggest that the EPA removal action was effective in lowering concentrations of metals and sulfate in this surface water body (Table 5-2). Table 5-2 indicates, however, that concentrations of some pesticides (e.g., alpha-BHC, beta-BHC, DDE, dieldrin, endosulfan II and heptachlor), some metals (e.g., magnesium, manganese and sodium), chloride and sulfate increased after the EPA removal action. In addition, the metals

that exceeded the NYSDEC surface water standards or guidance values prior to the EPA removal action were the same metals (the exception being copper) that exceeded the NYSDEC surface water standards or guidance values in the post-remediation samples (Table 5-2). The concentrations of sulfate in both pre- and post-remediation samples also exceeded the NYSDEC surface water standard for this contaminant (Table 5-2). The results from the post-remediation samples, therefore, suggest that the EPA removal action was only partially effective at addressing contamination in the Central Drainage Ditch and Low pH Trough.

5.1.3 *Ponded Water Area*

Surface water from the Ponded Water Area was not collected prior to the EPA removal action, so a comparison between pre- and post-remediation samples cannot be made. Samples from this surface water body, however, were collected in 2003 and 2008 (Tables 3-1 and 5-1); these results will be evaluated to document changes, if any, between the two post-remediation samples.

Acetone was the only volatile organic compound detected in the 2003 sample, while acetone, 2-butanone and carbon disulfide were detected in the 2008 sample (Table 5-2). None of the concentrations, however, exceeded the NYSDEC surface water standards or guidance values. It is important to note that these contaminants were also detected in nearby micro-well MW-3, and upgradient micro-wells MW-4 and MW-5 (Figure 3-2; Table 4-3). The concentrations of acetone and 2-butanone in micro-well MW-3 exceeded the NYSDEC groundwater guidance values for these contaminants (Table 4-3). Acetone and carbon disulfide were also detected in the surface water sample collected in 2008 from the Central Drainage Ditch and Low pH Trough (Table 4-2). The presence of acetone, 2-butanone and carbon disulfide in surface water and groundwater, therefore, suggest an on-site source for these contaminants. Unfortunately, none of the soil and fill samples collected from the Site were analyzed for volatile organic compounds (Table 5-1), so the location of this source is unknown.

No pesticides were detected in the 2003 surface water sample collected from the Ponded Water Area, while six pesticides (chlordane, DDD, DDE, DDT, dieldrin and heptachlor) were detected in the 2008 sample (Table 5-2). The concentration of dieldrin exceeded the NYSDEC surface water guidance value for this contaminant. These results suggest an increasing trend.

Eighteen metals were detected in the post-remediation surface water samples collected from the Ponded Water Area (Table 5-2). Of these compounds, seven were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values, with two of these metals being EPA priority

pollutant metals. The priority pollutant metals exceeding the surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: beryllium (2 samples; 6.0 µg/L) and nickel (2 samples; 144 µg/L). The concentrations of these metals were similar for both sampling events (Table 5-2). Other metals that significantly exceeded the NYSDEC surface water standards or guidance values (with the number of exceedances and maximum concentrations) included: aluminum (2 samples; 57,400 µg/L), cobalt (2 samples; 92.3 µg/L), iron (2 samples; 117,000 µg/L), magnesium (2 samples; 68,200 µg/L) and manganese (2 samples; 14,100 µg/L). The concentrations of these metals were also similar for both sampling events (Table 5-2). Calcium was also detected at significant concentrations (335,000 and 281,000 µg/L) in both post-remediation samples (Table 5-2). There is no NYSDEC surface water standard or guidance value for this contaminant.

Sulfate was detected in both post-remediation surface water samples collected from the Ponded Water Area at concentrations well above the NYSDEC surface water standard (Table 5-2). The concentration of sulfate in the 2008 sample increased substantially (35%) from the concentration detected in 2003 (Table 5-2). Sulfide was not detected in the 2003 sample, but was detected in the 2008 sample at a concentration that significantly exceeded the NYSDEC surface water standard (Table 5-2). These results suggest an increasing trend.

Surface water samples collected from the Ponded Water Area in 2003 and 2008 suggest that the EPA removal action was not effective in addressing contamination in this surface water body (Table 5-2). The concentrations of volatile organic compounds, pesticides, sulfate and sulfide increased between 2003 and 2008, while the concentrations of metals were similar for both sampling events (Table 5-2). The lack of data from the Ponded Water Area prior to the EPA removal action, however, makes it impossible to determine if any improvement to this surface water body was achieved by the EPA activities.

5.2 pH Measurements

5.2.1 *Spill Area*

Prior to the EPA removal action, the pH of surface water in the former Spill Area (pH-3; Figure 5-1) was only measured once, with a pH value of 3.62 standard pH units (Table 5-3). In 2003, following the EPA removal action, the pH of surface water in the former Spill Area (pH-1 and pH-2; Figure 3-3) was relatively neutral, with pH values ranging from 6.92 to 7.86 standard pH units (Table 5-3). Similar pH values were measured in 2008, ranging from 6.77 to 7.21 standard pH units. The pH results from 2003 and 2008 indicate that the EPA removal action was effective in ameliorating the low pH surface water conditions in the Spill

Area at the Former Barker Chemical Site.

5.2.2 *Central Drainage Ditch and Low pH Trough*

Prior to the EPA removal action, the lowest pH values measured at the Former Barker Chemical Site were associated with the Central Drainage Ditch and Low pH Trough (pH-1, pH-2, pH-13, pH-15 and pH-16; Figure 5-1), with values ranging from 1.71 to 2.47 standard pH units (Table 5-3). Four of five values obtained from this area were below the 2.0 regulatory limit for a corrosive hazardous waste.

In 2003, following the EPA removal action, the pH of surface water in the Central Drainage Ditch and Low pH Trough (pH-3, pH-4 and pH-13) varied considerably, with values ranging from 3.10 to 7.39 standard pH units (Table 5-3). The values, however, remained relatively constant at each location (Table 5-3). The lowest pH value (3.10 standard pH units) was associated with location pH-13 in the former Low pH Trough (Figure 3-3). This value was only slightly higher than the pH values measured in the Central Drainage Ditch and Low pH Trough prior to the EPA removal action (1.71 to 2.47 standard pH units).

In 2008, the pH of surface water in the Central Drainage Ditch and Low pH Trough (pH-3, pH-4, pH-13 and pH-15) also varied considerably, with pH values ranging from 3.04 to 6.55 standard pH units. The values remained relatively constant at each location, and generally increased with distance from the Filled Lagoon and former Lime Waste Area (Table 5-3). The lowest pH values were associated with location pH-15 (3.04 to 3.21 standard pH units), which was located in the Central Drainage Ditch south of the Filled Lagoon and former Lime Waste Area. These values were only slightly higher than the pH values measured in the Central Drainage Ditch and Low pH Trough prior to the EPA removal action, and were similar to the lowest pH value measured in this surface water body in 2003.

The pH results from 2003 and 2008 indicate that the EPA removal action was not effective in ameliorating the low pH surface water conditions in the Central Drainage Ditch and Low pH Trough (Table 5-3). As stated in the EPA Removal Site Evaluation report, "*the acidic surface water in the . . . Trough are due to the formation of sulfuric acid from the very high concentrations of sulfur throughout much of the site*" (Lockheed Martin, 2000). The low pH surface water in the Central Drainage Ditch and Low pH Trough suggests that the formation of sulfuric acid is still taking place. Sulfuric acid formation likely accounted for the stressed and dead vegetation observed in 2003 at the former Lime Waste Area near the Central Drainage Ditch (Figure 4-1).

5.2.3 *Ponded Water Area*

Prior to the EPA removal action, the pH of surface water in the Ponded Water Area (pH-11; Figure 5-1) was only measured once, with a pH value of 2.82 standard pH units (Table 5-3). In 2003, following the EPA removal action, the pH of surface water in the Ponded Water Area (pH-5) remained extremely acidic, with values ranging from 3.24 to 4.20 standard pH units (Table 5-3). In 2008, some of the lowest pH values measured at the Site were associated with this surface water body (pH-5 and pH-14), ranging from 3.15 to 3.75 standard pH units (Table 5-3). These values were only slightly higher than the pH values measured prior to the EPA removal action (2.82 standard pH units), and were similar to the pH values measured in the Ponded Water Area in 2003. The post-remediation pH results indicate, therefore, that the EPA removal action was not effective in ameliorating the low pH surface water conditions in the Ponded Water Area at the Former Barker Chemical Site.

5.2.4 *Eastern Boundary Ditch*

Prior to the EPA removal action, pH of surface water in the Eastern Boundary Ditch (pH-F and pH-10; Figure 5-1) was relatively neutral, with pH values of 6.74 and 6.80 standard pH units recorded (Table 5-3). In 2003, following the EPA removal action, the pH of surface water in this ditch (pH-6 and pH-12; Figure 3-3) varied slightly, with pH values ranging from 6.67 to 8.08 standard pH units (Table 5-3). The highest pH values were observed in June and July prior to the ditch going dry (Table 5-3). In 2008, the pH of surface water in the Eastern Boundary Ditch (pH-6 and pH-12) remained relatively neutral, with pH values ranging from 6.74 to 7.37 standard pH units (Table 5-3).

The pre- and post-remediation pH results from the Eastern Boundary Ditch indicate that low pH surface water from other areas of the Site is not adversely impacting the pH of this ditch. It is important to note, however, that during the Spring of 2008 water was observed flowing from the Ponded Water Area at the pH-5 location (Figure 3-3) and entering the Eastern Boundary Ditch.

5.2.5 *North Lagoon*

Prior to the EPA removal action, the pH of surface water in the North Lagoon (pH-E, pH-H, pH-6, pH-7 and pH-9; Figure 5-1) was extremely acidic, with pH values ranging from 2.20 to 2.59 standard pH units (Table 5-3). In 2003, following the EPA removal action, the pH of surface water in the North Lagoon (pH-7, pH-8, pH-9 and pH-11; Figure 3-3) varied considerably (Figure 5-2), with pH values ranging from 6.88 to 10.46 standard pH units (Table 5-3). The highest values (9.23 to 10.46 standard pH units) were measured during May, June and July 2003, suggesting that the weathered lime and Portland cement utilized

by EPA to stabilize sludge in the South Lagoon was being leached into the North Lagoon during precipitation events. By 2008 this leaching process appeared to be complete as relatively neutral pH values (6.90 to 7.49 standard pH units) were documented in the North Lagoon (Table 5-3). The 2008 pH results indicate, therefore, that the EPA removal action was effective in ameliorating the low pH surface water conditions in the North Lagoon at the Former Barker Chemical Site.

5.2.6 *Chip Area*

Prior to the EPA removal action, the pH of surface water in the Chip Area was not measured. In 2003, following the EPA removal action, the pH of surface water in this area (pH-10; Figure 3-3) was relatively neutral, with pH values ranging from 7.13 to 7.70 standard pH units (Table 5-3). In 2008, the pH of surface water in the Chip Area (pH-10; Figure 3-3) varied slightly, with pH values of 5.92 and 7.81 standard pH units recorded (Table 5-3). The reason for the lower pH in April 2008 is unknown as the nearest surface water body to the Chip Area, the North Lagoon, had relatively neutral pH values in 2008 (6.90 to 7.49 standard pH units; Table 5-3). Overall, however, the post-remediation pH results from the Chip Area indicate that low pH surface water from other areas of the Site is not adversely impacting the pH of this surface water body.

6.0 COMPARISON OF SITE INVESTIGATION RESULTS TO PART 375 SCOs

6.1 General

Analytical results from soil, waste and sludge samples collected during the 2003 Site Investigation were compared to the soil cleanup objectives in the NYSDEC publication entitled "*Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels*", Division of Environmental Remediation, October 1995. In December 2006, the NYSDEC promulgated new soil cleanup objectives (*6NYCRR Part 375: Environmental Remediation Programs*) for use in its remedial programs. This regulation contains soil cleanup objectives for (1) unrestricted use, (2) for the protection of public health under different use scenarios (e.g., residential, commercial or industrial), (3) for the protection of groundwater, and (4) for the protection of ecological resources. Because the Part 375 soil cleanup objectives supercede the TAGM 4046 soil cleanup objectives, Tables 7-3 thru 7-5 of the 2003 Site Investigation report have been revised to include the Part 375 soil cleanup objectives, and are presented in this report as Tables 6-1 thru 6-3. A detailed evaluation of these results in comparison to the Part 375 soil cleanup objectives are included in Sections 6.2 thru 6.4 of this report.

Analytical results are evaluated against the residential and commercial soil cleanup objectives of Table 375-6.8(b) of the Part 375 regulations. For contaminants not included in Part 375, the soil cleanup objectives identified in TAGM 4046 were retained. When utilized, the soil cleanup objectives for individual semivolatile organic compounds were taken directly from Table 2 of the TAGM, while the soil cleanup objective for pesticides and herbicides were taken directly from Table 3. For metals, the soil cleanup objectives from Table 4 of the TAGM were utilized.

Analytical results from sediment samples collected during the 2003 Site Investigation were compared to sediment criteria developed from the NYSDEC publication entitled "*Technical Guidance for Screening Contaminated Sediments*", Division of Fish and Wildlife, January 1999. This document contains guidance values for several levels of protection including: (1) human health bioaccumulation, (2) wildlife bioaccumulation, (3) acute toxicity to benthic aquatic life, and (4) chronic toxicity to benthic aquatic life. These guidance values are derived using the equilibrium partitioning methodology and are calculated as a function of the organic carbon content of the sediment being evaluated. The sediment analytical results evaluated during the Site Investigation, however, did not include total organic carbon. In addition, sediment from the nearby Golden Hill Creek has not been collected for analysis. As a result, the mean total organic carbon content (3.14%) that was determined during the Remedial Investigation of the Eighteenmile Creek Corridor Site in the City of Lockport, Niagara County, New York (NYSDEC, 2006) was utilized. This site

is located approximately 12.5 miles southwest of the Former Barker Chemical Site.

For screening purposes, the sediment criteria to protect benthic aquatic life from chronic toxicity were utilized. When these criteria were not available for a particular contaminant, the Part 375 soil cleanup objectives for the protection of ecological resources were used. For metals, the sediment criteria (lowest effect levels) were taken directly from Table 2 of the *Technical Guidance for Screening Contaminated Sediments*. Due to the inclusion of the Part 375 soil cleanup objectives, Table 7-5 of the 2003 Site Investigation report has been revised to include these soil cleanup objectives, and is presented in this report as Table 6-4. A detailed evaluation of these results in comparison to the sediment criteria and the Part 375 soil cleanup objectives for the protection of ecological resources are included in Section 6.5 of this report.

6.2 Lime Waste

The analytical results from seven lime waste samples collected from the Former Barker Chemical Site were compiled and evaluated during the Site Investigation. The locations of these samples are shown on Figure 6-1, and include one sample collected by the NYSDEC in December 1999, one sample collected by the EPA in June 2000, and five samples collected by the NYSDEC in May 2003. All samples were collected from the Filled Lagoon (Figure 6-1). Analyses varied among the samples (Table 5-1), and included TCL semivolatile organic compounds, TCL pesticides, TCL herbicides, TAL metals, sulfur, boron and leachable pH. Detailed information concerning sample collection and analysis is given in Table 5-1.

The results of the organic analyses reveal that six semivolatile organic compounds were detected in the lime waste samples collected from the Filled Lagoon (Table 6-1). None of the concentrations, however, exceeded the NYSDEC Part 375 residential soil cleanup objectives. Pesticides and herbicides, including BHC, DDD, DDE, DDT, endrin ketone, methoxychlor, 2,4-D, silvex and 2,4,5-T, were also detected in the lime waste samples (Table 6-1). Only the concentrations of alpha-BHC (280.0 µg/kg), DDD (5,400 µg/kg) and DDT (21,000 µg/kg) exceeded the NYSDEC Part 375 residential soil cleanup objectives. These exceedances were documented in the sample collected from boring SB-13 (Figure 6-1).

Fourteen metals were detected in the lime waste samples collected from the Filled Lagoon (Table 6-1). Of these compounds, only two were detected at concentrations that exceeded the NYSDEC Part 375 residential soil cleanup objectives, with arsenic being the only EPA priority pollutant metal. The concentration of arsenic in sample W-2 exceeded both the Part 375 residential and commercial soil cleanup objectives for this contaminant (Table 6-1).

The lime waste samples collected from the Filled Lagoon contained significant concentrations of sulfur, ranging from 10,000 to 352,000 mg/kg (Table 6-1). Boron was also detected in these samples at concentrations ranging from 0.44 to 10.4 mg/kg (Table 6-1). There are no soil cleanup objectives for these contaminants. Leachable pH was measured at levels ranging from 3.34 to 7.54 standard pH units (Table 6-1).

6.3 Lagoon Sludge

The analytical results for eight lagoon sludge samples collected from the Former Barker Chemical Site were compiled and evaluated during the Site Investigation. Three of these samples, however, were collected from the South Lagoon prior to the EPA removal action. As a result, these samples have been removed from Table 7-4 of the Site Investigation report and will not be evaluated in the Supplemental Site Investigation report. The locations of the samples evaluated in this report are shown on Figure 6-2, and include one sludge samples collected by the EPA in June 2000 and four sludge samples collected by the NYSDEC in May 2003. Analyses varied among the samples (Table 5-1), and included TCL semivolatile organic compounds, TCL pesticides, TCL herbicides, TAL metals, sulfur, boron and leachable pH. Detailed information concerning sample collection and analysis is given in Table 5-1.

The results of the organic analyses reveal that naphthalene was the only semivolatile organic compound detected in the sludge samples collected from the Former Barker Chemical Site (Table 6-2). The concentration of naphthalene (10.0 µg/kg), however, did not exceed the NYSDEC Part 375 residential soil cleanup objective for this contaminant. Pesticides and herbicides, including DDD, DDE, 2,4-D, silvex and 2,4,5-T, were also detected in the sludge samples (Table 6-2). None of the concentrations, however, exceeded the NYSDEC Part 375 residential soil cleanup objectives.

Thirteen metals were detected in the sludge samples collected from the Former Barker Chemical Site (Table 6-2). None of these compounds, however, were detected at concentrations that exceeded the NYSDEC Part 375 residential soil cleanup objectives.

The lagoon sludge samples collected from the Former Barker Chemical Site contained significant concentrations of sulfur, ranging from 7,700 to 551,000 mg/kg (Table 6-2). Boron was also detected in these samples at concentrations ranging from 2.5 to 14.6 mg/kg (Table 6-2). There are no soil cleanup objectives for these contaminants. Leachable pH was measured at 9.65 standard pH units in the only sample analyzed for leachable pH (Table 6-2).

6.4 Native Soil

The analytical results for three native soil samples collected from under the Filled Lagoon were compiled and evaluated during the Site Investigation. The locations of these samples are shown on Figure 6-3, and include two samples collected by the EPA in June 2000 and one sample collected by the NYSDEC in May 2003. These samples were collected to evaluate the potential for contaminants in the lagoon to migrate into native soils. Analyses varied among the samples (Table 5-1), and included TCL semivolatile organic compounds, TCL pesticides, TCL herbicides, TAL metals, sulfur, boron and total petroleum hydrocarbons (TPH). Detailed information concerning sample collection and analysis is given in Table 5-1.

The results of the organic analyses reveal that fifteen semivolatile organic compounds were detected in the native soil underlying the Filled Lagoon (Table 6-3). None of the concentrations, however, exceeded the NYSDEC Part 375 residential soil cleanup objectives. Pesticides were not detected in the one sample analyzed for these contaminants (Table 6-3). Herbicides, including 2,4-D, silvex and 2,4,5-T, were detected in one sample, but at concentrations that did not exceed the NYSDEC Part 375 residential soil cleanup objectives (Table 6-3).

Thirteen metals were detected in the native soil samples collected from under the Filled Lagoon (Table 6-3). Only iron was detected at concentrations that exceeded the NYSDEC TAGM 4046 soil cleanup objectives; there are no Part 375 soil cleanup objectives for this contaminant.

The native soil samples collected from under the Filled Lagoon contained significant concentrations of sulfur, ranging from 2,200 to 198,000 mg/kg (Table 6-3). Boron was also detected in these samples at concentrations ranging from 3.7 to 25.7 mg/kg (Table 6-3). There are no soil cleanup objectives for these contaminants. TPH was detected at a concentration of 131.0 mg/kg in the only sample tested (Table 6-3). There is no soil cleanup objective for total petroleum hydrocarbons.

6.5 Sediment

The analytical results for ten sediment samples collected from the Former Barker Chemical Site were compiled and evaluated during the Site Investigation. The locations of these samples are shown on Figure 6-4, and include four sediment samples collected by the EPA in June and December 2000, and six sediment samples collected by the NYSDEC in September 2003. Analyses varied among the samples (Table 5-1), and included TCL volatile organic compounds, TCL semivolatile organic compounds, TCL pesticides, TCL PCBs, TCL herbicides, TAL metals, sulfur, boron and leachable pH. Detailed information concerning sample

collection and analysis is given in Table 5-1.

The results of the organic analyses reveal that volatile organic compounds were not detected in the one sample analyzed for these contaminants. Twelve semivolatile organic compounds, however, were detected in the sediment samples collected from the Former Barker Chemical Site (Table 6-4). None of these compounds were detected at concentrations that exceeded the NYSDEC sediment criteria. There are no sediment criteria for six of the semivolatile organic compounds detected (Table 6-4).

The sediment samples collected from the Former Barker Chemical Site were also analyzed for PCBs, pesticides and herbicides (Table 5-1). PCBs were not detected in the one sample analyzed for these contaminants (Table 6-4). Thirteen pesticides and herbicides, however, were detected in the sediment samples, with the concentrations of delta-BHC, chlordane, DDD, DDE, DDT, dieldrin, endosulfan II and methoxychlor exceeding the NYSDEC sediment criteria (Table 6-4). There are no sediment criteria for five of the pesticides and herbicides detected (Table 6-4).

Fourteen metals were detected in the sediment samples collected from the Former Barker Chemical Site (Table 6-4). Of these compounds, ten were detected at concentrations that exceeded the NYSDEC sediment criteria, with eight of these metals being EPA priority pollutant metals. The priority pollutant metals exceeding the sediment criteria (with the number of exceedances and maximum concentrations) included: arsenic (9 samples; 367 mg/kg), cadmium (1 sample; 1.1 mg/kg), chromium (1 sample; 69.6 mg/kg), copper (9 samples; 438 mg/kg), lead (6 samples; 314 mg/kg), mercury (4 samples; 0.51 mg/kg), nickel (2 samples; 20.1 mg/kg) and zinc (1 sample; 291 mg/kg).

The sediment samples collected from the Former Barker Chemical Site contained relatively high concentrations of sulfur, ranging from 670 to 10,100 mg/kg (Table 6-4). Boron was also detected in these samples at concentrations ranging from 1.9 to 52.6 mg/kg (Table 6-4). There are no sediment criteria for these contaminants. Leachable pH was measured at levels ranging from 3.80 to 7.14 standard pH units (Table 6-4).

7.0 DISCUSSION AND RECOMMENDATION

7.1 Discussion

The principle objective of the Supplemental Site Investigation was to obtain additional data from the Former Barker Chemical Site to make a proper decision regarding Site classification. A secondary objective was to further evaluate the EPA removal action to ensure that it continues to adequately protect public health. This section discusses the results of the field activities, presented in Sections 4.0, 5.0 and 6.0, as they relate to the stated objectives.

The only waste remaining at the Former Barker Chemical Site is associated with the Filled and South lagoons, although the waste in the South Lagoon was stabilized with Portland cement and weathered lime during the EPA removal action. A soil boring completed in the South Lagoon during the 2003 Site Investigation revealed, however, that the stabilization effort was incomplete; the sludge contained crystallized sulfur and lime, and layers of gray-white powder believed to be Portland cement. The high pH surface water documented in the North Lagoon (9.23 to 10.46 standard pH units) during May, June and July 2003 suggested that the weathered lime and Portland cement was being leached into the North Lagoon. This leaching process appears to be complete as relatively neutral pH values (6.90 to 7.49 standard pH units) were documented in the North Lagoon during 2008 (Table 5-3).

The waste samples collected from the Filled and South lagoons in 2003 contained significant concentrations of sulfur, ranging from 7,700 to 551,000 mg/kg in the Filled Lagoon (Tables 6-1 and 6-2), and 22,000 mg/kg in the South Lagoon (Table 6-2). The EPA Removal Site Evaluation report concluded that "*the acidic surface water in the North and South lagoons and the Trough are due to the formation of sulfuric acid from the very high concentrations of sulfur throughout much of the site*" (Lockheed Martin, 2000). The low pH surface water in the Central Drainage Ditch and Low pH Trough (3.04 to 3.21) and Ponded Water Area (3.15 to 4.20) that was documented at the Site in 2003 and 2008 (Table 5-3) suggests that the formation of sulfuric acid is still taking place. Sulfuric acid formation likely accounts for the stressed and dead vegetation observed in 2003 at the former Lime Waste Area near the Central Drainage Ditch (Figure 4-1). Acidic water also "*causes a cascade of effects that harm or kill individual fish, reduce fish population numbers, completely eliminate fish species from a water body, and decrease biodiversity. As acid rain flows through soils in a watershed, aluminum is released from soils into the lakes and streams located in that watershed. So, as pH in a lake or stream decreases, aluminum levels increase. Both low pH and increased aluminum levels are directly toxic to fish. In addition, low pH and increased aluminum levels cause chronic stress that may not kill individual fish, but leads to lower body weight and smaller size and makes fish less*

able to compete for food and habitat" (EPA, 2007). The pre- and post-remediation surface water samples collected from the Former Barker Chemical Site (Table 5-2) indicate that elevated concentrations of aluminum are associated with the water bodies having the lowest pH. These toxic conditions (low pH, high aluminum concentration) likely account for the lack of observable aquatic organisms in the on-Site surface water bodies.

Surface water and groundwater at the Former Barker Chemical Site also contain significant concentrations of calcium (Tables 4-2 and 4-3), which is likely related to the lime waste in the Filled Lagoon, and the weathered lime and Portland cement utilized by EPA to stabilize the sludge in the South Lagoon. The significant concentrations of calcium and magnesium in the groundwater samples (Table 4-3) apparently have the buffering capacity to neutralized groundwater throughout the Site as the pH of groundwater was relatively neutral (6.53 to 7.85 standard pH units). The concentrations of these metals are substantially lower in the surface water samples (Table 4-2), and appear to be ineffective in neutralizing the pH of surface water in the Central Drainage Ditch and Low pH Trough, and the Ponded Water Area.

Surface water samples collected from the Former Barker Chemical Site are contaminated primarily with metals, sulfate and sulfide, although pentachlorophenol, phenol, alpha-BHC, beta-BHC, delta-BHC, gamma-BHC, dieldrin, endosulfan II and heptachlor were detected at concentrations in the Central Drainage Ditch and Low pH Trough that exceeded the NYSDEC surface water standards or guidance values (Table 4-2). A comparison of results from post-remediation samples collected in 2003 and 2008 suggests: (1) an increasing trend for pesticides, metals and sulfate in the North Lagoon; (2) an increasing trend for pesticides, sulfate and sulfide in the Central Drainage Ditch and Low pH Trough; (3) a decreasing trend for metals in the Central Drainage Ditch and Low pH Trough; and (4) an increasing trend for pesticides, sulfate and sulfide in the Ponded Water Area.

Groundwater samples collected from the Former Barker Chemical Site are contaminated primarily with metals, sulfate and sulfide, although acetone (1 sample), 2-butanone (1 sample), chlorobenzene (1 sample), alpha-BHC (1 sample) and dieldrin (2 samples) were detected at concentrations that exceeded the NYSDEC groundwater standards (Table 4-3). Sulfate and sulfide were detected at significant concentrations, ranging from 32,100 to 2,570,000 µg/L and 1,200 to 2,470,000 µg/L, respectively (Table 4-3).

7.2 Recommendation

Prior to the EPA removal action, corrosive hazardous waste (D002) was likely present at the Former

Barker Chemical Site as suggested by the presence of low pH (less than 2.0 standard pH units) surface water (Table 5-3). Although slightly corrosive fill (Table 6-1) and sediment (Table 6-4) remain on site, no hazardous waste was identified during the Site Investigation. Unfortunately, the EPA removal action did not completely remediate the Site. Extensive groundwater and surface water contamination by metals, sulfate and sulfide was documented during the Site Investigation (Tables 4-3 and 5-2, respectively). In addition, changes in surface water concentrations between 2003 and 2008 suggest an increasing trend for most contaminants. Surface water in the Central Drainage Ditch and Low pH Trough, and the Ponded Water Area has pH values in the 3 to 4 standard pH unit range (Table 5-3), suggesting that the formation of sulfuric acid is still taking place as precipitation percolates through the high sulfur waste in the Filled and South lagoons (Table 6-1 and 6-2).

Due to the absence of hazardous waste at the Former Barker Chemical Site the Site does not qualify for inclusion in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in New York State. Because waste material is present at this Site, along with contaminated groundwater and surface water, and low pH surface water, several precautions are required if this property is redeveloped. Redevelopment activities should ideally be restricted to that portion of the Site between West Somerset Road and the Central Drainage Ditch and Low pH Trough (Figure 1-2). Contamination in this area was remediated fully by EPA. The Soils Management Plan in Appendix C, however, should be utilized if waste , stained soil, or other signs of contamination are encountered.

It is recommended that no subsurface activities take place in the Filled and South lagoons as waste in these lagoons is producing the low pH surface water documented at the Site. Disturbance of this waste could make pH conditions worse. If excavation in these lagoons is necessary, excavated materials must be transported off-site for proper disposal as discussed in the Soils Management Plan (Appendix C). Methods should also be put in place to avoid direct contact with low pH and contaminated surface water at the Site. In addition, groundwater underlying the Site should not be utilized as a source of potable or process water, without necessary water quality treatment as determined by the Niagara County Health Department.

It is important to note that the Former Barker Chemical property north of the Chip Area (Figure 1-2) was not inspected nor investigated during the Site Investigation. As a result, the NYSDEC can draw no conclusions about possible environmental issues associated with this portion of the property.

8.0 REFERENCES

EPA, 2007, Effects of Acid Rain - Surface Waters and Aquatic Animals: United States Environmental Protection Agency website at http://www.epa.gov/acidrain/effects/surface_water.html.

Lockheed Martin, 2000, Removal Site Evaluation Report: Lockheed Martin Technology Services Group, Edison, New Jersey.

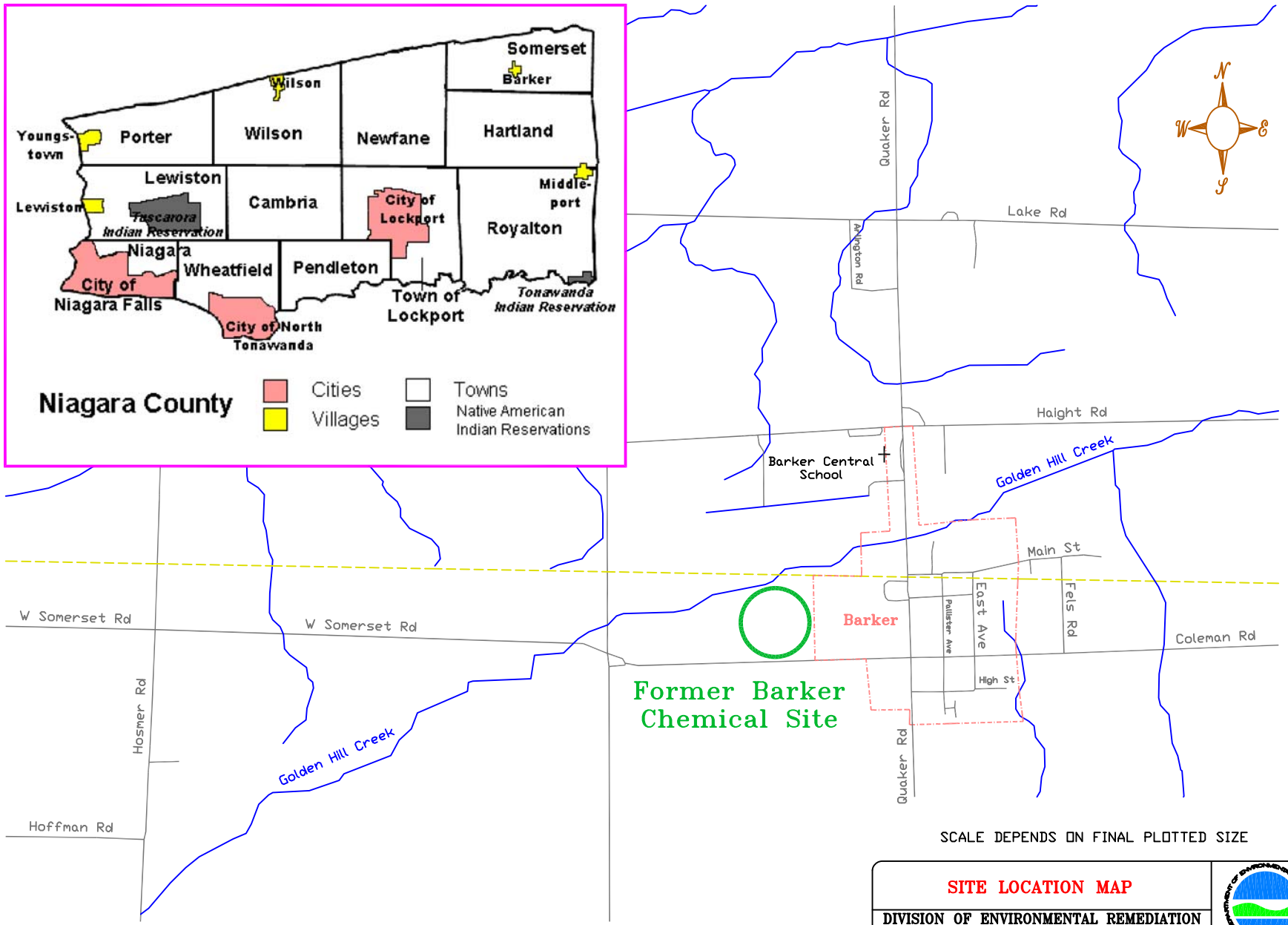
NYSDEC, 1995, Determination of Soil Cleanup Objectives and Cleanup Levels: New York State Department of Environmental Conservation, Division of Environmental Remediation Technical and Administrative Guidance Memorandum # HWR-95-4046, Albany, New York.

NYSDEC, 1995, Identification and Listing of Hazardous Wastes, New York State Codes, Rules and Regulations Title 6, Part 371: New York State Department of Environmental Conservation, Division of Hazardous Substances Regulation, Albany, New York.

NYSDEC, 1998, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations: New York State Department of Environmental Conservation, Division of Water Technical and Operational Guidance Series (1.1.1), Albany, New York.

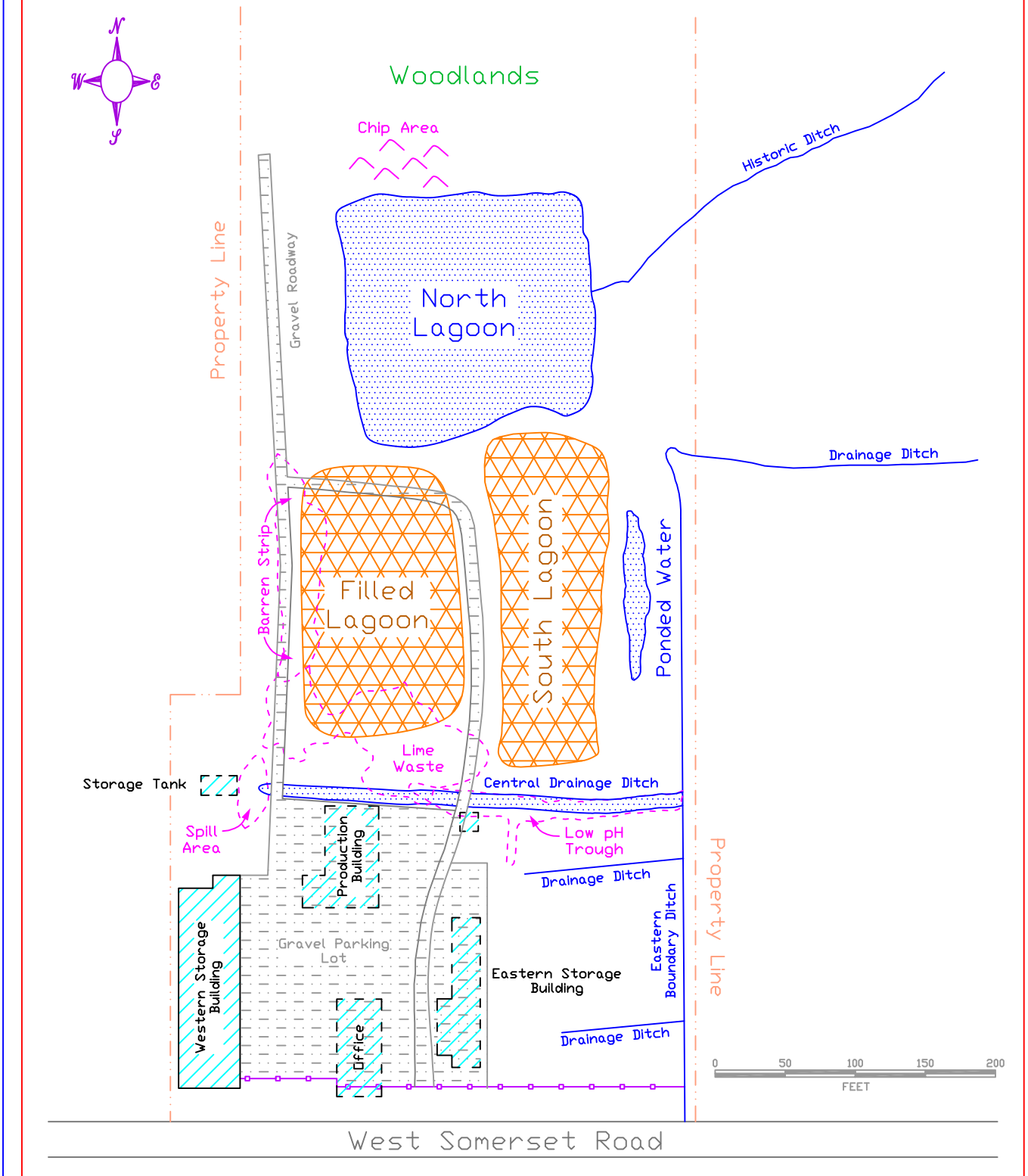
NYSDEC, 1999, Technical Guidance for Screening Contaminated Sediments: New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Albany, New York.

NYSDEC, 2007, Site Investigation Report of the Former Barker Chemical Site, Village of Barker, Niagara County, New York: New York State Department of Environmental Conservation, Division of Environmental Remediation, Buffalo, New York.



SCALE DEPENDS ON FINAL PLOTTED SIZE

SITE LOCATION MAP	
DIVISION OF ENVIRONMENTAL REMEDIATION	
DATE: 08/14/03	DRAWING: Location Map.dwg
SITE NAME: BARKER CHEMICAL SITE	FIGURE 1-1



LEGEND:

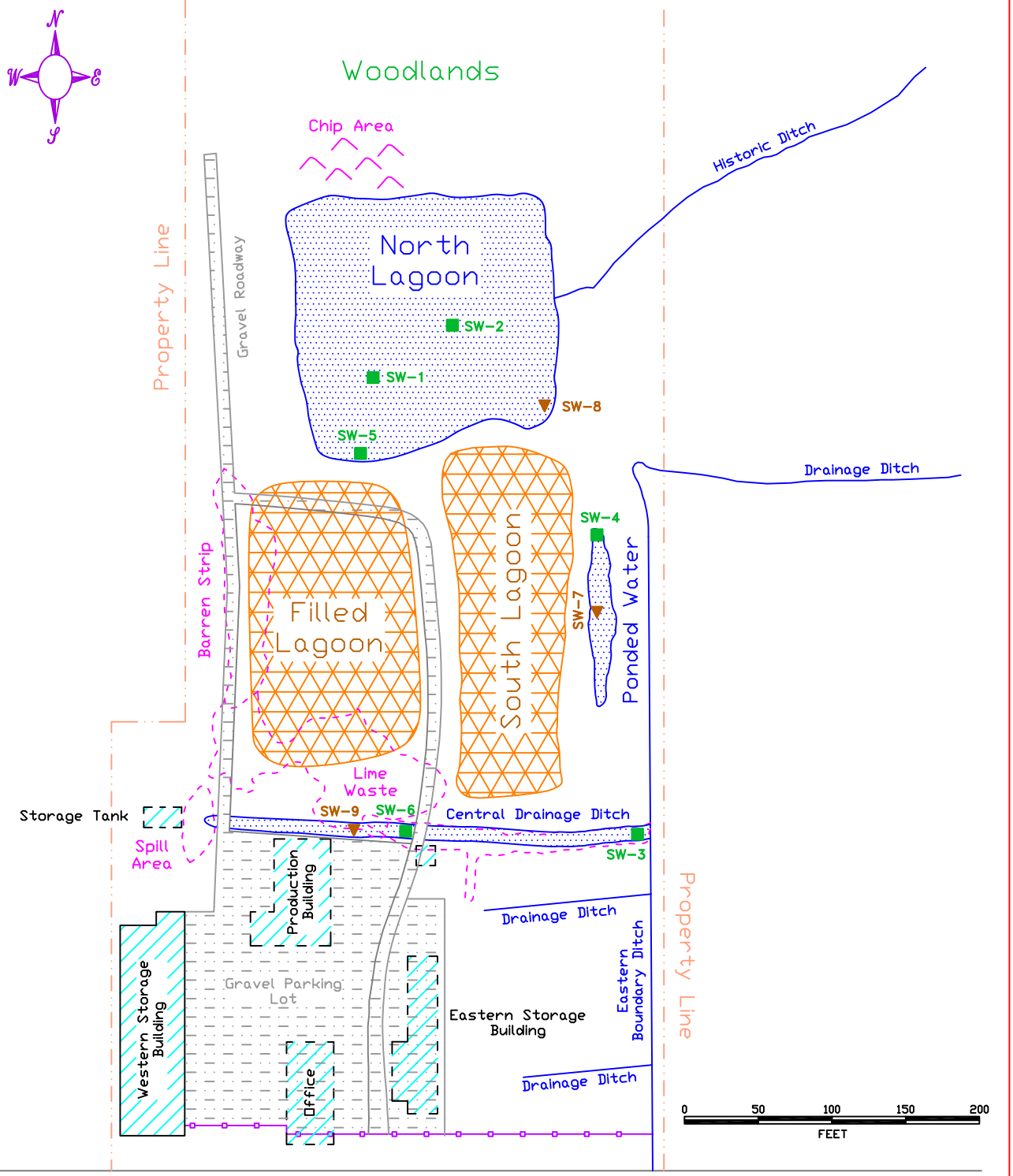
PROPERTY LINE

BARKER CHEMICAL SITE MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 06/06/03 DRAWING: Sections 1 & 4.dwg

SITE: BARKER CHEMICAL SITE FIGURE 1-2



LEGEND:

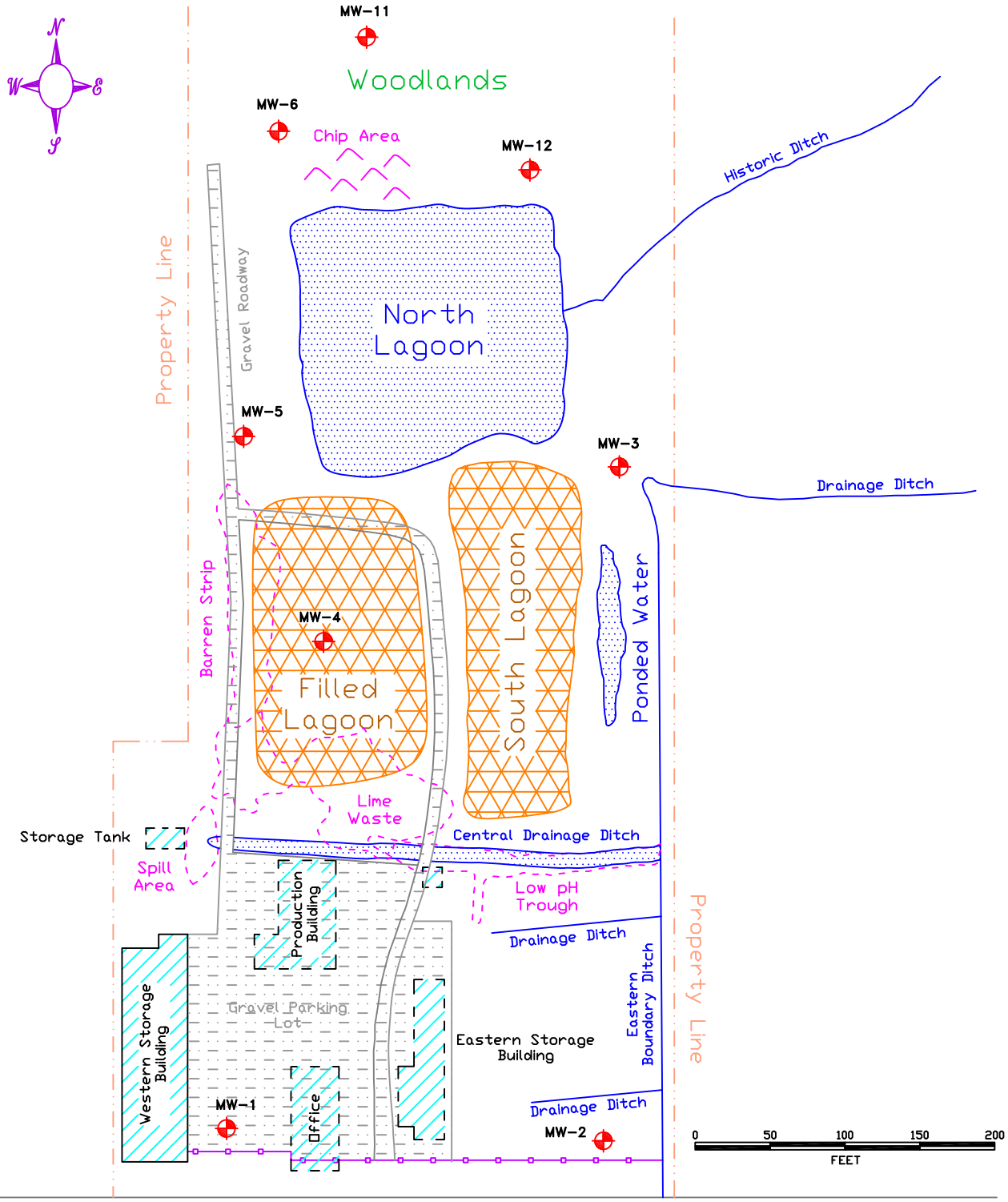
- Historical Surface Water Sample (NYSDEC & EPA)
- 2008 Surface Water Sample (NYSDEC)

SURFACE WATER SAMPLE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/05/08 DRAWING: Section 3.dwg

SITE: BARKER CHEMICAL SITE FIGURE 3-1



LEGEND:

MONITORING WELL LOCATION

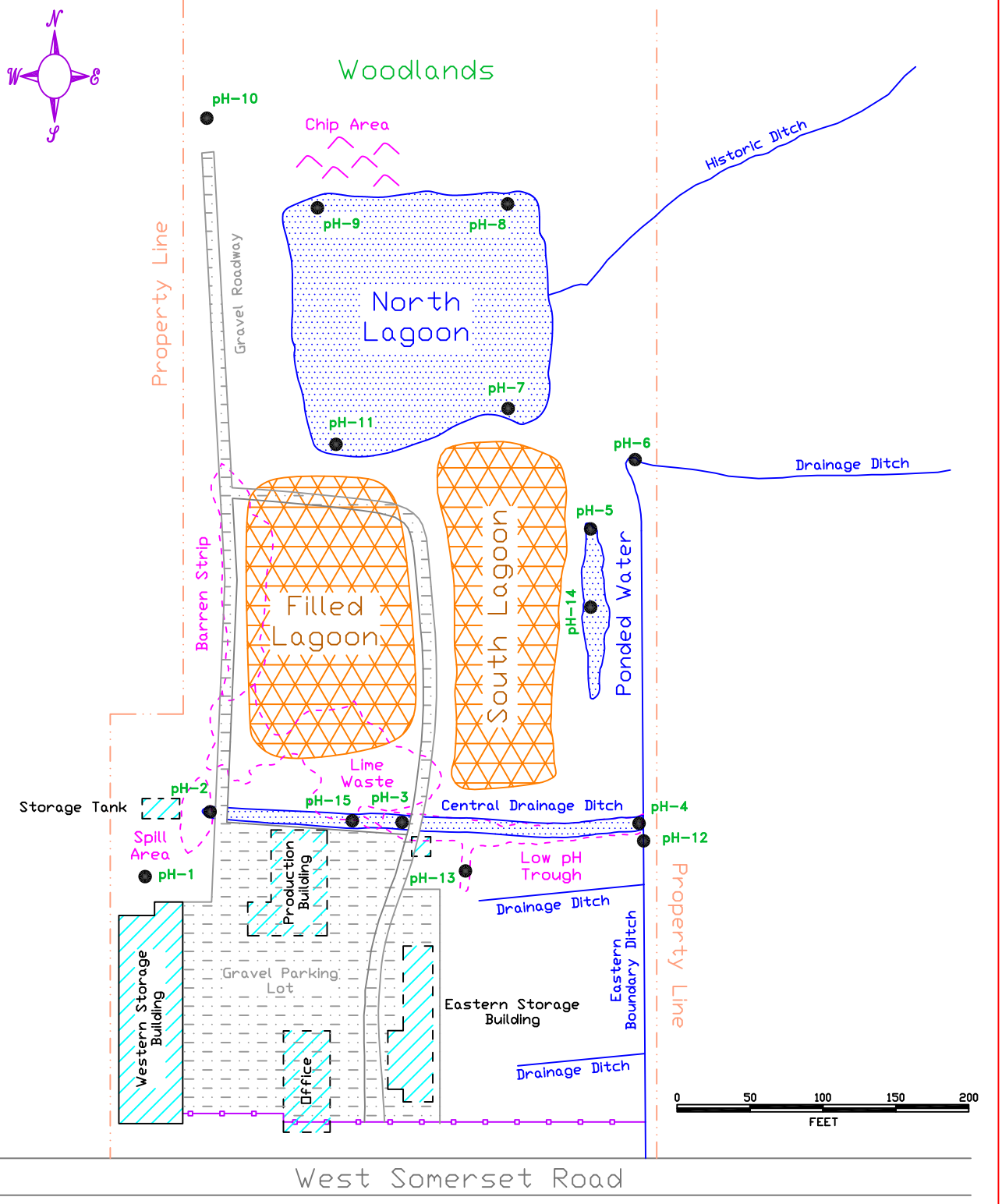
MICRO-WELL LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/05/08 DRAWING: Section 3.dwg

SITE: BARKER CHEMICAL SITE

FIGURE 3-2



LEGEND:

- pH MEASUREMENT LOCATION

pH MEASUREMENT LOCATION MAP	
DIVISION OF ENVIRONMENTAL REMEDIATION	
DATE: 05/05/08	DRAWING: Section 3.dwg
SITE: BARKER CHEMICAL SITE	FIGURE 3-3

Figure 4-1. Photograph showing the stressed and dead vegetation in the former Lime Waste Area near the Central Drainage Ditch. Photograph taken by Glenn May on May 22, 2003.

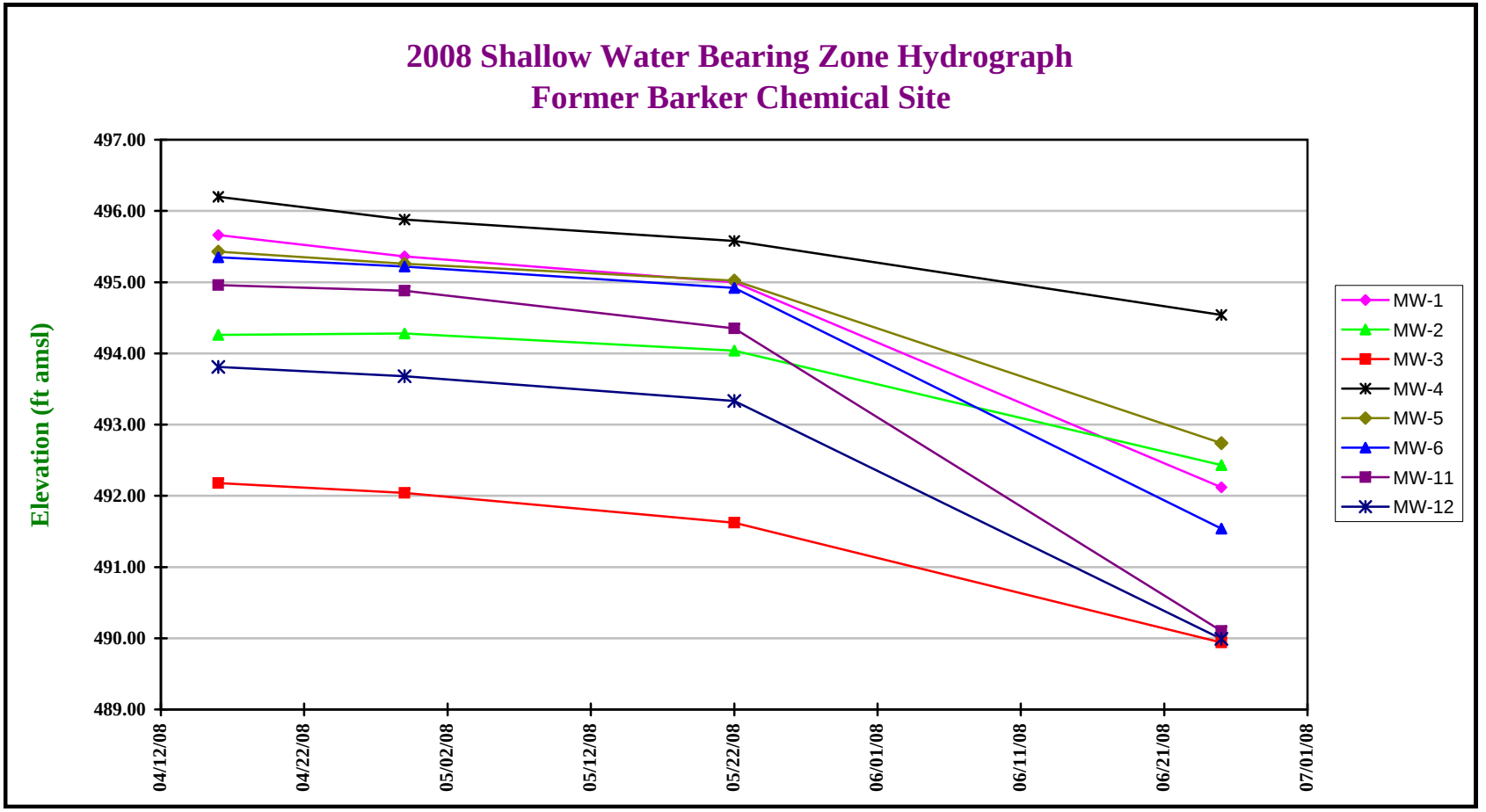


Figure 4-2. 2008 Shallow water bearing zone hydrograph for the micro-wells installed at the Former Barker Chemical Site. Lines are dashed where the wells are dry. Well locations are shown on Figure 3-2.

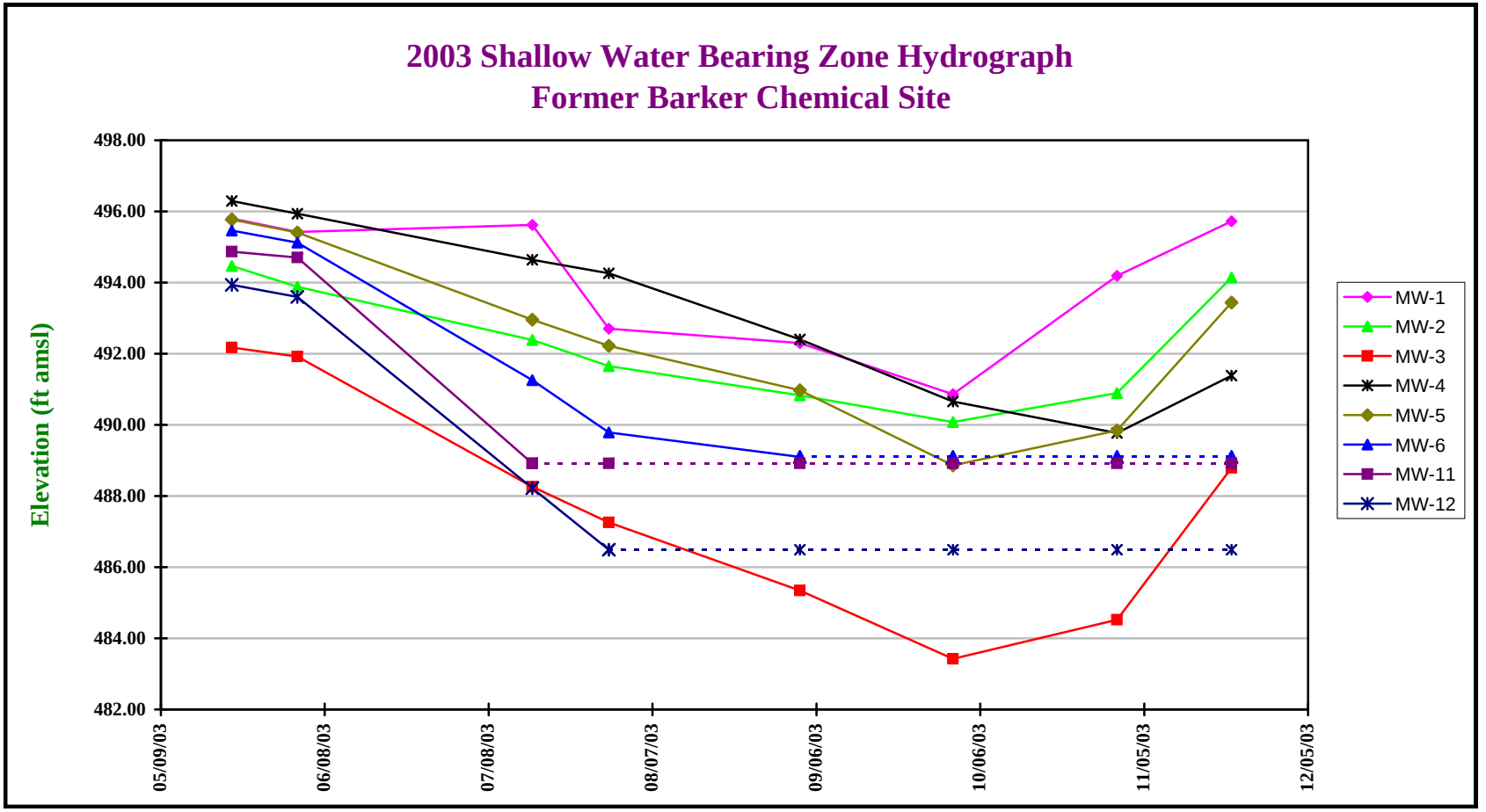
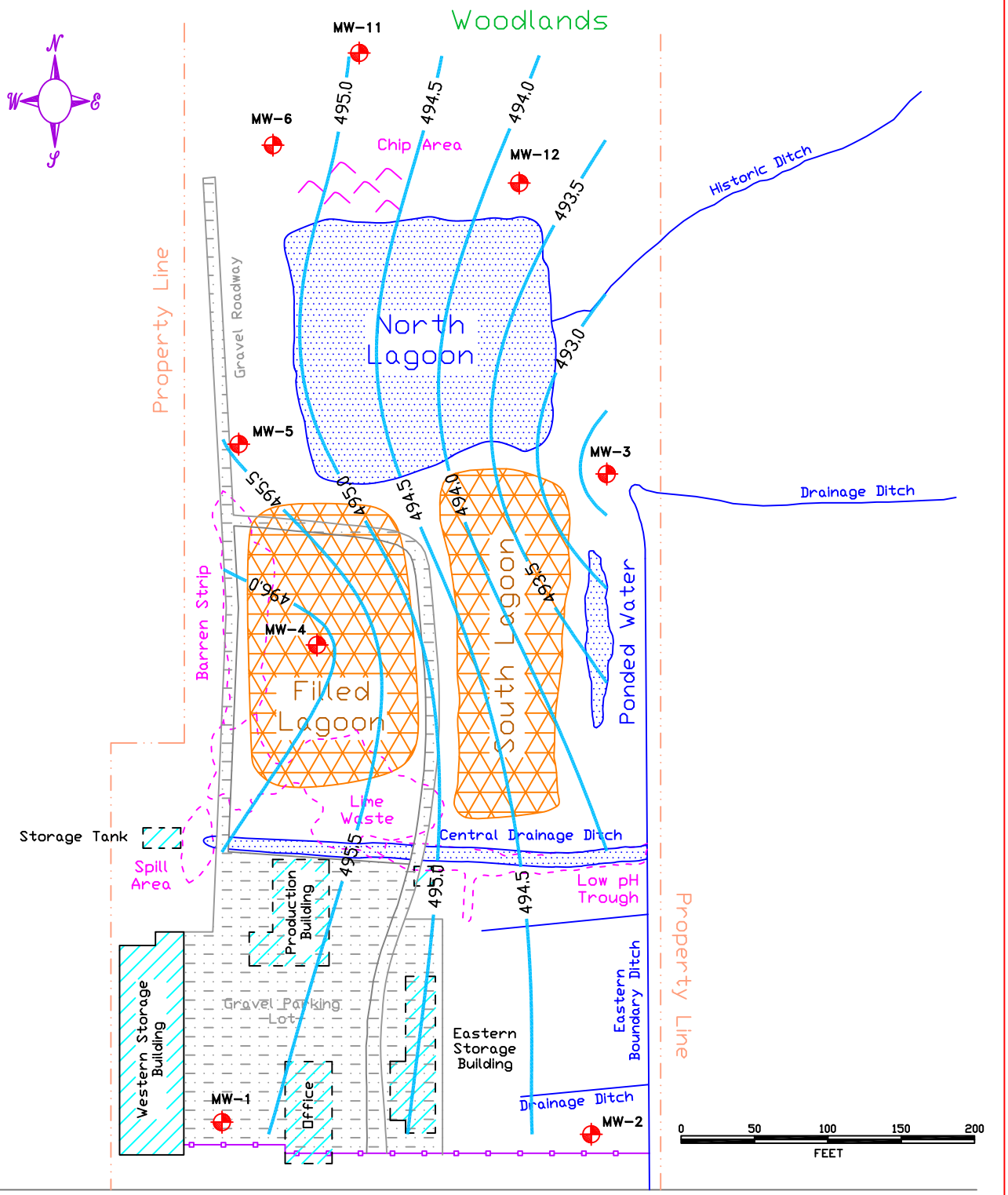


Figure 4-3. 2003 Shallow water bearing zone hydrograph for the micro-wells installed at the Former Barker Chemical Site. Lines are dashed where the wells are dry. Well locations are shown on Figure 3-2.



LEGEND:

MONITORING WELL LOCATION

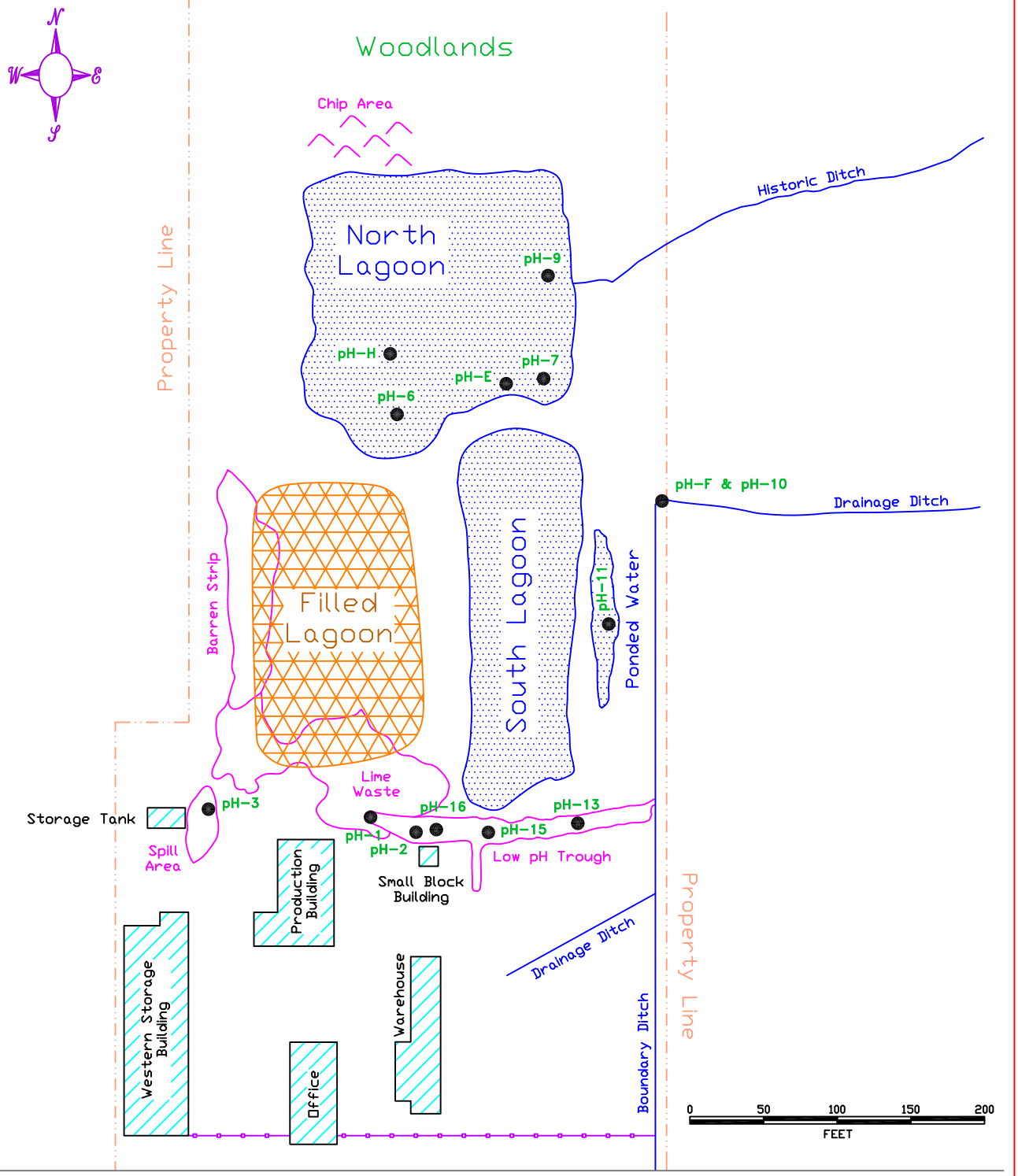
GROUNDWATER CONTOUR MAP (APRIL 16, 2008)

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/05/08 DRAWING: Section 4.dwg

SITE: BARKER CHEMICAL SITE

FIGURE 4-4



LEGEND:

- pH MEASUREMENT LOCATION

PRE-REMEDIATION pH MEASUREMENT LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/05/08 | DRAWING: Section 5.dwg

SITE: BARKER CHEMICAL SITE

FIGURE 5-1

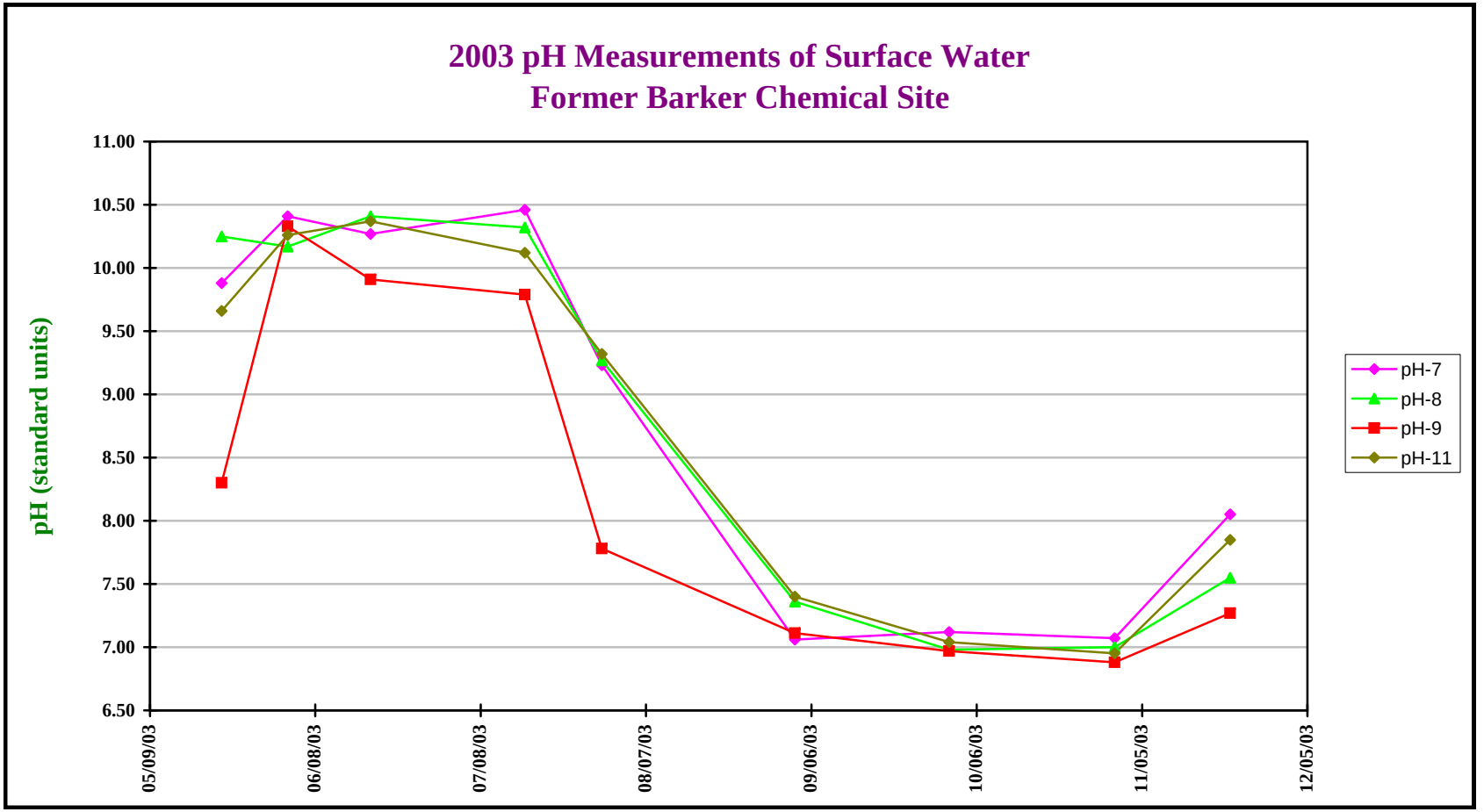
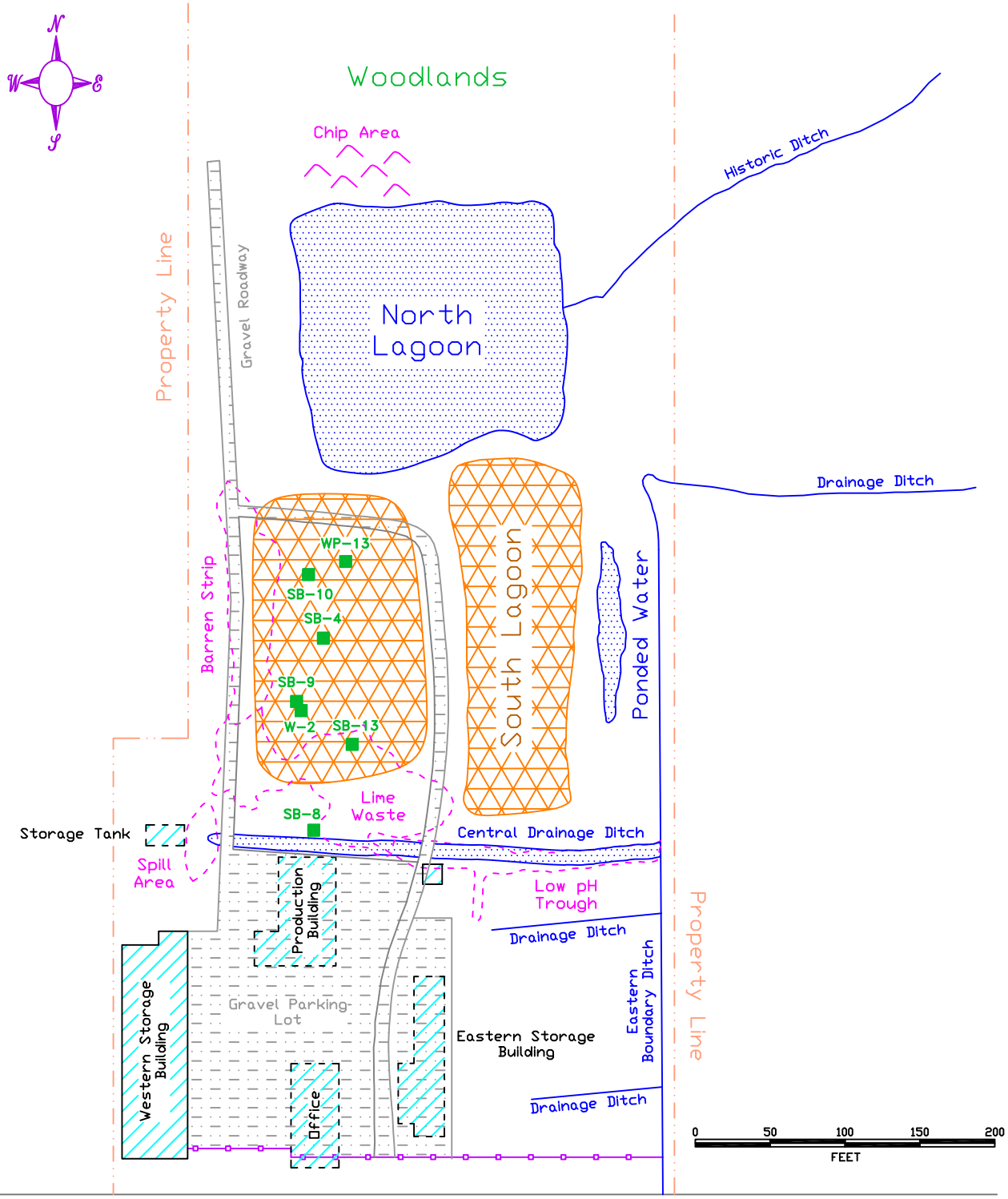


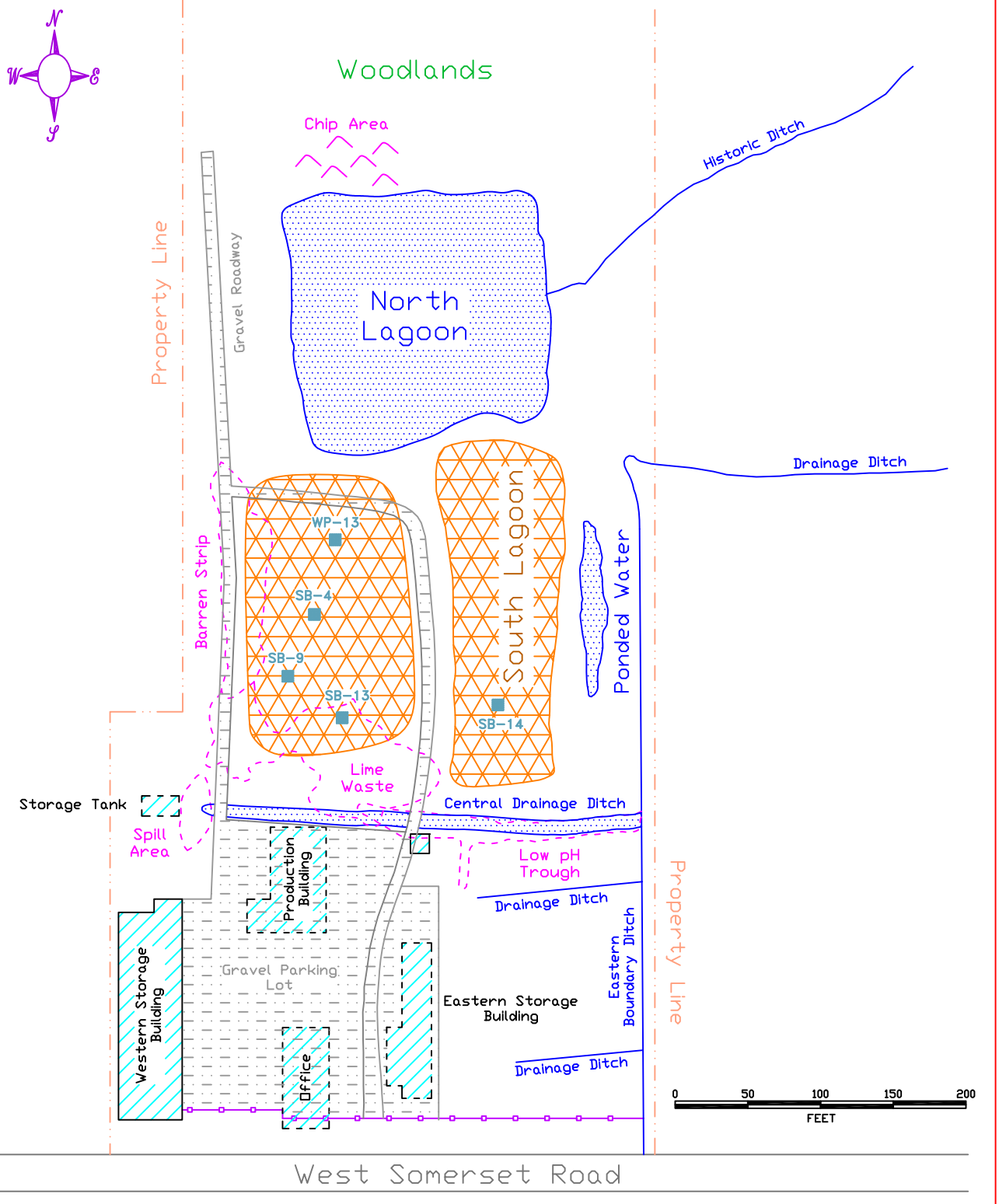
Figure 5-2. 2003 pH measurements of surface water in the North Lagoon at the Former Barker Chemical Site. pH locations are shown on Figure 3-3.



LEGEND:

■ LIME WASTE SAMPLE LOCATION

LIME WASTE SAMPLE LOCATION MAP		
DIVISION OF ENVIRONMENTAL REMEDIATION		
DATE: 12/24/08	DRAWING: Section 6.dwg	
SITE: BARKER CHEMICAL SITE		FIGURE 6-1



LEGEND:

■ SLUDGE SAMPLE LOCATION

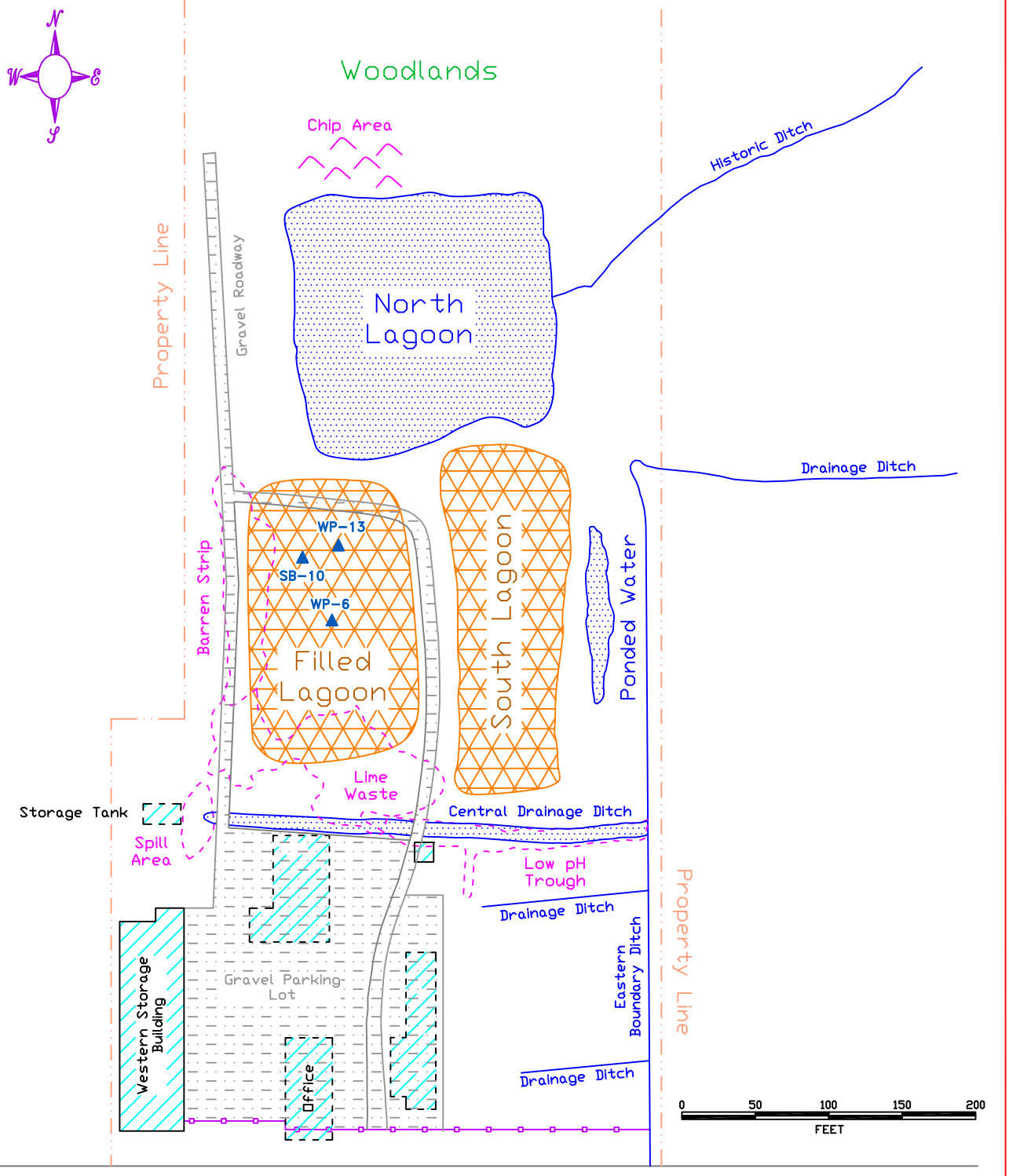
SLUDGE SAMPLE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/24/08 | DRAWING: Section 6.dwg

SITE: BARKER CHEMICAL SITE

FIGURE 6-2



LEGEND:

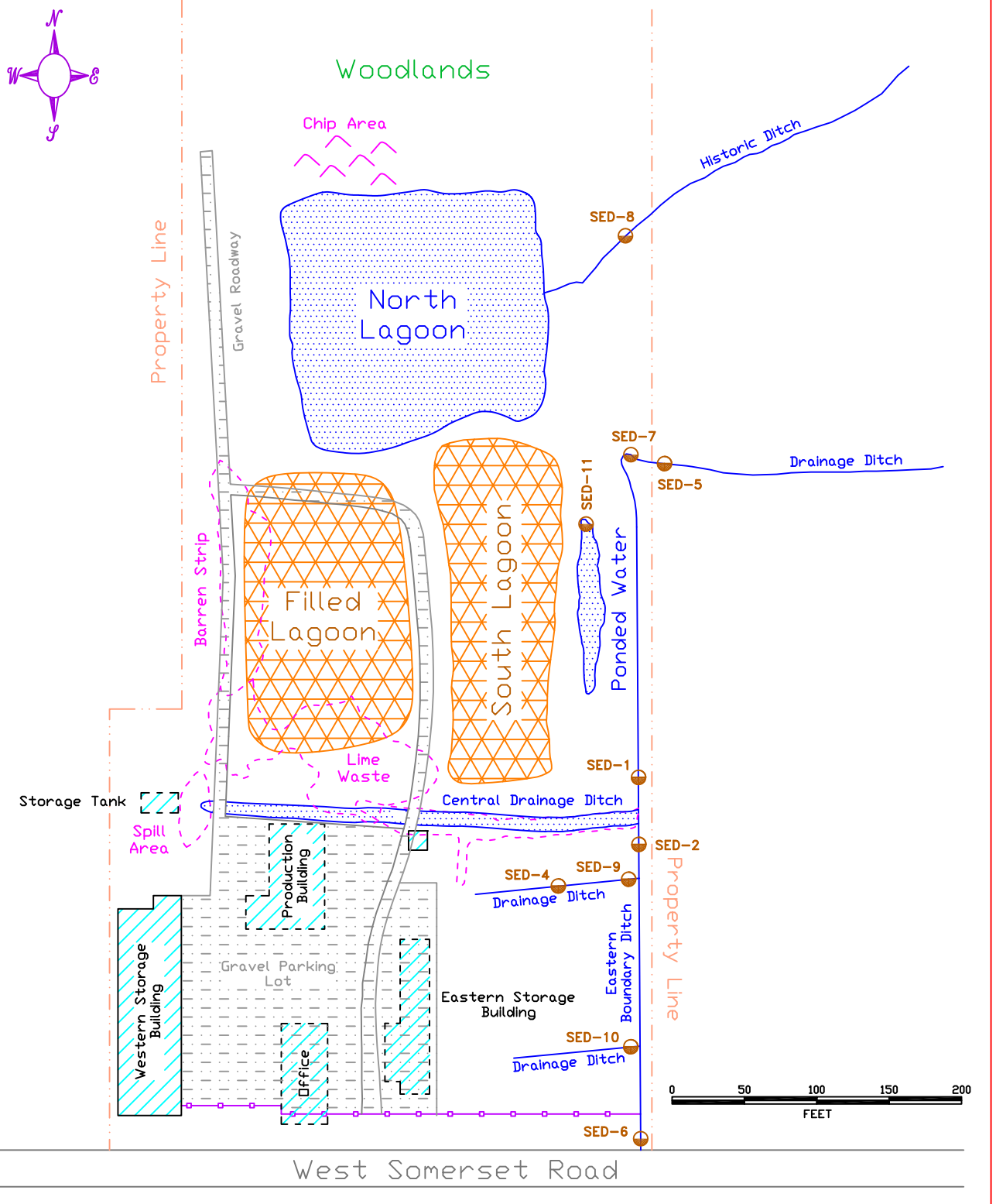
▲ SOIL SAMPLE LOCATION

SOIL SAMPLE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/24/08 DRAWING: Section 6.dwg

SITE: BARKER CHEMICAL SITE FIGURE 6-3



LEGEND:

- SEDIMENT SAMPLE LOCATION

SEDIMENT SAMPLE LOCATION MAP	
DIVISION OF ENVIRONMENTAL REMEDIATION	
DATE: 12/24/08	DRAWING: Section 6.dwg
SITE: BARKER CHEMICAL SITE	FIGURE 6-4

Table 3-1.
Summary Key for Samples Collected During the Supplemental Site Investigation at the Former Barker Chemical Site.

Lab ID	Sample ID	Date Sampled	Time Sampled	Analytical Parameters	Comments	Table Reference
Surface Water Samples						
SW-7	SW-7	04/30/08	1425	VOCs, SVOCs, Pesticides, Metals, Sulfate, Sulfide	Center of the Ponded Water area east of the South Lagoon	Tables 4-2 & 5-2
SW-8	SW-8	05/01/08	1155	VOCs, SVOCs, Pesticides, Metals, Sulfate, Sulfide	Southeast corner of the North Lagoon	Tables 4-2 & 5-2
SW-6	SW-9	04/30/08	1345	VOCs, SVOCs, Pesticides, Metals, Sulfate, Sulfide	Former Low pH Trough south of Filled Lagoon	Tables 4-2 & 5-2
Groundwater Samples						
MW-1	MW-1	04/30/08 & 05/01/08	1000 & 1020	VOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-1	Table 4-3
MW-2	MW-2	04/30/08 & 05/01/08	1030 & 1030	VOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-2	Table 4-3
MW-3	MW-3	04/30/08 & 05/01/08	1040 & 1050	VOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-3	Table 4-3
MW-4	MW-4	04/30/08	1315	VOCs, SVOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-4	Table 4-3
MW-5	MW-5	04/30/08 & 05/01/08	1100 & 1105	VOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-5	Table 4-3
MW-6	MW-6	04/30/08 & 05/01/08	1115 & 1110	VOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-6	Table 4-3
MW-12	MW-12	04/30/08	1140	VOCs, SVOCs, Pesticides, Metals, Sulfate, Sulfide	Micro well MW-12	Table 4-3

VOCs **Volatile organic compounds.**
SVOCs **Semivolatile organic compounds.**
PCBs **Polychlorinated biphenyls.**

Table 4-1.
2008 Groundwater Elevations in Micro-Wells Installed at the Former Barker Chemical Site.
(All water levels and elevations measured in feet)

Well Designation	Top of Riser Elevation	04/16/08		04/29/08		05/22/08		06/25/08	
		Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation
MW-1	498.69	3.03	495.66	3.33	495.36	3.69	495.00	6.57	492.12
MW-2	499.80	5.54	494.26	5.52	494.28	5.76	494.04	7.37	492.43
MW-3	496.09	3.91	492.18	4.05	492.04	4.47	491.62	6.15	489.94
MW-4	501.03	4.83	496.20	5.15	495.88	5.45	495.58	6.49	494.54
MW-5	499.11	3.68	495.43	3.85	495.26	4.09	495.02	6.37	492.74
MW-6	500.48	5.13	495.35	5.26	495.22	5.56	494.92	8.94	491.54
MW-11	499.75	4.79	494.96	4.87	494.88	5.40	494.35	9.65	490.10
MW-12	498.05	4.24	493.81	4.37	493.68	4.72	493.33	8.06	489.99

Table 4-2.
Analytical Results for Surface Water Samples Collected During the Supplemental Site Investigation at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-7 04/30/08 Ponded Water	SW-8 05/01/08 North Lagoon	SW-9 04/30/08 Low Ph Trough
Volatile Organic Compounds (µg/L or ppb)				
Acetone	50 G	22.0	ND (5.0)	5.3
2-Butanone	50 G	2.6 J	ND (5.0)	ND (5.0)
Carbon Disulfide	NS	2.2	ND (1.0)	0.63 J
Toluene	5.0	ND (1.0)	0.67 J	ND (1.0)
Semivolatile Organic Compounds (µg/L or ppb)				
Pentachlorophenol	1.0	ND (10.0)	ND (10.0)	**12.0**
Phenol	1.0	ND (5.0)	ND (5.0)	**5.0**
Pesticides (µg/L or ppb)				
Aldrin	0.002 G	ND (0.051)	ND (0.048)	ND (0.25)
alpha-BHC	0.01	ND (0.051)	ND (0.048)	**1.1**
beta-BHC	0.04	ND (0.051)	ND (0.048)	**0.19 J**
delta-BHC	0.04	ND (0.051)	ND (0.048)	**0.27**
gamma-BHC (Lindane)	0.05	ND (0.051)	0.025 J	**1.2**
Chlordane	0.05	0.026 J	ND (0.048)	ND (0.25)
4,4'-DDD	0.3	0.020 J	0.024 J	ND (0.25)
4,4'-DDE	0.2	0.018 J	0.030 J	0.11 J
4,4'-DDT	0.2	0.046 J	ND (0.048)	ND (0.25)
Dieldrin	0.002 G	**0.017 J**	ND (0.048)	**0.11 J**
Endosulfan (I)	0.009	ND (0.051)	ND (0.048)	ND (0.25)
Endosulfan (II)	0.009	ND (0.051)	ND (0.048)	**0.19 J**
Endrin	0.2	ND (0.051)	ND (0.048)	ND (0.25)
Endrin Ketone	5.0 G	ND (0.051)	0.0095 J	0.10 J
Heptachlor	0.04	0.028 J	0.014 J	**0.086 J**
Methoxychlor	35.0	ND (0.051)	ND (0.048)	ND (0.25)
Inorganic Compounds (µg/L or ppb)				
Aluminum	100.0	**57,400 N**	**1,030 N**	**2,970 N**
Arsenic **	50.0	14.4 N	ND (10.0)	**106 N**
Barium	1,000	15.3 N	56.8 N	61.1 N
Beryllium **	3.0 G	**5.8 N**	ND (2.0)	ND (2.0)

Table 4-2 (Continued).
Analytical Results for Surface Water Samples Collected During the Supplemental Site Investigation at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-7 04/30/08 Ponded Water	SW-8 05/01/08 North Lagoon	SW-9 04/30/08 Low Ph Trough
Inorganic Compounds (continued)				
Cadmium **	5.0	1.6	ND (1.0)	ND (1.0)
Calcium	NS	281,000	91,100	291,000
Chromium **	50.0	5.1 N	ND (4.0)	4.0 N
Cobalt	5.0	**92.3 N**	ND (4.0)	**6.9 N**
Copper **	200.0	16.8 N	ND (10.0)	50.3 N
Iron	300.0	**104,000 N**	**1,520 N**	**17,900 N**
Lead **	50.0	5.2 N	ND (5.0)	19.1 N
Magnesium	35,000	**68,200 E**	13,100 E	**102,000 E**
Manganese	300.0	**14,100 N**	**476 N**	**2,340 N**
Mercury **	0.7	ND (0.2)	ND (0.2)	ND (0.2)
Nickel **	100.0	**144 N**	ND (10.0)	16.4 N
Potassium	NS	3,630 EN	8,620 EN	6,820 EN
Silver **	50.0	ND (3.0)	ND (3.0)	ND (3.0)
Sodium	NS	8,370	3,730	62,000
Vanadium	14.0	10.8 N	ND (5.0)	ND (5.0)
Zinc **	2,000 G	260 N	11.1 N	99.3 N
Miscellaneous Compounds (µg/L or ppb)				
Sulfate	250,000	**2,600,000**	118,000	**1,270,000**
Sulfide	2.0	**1,200**	ND (1,000)	**3,200**
pH (Standard Units)	6.5-8.5	**3.30**	7.02	**3.21**

***** **NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998.**
****** **EPA priority pollutant metal.**
E **Estimated concentration due to the presence of interference (inorganics).**
G **Guidance value.**
J **Compound reported at an estimated concentration below the reporting limit.**
N **Spike sample recovery is not within the quality control limits.**
ND **Indicates that the compound was not detected at the method detection limit specified in parentheses.**
NS **No standard or guidance value available.**
Shaded values equal or exceed the NYSDEC surface water standards or guidance values.

Table 4-3.
Analytical Results for Groundwater Samples Collected During the Supplemental Site Investigation at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Groundwater Standard *	MW-1 04/30/08 Micro Well 1	MW-2 04/30/08 Micro Well 2	MW-3 04/30/08 Micro Well 3	MW-4 04/30/08 Micro Well 4	MW-5 04/30/08 Micro Well 5	MW-6 04/30/08 Micro Well 6	MW-12 04/30/08 Micro Well 12
Volatile Organic Compounds (µg/L or ppb)								
Acetone	50 G	ND (5.0)	ND (5.0)	**92.0**	21.0	30.0	7.4	4.0 J
Benzene	1.0	ND (1.0)	ND (1.0)	0.87 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2-Butanone	50 G	ND (5.0)	ND (5.0)	**59.0**	4.9 J	12.0	ND (5.0)	ND (5.0)
Carbon Disulfide	NS	ND (1.0)	ND (1.0)	93.0	15.0	1.5	ND (1.0)	ND (1.0)
Chlorobenzene	5.0	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**6.5**	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	5.0	ND (1.0)	0.77 J	0.50 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	5.0	ND (1.0)	0.75 J	0.60 J	ND (1.0)	0.59 J	ND (1.0)	ND (1.0)
1,2,4-Trichlorobenzene	5.0 G	ND (1.0)	0.64 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Pesticides (µg/L or ppb)								
Aldrin	ND	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
alpha-BHC	0.01	ND (0.051)	ND (0.077)	**0.029 J**	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
beta-BHC	0.04	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
delta-BHC	0.04	ND (0.051)	ND (0.077)	0.025 J	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
gamma-BHC (Lindane)	0.05	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
Chlordane	0.05	0.039 J	0.025 J	0.030 J	0.038 J	0.029 J	0.040 J	ND (0.050)
4,4'-DDD	0.3	0.022 J	ND (0.077)	ND (0.050)	ND (0.050)	0.024 J	0.022 J	ND (0.050)
4,4'-DDE	0.2	0.043 J	ND (0.077)	ND (0.050)	ND (0.050)	0.028 J	0.034 J	ND (0.050)
4,4'-DDT	0.2	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
Dieldrin	0.004	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	**0.028 J**	**0.032 J**	ND (0.050)

Table 4-3 (Continued).
Analytical Results for Groundwater Samples Collected During the Supplemental Site Investigation at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Groundwater Standard *	MW-1 04/30/08 Micro Well 1	MW-2 04/30/08 Micro Well 2	MW-3 04/30/08 Micro Well 3	MW-4 04/30/08 Micro Well 4	MW-5 04/30/08 Micro Well 5	MW-6 04/30/08 Micro Well 6	MW-12 04/30/08 Micro Well 12
Pesticides (continued)								
Endosulfan (I)	NS	ND (0.051)	ND (0.077)	ND (0.050)	0.032 J	ND (0.050)	ND (0.047)	ND (0.050)
Endosulfan (II)	NS	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	0.029 J	ND (0.050)
Endrin	ND	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
Endrin Ketone	5.0	ND (0.051)	ND (0.077)	ND (0.050)	0.011 J	ND (0.050)	ND (0.047)	ND (0.050)
Heptachlor	0.04	ND (0.051)	ND (0.077)	0.020 J	0.016 J	ND (0.050)	ND (0.047)	ND (0.050)
Heptachlor Epoxide	0.03	0.016 J	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
Methoxychlor	35.0	ND (0.051)	ND (0.077)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.047)	ND (0.050)
Inorganic Compounds (µg/L or ppb)								
Aluminum	NS	33,000 N	64,600 N	5,460 N	586 N	90,300 N	62,100 N	269,000 N
Antimony **	3.0	ND (100)	ND (100)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)	ND (20.0)
Arsenic **	25.0	10.9 N	**31.1 N**	**365 N**	10.4 N	**65.2 N**	20.5 N	**82.1 N**
Barium	1,000	482 N	798 N	234 N	107 N	**1,090 N**	569 N	**2,700 N**
Beryllium **	3.0 G	ND (2.0)	2.7 N	**3.8 N**	ND (2.0)	**6.2 N**	**3.5 N**	**11.7 N**
Cadmium **	5.0	2.2	1.8	ND (20.0)	ND (1.0)	ND (1.0)	2.1	ND (1.0)
Calcium	NS	238,000	508,000	6,870,000	663,000	4,500,000	1,160,000	1,620,000
Chromium **	50.0	**96.6 N**	**106 N**	11.8 N	ND (4.0)	**149 N**	**89.9 N**	**435 N**
Cobalt	NS	ND (4.0)	33.0 N	ND (4.0)	ND (4.0)	72.1 N	14.4 N	178 N
Copper **	200.0	85.8 N	141 N	ND (10.0)	ND (10.0)	**218 N**	112 N	**467 N**
Iron	500.0	**39,900 N**	**102,000 N**	**9,140 N**	**13,800 N**	**165,000 N**	**83,000 N**	**381,000 N**

Table 4-3 (Continued).
Analytical Results for Groundwater Samples Collected During the Supplemental Site Investigation at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Groundwater Standard *	MW-1 04/30/08 Micro Well 1	MW-2 04/30/08 Micro Well 2	MW-3 04/30/08 Micro Well 3	MW-4 04/30/08 Micro Well 4	MW-5 04/30/08 Micro Well 5	MW-6 04/30/08 Micro Well 6	MW-12 04/30/08 Micro Well 12
Inorganic Compounds (Continued)								
Lead **	25.0	**25.8 N**	**29.4 N**	ND (100)	ND (5.0)	**45.5 N**	**27.4 N**	**107 N**
Magnesium	35,000 G	**66,900 E**	**65,600 E**	**189,000 E**	**315,000 E**	**376,000 E**	**272,000 E**	**213,000 E**
Manganese	300.0	**11,300 N**	**8,080 N**	**540 N**	**2,470 N**	**13,500 N**	**4,610 N**	**16,400 N**
Mercury **	0.7	ND (0.2)	ND (0.2)	ND (1.2)	ND (0.2)	ND (0.4)	**0.99**	**2.5**
Nickel **	100.0	74.8 N	97.4 N	ND (10.0)	ND (10.0)	**141 N**	75.8 N	**388 N**
Potassium	NS	11,700 EN	21,000 EN	7,790 EN	6,550 EN	31,300 EN	16,700 EN	43,200 EN
Silver **	50.0	ND (3.0)	ND (3.0)	12.4 N	ND (3.0)	5.6 N	ND (3.0)	ND (3.0)
Sodium	20,000	**50,400**	19,700	**78,500**	12,800	**139,000**	**102,000**	10,200
Vanadium	NS	53.0 N	132 N	17.9 N	ND (5.0)	207 N	107 N	497 N
Zinc **	2,000 G	476.0 N	319 N	ND (200)	ND (10.0)	319 N	194 N	959 N
Miscellaneous Compounds (µg/L or ppb)								
Sulfate	250,000	**434,000**	32,100	**1,210,000**	**1,450,000**	**1,660,000**	**2,570,000**	**1,650,000**
Sulfide	50.0 G	ND (1,000)	ND (1,000)	**2,470,000**	**46,000**	**1,590,000**	ND (1,000)	**1,200**
pH (Standard Units)	6.5-8.5	7.09	7.57	7.63	7.85	6.53	7.29	7.07

***** **NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998.**
****** **EPA priority pollutant metal.**
E **Estimated concentration due to the presence of interference.**
G **Guidance value.**
J **Compound reported at an estimated concentration below the reporting limit.**
N **Spike sample recovery is not within the quality control limits.**
ND **Indicates that the compound was not detected at the method detection limit specified in parentheses.**
NS **No standard or guidance value available.**
Shaded values equal or exceed the NYSDEC groundwater standards or guidance values.

Table 4-4.
Summary of the 2008 pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}F)	Comments
Spill Area				
pH-1	04/16/08	6.81	49.1	
″	05/22/08	7.21	52.3	
″	06/25/08	NM	NM	not measured because location was dry
pH-2	04/16/08	6.77	52.9	
″	05/22/08	7.05	54.2	
″	06/25/08	NM	NM	not measured because location was dry
Central Drainage Ditch and Low pH Trough				
pH-15	04/30/08	3.21	68.2	
″	05/22/08	3.04	57.4	
″	06/25/08	NM	NM	not measured because location was dry
pH-3	04/16/08	5.91	55.6	
″	04/30/08	6.32	66.1	
″	05/22/08	6.53	NM	
″	06/25/08	NM	NM	not measured because location was dry
pH-13	04/16/08	5.72	48.7	
″	05/22/08	5.31	NM	
″	06/25/08	NM	NM	not measured because location was dry
pH-4	04/16/08	6.25	48.1	
″	05/22/08	6.55	NM	
″	06/25/08	NM	NM	not measured because location was dry
Ponded Water Area				
pH-5	04/16/08	3.39	49.0	
″	04/30/08	3.30	61.0	
″	05/22/08	3.48	NM	
″	06/25/08	3.18	NM	
pH-14	04/16/08	3.75	50.8	
″	04/30/08	3.30	61.0	
″	05/22/08	3.24	NM	
″	06/25/08	3.15	NM	

Table 4-4 (Continued).
Summary of the 2008 pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}F)	Comments
Eastern Boundary Ditch				
pH-6	04/16/08	7.31	48.4	
″	05/22/08	7.24	NM	
″	06/25/08	6.74	NM	
pH-12	04/16/08	7.16	50.2	
″	05/22/08	7.37	NM	
″	06/25/08	6.88	NM	
North Lagoon				
pH-7	04/16/08	7.01	52.1	
″	05/01/08	7.02	60.4	
″	05/22/08	7.32	NM	
″	06/25/08	7.20	NM	
pH-8	04/16/08	6.92	50.6	
″	05/22/08	7.49	NM	
″	06/25/08	6.90	NM	
pH-9	04/16/08	7.15	51.9	
″	05/22/08	7.37	NM	
″	06/25/08	7.01	NM	
pH-11	04/16/08	7.04	51.2	
″	05/22/08	7.27	NM	
″	06/25/08	7.18	NM	
Chip Area				
pH-10	04/16/08	5.92	49.3	
″	05/22/08	7.81	NM	
″	06/25/08	NM	NM	not measured because location was dry

NM **Not measured.**
Shaded values exceed regulatory limit for corrosivity.

Table 5-1. Sample Summary Key for Historic Samples Collected at the Former Barker Chemical Site.							
Lab ID	**Sample ID**	**Date Sampled**	**Time Sampled**	**Interval Sampled***	**Analytical Parameters**	**Comments**	**Table Reference**
Lime Waste Samples							
B08103	W-2	12/17/99	1500	2.0'	Metals, Cyanide	Coarse grained, cream colored, lime-like material in the Filled Lagoon	Table 6-1
22255	WP-13	06/21/00	1345	0.0' - 2.4'	Herbicides, Metals, Sulfur, Boron	Coarse grained, cream colored, lime-like material in the Filled Lagoon. EPA boring WP-13	Table 6-1
D35304	SB-4	05/21/03	1300	0.0' - 4.0'	SVOCs, Pesticides, Herbicides, Metals, Sulfur, Boron	Coarse grained, cream colored, lime-like material in the Filled Lagoon	Table 6-1
D35308	SB-8	05/21/03	1530	0.0' - 4.0'	Pesticides, Herbicides, Metals, Sulfur, Boron	Coarse grained, cream colored, lime-like material in the Filled Lagoon	Table 6-1
D3539A	SB-9	05/21/03	1450	0.0' - 4.0'	Metals, Sulfur, Boron	Coarse grained, cream colored, lime-like material in the Filled Lagoon	Table 6-1
D35310	SB-10	05/21/03	1410	0.0' - 4.0'	SVOCs, Pesticides, Herbicides, Metals, Sulfur, Boron	Coarse grained, cream colored, lime-like material in the Filled Lagoon	Table 6-1
D35313	SB-13	05/21/03	1430	3.5' - 5.0'	Pesticides, Herbicides, Metals, Sulfur, Boron	Coarse grained, cream colored, lime-like material in the Filled Lagoon	Table 6-1
Sludge Samples							
22254	WP-13	06/21/00	1345	2.4' - 3.2'	Herbicides, Metals, Sulfur, Boron	Dark green sludge in Filled Lagoon. EPA boring WP-13	Table 6-2
D3534B	SB-4	05/21/03	1300	4.0' - 8.0'	SVOCs, Pesticides, Herbicides, Metals, Sulfur, Boron	Green-blue sludge in the Filled Lagoon	Table 6-2
D3539B	SB-9	05/21/03	1450	4.0' - 8.0'	Metals, Sulfur, Boron	Green-blue sludge in the Filled Lagoon	Table 6-2
D35313B	SB-13	05/21/03	1430	5.0' - 6.0'	Herbicides, Metals, Sulfur, Boron	Green-blue sludge in the Filled Lagoon	Table 6-2
D35314	SB-14	05/21/03	1410	4.0' - 7.0'	Pesticides, Herbicides, Metals, Sulfur, Boron	Green-blue sludge in the South Lagoon	Table 6-2

Table 5-1 (Continued).
Sample Summary Key for Historic Samples Collected at the Former Barker Chemical Site.

Lab ID	Sample ID	Date Sampled	Time Sampled	Interval Sampled*	Analytical Parameters	Comments	Table Reference
Native Soil Samples							
22256	WP-6	06/21/00	1515	5.7' - 8.0'	SVOCs, Herbicides, Metals, Sulfur, Boron	Dark red glacial till under the Filled Lagoon. EPA boring WP-6	Table 6-3
22253	WP-13	06/21/00	1345	3.2' - 4.2'	SVOCs, Herbicides, Metals, Sulfur, Boron, TPH	Black stained glacial till under the Filled Lagoon. EPA boring WP-13	Table 6-3
D35310B	SB-10	05/21/03	1410	4.0' - 8.0'	SVOCs, Pesticides, Herbicides, Metals, Sulfur, Boron	Stained soil in boring SB-10 in the Filled Lagoon	Table 6-3
Sediment Samples							
22264	SED-1	06/21/00	NR	NR	Herbicides, Metals, Sulfur, Boron	Boundary Ditch downstream of the former Low pH Trough	Table 6-4
22271	SED-2	06/21/00	NR	NR	Herbicides, Metals, Sulfur, Boron	Boundary Ditch upstream of the former Low pH Trough	Table 6-4
22270	SED-4	06/21/00	NR	NR	Herbicides, Metals, Sulfur, Boron	Center of the Drainage Ditch south of the former Low pH Trough	Table 6-4
EC-01	SED-5	12/14/00	1100	NR	VOCs, SVOCs, PCBs, Pesticides, Metals	Boundary Ditch at the 90^{O} bend	Table 6-4
D35306	SED-6	09/03/03	0830	0.0' - 0.08'	SVOCs, Pesticides, Herbicides, Metals, Boron	Boundary Ditch at West Somerset Road	Table 6-4
D35307	SED-7	09/03/03	0905	0.0' - 0.17'	SVOCs, Pesticides, Herbicides, Metals, Boron	Boundary Ditch at the 90^{O} bend	Table 6-4
D35308	SED-8	09/03/03	0915	0.17' - 0.33'	SVOCs, Pesticides, Herbicides, Metals, Boron	Historic Ditch east of the North Lagoon	Table 6-4
D35309	SED-9	09/03/03	0855	0.0' - 0.17'	SVOCs, Pesticides, Herbicides, Metals, Boron	East end of Drainage Ditch south of the former Low pH Trough	Table 6-4
D35310	SED-10	09/03/03	0840	0.0' - 0.17'	SVOCs, Pesticides, Herbicides, Metals, Boron	East end of Drainage Ditch north of West Somerset Road	Table 6-4
D35311	SED-11	09/03/03	0935	0.0' - 0.17'	SVOCs, Pesticides, Herbicides, Metals, Sulfur, Boron	North end of Ponded Water area	Table 6-4

Table 5-1 (Continued).
Sample Summary Key for Historic Samples Collected at the Former Barker Chemical Site.

Lab ID	Sample ID	Date Sampled	Time Sampled	Interval Sampled*	Analytical Parameters	Comments	Table Reference
Surface Water Samples							
B081NL	SW-1	12/29/99	1310	NR	Metals, Cyanide, Hexavalent Chromium	~50' from the southwest central shore of the North Lagoon	Table 5-2
22257	SW-2	06/21/00	1720	NR	Herbicides, Metals, Sulfur, Boron, Sulfate, Chloride	North Lagoon	Table 5-2
22259	SW-3	06/21/00	1740	< 0.08'	Herbicides, Metals, Sulfur, Boron, Sulfate, Chloride	East end of the former Low pH Trough	Table 5-2
D35310	SW-4	06/18/03	1050	0.25'	VOCs, SVOCs, Pesticides, Herbicides, Metals, Boron, Sulfate, Sulfide	North end of the Ponded Water area east of the South Lagoon	Table 5-2
D35311	SW-5	06/18/03	1310	0.25'	Pesticides, Herbicides, Metals, Boron, Sulfate, Sulfide	Southwest corner of the North Lagoon	Table 5-2
D35312	SW-6	06/18/03	0930	< 0.08'	Pesticides, Herbicides, Metals, Boron, Sulfate, Sulfide	West end of the Former Low pH Trough near the spring	Table 5-2

***** **Intervals in feet below ground surface.**
NR **Not reported.**
VOCs **Volatile organic compounds.**
SVOCs **Semivolatile organic compounds.**
PCBs **Polychlorinated biphenyls.**

Table 5-2.
Analytical Results for Pre- and Post-Remediation Surface Water Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-1 12/29/99 North Lagoon	SW-2 06/21/00 North Lagoon	SW-5 06/18/03 North Lagoon	SW-8 05/01/08 North Lagoon	SW-3 06/21/00 Low pH Trough	SW-6 06/18/03 Low Ph Trough	SW-9 04/30/08 Low Ph Trough
Pesticides (µg/L or ppb)								
Aldrin	0.002 G	NA	NA	ND (0.053)	ND (0.048)	NA	ND (0.48)	ND (0.25)
alpha-BHC	0.01	″	″	ND (0.053)	ND (0.048)	″	**0.74**	**1.1**
beta-BHC	0.04	″	″	ND (0.053)	ND (0.048)	″	ND (0.48)	**0.19 J**
delta-BHC	0.04	″	″	ND (0.053)	ND (0.048)	″	**0.74**	**0.27**
gamma-BHC (Lindane)	0.05	″	″	ND (0.053)	0.025 J	″	**1.2**	**1.2**
Chlordane	0.05	″	″	ND (0.053)	ND (0.048)	″	ND (0.48)	ND (0.25)
4,4'-DDD	0.3	″	″	ND (0.1)	0.024 J	″	ND (0.96)	ND (0.25)
4,4'-DDE	0.2	″	″	ND (0.1)	0.030 J	″	ND (0.96)	0.11 J
4,4'-DDT	0.2	″	″	ND (0.1)	ND (0.048)	″	**1.2**	ND (0.25)
Dieldrin	0.002 G	″	″	ND (0.1)	ND (0.048)	″	ND (0.96)	**0.11 J**
Endosulfan (I)	0.009	″	″	ND (0.1)	ND (0.048)	″	ND (0.96)	ND (0.25)
Endosulfan (II)	0.009	″	″	ND (0.1)	ND (0.048)	″	ND (0.96)	**0.19 J**
Endrin	0.2	″	″	ND (0.1)	ND (0.048)	″	ND (0.96)	ND (0.25)
Endrin Ketone	5.0 G	″	″	ND (0.1)	0.0095 J	″	0.59 J	0.10 J
Heptachlor	0.04	″	″	ND (0.053)	0.014 J	″	ND (0.48)	**0.086 J**
Methoxychlor	35.0	″	″	ND (0.53)	ND (0.048)	″	ND (4.8)	ND (0.25)
Herbicides (µg/L or ppb)								
2,4-D	50.0	NA	0.2 JBP	ND (9.6)	NA	0.28 JBP	1.3 J	NA
2,4,5-TP (Silvex)	10.0	″	0.16 JBP	ND (1.9)	″	0.03 JB	ND (2.1)	″
2,4,5-T	NS	″	0.077 JBP	ND (1.9)	″	0.015 JBP	ND (2.1)	″

Table 5-2 (Continued).
Analytical Results for Pre- and Post-Remediation Surface Water Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-1 12/29/99 North Lagoon	SW-2 06/21/00 North Lagoon	SW-5 06/18/03 North Lagoon	SW-8 05/01/08 North Lagoon	SW-3 06/21/00 Low pH Trough	SW-6 06/18/03 Low Ph Trough	SW-9 04/30/08 Low Ph Trough
Inorganic Compounds (µg/L or ppb)								
Aluminum	100.0	**109,000 E**	**51,200**	67.5 B	**1,030 N**	**30,200**	**9,570**	**2,970 N**
Arsenic **	50.0	**259 E**	31.4	5.2 B	ND (10.0)	**204.0**	**115.0**	**106 N**
Barium	1,000	11.4 E	21.9	12.2 B	56.8 N	82.0	84.1 B	61.1 N
Beryllium **	3.0 G	**5.1**	1.9 B	ND (0.1)	ND (2.0)	1.2 B	0.56 B	ND (2.0)
Cadmium **	5.0	**8.6**	3.6 B	ND (0.3)	ND (1.0)	3.0 B	ND (0.3)	ND (1.0)
Calcium	NS	307,000 E	296,000	24,000	91,100	470,000	335,000	291,000
Chromium **	50.0	**157 E**	48.4	ND (1.1)	ND (4.0)	38.4	10.8	4.0 N
Cobalt	5.0	**199 E**	**75.3**	ND (0.8)	ND (4.0)	**22.8**	**8.0 B**	**6.9 N**
Copper **	200.0	**1,280**	**347 E**	2.0 B	ND (10.0)	**355 E**	27.0	50.3 N
Iron	300.0	**181,000 E**	**77,300**	216.0	**1,520 N**	**67,400**	**49,400**	**17,900 N**
Lead **	50.0	**374 E**	**72.0 N**	ND (2.3)	ND (5.0)	**222 N**	**57.9**	19.1 N
Magnesium	35,000	**60,900**	**38,400**	10,300	13,100 E	**78,700**	**124,000**	**102,000 E**
Manganese	300.0	**6,600**	**5,270**	48.4	**476 N**	**2,050**	**4,510**	**2,340 N**
Mercury **	0.7	ND (0.2)	ND (0.1)	ND (0.095)	ND (0.2)	0.12 B	ND (0.095)	ND (0.2)
Nickel **	100.0	**355 E**	**127.0**	ND (1.2)	ND (10.0)	81.0	13.7 B	16.4 N
Potassium	NS	5,990	3,880 E	235 B	8,620 EN	8,260 E	9,060	6,820 EN
Silver **	50.0	ND (1.5)	ND (0.6)	ND (1.0)	ND (3.0)	ND (0.6)	ND (1.0)	ND (3.0)
Sodium	NS	8,060	3,900	2,390 B	3,730	14,600	21,000	62,000
Vanadium	14.0	**344 E**	**56.9**	ND (0.9)	ND (5.0)	**49.0**	**18.2 B**	ND (5.0)
Zinc **	2,000 G	1,450 E	735.0	2.9 B	11.1 N	1,150	85.2	99.3 N

Table 5-2 (Continued).
Analytical Results for Pre- and Post-Remediation Surface Water Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-1 12/29/99 North Lagoon	SW-2 06/21/00 North Lagoon	SW-5 06/18/03 North Lagoon	SW-8 05/01/08 North Lagoon	SW-3 06/21/00 Low pH Trough	SW-6 06/18/03 Low Ph Trough	SW-9 04/30/08 Low Ph Trough
Miscellaneous Compounds (µg/L or ppb)								
Boron	10,000	NA	162.0	58.4	NA	132.0	133.0	NA
Chloride	250,000	″	ND (3,000)	3,500	″	8,200	27,000	″
Sulfate	250,000	″	**1,470,000**	43,700	118,000	**2,250,000**	**1,180,000**	**1,270,000**
Sulfide	2.0	″	NA	ND (1,000)	ND (1,000)	NA	**2,400**	**3,200**

***** **NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998.**
****** **EPA priority pollutant metal.**
B **Analyte detected in the associated blank, as well as in the sample (organics) or the value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).**
E **Estimated concentration due to the presence of interference (inorganics).**
G **Guidance value.**
J **Compound reported at an estimated concentration below the reporting limit.**
N **Spike sample recovery is not within the quality control limits.**
NA **Not analyzed.**
ND **Indicates that the compound was not detected at the method detection limit specified in parentheses.**
NS **No standard or guidance value available.**
P **>25% difference between the analytical results on two GC columns. The lower value is reported.**
Shaded values equal or exceed the NYSDEC surface water standards or guidance values.

Table 5-2 (Continued).
Analytical Results for Pre- and Post-Remediation Surface Water Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-4 06/18/03 Ponded Water	SW-7 04/30/08 Ponded Water
Volatile Organic Compounds (µg/L or ppb)			
Acetone	50 G	10 J	22.0
2-Butanone	50 G	ND (25.0)	2.6 J
Carbon Disulfide	NS	ND (5.0)	2.2
Pesticides (µg/L or ppb)			
Aldrin	0.002 G	ND (0.048)	ND (0.051)
alpha-BHC	0.01	ND (0.048)	ND (0.051)
beta-BHC	0.04	ND (0.048)	ND (0.051)
delta-BHC	0.04	ND (0.048)	ND (0.051)
gamma-BHC (Lindane)	0.05	ND (0.048)	ND (0.051)
Chlordane	0.05	ND (0.048)	0.026 J
4,4'-DDD	0.3	ND (0.097)	0.020 J
4,4'-DDE	0.2	ND (0.097)	0.018 J
4,4'-DDT	0.2	ND (0.097)	0.046 J
Dieldrin	0.002 G	ND (0.097)	**0.017 J**
Endosulfan (I)	0.009	ND (0.097)	ND (0.051)
Endosulfan (II)	0.009	ND (0.097)	ND (0.051)
Endrin	0.2	ND (0.097)	ND (0.051)
Endrin Ketone	5.0 G	ND (0.097)	ND (0.051)
Heptachlor	0.04	ND (0.048)	0.028 J
Methoxychlor	35.0	ND (4.8)	ND (0.051)
Inorganic Compounds (µg/L or ppb)			
Aluminum	100.0	**42,700**	**57,400 N**
Arsenic **	50.0	6.7 B	14.4 N
Barium	1,000	19.7 B	15.3 N
Beryllium **	3.0 G	**6.0**	**5.8 N**
Cadmium **	5.0	ND (0.3)	1.6
Calcium	NS	335,000	281,000
Chromium **	50.0	4.3 B	5.1 N
Cobalt	5.0	**72.1**	**92.3 N**

Table 5-2 (Continued).
Analytical Results for Pre- and Post-Remediation Surface Water Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-4 06/18/03 Ponded Water	SW-7 04/30/08 Ponded Water
Inorganic Compounds (continued)			
Copper **	200.0	35.3	16.8 N
Iron	300.0	**117,000**	**104,000 N**
Lead **	50.0	12.8	5.2 N
Magnesium	35,000	**59,800**	**68,200 E**
Manganese	300.0	**10,300**	**14,100 N**
Mercury **	0.7	ND (0.095)	ND (0.2)
Nickel **	100.0	**136.0**	**144 N**
Potassium	NS	3,520 B	3,630 EN
Silver **	50.0	ND (1.0)	ND (3.0)
Sodium	NS	6,650	8,370
Vanadium	14.0	9.7 B	10.8 N
Zinc **	2,000 G	542.0	260 N
Miscellaneous Compounds (µg/L or ppb)			
Sulfate	250,000	**1,920,000**	**2,600,000**
Sulfide	2.0	ND (1,000)	**1,200**

***** NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998.
****** EPA priority pollutant metal.
B The value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
E Estimated concentration due to the presence of interference (inorganics).
G Guidance value.
J Compound reported at an estimated concentration below the reporting limit.
N Spike sample recovery is not within the quality control limits.
ND Indicates that the compound was not detected at the method detection limit specified in parentheses.
NS No standard or guidance value available.
Shaded values equal or exceed the NYSDEC surface water standards or guidance values.

Table 5-3.
Summary of Pre- and Post-Remediation pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}C)	Comments
Spill Area				
pH-3 *	01/12/00	3.62	2.3	
pH-1	05/22/03	7.50	NM	
″	06/03/03	7.86	NM	
″	06/18/03	7.62	NM	
″	04/16/08	6.81	49.1	
″	05/22/08	7.21	52.3	
pH-2	05/22/03	7.33	NM	
″	06/03/03	7.48	NM	
″	06/18/03	7.32	NM	
″	07/16/03	7.15	NM	
″	11/21/03	6.92	8.6	
″	04/16/08	6.77	52.9	
″	05/22/08	7.05	54.2	
Central Drainage Ditch and Low pH Trough				
pH-1 *	01/20/00	2.47	2.9	
pH-2 *	01/20/00	**1.76**	3.9	
pH-13 *	01/12/00	**1.87**	0.9	Sulfurous odor observed
pH-15 *	01/12/00	**1.88**	0.8	
pH-16 *	01/12/00	**1.71**	0.1	
pH-15	04/30/08	3.21	68.2	
″	05/22/08	3.04	57.4	
pH-3	05/22/03	6.51	NM	
″	06/03/03	6.50	NM	
″	06/18/03	5.93	NM	
″	07/16/03	6.56	NM	
″	11/21/03	6.39	6.9	
″	04/16/08	5.91	55.6	
″	04/30/08	6.32	66.1	
″	05/22/08	6.53	NM	

Table 5-3 (Continued).
Summary of Pre- and Post-Remediation pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}C)	Comments
Central Drainage Ditch and Low pH Trough (Continued)				
pH-13	11/21/03	3.10	7.4	
″	04/16/08	5.72	48.7	
″	05/22/08	5.31	NM	
pH-4	05/22/03	7.16	NM	
″	06/03/03	7.21	NM	
″	06/18/03	7.10	NM	
″	07/16/03	7.39	NM	
″	04/16/08	6.25	48.1	
″	05/22/08	6.55	NM	
Ponded Water Area				
pH-11 *	01/12/00	2.82	1.7	
pH-5	05/22/03	3.24	NM	
″	06/03/03	3.36	NM	
″	06/18/03	3.61	NM	
″	07/16/03	4.20	NM	
″	07/30/03	3.48	NM	
″	09/03/03	3.34	18.7	
″	10/01/03	4.03	7.3	
″	10/31/03	3.66	11.0	
″	11/21/03	3.90	7.9	
″	04/16/08	3.39	49.0	
″	04/30/08	3.30	61.0	
″	05/22/08	3.48	NM	
″	06/25/08	3.18	NM	
pH-14	04/16/08	3.75	50.8	
″	04/30/08	3.30	61.0	
″	05/22/08	3.24	NM	
″	06/25/08	3.15	NM	

Table 5-3 (Continued).
Summary of Pre- and Post-Remediation pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}C)	Comments
Eastern Boundary Ditch				
pH-F	12/17/99	6.80	NM	
pH-10	01/12/00	6.74	2.3	
pH-6	05/22/03	6.67	NM	
″	06/03/03	7.48	NM	
″	06/18/03	8.01	NM	
″	07/16/03	8.00	NM	
″	11/21/03	7.42	8.7	
″	04/16/08	7.31	48.4	
″	05/22/08	7.24	NM	
″	06/25/08	6.74	NM	
pH-12	06/03/03	7.81	NM	
″	06/18/03	8.01	NM	
″	07/16/03	8.08	NM	
″	11/21/03	7.33	8.5	
″	04/16/08	7.16	50.2	
″	05/22/08	7.37	NM	
″	06/25/08	6.88	NM	
North Lagoon				
pH-E *	12/17/99	2.59	NM	
pH-H *	12/29/99	2.34	0.02	pH results from STL
pH-6 *	01/12/00	2.20	3.2	
pH-7 *	01/12/00	2.20	1.5	Slight sheen on water surface
pH-9 *	01/12/00	2.21	2.2	
pH-7	05/22/03	9.88	NM	
″	06/03/03	10.41	NM	
″	06/18/03	10.27	NM	
″	07/16/03	10.46	NM	
″	07/30/03	9.23	NM	
″	09/03/03	7.06	20.7	

Table 5-3 (Continued).
Summary of Pre- and Post-Remediation pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}C)	Comments
North Lagoon (Continued)				
pH-7	10/01/03	7.12	9.7	
″	10/31/03	7.07	10.3	
″	11/21/03	8.05	8.2	
″	04/16/08	7.01	52.1	
″	05/01/08	7.02	60.4	
″	05/22/08	7.32	NM	
″	06/25/08	7.20	NM	
pH-8	05/22/03	10.25	NM	
″	06/03/03	10.17	NM	
″	06/18/03	10.41	NM	
″	07/16/03	10.32	NM	
″	07/30/03	9.27	NM	
″	09/03/03	7.36	19.8	
″	10/01/03	6.98	10.2	
″	10/31/03	7.00	12.0	
″	11/21/03	7.55	9.3	
″	04/16/08	6.92	50.6	
″	05/22/08	7.49	NM	
″	06/25/08	6.90	NM	
pH-9	05/22/03	8.30	NM	
″	06/03/03	10.33	NM	
″	06/18/03	9.91	NM	a pH of 9.95 was measured at a point ≈10 ft east
″	07/16/03	9.79	NM	
″	07/30/03	7.78	NM	
″	09/03/03	7.11	20.1	
″	10/01/03	6.97	8.9	
″	10/31/03	6.88	13.8	
″	11/21/03	7.27	8.8	
″	04/16/08	7.15	51.9	

Table 5-3 (Continued).
Summary of Pre- and Post-Remediation pH and Temperature Measurements of Surface Water at the Former Barker Chemical Site.

Location Number	Date	pH	Temp (^{O}C)	Comments
North Lagoon (Continued)				
pH-9	05/22/08	7.37	NM	
″	06/25/08	7.01	NM	
pH-11	05/22/03	9.66	NM	
″	06/03/03	10.26	NM	
″	06/18/03	10.37	NM	
″	07/16/03	10.12	NM	
″	07/30/03	9.32	NM	
″	09/03/03	7.40	21.1	
″	10/01/03	7.04	10.3	
″	10/31/03	6.95	10.4	
″	11/21/03	7.85	7.7	
″	04/16/08	7.04	51.2	
″	05/22/08	7.27	NM	
″	06/25/08	7.18	NM	
Chip Area				
pH-10	05/22/03	7.70	NM	
″	06/03/03	7.65	NM	
″	06/18/03	7.13	NM	
″	04/16/08	5.92	49.3	
″	05/22/08	7.81	NM	

***** **The locations of the pre-remediation pH measurements are shown on Figure 5-1.**
NM **Not measured.**
Pre- and post-remediation results are separated by a heavy single line.
Shaded values exceed regulatory limit for corrosivity.

Table 6-1.
Analytical Results for the Lime Waste Samples Collected from the Filled Lagoon at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	W-2 12/17/99 2.0' Filled Lagoon	WP-13 06/21/00 0.0' - 2.4' Filled Lagoon	SB-4 05/21/03 0.0' - 4.0' Filled Lagoon	SB-8 05/21/03 0.0' - 4.0' Filled Lagoon	SB-9 05/21/03 0.0' - 4.0' Filled Lagoon	SB-10 05/21/03 0.0' - 4.0' Filled Lagoon	SB-13 05/21/03 3.5' - 5.0' Filled Lagoon
Semivolatile Organic Compounds (µg/kg or ppb)									
Butylbenzylphthalate	50,000 +	NS			14 J			17 J	
4',5-Dihydroxy-7-methoxyflavone	NS	NS			120 J			220 J	
Di-n-butylphthalate	8,100 +	NS			19 J			20 J	
Fluoranthene	100,000	500,000						21 J	
Phenanthrene	100,000	500,000						37 J	
Pyrene	100,000	500,000						21 J	
Pesticides (µg/kg or ppb)									
Aldrin	19.0	680.0			ND (25)	ND (12)		ND (28)	ND (1,100)
alpha-BHC	97.0	3,400			ND (25)	3.0 J		ND (28)	**280 J**
delta-BHC	100,000	500,000			ND (25)	2.4 J		ND (28)	250 J
gamma-BHC (Lindane)	280.0	9,200			ND (25)	3.9 J		ND (28)	ND (1,100)
Chlordane	910.0	24,000			ND (120)	ND (61)		ND (140)	ND (5,400)
4,4'-DDD	2,600	92,000			ND (50)	ND (24)		5.6 J	**5,400 J**
4,4'-DDE	1,800	62,000			ND (50)	ND (24)		17 J	670 J
4,4'-DDT	1,700	47,000			ND (50)	ND (24)		5.8 J	**21,000**
Dieldrin	39.0	1,400			ND (50)	ND (24)		ND (56)	ND (2,100)
Endosulfan (I)	4,800	200,000			ND (50)	ND (24)		ND (56)	ND (2,100)
Endosulfan (II)	4,800	200,000			ND (50)	ND (24)		ND (56)	ND (2,100)
Endrin	2,200	89,000			ND (50)	ND (24)		ND (56)	ND (2,100)
Endrin Ketone	NS	NS			ND (50)	3.0 J		ND (56)	180 J

Table 6-1 (Continued).
Analytical Results for the Lime Waste Samples Collected from the Filled Lagoon at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	W-2 12/17/99 2.0' Filled Lagoon	WP-13 06/21/00 0.0' - 2.4' Filled Lagoon	SB-4 05/21/03 0.0' - 4.0' Filled Lagoon	SB-8 05/21/03 0.0' - 4.0' Filled Lagoon	SB-9 05/21/03 0.0' - 4.0' Filled Lagoon	SB-10 05/21/03 0.0' - 4.0' Filled Lagoon	SB-13 05/21/03 3.5' - 5.0' Filled Lagoon
Pesticides (Continued)									
Heptachlor	NS	NS			ND (25)	ND (12)		ND (28)	ND (1,100)
Methoxychlor	NS	NS			ND (250)	3.3 J		ND (280)	250 J
Herbicides (µg/kg or ppb)									
2,4-D	500.0 +	NS		3.4 JBP	ND (1,200)	ND (1,200)		ND (1,400)	ND (1,100)
2,4,5-TP (Silvex)	58,000	500,000		1.8 JBP	ND (500)	ND (490)		ND (560)	ND (430)
2,4,5-T	1,900 +	NS		2.0 JBP	ND (500)	ND (490)		ND (560)	ND (430)
Inorganic Compounds (mg/kg or ppm)									
Aluminum	NS	NS	2,950 E	4,350					
Arsenic **	16.0	16.0	**16.1 N**	3.7 N	3.9	11.6	3.6	4.7	12.5
Beryllium **	14.0	590.0	ND (0.30)	0.15 B	0.22 B	0.03 B	0.18 B	0.19 B	0.10 B
Cadmium **	2.5	9.3	ND (0.21)	ND (0.042)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.09 B
Chromium **	36.0	1,500	4.0	5.8	4.5 E	2.2 E	3.6 E	3.2 E	3.6 E
Cobalt	30.0 +	NS	0.76 B	0.3 B	0.77 B	0.4 B	0.76 B	0.69 B	0.39 B
Copper **	270.0	270.0	52.3 E	3.4 N	6.0 E	143.0 E	6.2 E	7.4 E	6.8 E
Cyanide	27.0	27.0	ND (1.6)						
Iron	2,000 +	NS	**3,270 E**	**3,450**					
Lead **	400.0	1,000	33.1	5.7 N	2.6	6.3	15.0	7.0	61.8
Manganese	2,000	10,000	88.3 N	56.6 N					
Mercury **	0.81	2.8	ND (0.15)	0.032 BN	ND (0.007)	ND (0.007)	ND (0.008)	ND (0.009)	ND (0.007)
Nickel **	140.0	310.0	2.5 B	2.2	3.0 BE	1.8 BE	2.6 BE	2.5 BE	1.6 BE

Table 6-1 (Continued).
Analytical Results for the Lime Waste Samples Collected from the Filled Lagoon at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	W-2 12/17/99 2.0' Filled Lagoon	WP-13 06/21/00 0.0' - 2.4' Filled Lagoon	SB-4 05/21/03 0.0' - 4.0' Filled Lagoon	SB-8 05/21/03 0.0' - 4.0' Filled Lagoon	SB-9 05/21/03 0.0' - 4.0' Filled Lagoon	SB-10 05/21/03 0.0' - 4.0' Filled Lagoon	SB-13 05/21/03 3.5' - 5.0' Filled Lagoon
Inorganic Compounds (Continued)									
Vanadium	150.0 +	NS	3.6 B	5.8	4.7 BE	1.3 BE	3.3 BE	4.3 BE	1.8 BE
Zinc **	2,200	10,000	15.1 E	7.4	7.4 E	4.1 E	18.5 E	37.3 E	18.9 E
Miscellaneous Compounds (mg/kg or ppm)									
Sulfur	NS	NS		352,000	18,000	22,000	22,000	10,000	24,000
Boron	NS	NS		10.4	1.4 B	0.44 B	1.6 B	3.2	1.3 B
Leachable pH (pH units)	≤2; ≥12.5	NS	6.7		7.06	3.34		7.01	7.54

***** 6 NYCRR Part 375: Environmental Remediation Programs, Restricted Use Soil Cleanup Objectives, NYSDEC, 2006.
+ NYSDEC Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1995.
****** EPA priority pollutant metal.
B Analyte detected in the associated blank, as well as in the sample (organics) or the value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
E Estimated concentration due to the presence of interference (inorganics).
J Compound reported at an estimated concentration below the reporting limit.
N Spike sample recovery is not within the quality control limits.
ND Indicates that the compound was not detected at the method detection limit specified in parentheses.
NS No standard or guidance value available.
P >25% difference between the analytical results on two GC columns. The lower value is reported.
Blanks indicate that the sample was not analyzed for the associated compound.
Shaded values equal or exceed the Part 375 residential or TAGM 4046 soil cleanup objectives.
Hachured values equal or exceed both the Part 375 residential and commercial soil cleanup objectives.

Table 6-2.
Analytical Results for the Sludge Samples Collected from the Lagoons at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	WP-13 06/21/00 2.4' - 3.2' Filled Lagoon	SB-4 05/21/03 4.0' - 8.0' Filled Lagoon	SB-9 05/21/03 4.0' - 8.0' Filled Lagoon	SB-13 05/21/03 5.0' - 6.0' Filled Lagoon	SB-14 05/22/03 4.0' - 7.0' South Lagoon
Semivolatile Organic Compounds (µg/kg or ppb)							
Naphthalene	100,000	500,000		10 J			
Pesticides (µg/kg or ppb)							
Aldrin	19.0	680.0		ND (19)			ND (14)
alpha-BHC	97.0	3,400		ND (19)			ND (14)
delta-BHC	100,000	500,000		ND (19)			ND (14)
gamma-BHC (Lindane)	280.0	9,200		ND (19)			ND (14)
Chlordane	910.0	24,000		ND (94)			ND (68)
4,4'-DDD	2,600	92,000		ND (38)			3.8 J
4,4'-DDE	1,800	62,000		ND (38)			35.0
4,4'-DDT	1,700	47,000		ND (38)			ND (27)
Dieldrin	39.0	1,400		ND (38)			ND (27)
Endosulfan (I)	4,800	200,000		ND (38)			ND (27)
Endosulfan (II)	4,800	200,000		ND (38)			ND (27)
Endrin	2,200	89,000		ND (38)			ND (27)
Endrin Ketone	NS	NS		ND (38)			ND (27)
Heptachlor	NS	NS		ND (19)			ND (14)
Methoxychlor	NS	NS		ND (190)			ND (140)
Herbicides (µg/kg or ppb)							
2,4-D	500.0 +	NS	9.0 JB	ND (920)		ND (1,200)	ND (1,400)
2,4,5-TP (Silvex)	58,000	500,000	1.1 JBP	ND (370)		ND (480)	ND (550)
2,4,5-T	1,900 +	NS	3.1 JBP	ND (370)		ND (480)	ND (550)

Table 6-2 (Continued).
Analytical Results for the Sludge Samples Collected from the Lagoons at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	WP-13 06/21/00 2.4' - 3.2' Filled Lagoon	SB-4 05/21/03 4.0' - 8.0' Filled Lagoon	SB-9 05/21/03 4.0' - 8.0' Filled Lagoon	SB-13 05/21/03 5.0' - 6.0' Filled Lagoon	SB-14 05/22/03 4.0' - 7.0' South Lagoon
Inorganic Compounds (mg/kg or ppm)							
Aluminum	NS	NS	1,960				
Arsenic **	16.0	16.0	3.3 N	3.7	2.3	4.5	3.5
Beryllium **	14.0	590.0	0.089 B	0.34 B	0.29 B	0.24 B	0.57 B
Cadmium **	2.5	9.3	ND (0.045)	ND (0.04)	ND (0.04)	ND (0.05)	ND (0.05)
Chromium **	36.0	1,500	2.4	11.0 E	9.3 E	7.4 E	21.0
Cobalt	30.0 +	NS	ND (0.1)	5.9 B	4.9 B	3.7 B	4.2 B
Copper **	270.0	270.0	2.8 N	15.5 E	13.0 E	11.6 E	17.3
Iron	2,000 +	NS	1,770				
Lead **	400.0	1,000	3.7 N	3.6	3.0	6.6	6.4
Manganese	2,000	10,000	146 N				
Mercury **	0.81	2.8	0.031 BN	ND (0.006)	0.024	0.124	ND (0.008)
Nickel **	140.0	310.0	1.9	10.6 E	9.5 E	8.0 E	11.7
Vanadium	150.0 +	NS	3.3	18.4 E	16.8 E	12.6 E	18.8
Zinc **	2,200	10,000	7.0	25.2 E	23.5 E	24.8 E	39.6
Miscellaneous Compounds (mg/kg or ppm)							
Sulfur	NS	NS	551,000	8,200	7,700	23,000	22,000
Boron	NS	NS	14.6	2.5	4.5	3.0	13.5
Leachable pH (pH units)	≤2; ≥12.5	NS		9.65			

Table 6-2 (Continued).
Analytical Results for the Sludge Samples Collected from the Lagoons at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	WP-13 06/21/00 2.4' - 3.2' Filled Lagoon	SB-4 05/21/03 4.0' - 8.0' Filled Lagoon	SB-9 05/21/03 4.0' - 8.0' Filled Lagoon	SB-13 05/21/03 5.0' - 6.0' Filled Lagoon	SB-14 05/22/03 4.0' - 7.0' South Lagoon

*	6 NYCRR Part 375: Environmental Remediation Programs, Restricted Use Soil Cleanup Objectives, NYSDEC, 2006.
+	NYSDEC Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1995.
**	EPA priority pollutant metal.
B	Value greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
E	Estimated concentration due to the presence of interference.
J	Compound reported at an estimated concentration below the reporting limit.
ND	Indicates that the compound was not detected at the method detection limit specified in parentheses.
NS	No standard or guidance value available.
	Blanks indicate that the sample was not analyzed for the associated compound.
	Shaded values equal or exceed the Part 375 residential or TAGM 4046 soil cleanup objectives.
	Hachured values equal or exceed both the Part 375 residential and commercial soil cleanup objectives.

Table 6-3.
Analytical Results for Native Soil Samples Collected Under the Filled Lagoon at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	WP-6 06/21/00 5.7' - 8.0' Filled Lagoon	WP-13 06/21/00 3.2' - 4.2' Filled Lagoon	SB-10 05/21/03 4.0' - 8.0' Filled Lagoon
Semivolatile Organic Compounds (µg/kg or ppb)					
Acenaphthene	100,000	500,000	ND (370)	180 J	ND (360)
Anthracene	100,000	500,000	ND (370)	190 J	ND (360)
Benzo(a)anthracene	1,000	5,600	ND (370)	140 J	ND (360)
Benzo(a)pyrene	1,000	1,000	ND (370)	93 J	ND (360)
Benzo(k)fluoranthene	1,000	56,000	ND (370)	62 J	ND (360)
Bis(2-ethylhexyl)phthalate	50,000 +	NS	78 J	3,100	ND (360)
Carbazole	NS	NS	ND (370)	150 J	ND (360)
Chrysene	1,000	56,000	ND (370)	150 J	ND (360)
Dibenzofuran	14,000	350,000	ND (370)	120 J	ND (360)
Fluoranthene	100,000	500,000	ND (370)	330 J	ND (360)
Fluorene	100,000	500,000	ND (370)	200 J	ND (360)
2-Methylnaphthalene	36,400 +	NS	ND (370)	120 J	ND (360)
Naphthalene	100,000	500,000	ND (370)	170 J	ND (360)
Phenanthrene	100,000	500,000	ND (370)	800.0	ND (360)
Pyrene	100,000	500,000	ND (370)	390 J	ND (360)
Pesticides (µg/kg or ppb)					
Aldrin	19.0	680.0			ND (8.6)
alpha-BHC	97.0	3,400			ND (8.6)
beta-BHC	72.0	3,000			ND (8.6)
delta-BHC	100,000	500,000			ND (8.6)
gamma-BHC (Lindane)	280.0	9,200			ND (8.6)
Chlordane	910.0	24,000			ND (43)
4,4'-DDD	2,600	92,000			ND (17)
4,4'-DDE	1,800	62,000			ND (17)
4,4'-DDT	1,700	47,000			ND (17)
Dieldrin	39.0	1,400			ND (17)
Endosulfan (I)	4,800	200,000			ND (17)
Endosulfan (II)	4,800	200,000			ND (17)
Endrin	2,200	89,000			ND (17)

Table 6-3 (Continued).
Analytical Results for Native Soil Samples Collected Under the Filled Lagoon at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	Part 375 Residential Soil Cleanup Objective *	Part 375 Commercial Soil Cleanup Objective *	WP-6 06/21/00 5.7' - 8.0' Filled Lagoon	WP-13 06/21/00 3.2' - 4.2' Filled Lagoon	SB-10 05/21/03 4.0' - 8.0' Filled Lagoon
Pesticides (Continued)					
Endrin Ketone	NS	NS			ND (17)
Heptachlor	NS	NS			ND (8.6)
Methoxychlor	NS	NS			ND (86)
Herbicides (µg/kg or ppb)					
2,4-D	500.0 +	NS		6.4 JBP	ND (860)
2,4,5-TP (Silvex)	58,000	500,000		6.8 B	ND (340)
2,4,5-T	1,900 +	NS		16 BP	ND (340)
Inorganic Compounds (mg/kg or ppm)					
Aluminum	NS	NS	4,240	8,810	
Arsenic **	16.0	16.0	2.6 N	1.2 BN	3.0
Beryllium **	14.0	590.0	0.19 B	0.4 B	0.2 B
Cadmium **	2.5	9.3	ND (0.031)	ND (0.044)	ND (0.03)
Chromium **	36.0	1,500	6.4	9.2	7.2 E
Cobalt	30.0 +	NS	4.0	3.4	5.2 B
Copper **	270.0	270.0	19.1 N	8.9 N	21.5 E
Iron	2,000 +	NS	**9,690**	**8,780**	
Lead **	400.0	1,000	2.9 N	3.5 N	3.2
Manganese	2,000	10,000	610 N	269 N	
Mercury **	0.81	2.8	0.032 BN	ND (0.018)	ND (0.005)
Nickel **	140.0	310.0	8.4	8.0	10.5 E
Vanadium	150.0 +	NS	10.3	13.3	12.2 E
Zinc **	2,200	10,000	21.6	30.8	29.2 E
Miscellaneous Compounds (mg/kg or ppm)					
Sulfur	NS	NS	27,400	198,000	2,200
Boron	NS	NS	17.8	25.7	3.7
Leachable pH (pH units)	≤2; ≥12.5	NS			8.10
TPH	NS	NS		131.0	

Table 6-3 (Continued).
Analytical Results for Native Soil Samples Collected Under the Filled Lagoon at the Former Barker Chemical Site.

*	6 NYCRR Part 375: Environmental Remediation Programs, Restricted Use Soil Cleanup Objectives, NYSDEC, 2006.
+	NYSDEC Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1995.
**	EPA priority pollutant metal.
B	Analyte detected in the associated blank, as well as in the sample (organics) or the value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
E	Estimated concentration due to the presence of interference.
J	Compound reported at an estimated concentration below the reporting limit.
N	Spike sample recovery is not within the quality control limits.
ND	Indicates that the compound was not detected at the method detection limit specified in parentheses.
NS	No standard or guidance value available.
P	>25% difference between the analytical results on two GC columns. The lower value is reported.
	Blanks indicate that the sample was not analyzed for the associated compound.
	Shaded values equal or exceed the Part 375 residential or TAGM 4046 soil cleanup objectives.
	Hachured values equal or exceed both the Part 375 residential and commercial soil cleanup objectives.

Table 6-4.
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	NYSDEC Sediment Criteria *	SED-1 06/21/00 NR Boundary Ditch Downstream Trough	SED-2 06/21/00 NR Boundary Ditch Upstream of Trough	SED-4 06/21/00 NR Drainage Ditch Near Low pH Trough	SED-5 12/14/00 NR Boundary Ditch at 90^{O} Bend	SED-6 09/03/03 0.0' - 0.08' Boundary Ditch at Road
Semivolatile Organic Compounds (µg/kg or ppb)						
Benzo(a)pyrene	2,600 **				ND (330)	170 J
Benzo(a)anthracene	383.8				ND (330)	200 J
Benzo(b)fluoranthene	NS				ND (330)	180 J
Benzo(g,h,i)perylene	NS				ND (330)	120 J
Benzo(k)fluoranthene	NS				ND (330)	120 J
Bis(2-ethylhexyl)phthalate	3,759				ND (330)	ND (2,100)
Chrysene	NS				ND (330)	220 J
Di-n-butylphthalate	NS				750.0	ND (2,100)
Fluoranthene	32,028				ND (330)	550 J
Indeno(1,2,3-cd)pyrene	NS				ND (330)	100 J
Phenanthrene	3,768				ND (330)	450 J
Pyrene	30,178				ND (330)	440 J
Pesticides (µg/kg or ppb)						
Aldrin	140.0 **				ND (50)	ND (40)
alpha-BHC	2.0				ND (50)	ND (40)
delta-BHC	2.0				ND (50)	ND (40)
gamma-BHC (Lindane)	2.0				ND (50)	ND (40)
Chlordane	0.8				ND (100)	ND (200)
4,4'-DDD	3.3 **				**100.0**	**7 J**

Table 6-4 (Continued).
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

Sample Number Date Sampled Sample Depth Sample Location	NYSDEC Sediment Criteria *	SED-1 06/21/00 NR Boundary Ditch Downstream Trough	SED-2 06/21/00 NR Boundary Ditch Upstream of Trough	SED-4 06/21/00 NR Drainage Ditch Near Low pH Trough	SED-5 12/14/00 NR Boundary Ditch at 90^{O} Bend	SED-6 09/03/03 0.0' - 0.08' Boundary Ditch at Road
Pesticides (Continued)						
4,4'-DDE	3.3 **				ND (100)	**28 J**
4,4'-DDT	31.4				ND (100)	7.5 J
Dieldrin	282.6				ND (100)	ND (80)
Endosulfan I	1.0				ND (50)	ND (80)
Endosulfan II	1.0				ND (100)	ND (80)
Endosulfan Sulfate	NS				ND (100)	ND (80)
Endrin	125.6				ND (100)	ND (80)
Endrin Ketone	NS				ND (100)	ND (80)
Heptachlor	3.0				ND (50)	ND (40)
Methoxychlor	18.8				ND (500)	ND (400)
PCBs (µg/kg or ppb)						
PCBs (Total)	606.8				ND (1,000)	
Herbicides (µg/kg or ppb)						
2,4-D	NS	2.5 JBP	8.7 B	6.1 JBP		ND (1000)
2,4,5-TP (Silvex)	NS	0.39 JBP	0.22 JBP	0.56 JBP		ND (400)
2,4,5-T	NS	0.95 JBP	1.2 JBP	0.79 JBP		ND (400)
Inorganic Compounds (mg/kg or ppm)						
Aluminum	NS	6,340	6,160	8,780	6,400	11,300
Arsenic **	6.0	**23.5 N**	**22.1 N**	**321 N**	**23.0**	5.5

Table 6-4 (Continued).
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

Sample Number **Date Sampled** **Sample Depth** **Sample Location**	**NYSDEC Sediment Criteria ***	**SED-1** **06/21/00** **NR** **Boundary Ditch Downstream Trough**	**SED-2** **06/21/00** **NR** **Boundary Ditch Upstream of Trough**	**SED-4** **06/21/00** **NR** **Drainage Ditch Near Low pH Trough**	**SED-5** **12/14/00** **NR** **Boundary Ditch at 90^{O} Bend**	**SED-6** **09/03/03** **0.0' - 0.08'** **Boundary Ditch at Road**
Inorganic Compounds (Continued)						
Beryllium **	10.0 **	0.25 B	0.33 B	0.29 B	0.27	0.59 B
Cadmium **	0.6	ND (0.032)	ND (0.034)	ND (0.062)	**1.1**	ND (0.04)
Chromium **	26.0	11.2	**69.6**	17.0	16.0	13.7
Cobalt	NS	3.9	4.5	1.8	2.0	6.5 B
Copper **	16.0	**65.8 N**	**53.4 N**	**394 N**	**27.0**	**18.6 N**
Iron	20,000	14,900	15,300	**26,900**	5,100	15,500
Lead **	31.0	15.5 N	**314 N**	**68.5 N**	22.0	**48.9**
Manganese	460.0	326 N	309 N	84.2 N	48.0	**563.0**
Mercury **	0.15	**0.27 N**	**0.19 N**	0.13 N	**0.51**	0.025 B
Nickel **	16.0	10.1	10.4	6.6	5.6	**16.2**
Vanadium	NS	17.7	17.2	22.2	16.0	19.2
Zinc **	120.0	54.7	83.9	82.7	21.0	106 E
Miscellaneous Compounds (mg/kg or ppm)						
Sulfur	NS	2,530	2,260	10,100		
Boron	NS	30.6	25.2	52.6		5.1 B
Leachable pH (pH units)	≤2; ≥12.5					6.86

Table 6-4 (Continued).
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

Sample Number **Date Sampled** **Sample Depth** **Sample Location**	**NYSDEC Sediment Criteria ***	**SED-7** **09/03/03** **0.0' - 0.17'** **Boundary Ditch at 90^{O} Bend**	**SED-8** **09/03/03** **0.17' - 0.33'** **Historic Ditch**	**SED-9** **09/03/03** **0.0' - 0.17'** **Drainage Ditch Near Low pH Trough**	**SED-10** **09/03/03** **0.0' - 0.17'** **Drainage Ditch Near Road**	**SED-11** **09/03/03** **0.0' - 0.17'** **Ponded Water Area**
Semivolatile Organic Compounds (µg/kg or ppb)						
Benzo(a)pyrene	2,600 **	25 J	13 J	190 J	49 J	ND (2,800)
Benzo(a)anthracene	383.8	33 J	13 J	230 J	55 J	ND (2,800)
Benzo(b)fluoranthene	NS	17 J	16 J	130 J	36 J	ND (2,800)
Benzo(g,h,i)perylene	NS	16 J	ND (440)	140 J	35 J	ND (2,800)
Benzo(k)fluoranthene	NS	28 J	ND (440)	190 J	53 J	ND (2,800)
Bis(2-ethylhexyl)phthalate	3,759	16 J	14 J	ND (3,600)	24 J	ND (2,800)
Chrysene	NS	38 J	16 J	270 J	57 J	ND (2,800)
Di-n-butylphthalate	NS	ND (440)	ND (440)	ND (3,600)	ND (460)	ND (2,800)
Fluoranthene	32,028	56 J	33 J	360 J	120 J	140 J
Indeno(1,2,3-cd)pyrene	NS	13 J	ND (440)	110 J	31 J	ND (2,800)
Phenanthrene	3,768	38 J	21 J	190 J	68 J	110 J
Pyrene	30,178	66 J	26 J	440 J	100 J	100 J
Pesticides (µg/kg or ppb)						
Aldrin	140.0 **	ND (86)	ND (42)	ND (340)	ND (45)	ND (130)
alpha-BHC	2.0	ND (86)	ND (42)	ND (340)	ND (45)	ND (130)
delta-BHC	2.0	**15 J**	ND (42)	**74 J**	ND (45)	ND (130)
gamma-BHC (Lindane)	2.0	ND (86)	ND (42)	ND (340)	ND (45)	ND (130)
Chlordane	0.8	**34 J**	ND (210)	**120 J**	ND (220)	ND (670)
4,4'-DDD	3.3 **	**390.0**	**8 J**	**390 J**	**6.2 J**	**220 J**

Table 6-4 (Continued).
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

Sample Number **Date Sampled** **Sample Depth** **Sample Location**	**NYSDEC Sediment Criteria ***	**SED-7** **09/03/03** **0.0' - 0.17'** **Boundary Ditch at 90^{O} Bend**	**SED-8** **09/03/03** **0.17' - 0.33'** **Historic Ditch**	**SED-9** **09/03/03** **0.0' - 0.17'** **Drainage Ditch Near Low pH Trough**	**SED-10** **09/03/03** **0.0' - 0.17'** **Drainage Ditch Near Road**	**SED-11** **09/03/03** **0.0' - 0.17'** **Ponded Water Area**
Pesticides (Continued)						
4,4'-DDE	3.3 **	**57 J**	**21 J**	**430 J**	**12 J**	**47 J**
4,4'-DDT	31.4	**50 J**	8.7 J	**1,400**	**64 J**	**250 J**
Dieldrin	282.6	ND (170)	ND (85)	**300 J**	ND (90)	ND (270)
Endosulfan I	1.0	ND (170)	ND (85)	ND (690)	ND (90)	ND (270)
Endosulfan II	1.0	**17 J**	ND (85)	ND (690)	ND (90)	ND (270)
Endosulfan Sulfate	NS	23 J	ND (85)	240 J	ND (90)	ND (270)
Endrin	125.6	ND (170)	ND (85)	ND (690)	ND (90)	ND (270)
Endrin Ketone	NS	ND (170)	ND (85)	69 J	ND (90)	ND (270)
Heptachlor	3.0	ND (86)	ND (42)	ND (340)	ND (45)	ND (130)
Methoxychlor	18.8	ND (860)	ND (420)	**70 J**	ND (450)	ND (1300)
PCBs (µg/kg or ppb)						
PCBs (Total)	606.8					
Herbicides (µg/kg or ppb)						
2,4-D	NS	ND (1100)	ND (1000)	ND (1700)	ND (1100)	ND (1300)
2,4,5-TP (Silvex)	NS	ND (430)	ND (420)	ND (690)	ND (440)	ND (540)
2,4,5-T	NS	ND (430)	ND (420)	ND (690)	ND (440)	ND (540)
Inorganic Compounds (mg/kg or ppm)						
Aluminum	NS	7,820	12,000	19,800	9,010	7,860
Arsenic **	6.0	**53.0**	**8.4**	**367.0**	**32.1**	**33.3**

Table 6-4 (Continued).
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

Sample Number **Date Sampled** **Sample Depth** **Sample Location**	**NYSDEC Sediment Criteria ***	**SED-7** **09/03/03** **0.0' - 0.17'** **Boundary Ditch at 90^{O} Bend**	**SED-8** **09/03/03** **0.17' - 0.33'** **Historic Ditch**	**SED-9** **09/03/03** **0.0' - 0.17'** **Drainage Ditch Near Low pH Trough**	**SED-10** **09/03/03** **0.0' - 0.17'** **Drainage Ditch Near Road**	**SED-11** **09/03/03** **0.0' - 0.17'** **Ponded Water Area**
Inorganic Compounds (Continued)						
Beryllium **	10.0 **	0.23 B	0.63 B	0.87 B	0.38 B	0.40 B
Cadmium **	0.6	ND (0.04)	ND (0.04)	ND (0.06)	ND (0.04)	ND (0.05)
Chromium **	26.0	17.8	11.3	22.9	9.8	7.8
Cobalt	NS	2.6 B	3.8 B	13.8	7.9	2.9 B
Copper **	16.0	**27.9 N**	15.8 N	**438 N**	**18.0 N**	**114 N**
Iron	20,000	10,100	9,590	**53,100**	17,900	13,100
Lead **	31.0	**34.1**	**57.8**	**131.0**	20.1	19.5
Manganese	460.0	55.8	75.5	**1,240**	**960.0**	122.0
Mercury **	0.15	0.037 B	0.049	**0.165**	0.049	ND (0.021)
Nickel **	16.0	7.0	11.7	**20.1**	14.4	8.7
Vanadium	NS	22.7	18.0	29.5	15.1	14.6
Zinc **	120.0	28.2 E	60.7 E	**291 E**	66.7 E	35.3 E
Miscellaneous Compounds (mg/kg or ppm)						
Sulfur	NS					670.0
Boron	NS	3.6 B	1.9 B	10.4 B	6.0 B	3.4 B
Leachable pH (pH units)	≤2; ≥12.5	4.35	4.45	6.58	7.14	3.80

Table 6-4 (Continued).
Analytical Results for Sediment Samples Collected at the Former Barker Chemical Site.

*	NYSDEC Technical Guidance for Screening Contaminated Sediments, January 1999. Sediment criteria calculated using a total organic carbon content of 3.14%. Sediment criteria given are for the protection of benthic aquatic life from chronic toxicity (organics) and the lowest effect level (metals).
**	6 NYCRR Part 375: Environmental Remediation Programs, Soil Cleanup Objectives for the Protection of Ecological Resources, NYSDEC, 2006.
B	Analyte was detected in the associated blank as well as the sample (organics) or value greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
E	Estimated concentration due to the presence of interference.
J	Compound reported at an estimated concentration below the reporting limit.
N	Spike sample recovery is not within the quality control limits.
ND	Indicates that the compound was not detected at the method detection limit specified in parentheses.
NS	No standard or guidance value available.
P	>25% difference between the analytical results on two GC columns. The lower value is reported.
	Blanks indicate that the sample was not analyzed for the associated compound.
	Shaded values equal or exceed the NYSDEC sediment criteria or Part 375 soil cleanup objectives for the protection of ecological resources.

APPENDIX A

WELL PURGE AND SAMPLE LOGS

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119	
SAMPLERS: Glenn M. May & Brian P. Sadowski			
PURGE DATE: April 29, 2008	START PURGE: 1153	END PURGE: 1156	
SAMPLE DATE: April 30 & May 1, 2008	SAMPLE TIME: 1000 & 1300 (04/30/08); 1020 & 1250 (05/01/08)		

WELL NUMBER: **MW-1**

1. TOTAL CASING AND SCREEN LENGTH (FT): **8.11**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **3.33**
4. VOLUME OF WATER IN CASING (OUNCE): **25.1**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **75.3** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

PARAMETERS	VOLUME PURGED (OUNCES)									
	20.0									
pH	7.09									
CONDUCTIVITY (µmhos)	NM									
TURBIDITY (NTU)	NM									
TEMPERATURE (^{O}F)	62.3									
Eh	NM									
TIME	1200									

Purge water clear with a slight gray color. No odor. Purged dry after 20 ounce.
Water level before purge: 3.33 feet below top of riser.
Water level at 1440: 4.65 feet below top of riser.
Water level prior to sampling on May 1, 2008: 4.70 feet below top of riser with water in tubing.
During the first purge on April 30, 2008 the sample bottles for VOC, metals and sulfate analyses were filled.
At 1300 on April 30, 2008 the bottle for sulfide and part of the first bottle for pesticide analyses were filled.
The remaining pesticide bottles were filled on May 1, 2008.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119	
SAMPLERS: Glenn M. May & Brian P. Sadowski			
PURGE DATE: April 29, 2008	START PURGE: 1424	END PURGE: 1433	
SAMPLE DATE: April 30 & May 1, 2008	SAMPLE TIME: 1022 & 1504 (04/30/08); 1030 & 1300 (05/01/08)		

WELL NUMBER: **MW-2**

1. TOTAL CASING AND SCREEN LENGTH (FT): **9.72**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **5.52**
4. VOLUME OF WATER IN CASING (OUNCE): **22.0**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **66.0** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

PARAMETERS	VOLUME PURGED (OUNCES)									
	30.0									
pH	7.57									
CONDUCTIVITY (µmhos)	NM									
TURBIDITY (NTU)	NM									
TEMPERATURE (^{O}F)	63.6									
Eh	NM									
TIME	1432									

Purge water medium brown in color with a slight sulfur odor. Purged dry after 30 ounce.
During the first purge on April 30, 2008 the sample bottles for VOC, sulfide, sulfate and 1/3 of the bottle for metals analyses were filled.
At 1504 on April 30, 2008 the remainder of the bottle for metals and part of the first bottle for pesticide analyses were filled.
The remaining pesticide bottles were filled on May 1, 2008.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119	
SAMPLERS: Glenn M. May & Brian P. Sadowski			
PURGE DATE: April 29, 2008	START PURGE: 1316	END PURGE: 1327	
SAMPLE DATE: April 30 & May 1, 2008	SAMPLE TIME: 1040 (04/30/08); 1050 & 1310 (05/01/08)		

WELL NUMBER: **MW-3**

1. TOTAL CASING AND SCREEN LENGTH (FT): **12.62**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **4.05**
4. VOLUME OF WATER IN CASING (OUNCE): **45.0**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **135.0** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

	VOLUME PURGED (OUNCES)									
PARAMETERS	40.0	50.0								
pH	7.45	7.63								
CONDUCTIVITY (µmhos)	NM	NM								
TURBIDITY (NTU)	NM	NM								
TEMPERATURE (^{O}F)	53.7	57.5								
Eh	NM	NM								
TIME	1319	1323								

Purge water black in color with a sulfur odor. Some fine grained sand in the bottom of the purge bottle. Purged dry after 50 ounce.
During the first purge on April 30, 2008 the sample bottles for VOC, sulfide, sulfate and metals analyses were filled. The water in the VOC bottles turned milky white. The water in the sulfide bottle flocculated with a white color. The floc ultimately settled to the bottom of the bottle. The water in the metals bottle also turned white but took more time than the VOC and sulfide bottles.
The pesticide bottles were filled on May 1, 2008.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119
SAMPLERS: Glenn M. May & Brian P. Sadowski		
PURGE DATE: April 29, 2008	START PURGE: 1245	END PURGE: 1304
SAMPLE DATE: April 30, 2008	SAMPLE TIME: 1315	

WELL NUMBER: **MW-4**

1. TOTAL CASING AND SCREEN LENGTH (FT): **13.58**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **5.15**
4. VOLUME OF WATER IN CASING (OUNCE): **44.2**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **132.6** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

	VOLUME PURGED (OUNCES)									
PARAMETERS	60.0	120.0	180.0	240.0	300.0					
pH	6.62	8.56	8.52	7.91	7.85					
CONDUCTIVITY (µmhos)	NM	NM	NM	NM	NM					
TURBIDITY (NTU)	NM	NM	NM	NM	NM					
TEMPERATURE (^{O}F)	54.6	53.3	53.2	50.7	50.8					
Eh	NM	NM	NM	NM	NM					
TIME	1248	NM	NM	NM	1304					

Purge water black in color with a septic odor. Water has cleared by the 4th purge; water is now dark gray. Well was not purged dry. During the first purge on April 30, 2008 all of the sample bottles were filled.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119	
SAMPLERS: Glenn M. May & Brian P. Sadowski			
PURGE DATE: April 29, 2008	START PURGE: 1330	END PURGE: 1341	
SAMPLE DATE: April 30 & May 1, 2008	SAMPLE TIME: 1100 (04/30/08); 1105 & 1315 (05/01/08)		

WELL NUMBER: **MW-5**

1. TOTAL CASING AND SCREEN LENGTH (FT): **16.03**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **3.85**
4. VOLUME OF WATER IN CASING (OUNCE): **63.9**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **191.7** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

	VOLUME PURGED (OUNCES)									
PARAMETERS	40.0	65.0								
pH	6.53	NM								
CONDUCTIVITY (µmhos)	NM	NM								
TURBIDITY (NTU)	NM	NM								
TEMPERATURE (^{O}F)	55.7	NM								
Eh	NM	NM								
TIME	1335	NM								

Purge water chocolate brown in color with a sulfur odor. Some fine grained sand in the bottom of the purge bottle. Purged dry after 65 ounce. During the first purge on April 30, 2008 the sample bottles for VOC, sulfide, sulfate, metals and part of the first bottle for pesticide analyses were filled.
The remaining pesticide bottles were filled on May 1, 2008.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119	
SAMPLERS: Glenn M. May & Brian P. Sadowski			
PURGE DATE: April 29, 2008	START PURGE: 1409	END PURGE: 1416	
SAMPLE DATE: April 30 & May 1, 2008	SAMPLE TIME: 1120 & 1452 (04/30/08); 1110 & 1325 (05/01/08)		

WELL NUMBER: **MW-6**

1. TOTAL CASING AND SCREEN LENGTH (FT): **11.38**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **5.26**
4. VOLUME OF WATER IN CASING (OUNCE): **32.1**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **96.3** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

PARAMETERS	VOLUME PURGED (OUNCES)									
	30.0									
pH	7.29									
CONDUCTIVITY (µmhos)	NM									
TURBIDITY (NTU)	NM									
TEMPERATURE (^{O}F)	60.7									
Eh	NM									
TIME	1415									

Purge water medium brown in color with a no odor. Purged dry after 30 ounce.
During the first purge on April 30, 2008 the sample bottles for VOC, sulfide, sulfate and part of the bottle for metals analyses were filled. At 1452 on April 30, 2008 the remainder of the bottle for metals analysis was filled. The bottle was swollen and gassed off when opened. One bottle for pesticide analysis was filled on May 1, 2008.

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York, 14203-2999

WELL PURGE AND SAMPLE LOG

SITE NAME: Barker Chemical Site		SITE NUMBER: 932119	
SAMPLERS: Glenn M. May & Brian P. Sadowski			
PURGE DATE: April 29, 2008	START PURGE: 1350	END PURGE: 1400	
SAMPLE DATE: April 30, 2008	SAMPLE TIME: 1140		

WELL NUMBER: **MW-12**

1. TOTAL CASING AND SCREEN LENGTH (FT): **11.56**
2. CASING INTERNAL DIAMETER (IN): **1.0**
3. WATER LEVEL BELOW TOP OF CASING (FT): **4.37**
4. VOLUME OF WATER IN CASING (OUNCE): **37.7**

[(#1 - #3) x #2] x 128 fl oz

VOLUME OF 3 CASINGS: **113.1** OZ.

WELL ID.	VOL. (GAL/FT)
1"	0.041
2"	0.163
3"	0.367
4"	0.653
5"	1.020
6"	1.469
8"	2.611

	VOLUME PURGED (OUNCES)									
PARAMETERS	40.0									
pH	7.07									
CONDUCTIVITY (µmhos)	NM									
TURBIDITY (NTU)	NM									
TEMPERATURE (^{O}F)	58.9									
Eh	NM									
TIME	1358									

Purge water medium brown in color with no odor. A relatively large quantity of fine grained sand in the bottom of the purge bottle. Purged dry after 40 ounce.
During the first purge on April 30, 2008 all of the sample bottles were filled.

APPENDIX B

ANALYTICAL DATA

SURFACE WATER

SDG NARRATIVE

Job#: A08-4834,A08-4835,A08-4854

Project#: NY5A946109
SDG#: A84834
Site Name: NYSDEC - REGION 9 REMEDIATION/SPILLS CONTRACT

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A08-4834
Sample Cooler(s) were received at the following temperature(s); 3 @ 2.0 °C
All samples were received in good condition.
A08-4835
Sample Cooler(s) were received at the following temperature(s); 3 @ 2.0 °C
All samples were received in good condition.
A08-4854
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC/MS Volatile Data

The analyte Bromomethane was detected in the Method Blank A8B1509202 at a level above the project established reporting limit. All samples were non-detect for this analyte, therefore, no corrective action was necessary.

Linear regression was used to calibrate analytes that were greater than 15% RSD in the initial calibration A8I0000302-1.

For method 8260, samples MW-6 and MW-12 exhibited a pH>2 at the time of analysis. The analysis was performed after the recommended 7 days for un-preserved samples, therefore all detected concentrations should be considered minimum values and the results estimated.

For method 8260, all samples were preserved to a pH less than 2 except for MW-6 and MW-12.

GC/MS Semivolatile Data

Linear regression was used to calibrate analytes that were greater than 15% RSD in the initial calibration A8I0000218-1.

GC Extractable Data

For method 8081, all sample extracts and associated quality control required treatment with Copper prior to analysis due to the presence of elemental Sulfur.

Metals Data

The recoveries of sample MW-3 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Calcium, Magnesium and Sodium. The sample results are more than four times greater than the spike added. The RPD between sample MW-3 Matrix Spike and Matrix Spike Duplicate exceeded quality control criteria for Magnesium and Sodium. However, the LFB was acceptable.

The recoveries of sample MW-3 Matrix Spike exhibited results below the quality control limits for Aluminum, Antimony, Arsenic, Barium, Beryllium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Potassium, Selenium, Silver, Thallium, Vanadium, and Zinc. The recoveries of sample MW-3 Matrix Spike Duplicate exhibited results below the quality control limits for Barium, Manganese, Selenium, Silver, and Zinc. Sample matrix is suspect. The RPD between sample MW-3 Matrix Spike and Matrix Spike Duplicate exceeded quality control criteria for Aluminum, Arsenic, Barium, Beryllium, Chromium, Cobalt, Copper, Iron, Manganese, Nickel, Potassium, Thallium and Vanadium. However, the LFB was acceptable.

Samples MW-3, MW-4 and MW-12 were filtered prior to analysis due to the presence of sediment.

The CCB, analyzed at 18:09, exhibited results below the detection limits for Cadmium, Chromium, Cobalt, Copper, Iron and Vanadium. However, the samples were bracketed by compliant CCB's, therefore, no corrective action was necessary.

The Post Spike and Serial Dilution of sample MW-3 exceeded the quality control limits for Magnesium and Potassium. Sample matrix is suspect, therefore, no correction action was necessary.

The recoveries of sample MW-3 Post Spike exhibited results above the quality control limits for Antimony, Arsenic, Nickel, and Selenium and exhibited a result below the quality control limits for Calcium. However, the Serial Dilution of this sample and elements was compliant. Therefore, no corrective action was necessary.

Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Brian J. Fischer
Project Manager

5-16-08
Date

Sample ID: SW-6
Lab Sample ID: A8483408
Date Collected: 04/30/2008
Time Collected: 13:45

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	3.2		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: SW-6
Lab Sample ID: A8483508
Date Collected: 04/30/2008
Time Collected: 13:45

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
2-Butanone	ND		5.0	UG/L	8260	05/11/2008 21:05	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 21:05	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 21:05	ND
Acetone	5.3		5.0	UG/L	8260	05/11/2008 21:05	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Carbon Disulfide	0.63	J	1.0	UG/L	8260	05/11/2008 21:05	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Toluene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 21:05	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 21:05	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 21:05	ND

Sample ID: SW-6
Lab Sample ID: A8483508
Date Collected: 04/30/2008
Time Collected: 13:45

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
1,2,4-Trichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:19	MD
1,2-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:19	MD
1,3-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:19	MD
1,4-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:19	MD
2,2'-Oxybis(1-Chloropropane)	ND		5	UG/L	8270	05/08/2008 08:19	MD
2,4,5-Trichlorophenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
2,4,6-Trichlorophenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
2,4-Dichlorophenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
2,4-Dimethylphenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
2,4-Dinitrophenol	ND		10	UG/L	8270	05/08/2008 08:19	MD
2,4-Dinitrotoluene	ND		5	UG/L	8270	05/08/2008 08:19	MD
2,6-Dinitrotoluene	ND		5	UG/L	8270	05/08/2008 08:19	MD
2-Chloronaphthalene	ND		5	UG/L	8270	05/08/2008 08:19	MD
2-Chlorophenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
2-Methylnaphthalene	ND		5	UG/L	8270	05/08/2008 08:19	MD
2-Methylphenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
2-Nitroaniline	ND		10	UG/L	8270	05/08/2008 08:19	MD
2-Nitrophenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
3,3'-Dichlorobenzidine	ND		5	UG/L	8270	05/08/2008 08:19	MD
3-Nitroaniline	ND		10	UG/L	8270	05/08/2008 08:19	MD
4,6-Dinitro-2-methylphenol	ND		10	UG/L	8270	05/08/2008 08:19	MD
4-Bromophenyl phenyl ether	ND		5	UG/L	8270	05/08/2008 08:19	MD
4-Chloro-3-methylphenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
4-Chloroaniline	ND		5	UG/L	8270	05/08/2008 08:19	MD
4-Chlorophenyl phenyl ether	ND		5	UG/L	8270	05/08/2008 08:19	MD
4-Methylphenol	ND		5	UG/L	8270	05/08/2008 08:19	MD
4-Nitroaniline	ND		10	UG/L	8270	05/08/2008 08:19	MD
4-Nitrophenol	ND		10	UG/L	8270	05/08/2008 08:19	MD
Acenaphthene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Acenaphthylene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Anthracene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Benzo(a)anthracene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Benzo(a)pyrene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Benzo(b)fluoranthene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Benzo(ghi)perylene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Benzo(k)fluoranthene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Bis(2-chloroethoxy) methane	ND		5	UG/L	8270	05/08/2008 08:19	MD
Bis(2-chloroethyl) ether	ND		5	UG/L	8270	05/08/2008 08:19	MD
Bis(2-ethylhexyl) phthalate	ND		5	UG/L	8270	05/08/2008 08:19	MD
Butyl benzyl phthalate	ND		5	UG/L	8270	05/08/2008 08:19	MD
Carbazole	ND		5	UG/L	8270	05/08/2008 08:19	MD
Chrysene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Di-n-butyl phthalate	ND		5	UG/L	8270	05/08/2008 08:19	MD
Di-n-octyl phthalate	ND		5	UG/L	8270	05/08/2008 08:19	MD
Dibenzo(a,h)anthracene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Dibenzofuran	ND		5	UG/L	8270	05/08/2008 08:19	MD
Diethyl phthalate	ND		5	UG/L	8270	05/08/2008 08:19	MD
Dimethyl phthalate	ND		5	UG/L	8270	05/08/2008 08:19	MD
Fluoranthene	ND		5	UG/L	8270	05/08/2008 08:19	MD

Sample ID: SW-6
Lab Sample ID: A8483508
Date Collected: 04/30/2008
Time Collected: 13:45

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
Fluorene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Hexachlorobenzene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Hexachlorobutadiene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Hexachlorocyclopentadiene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Hexachloroethane	ND		5	UG/L	8270	05/08/2008 08:19	MD
Indeno(1,2,3-cd)pyrene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Isophorone	ND		5	UG/L	8270	05/08/2008 08:19	MD
N-Nitroso-Di-n-propylamine	ND		5	UG/L	8270	05/08/2008 08:19	MD
N-nitrosodiphenylamine	ND		5	UG/L	8270	05/08/2008 08:19	MD
Naphthalene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Nitrobenzene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Pentachlorophenol	12		10	UG/L	8270	05/08/2008 08:19	MD
Phenanthrene	ND		5	UG/L	8270	05/08/2008 08:19	MD
Phenol	5		5	UG/L	8270	05/08/2008 08:19	MD
Pyrene	ND		5	UG/L	8270	05/08/2008 08:19	MD
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
4,4'-DDE	0.11	J	0.25	UG/L	8081	05/09/2008 15:03	TCH
4,4'-DDT	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Aldrin	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
alpha-BHC	1.1		0.25	UG/L	8081	05/09/2008 15:03	TCH
alpha-Chlordane	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
beta-BHC	0.19	J	0.25	UG/L	8081	05/09/2008 15:03	TCH
delta-BHC	0.27		0.25	UG/L	8081	05/09/2008 15:03	TCH
Dieldrin	0.11	J	0.25	UG/L	8081	05/09/2008 15:03	TCH
Endosulfan I	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Endosulfan II	0.19	J	0.25	UG/L	8081	05/09/2008 15:03	TCH
Endosulfan Sulfate	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Endrin	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Endrin aldehyde	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Endrin ketone	0.10	J	0.25	UG/L	8081	05/09/2008 15:03	TCH
gamma-BHC (Lindane)	1.2		0.25	UG/L	8081	05/09/2008 15:03	TCH
gamma-Chlordane	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Heptachlor	0.086	J	0.25	UG/L	8081	05/09/2008 15:03	TCH
Heptachlor epoxide	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Methoxychlor	ND		0.25	UG/L	8081	05/09/2008 15:03	TCH
Toxaphene	ND		2.5	UG/L	8081	05/09/2008 15:03	TCH
Metals Analysis							
Aluminum - Total	2970	N*	200	UG/L	6010	05/06/2008 15:09	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 15:09	
Arsenic - Total	106	N*	10.0	UG/L	6010	05/06/2008 15:09	
Barium - Total	61.1	N*	2.0	UG/L	6010	05/06/2008 15:09	
Beryllium - Total	ND	N*	2.0	UG/L	6010	05/06/2008 15:09	
Cadmium - Total	ND		1.0	UG/L	6010	05/06/2008 15:09	
Calcium - Total	291000		500	UG/L	6010	05/06/2008 15:09	
Chromium - Total	4.0	N*	4.0	UG/L	6010	05/06/2008 15:09	
Cobalt - Total	6.9	N*	4.0	UG/L	6010	05/06/2008 15:09	

Sample ID: SW-6
Lab Sample ID: A8483508
Date Collected: 04/30/2008
Time Collected: 13:45

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Copper - Total	50.3	N*	10.0	UG/L	6010	05/06/2008 15:09	
Iron - Total	17900	N*	50.0	UG/L	6010	05/06/2008 15:09	
Lead - Total	19.1	N	5.0	UG/L	6010	05/06/2008 15:09	
Magnesium - Total	102000	E*	200	UG/L	6010	05/06/2008 15:09	
Manganese - Total	2340	N*	3.0	UG/L	6010	05/06/2008 15:09	
Mercury - Total	ND		0.200	UG/L	7470	05/05/2008 13:55	
Nickel - Total	16.4	N*	10.0	UG/L	6010	05/06/2008 15:09	
Potassium - Total	6820	EN*	500	UG/L	6010	05/06/2008 15:09	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 15:09	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 15:09	
Sodium - Total	62000	*	1000	UG/L	6010	05/06/2008 15:09	
Thallium - Total	ND	N*	20.0	UG/L	6010	05/06/2008 15:09	
Vanadium - Total	ND	N*	5.0	UG/L	6010	05/06/2008 15:09	
Zinc - Total	99.3	N	10.0	UG/L	6010	05/06/2008 15:09	
Wet Chemistry Analysis							
Sulfate	1270		100	MG/L	300.0	05/14/2008 14:42	AEG

Sample ID: SW-7
Lab Sample ID: A8483409
Date Collected: 04/30/2008
Time Collected: 14:25

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	1.2		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: SW-7
Lab Sample ID: A8483509
Date Collected: 04/30/2008
Time Collected: 14:25

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
2-Butanone	2.6	J	5.0	UG/L	8260	05/11/2008 21:26	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 21:26	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 21:26	ND
Acetone	22		5.0	UG/L	8260	05/11/2008 21:26	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Carbon Disulfide	2.2		1.0	UG/L	8260	05/11/2008 21:26	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Toluene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 21:26	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 21:26	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 21:26	ND

Sample ID: SW-7
Lab Sample ID: A8483509
Date Collected: 04/30/2008
Time Collected: 14:25

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
1,2,4-Trichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:42	MD
1,2-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:42	MD
1,3-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:42	MD
1,4-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 08:42	MD
2,2'-Oxybis(1-Chloropropane)	ND		5	UG/L	8270	05/08/2008 08:42	MD
2,4,5-Trichlorophenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
2,4,6-Trichlorophenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
2,4-Dichlorophenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
2,4-Dimethylphenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
2,4-Dinitrophenol	ND		10	UG/L	8270	05/08/2008 08:42	MD
2,4-Dinitrotoluene	ND		5	UG/L	8270	05/08/2008 08:42	MD
2,6-Dinitrotoluene	ND		5	UG/L	8270	05/08/2008 08:42	MD
2-Chloronaphthalene	ND		5	UG/L	8270	05/08/2008 08:42	MD
2-Chlorophenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
2-Methylnaphthalene	ND		5	UG/L	8270	05/08/2008 08:42	MD
2-Methylphenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
2-Nitroaniline	ND		10	UG/L	8270	05/08/2008 08:42	MD
2-Nitrophenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
3,3'-Dichlorobenzidine	ND		5	UG/L	8270	05/08/2008 08:42	MD
3-Nitroaniline	ND		10	UG/L	8270	05/08/2008 08:42	MD
4,6-Dinitro-2-methylphenol	ND		10	UG/L	8270	05/08/2008 08:42	MD
4-Bromophenyl phenyl ether	ND		5	UG/L	8270	05/08/2008 08:42	MD
4-Chloro-3-methylphenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
4-Chloroaniline	ND		5	UG/L	8270	05/08/2008 08:42	MD
4-Chlorophenyl phenyl ether	ND		5	UG/L	8270	05/08/2008 08:42	MD
4-Methylphenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
4-Nitroaniline	ND		10	UG/L	8270	05/08/2008 08:42	MD
4-Nitrophenol	ND		10	UG/L	8270	05/08/2008 08:42	MD
Acenaphthene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Acenaphthylene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Anthracene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Benzo(a)anthracene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Benzo(a)pyrene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Benzo(b)fluoranthene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Benzo(ghi)perylene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Benzo(k)fluoranthene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Bis(2-chloroethoxy) methane	ND		5	UG/L	8270	05/08/2008 08:42	MD
Bis(2-chloroethyl) ether	ND		5	UG/L	8270	05/08/2008 08:42	MD
Bis(2-ethylhexyl) phthalate	ND		5	UG/L	8270	05/08/2008 08:42	MD
Butyl benzyl phthalate	ND		5	UG/L	8270	05/08/2008 08:42	MD
Carbazole	ND		5	UG/L	8270	05/08/2008 08:42	MD
Chrysene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Di-n-butyl phthalate	ND		5	UG/L	8270	05/08/2008 08:42	MD
Di-n-octyl phthalate	ND		5	UG/L	8270	05/08/2008 08:42	MD
Dibenzo(a,h)anthracene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Dibenzofuran	ND		5	UG/L	8270	05/08/2008 08:42	MD
Diethyl phthalate	ND		5	UG/L	8270	05/08/2008 08:42	MD
Dimethyl phthalate	ND		5	UG/L	8270	05/08/2008 08:42	MD
Fluoranthene	ND		5	UG/L	8270	05/08/2008 08:42	MD

Sample ID: SW-7
Lab Sample ID: A8483509
Date Collected: 04/30/2008
Time Collected: 14:25

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
Fluorene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Hexachlorobenzene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Hexachlorobutadiene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Hexachlorocyclopentadiene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Hexachloroethane	ND		5	UG/L	8270	05/08/2008 08:42	MD
Indeno(1,2,3-cd)pyrene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Isophorone	ND		5	UG/L	8270	05/08/2008 08:42	MD
N-Nitroso-Di-n-propylamine	ND		5	UG/L	8270	05/08/2008 08:42	MD
N-nitrosodiphenylamine	ND		5	UG/L	8270	05/08/2008 08:42	MD
Naphthalene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Nitrobenzene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Pentachlorophenol	ND		10	UG/L	8270	05/08/2008 08:42	MD
Phenanthrene	ND		5	UG/L	8270	05/08/2008 08:42	MD
Phenol	ND		5	UG/L	8270	05/08/2008 08:42	MD
Pyrene	ND		5	UG/L	8270	05/08/2008 08:42	MD
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	0.020	J	0.051	UG/L	8081	05/09/2008 16:16	TCH
4,4'-DDE	0.018	J	0.051	UG/L	8081	05/09/2008 16:16	TCH
4,4'-DDT	0.046	J	0.051	UG/L	8081	05/09/2008 16:16	TCH
Aldrin	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
alpha-BHC	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
alpha-Chlordane	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
beta-BHC	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
delta-BHC	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Dieldrin	0.017	J	0.051	UG/L	8081	05/09/2008 16:16	TCH
Endosulfan I	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Endosulfan II	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Endosulfan Sulfate	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Endrin	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Endrin aldehyde	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Endrin ketone	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
gamma-BHC (Lindane)	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
gamma-Chlordane	0.026	J	0.051	UG/L	8081	05/09/2008 16:16	TCH
Heptachlor	0.028	J	0.051	UG/L	8081	05/09/2008 16:16	TCH
Heptachlor epoxide	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Methoxychlor	ND		0.051	UG/L	8081	05/09/2008 16:16	TCH
Toxaphene	ND		0.51	UG/L	8081	05/09/2008 16:16	TCH
Metals Analysis							
Aluminum - Total	57400	N*	200	UG/L	6010	05/06/2008 15:16	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 15:16	
Arsenic - Total	14.4	N*	10.0	UG/L	6010	05/06/2008 15:16	
Barium - Total	15.3	N*	2.0	UG/L	6010	05/06/2008 15:16	
Beryllium - Total	5.8	N*	2.0	UG/L	6010	05/06/2008 15:16	
Cadmium - Total	1.6		1.0	UG/L	6010	05/06/2008 15:16	
Calcium - Total	281000		500	UG/L	6010	05/06/2008 15:16	
Chromium - Total	5.1	N*	4.0	UG/L	6010	05/06/2008 15:16	
Cobalt - Total	92.3	N*	4.0	UG/L	6010	05/06/2008 15:16	

Sample ID: SW-7
Lab Sample ID: A8483509
Date Collected: 04/30/2008
Time Collected: 14:25

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Copper - Total	16.8	N*	10.0	UG/L	6010	05/06/2008 15:16	
Iron - Total	104000	N*	50.0	UG/L	6010	05/06/2008 15:16	
Lead - Total	5.2	N	5.0	UG/L	6010	05/06/2008 15:16	
Magnesium - Total	68200	E*	200	UG/L	6010	05/06/2008 15:16	
Manganese - Total	14100	N*	3.0	UG/L	6010	05/06/2008 15:16	
Mercury - Total	ND		0.200	UG/L	7470	05/05/2008 13:57	
Nickel - Total	144	N*	10.0	UG/L	6010	05/06/2008 15:16	
Potassium - Total	3630	EN*	500	UG/L	6010	05/06/2008 15:16	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 15:16	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 15:16	
Sodium - Total	8370	*	1000	UG/L	6010	05/06/2008 15:16	
Thallium - Total	ND	N*	20.0	UG/L	6010	05/06/2008 15:16	
Vanadium - Total	10.8	N*	5.0	UG/L	6010	05/06/2008 15:16	
Zinc - Total	260	N	10.0	UG/L	6010	05/06/2008 15:16	
Wet Chemistry Analysis							
Sulfate	2600		100	MG/L	300.0	05/14/2008 14:42	AEG

Sample ID: SW-8
Lab Sample ID: A8483410
Date Collected: 04/30/2008
Time Collected: 11:55

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	ND		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: SW-8
Lab Sample ID: A8483510
Date Collected: 04/30/2008
Time Collected: 11:55

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
2-Butanone	ND		5.0	UG/L	8260	05/11/2008 21:48	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 21:48	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 21:48	ND
Acetone	ND		5.0	UG/L	8260	05/11/2008 21:48	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Carbon Disulfide	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Toluene	0.67	J	1.0	UG/L	8260	05/11/2008 21:48	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 21:48	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 21:48	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 21:48	ND

Sample ID: SW-8
Lab Sample ID: A8483510
Date Collected: 04/30/2008
Time Collected: 11:55

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
1,2,4-Trichlorobenzene	ND		10	UG/L	8270	05/08/2008 09:05	MD
1,2-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 09:05	MD
1,3-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 09:05	MD
1,4-Dichlorobenzene	ND		10	UG/L	8270	05/08/2008 09:05	MD
2,2'-Oxybis(1-Chloropropane)	ND		5	UG/L	8270	05/08/2008 09:05	MD
2,4,5-Trichlorophenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
2,4,6-Trichlorophenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
2,4-Dichlorophenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
2,4-Dimethylphenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
2,4-Dinitrophenol	ND		10	UG/L	8270	05/08/2008 09:05	MD
2,4-Dinitrotoluene	ND		5	UG/L	8270	05/08/2008 09:05	MD
2,6-Dinitrotoluene	ND		5	UG/L	8270	05/08/2008 09:05	MD
2-Chloronaphthalene	ND		5	UG/L	8270	05/08/2008 09:05	MD
2-Chlorophenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
2-Methylnaphthalene	ND		5	UG/L	8270	05/08/2008 09:05	MD
2-Methylphenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
2-Nitroaniline	ND		10	UG/L	8270	05/08/2008 09:05	MD
2-Nitrophenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
3,3'-Dichlorobenzidine	ND		5	UG/L	8270	05/08/2008 09:05	MD
3-Nitroaniline	ND		10	UG/L	8270	05/08/2008 09:05	MD
4,6-Dinitro-2-methylphenol	ND		10	UG/L	8270	05/08/2008 09:05	MD
4-Bromophenyl phenyl ether	ND		5	UG/L	8270	05/08/2008 09:05	MD
4-Chloro-3-methylphenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
4-Chloroaniline	ND		5	UG/L	8270	05/08/2008 09:05	MD
4-Chlorophenyl phenyl ether	ND		5	UG/L	8270	05/08/2008 09:05	MD
4-Methylphenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
4-Nitroaniline	ND		10	UG/L	8270	05/08/2008 09:05	MD
4-Nitrophenol	ND		10	UG/L	8270	05/08/2008 09:05	MD
Acenaphthene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Acenaphthylene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Anthracene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Benzo(a)anthracene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Benzo(a)pyrene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Benzo(b)fluoranthene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Benzo(ghi)perylene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Benzo(k)fluoranthene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Bis(2-chloroethoxy) methane	ND		5	UG/L	8270	05/08/2008 09:05	MD
Bis(2-chloroethyl) ether	ND		5	UG/L	8270	05/08/2008 09:05	MD
Bis(2-ethylhexyl) phthalate	ND		5	UG/L	8270	05/08/2008 09:05	MD
Butyl benzyl phthalate	ND		5	UG/L	8270	05/08/2008 09:05	MD
Carbazole	ND		5	UG/L	8270	05/08/2008 09:05	MD
Chrysene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Di-n-butyl phthalate	ND		5	UG/L	8270	05/08/2008 09:05	MD
Di-n-octyl phthalate	ND		5	UG/L	8270	05/08/2008 09:05	MD
Dibenzo(a,h)anthracene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Dibenzofuran	ND		5	UG/L	8270	05/08/2008 09:05	MD
Diethyl phthalate	ND		5	UG/L	8270	05/08/2008 09:05	MD
Dimethyl phthalate	ND		5	UG/L	8270	05/08/2008 09:05	MD
Fluoranthene	ND		5	UG/L	8270	05/08/2008 09:05	MD

Sample ID: SW-8
Lab Sample ID: A8483510
Date Collected: 04/30/2008
Time Collected: 11:55

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
Fluorene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Hexachlorobenzene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Hexachlorobutadiene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Hexachlorocyclopentadiene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Hexachloroethane	ND		5	UG/L	8270	05/08/2008 09:05	MD
Indeno(1,2,3-cd)pyrene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Isophorone	ND		5	UG/L	8270	05/08/2008 09:05	MD
N-Nitroso-Di-n-propylamine	ND		5	UG/L	8270	05/08/2008 09:05	MD
N-nitrosodiphenylamine	ND		5	UG/L	8270	05/08/2008 09:05	MD
Naphthalene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Nitrobenzene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Pentachlorophenol	ND		10	UG/L	8270	05/08/2008 09:05	MD
Phenanthrene	ND		5	UG/L	8270	05/08/2008 09:05	MD
Phenol	ND		5	UG/L	8270	05/08/2008 09:05	MD
Pyrene	ND		5	UG/L	8270	05/08/2008 09:05	MD
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	0.024	J	0.048	UG/L	8081	05/09/2008 17:28	TCH
4,4'-DDE	0.030	J	0.048	UG/L	8081	05/09/2008 17:28	TCH
4,4'-DDT	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Aldrin	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
alpha-BHC	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
alpha-Chlordane	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
beta-BHC	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
delta-BHC	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Dieldrin	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Endosulfan I	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Endosulfan II	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Endosulfan Sulfate	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Endrin	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Endrin aldehyde	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Endrin ketone	0.0095	J	0.048	UG/L	8081	05/09/2008 17:28	TCH
gamma-BHC (Lindane)	0.025	J	0.048	UG/L	8081	05/09/2008 17:28	TCH
gamma-Chlordane	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Heptachlor	0.014	J	0.048	UG/L	8081	05/09/2008 17:28	TCH
Heptachlor epoxide	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Methoxychlor	ND		0.048	UG/L	8081	05/09/2008 17:28	TCH
Toxaphene	ND		0.48	UG/L	8081	05/09/2008 17:28	TCH
Metals Analysis							
Aluminum - Total	1030	N*	200	UG/L	6010	05/06/2008 15:21	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 15:21	
Arsenic - Total	ND	N*	10.0	UG/L	6010	05/06/2008 15:21	
Barium - Total	56.8	N*	2.0	UG/L	6010	05/06/2008 15:21	
Beryllium - Total	ND	N*	2.0	UG/L	6010	05/06/2008 15:21	
Cadmium - Total	ND		1.0	UG/L	6010	05/06/2008 15:21	
Calcium - Total	91100		500	UG/L	6010	05/06/2008 15:21	
Chromium - Total	ND	N*	4.0	UG/L	6010	05/06/2008 15:21	
Cobalt - Total	ND	N*	4.0	UG/L	6010	05/06/2008 15:21	

Sample ID: SW-8
Lab Sample ID: A8483510
Date Collected: 04/30/2008
Time Collected: 11:55

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Copper - Total	ND	N*	10.0	UG/L	6010	05/06/2008 15:21	
Iron - Total	1520	N*	50.0	UG/L	6010	05/06/2008 15:21	
Lead - Total	ND	N	5.0	UG/L	6010	05/06/2008 15:21	
Magnesium - Total	13100	E*	200	UG/L	6010	05/06/2008 15:21	
Manganese - Total	476	N*	3.0	UG/L	6010	05/06/2008 15:21	
Mercury - Total	ND		0.200	UG/L	7470	05/05/2008 13:58	
Nickel - Total	ND	N*	10.0	UG/L	6010	05/06/2008 15:21	
Potassium - Total	8620	EN*	500	UG/L	6010	05/06/2008 15:21	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 15:21	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 15:21	
Sodium - Total	3730	*	1000	UG/L	6010	05/06/2008 15:21	
Thallium - Total	ND	N*	20.0	UG/L	6010	05/06/2008 15:21	
Vanadium - Total	ND	N*	5.0	UG/L	6010	05/06/2008 15:21	
Zinc - Total	11.1	N	10.0	UG/L	6010	05/06/2008 15:21	
Wet Chemistry Analysis							
Sulfate	118		4.0	MG/L	300.0	05/13/2008 17:09	RP

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
NYSDEC	Glenn May	5-1-08	394106
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
270 Michigan Ave	716-851-7220	—	
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14203	G. May	B. Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Barker Chemical, 932119	—		
Contract/Purchase Order/Quote No.			
—			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: VOC 8260	SVOC 8270	Pesticides	TAL Metals	Sulfate	Sulfide	Special Instructions/ Conditions of Receipt
MW-1	5-1-08	1020		X			2								X				
MW-2	"	1030		X			2								X				
MW-3	"	1050		X			2								X				
MW-5	"	1105		X			2								X				
MW-6	"	1110		X			1								X				
SW-8	"	1155		X			5		1	2		1	X	X	X	X	X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☒ Archive For 1 Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 10 day TAT

QC Requirements (Specify)
ASP B

1. Relinquished By	Date	Time	1. Received By	Date	Time
Glenn M May	5-1-08	1425		5/1/08	1425
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

2.0°

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
NYSDEC	Glenn May	4-30-08	394107
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
270 Michigan Ave	716-851-7220	—	
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14203	G. May	B. Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Barker Chemical, 932119	—		
Contract/Purchase Order/Quote No.			
—			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TCL 8260	SVOC 8270	Pesticides	TAL Metals	Sulfate	Sulfide	Special Instructions/ Conditions of Receipt
MW-1	4/30/08	1000		X					1	2		1	X			X	X	X	
MW-2	"	1030		X								1	X			X	X	X	
MW-3	"	1040		X					1	2		1	X			X	X	X	Sample reacted to Acid & base preserv.
MW-4	"	1315		X			5		1	2		1	X	X	X	X	X	X	
MW-5	"	1100		X					1	2		1	X			X	X	X	
MW-6	"	1115		X						2		1	X			X	X	X	
MW-12	"	1140		X			5		1	2		1	X	X	X	X	X	X	
SW-6	"	1345		X			5		1	2		1	X	X	X	X	X	X	
SW-7	"	1425		X			5		1	2		1	X	X	X	X	X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For 1 Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 10 days

QC Requirements (Specify)
ASP B

1. Relinquished By	Date	Time	1. Received By	Date	Time
Glenn M May	5/1/08	0830		5/1/08	0830
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments
3 @ 2.0°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

GROUNDWATER

SDG NARRATIVE

Job#: A08-4834,A08-4835,A08-4854

Project#: NY5A946109
SDG#: A84834
Site Name: NYSDEC - REGION 9 REMEDIATION/SPILLS CONTRACT

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A08-4834
Sample Cooler(s) were received at the following temperature(s); 3 @ 2.0 °C
All samples were received in good condition.
A08-4835
Sample Cooler(s) were received at the following temperature(s); 3 @ 2.0 °C
All samples were received in good condition.
A08-4854
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC/MS Volatile Data

The analyte Bromomethane was detected in the Method Blank A8B1509202 at a level above the project established reporting limit. All samples were non-detect for this analyte, therefore, no corrective action was necessary.

Linear regression was used to calibrate analytes that were greater than 15% RSD in the initial calibration A8I0000302-1.

For method 8260, samples MW-6 and MW-12 exhibited a pH>2 at the time of analysis. The analysis was performed after the recommended 7 days for un-preserved samples, therefore all detected concentrations should be considered minimum values and the results estimated.

For method 8260, all samples were preserved to a pH less than 2 except for MW-6 and MW-12.

GC/MS Semivolatile Data

Linear regression was used to calibrate analytes that were greater than 15% RSD in the initial calibration A8I0000218-1.

GC Extractable Data

For method 8081, all sample extracts and associated quality control required treatment with Copper prior to analysis due to the presence of elemental Sulfur.

Metals Data

The recoveries of sample MW-3 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Calcium, Magnesium and Sodium. The sample results are more than four times greater than the spike added. The RPD between sample MW-3 Matrix Spike and Matrix Spike Duplicate exceeded quality control criteria for Magnesium and Sodium. However, the LFB was acceptable.

The recoveries of sample MW-3 Matrix Spike exhibited results below the quality control limits for Aluminum, Antimony, Arsenic, Barium, Beryllium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Potassium, Selenium, Silver, Thallium, Vanadium, and Zinc. The recoveries of sample MW-3 Matrix Spike Duplicate exhibited results below the quality control limits for Barium, Manganese, Selenium, Silver, and Zinc. Sample matrix is suspect. The RPD between sample MW-3 Matrix Spike and Matrix Spike Duplicate exceeded quality control criteria for Aluminum, Arsenic, Barium, Beryllium, Chromium, Cobalt, Copper, Iron, Manganese, Nickel, Potassium, Thallium and Vanadium. However, the LFB was acceptable.

Samples MW-3, MW-4 and MW-12 were filtered prior to analysis due to the presence of sediment.

The CCB, analyzed at 18:09, exhibited results below the detection limits for Cadmium, Chromium, Cobalt, Copper, Iron and Vanadium. However, the samples were bracketed by compliant CCB's, therefore, no corrective action was necessary.

The Post Spike and Serial Dilution of sample MW-3 exceeded the quality control limits for Magnesium and Potassium. Sample matrix is suspect, therefore, no correction action was necessary.

The recoveries of sample MW-3 Post Spike exhibited results above the quality control limits for Antimony, Arsenic, Nickel, and Selenium and exhibited a result below the quality control limits for Calcium. However, the Serial Dilution of this sample and elements was compliant. Therefore, no corrective action was necessary.

Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Brian J. Fischer
Project Manager

5-16-08
Date

Sample ID: MW-1
Lab Sample ID: A8483401
Date Collected: 04/30/2008
Time Collected: 10:00

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	ND		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-1
Lab Sample ID: A8483501
Date Collected: 04/30/2008
Time Collected: 10:00

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
2-Butanone	ND		5.0	UG/L	8260	05/12/2008 14:53	LH
2-Hexanone	ND		5.0	UG/L	8260	05/12/2008 14:53	LH
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/12/2008 14:53	LH
Acetone	ND		5.0	UG/L	8260	05/12/2008 14:53	LH
Benzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Bromodichloromethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Bromoform	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Bromomethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Carbon Disulfide	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Chlorobenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Chloroethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Chloroform	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Chloromethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Cyclohexane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Dibromochloromethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Ethylbenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Isopropylbenzene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Methyl acetate	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Methylcyclohexane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Methylene chloride	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Styrene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Tetrachloroethene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Toluene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Total Xylenes	ND		3.0	UG/L	8260	05/12/2008 14:53	LH
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Trichloroethene	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/12/2008 14:53	LH
Vinyl chloride	ND		1.0	UG/L	8260	05/12/2008 14:53	LH

Sample ID: MW-1
Lab Sample ID: A8483501
Date Collected: 04/30/2008
Time Collected: 10:00

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Aluminum - Total	33000	N*	200	UG/L	6010	05/06/2008 13:14	
Antimony - Total	ND	N	100	UG/L	6010	05/06/2008 17:11	
Arsenic - Total	10.9	N*	10.0	UG/L	6010	05/06/2008 13:14	
Barium - Total	482	N*	2.0	UG/L	6010	05/06/2008 13:14	
Beryllium - Total	ND	N*	2.0	UG/L	6010	05/06/2008 13:14	
Cadmium - Total	2.2		1.0	UG/L	6010	05/06/2008 13:14	
Calcium - Total	238000		500	UG/L	6010	05/06/2008 13:14	
Chromium - Total	96.6	N*	4.0	UG/L	6010	05/06/2008 13:14	
Cobalt - Total	ND	N*	4.0	UG/L	6010	05/06/2008 13:14	
Copper - Total	85.8	N*	10.0	UG/L	6010	05/06/2008 13:14	
Iron - Total	39900	N*	50.0	UG/L	6010	05/06/2008 13:14	
Lead - Total	25.8	N	25.0	UG/L	6010	05/06/2008 17:11	
Magnesium - Total	66900	E*	200	UG/L	6010	05/06/2008 13:14	
Manganese - Total	11300	N*	3.0	UG/L	6010	05/06/2008 13:14	
Mercury - Total	ND		0.200	UG/L	7470	05/05/2008 13:38	
Nickel - Total	74.8	N*	10.0	UG/L	6010	05/06/2008 13:14	
Potassium - Total	11700	EN*	500	UG/L	6010	05/06/2008 13:14	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 13:14	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 13:14	
Sodium - Total	50400	*	1000	UG/L	6010	05/06/2008 13:14	
Thallium - Total	ND	N*	100	UG/L	6010	05/06/2008 17:11	
Vanadium - Total	53.0	N*	5.0	UG/L	6010	05/06/2008 13:14	
Zinc - Total	476	N	10.0	UG/L	6010	05/06/2008 13:14	
Wet Chemistry Analysis							
Sulfate	434		10	MG/L	300.0	05/14/2008 14:42	AEG

Sample ID: MW-1
Lab Sample ID: A8485401
Date Collected: 05/01/2008
Time Collected: 10:20

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	0.022	J	0.051	UG/L	8081	05/10/2008 11:02	TCH
4,4'-DDE	0.043	J	0.051	UG/L	8081	05/10/2008 11:02	TCH
4,4'-DDT	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Aldrin	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
alpha-BHC	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
alpha-Chlordane	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
beta-BHC	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
delta-BHC	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Dieldrin	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Endosulfan I	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Endosulfan II	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Endosulfan Sulfate	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Endrin	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Endrin aldehyde	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Endrin ketone	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
gamma-BHC (Lindane)	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
gamma-Chlordane	0.039	J	0.051	UG/L	8081	05/10/2008 11:02	TCH
Heptachlor	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Heptachlor epoxide	0.016	J	0.051	UG/L	8081	05/10/2008 11:02	TCH
Methoxychlor	ND		0.051	UG/L	8081	05/10/2008 11:02	TCH
Toxaphene	ND		0.51	UG/L	8081	05/10/2008 11:02	TCH

Sample ID: MW-2
Lab Sample ID: A8483402
Date Collected: 04/30/2008
Time Collected: 10:30

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	ND		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-2
Lab Sample ID: A8483502
Date Collected: 04/30/2008
Time Collected: 10:30

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,2,4-Trichlorobenzene	0.64	J	1.0	UG/L	8260	05/11/2008 19:00	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
2-Butanone	ND		5.0	UG/L	8260	05/11/2008 19:00	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 19:00	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 19:00	ND
Acetone	ND		5.0	UG/L	8260	05/11/2008 19:00	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Carbon Disulfide	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
cis-1,2-Dichloroethene	0.77	J	1.0	UG/L	8260	05/11/2008 19:00	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Toluene	0.75	J	1.0	UG/L	8260	05/11/2008 19:00	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 19:00	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 19:00	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 19:00	ND

Sample ID: MW-2
Lab Sample ID: A8483502
Date Collected: 04/30/2008
Time Collected: 10:30

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Aluminum - Total	64600	N*	200	UG/L	6010	05/06/2008 13:21	
Antimony - Total	ND	N	100	UG/L	6010	05/06/2008 17:18	
Arsenic - Total	31.1	N*	10.0	UG/L	6010	05/06/2008 13:21	
Barium - Total	798	N*	2.0	UG/L	6010	05/06/2008 13:21	
Beryllium - Total	2.7	N*	2.0	UG/L	6010	05/06/2008 13:21	
Cadmium - Total	1.8		1.0	UG/L	6010	05/06/2008 13:21	
Calcium - Total	508000		2500	UG/L	6010	05/06/2008 17:18	
Chromium - Total	106	N*	4.0	UG/L	6010	05/06/2008 13:21	
Cobalt - Total	33.0	N*	4.0	UG/L	6010	05/06/2008 13:21	
Copper - Total	141	N*	10.0	UG/L	6010	05/06/2008 13:21	
Iron - Total	102000	N*	50.0	UG/L	6010	05/06/2008 13:21	
Lead - Total	29.4	N	25.0	UG/L	6010	05/06/2008 17:18	
Magnesium - Total	65600	E*	200	UG/L	6010	05/06/2008 13:21	
Manganese - Total	8080	N*	3.0	UG/L	6010	05/06/2008 13:21	
Mercury - Total	ND		0.200	UG/L	7470	05/05/2008 13:44	
Nickel - Total	97.4	N*	10.0	UG/L	6010	05/06/2008 13:21	
Potassium - Total	21000	EN*	500	UG/L	6010	05/06/2008 13:21	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 13:21	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 13:21	
Sodium - Total	19700	*	1000	UG/L	6010	05/06/2008 13:21	
Thallium - Total	ND	N*	100	UG/L	6010	05/06/2008 17:18	
Vanadium - Total	132	N*	5.0	UG/L	6010	05/06/2008 13:21	
Zinc - Total	319	N	10.0	UG/L	6010	05/06/2008 13:21	
Wet Chemistry Analysis							
Sulfate	32.1		4.0	MG/L	300.0	05/13/2008 17:09	RP

Sample ID: MW-2
Lab Sample ID: A8485402
Date Collected: 05/01/2008
Time Collected: 10:30

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
4,4'-DDE	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
4,4'-DDT	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Aldrin	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
alpha-BHC	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
alpha-Chlordane	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
beta-BHC	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
delta-BHC	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Dieldrin	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Endosulfan I	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Endosulfan II	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Endosulfan Sulfate	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Endrin	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Endrin aldehyde	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Endrin ketone	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
gamma-BHC (Lindane)	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
gamma-Chlordane	0.025	J	0.077	UG/L	8081	05/10/2008 11:39	TCH
Heptachlor	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Heptachlor epoxide	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Methoxychlor	ND		0.077	UG/L	8081	05/10/2008 11:39	TCH
Toxaphene	ND		0.77	UG/L	8081	05/10/2008 11:39	TCH

Sample ID: MW-3
Lab Sample ID: A8483403
Date Collected: 04/30/2008
Time Collected: 10:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	2470		20.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-3
Lab Sample ID: A8483503
Date Collected: 04/30/2008
Time Collected: 10:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
2-Butanone	59		5.0	UG/L	8260	05/11/2008 19:21	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 19:21	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 19:21	ND
Acetone	92		5.0	UG/L	8260	05/11/2008 19:21	ND
Benzene	0.87	J	1.0	UG/L	8260	05/11/2008 19:21	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Carbon Disulfide	93		1.0	UG/L	8260	05/11/2008 19:21	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
cis-1,2-Dichloroethene	0.50	J	1.0	UG/L	8260	05/11/2008 19:21	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Toluene	0.60	J	1.0	UG/L	8260	05/11/2008 19:21	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 19:21	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 19:21	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 19:21	ND

Sample ID: MW-3
Lab Sample ID: A8483503
Date Collected: 04/30/2008
Time Collected: 10:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Aluminum - Total	5460	N*	200	UG/L	6010	05/06/2008 13:28	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 13:28	
Arsenic - Total	365	N*	10.0	UG/L	6010	05/06/2008 13:28	
Barium - Total	234	N*	2.0	UG/L	6010	05/06/2008 13:28	
Beryllium - Total	3.8	N*	2.0	UG/L	6010	05/06/2008 13:28	
Cadmium - Total	ND		20.0	UG/L	6010	05/06/2008 16:07	
Calcium - Total	6870000		10000	UG/L	6010	05/06/2008 16:07	
Chromium - Total	11.8	N*	4.0	UG/L	6010	05/06/2008 13:28	
Cobalt - Total	ND	N*	4.0	UG/L	6010	05/06/2008 13:28	
Copper - Total	ND	N*	10.0	UG/L	6010	05/06/2008 13:28	
Iron - Total	9140	N*	50.0	UG/L	6010	05/06/2008 13:28	
Lead - Total	ND	N	100	UG/L	6010	05/06/2008 16:07	
Magnesium - Total	189000	E*	200	UG/L	6010	05/06/2008 13:28	
Manganese - Total	540	N*	3.0	UG/L	6010	05/06/2008 13:28	
Mercury - Total	ND		1.2	UG/L	7470	05/05/2008 13:45	
Nickel - Total	ND	N*	10.0	UG/L	6010	05/06/2008 13:28	
Potassium - Total	7790	EN*	500	UG/L	6010	05/06/2008 13:28	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 13:28	
Silver - Total	12.4	N	3.0	UG/L	6010	05/06/2008 13:28	
Sodium - Total	78500	*	1000	UG/L	6010	05/06/2008 13:28	
Thallium - Total	ND	N*	20.0	UG/L	6010	05/06/2008 13:28	
Vanadium - Total	17.9	N*	5.0	UG/L	6010	05/06/2008 13:28	
Zinc - Total	ND	N	200	UG/L	6010	05/06/2008 16:07	
Wet Chemistry Analysis							
Sulfate	1210		40.0	MG/L	300.0	05/16/2008 01:23	AEG

Sample ID: MW-3
Lab Sample ID: A8485403
Date Collected: 05/01/2008
Time Collected: 10:50

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
4,4'-DDE	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
4,4'-DDT	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Aldrin	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
alpha-BHC	0.029	J	0.050	UG/L	8081	05/10/2008 12:51	TCH
alpha-Chlordane	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
beta-BHC	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
delta-BHC	0.025	J	0.050	UG/L	8081	05/10/2008 12:51	TCH
Dieldrin	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Endosulfan I	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Endosulfan II	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Endosulfan Sulfate	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Endrin	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Endrin aldehyde	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Endrin ketone	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
gamma-BHC (Lindane)	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
gamma-Chlordane	0.030	J	0.050	UG/L	8081	05/10/2008 12:51	TCH
Heptachlor	0.020	J	0.050	UG/L	8081	05/10/2008 12:51	TCH
Heptachlor epoxide	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Methoxychlor	ND		0.050	UG/L	8081	05/10/2008 12:51	TCH
Toxaphene	ND		0.50	UG/L	8081	05/10/2008 12:51	TCH

Sample ID: MW-4
Lab Sample ID: A8483404
Date Collected: 04/30/2008
Time Collected: 13:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	46.0		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-4
Lab Sample ID: A8483504
Date Collected: 04/30/2008
Time Collected: 13:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
2-Butanone	4.9	J	5.0	UG/L	8260	05/11/2008 19:42	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 19:42	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 19:42	ND
Acetone	21		5.0	UG/L	8260	05/11/2008 19:42	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Carbon Disulfide	15		1.0	UG/L	8260	05/11/2008 19:42	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Toluene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 19:42	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 19:42	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 19:42	ND

Sample ID: MW-4
Lab Sample ID: A8483504
Date Collected: 04/30/2008
Time Collected: 13:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
1,2,4-Trichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:09	MD
1,2-Dichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:09	MD
1,3-Dichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:09	MD
1,4-Dichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:09	MD
2,2'-Oxybis(1-Chloropropane)	ND		5	UG/L	8270	05/06/2008 18:09	MD
2,4,5-Trichlorophenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
2,4,6-Trichlorophenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
2,4-Dichlorophenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
2,4-Dimethylphenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
2,4-Dinitrophenol	ND		10	UG/L	8270	05/06/2008 18:09	MD
2,4-Dinitrotoluene	ND		5	UG/L	8270	05/06/2008 18:09	MD
2,6-Dinitrotoluene	ND		5	UG/L	8270	05/06/2008 18:09	MD
2-Chloronaphthalene	ND		5	UG/L	8270	05/06/2008 18:09	MD
2-Chlorophenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
2-Methylnaphthalene	ND		5	UG/L	8270	05/06/2008 18:09	MD
2-Methylphenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
2-Nitroaniline	ND		10	UG/L	8270	05/06/2008 18:09	MD
2-Nitrophenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
3,3'-Dichlorobenzidine	ND		5	UG/L	8270	05/06/2008 18:09	MD
3-Nitroaniline	ND		10	UG/L	8270	05/06/2008 18:09	MD
4,6-Dinitro-2-methylphenol	ND		10	UG/L	8270	05/06/2008 18:09	MD
4-Bromophenyl phenyl ether	ND		5	UG/L	8270	05/06/2008 18:09	MD
4-Chloro-3-methylphenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
4-Chloroaniline	ND		5	UG/L	8270	05/06/2008 18:09	MD
4-Chlorophenyl phenyl ether	ND		5	UG/L	8270	05/06/2008 18:09	MD
4-Methylphenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
4-Nitroaniline	ND		10	UG/L	8270	05/06/2008 18:09	MD
4-Nitrophenol	ND		10	UG/L	8270	05/06/2008 18:09	MD
Acenaphthene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Acenaphthylene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Anthracene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Benzo(a)anthracene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Benzo(a)pyrene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Benzo(b)fluoranthene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Benzo(ghi)perylene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Benzo(k)fluoranthene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Bis(2-chloroethoxy) methane	ND		5	UG/L	8270	05/06/2008 18:09	MD
Bis(2-chloroethyl) ether	ND		5	UG/L	8270	05/06/2008 18:09	MD
Bis(2-ethylhexyl) phthalate	ND		5	UG/L	8270	05/06/2008 18:09	MD
Butyl benzyl phthalate	ND		5	UG/L	8270	05/06/2008 18:09	MD
Carbazole	ND		5	UG/L	8270	05/06/2008 18:09	MD
Chrysene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Di-n-butyl phthalate	ND		5	UG/L	8270	05/06/2008 18:09	MD
Di-n-octyl phthalate	ND		5	UG/L	8270	05/06/2008 18:09	MD
Dibenzo(a,h)anthracene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Dibenzofuran	ND		5	UG/L	8270	05/06/2008 18:09	MD
Diethyl phthalate	ND		5	UG/L	8270	05/06/2008 18:09	MD
Dimethyl phthalate	ND		5	UG/L	8270	05/06/2008 18:09	MD
Fluoranthene	ND		5	UG/L	8270	05/06/2008 18:09	MD

Sample ID: MW-4
Lab Sample ID: A8483504
Date Collected: 04/30/2008
Time Collected: 13:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
Fluorene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Hexachlorobenzene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Hexachlorobutadiene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Hexachlorocyclopentadiene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Hexachloroethane	ND		5	UG/L	8270	05/06/2008 18:09	MD
Indeno(1,2,3-cd)pyrene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Isophorone	ND		5	UG/L	8270	05/06/2008 18:09	MD
N-Nitroso-Di-n-propylamine	ND		5	UG/L	8270	05/06/2008 18:09	MD
N-nitrosodiphenylamine	ND		5	UG/L	8270	05/06/2008 18:09	MD
Naphthalene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Nitrobenzene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Pentachlorophenol	ND		10	UG/L	8270	05/06/2008 18:09	MD
Phenanthrene	ND		5	UG/L	8270	05/06/2008 18:09	MD
Phenol	ND		5	UG/L	8270	05/06/2008 18:09	MD
Pyrene	ND		5	UG/L	8270	05/06/2008 18:09	MD
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
4,4'-DDE	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
4,4'-DDT	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Aldrin	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
alpha-BHC	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
alpha-Chlordane	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
beta-BHC	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
delta-BHC	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Dieldrin	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Endosulfan I	0.032	J	0.050	UG/L	8081	05/09/2008 14:27	TCH
Endosulfan II	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Endosulfan Sulfate	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Endrin	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Endrin aldehyde	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Endrin ketone	0.011	J	0.050	UG/L	8081	05/09/2008 14:27	TCH
gamma-BHC (Lindane)	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
gamma-Chlordane	0.038	J	0.050	UG/L	8081	05/09/2008 14:27	TCH
Heptachlor	0.016	J	0.050	UG/L	8081	05/09/2008 14:27	TCH
Heptachlor epoxide	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Methoxychlor	ND		0.050	UG/L	8081	05/09/2008 14:27	TCH
Toxaphene	ND		0.50	UG/L	8081	05/09/2008 14:27	TCH
Metals Analysis							
Aluminum - Total	586	N*	200	UG/L	6010	05/06/2008 14:27	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 14:27	
Arsenic - Total	10.4	N*	10.0	UG/L	6010	05/06/2008 14:27	
Barium - Total	107	N*	2.0	UG/L	6010	05/06/2008 14:27	
Beryllium - Total	ND	N*	2.0	UG/L	6010	05/06/2008 14:27	
Cadmium - Total	ND		1.0	UG/L	6010	05/06/2008 14:27	
Calcium - Total	663000		10000	UG/L	6010	05/13/2008 12:04	
Chromium - Total	ND	N*	4.0	UG/L	6010	05/06/2008 14:27	
Cobalt - Total	ND	N*	4.0	UG/L	6010	05/06/2008 14:27	

Sample ID: MW-4
Lab Sample ID: A8483504
Date Collected: 04/30/2008
Time Collected: 13:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Copper - Total	ND	N*	10.0	UG/L	6010	05/06/2008 14:27	
Iron - Total	13800	N*	50.0	UG/L	6010	05/06/2008 14:27	
Lead - Total	ND	N	5.0	UG/L	6010	05/06/2008 14:27	
Magnesium - Total	315000	E*	200	UG/L	6010	05/06/2008 14:27	
Manganese - Total	2470	N*	3.0	UG/L	6010	05/06/2008 14:27	
Mercury - Total	ND		0.200	UG/L	7470	05/05/2008 13:47	
Nickel - Total	ND	N*	10.0	UG/L	6010	05/06/2008 14:27	
Potassium - Total	6550	EN*	500	UG/L	6010	05/06/2008 14:27	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 14:27	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 14:27	
Sodium - Total	12800	*	1000	UG/L	6010	05/06/2008 14:27	
Thallium - Total	ND	N*	20.0	UG/L	6010	05/06/2008 14:27	
Vanadium - Total	ND	N*	5.0	UG/L	6010	05/06/2008 14:27	
Zinc - Total	ND	N	10.0	UG/L	6010	05/06/2008 14:27	
Wet Chemistry Analysis							
Sulfate	1450		200	MG/L	300.0	05/14/2008 14:42	AEG

Sample ID: MW-5
Lab Sample ID: A8483405
Date Collected: 04/30/2008
Time Collected: 11:00

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	1590		20.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-5
Lab Sample ID: A8483505
Date Collected: 04/30/2008
Time Collected: 11:00

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
2-Butanone	12		5.0	UG/L	8260	05/11/2008 20:02	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 20:02	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 20:02	ND
Acetone	30		5.0	UG/L	8260	05/11/2008 20:02	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Carbon Disulfide	1.5		1.0	UG/L	8260	05/11/2008 20:02	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Chlorobenzene	6.5		1.0	UG/L	8260	05/11/2008 20:02	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Toluene	0.59	J	1.0	UG/L	8260	05/11/2008 20:02	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 20:02	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 20:02	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 20:02	ND

Sample ID: MW-5
Lab Sample ID: A8483505
Date Collected: 04/30/2008
Time Collected: 11:00

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Aluminum - Total	90300	N*	200	UG/L	6010	05/06/2008 14:34	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 14:34	
Arsenic - Total	65.2	N*	10.0	UG/L	6010	05/06/2008 14:34	
Barium - Total	1090	N*	2.0	UG/L	6010	05/06/2008 14:34	
Beryllium - Total	6.2	N*	2.0	UG/L	6010	05/06/2008 14:34	
Cadmium - Total	ND		1.0	UG/L	6010	05/06/2008 14:34	
Calcium - Total	4500000		10000	UG/L	6010	05/06/2008 16:34	
Chromium - Total	149	N*	4.0	UG/L	6010	05/06/2008 14:34	
Cobalt - Total	72.1	N*	4.0	UG/L	6010	05/06/2008 14:34	
Copper - Total	218	N*	10.0	UG/L	6010	05/06/2008 14:34	
Iron - Total	165000	N*	50.0	UG/L	6010	05/06/2008 14:34	
Lead - Total	45.5	N	5.0	UG/L	6010	05/06/2008 14:34	
Magnesium - Total	376000	E*	200	UG/L	6010	05/06/2008 14:34	
Manganese - Total	13500	N*	3.0	UG/L	6010	05/06/2008 14:34	
Mercury - Total	ND		0.400	UG/L	7470	05/05/2008 13:48	
Nickel - Total	141	N*	10.0	UG/L	6010	05/06/2008 14:34	
Potassium - Total	31300	EN*	500	UG/L	6010	05/06/2008 14:34	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 14:34	
Silver - Total	5.6	N	3.0	UG/L	6010	05/06/2008 14:34	
Sodium - Total	139000	*	1000	UG/L	6010	05/06/2008 14:34	
Thallium - Total	ND	N*	20.0	UG/L	6010	05/06/2008 14:34	
Vanadium - Total	207	N*	5.0	UG/L	6010	05/06/2008 14:34	
Zinc - Total	319	N	10.0	UG/L	6010	05/06/2008 14:34	
Wet Chemistry Analysis							
Sulfate	1660		100	MG/L	300.0	05/14/2008 14:42	AEG

Sample ID: MW-5
Lab Sample ID: A8485404
Date Collected: 05/01/2008
Time Collected: 11:05

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	0.024	J	0.050	UG/L	8081	05/10/2008 13:27	TCH
4,4'-DDE	0.028	J	0.050	UG/L	8081	05/10/2008 13:27	TCH
4,4'-DDT	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Aldrin	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
alpha-BHC	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
alpha-Chlordane	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
beta-BHC	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
delta-BHC	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Dieldrin	0.028	J	0.050	UG/L	8081	05/10/2008 13:27	TCH
Endosulfan I	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Endosulfan II	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Endosulfan Sulfate	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Endrin	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Endrin aldehyde	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Endrin ketone	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
gamma-BHC (Lindane)	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
gamma-Chlordane	0.029	J	0.050	UG/L	8081	05/10/2008 13:27	TCH
Heptachlor	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Heptachlor epoxide	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Methoxychlor	ND		0.050	UG/L	8081	05/10/2008 13:27	TCH
Toxaphene	ND		0.50	UG/L	8081	05/10/2008 13:27	TCH

Sample ID: MW-6
Lab Sample ID: A8483406
Date Collected: 04/30/2008
Time Collected: 11:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	ND		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-6
Lab Sample ID: A8483506
Date Collected: 04/30/2008
Time Collected: 11:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
2-Butanone	ND		5.0	UG/L	8260	05/11/2008 20:23	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 20:23	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 20:23	ND
Acetone	7.4		5.0	UG/L	8260	05/11/2008 20:23	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Carbon Disulfide	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Toluene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 20:23	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 20:23	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 20:23	ND

Sample ID: MW-6
Lab Sample ID: A8483506
Date Collected: 04/30/2008
Time Collected: 11:15

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Aluminum - Total	62100	N*	200	UG/L	6010	05/06/2008 14:41	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 14:41	
Arsenic - Total	20.5	N*	10.0	UG/L	6010	05/06/2008 14:41	
Barium - Total	569	N*	2.0	UG/L	6010	05/06/2008 14:41	
Beryllium - Total	3.5	N*	2.0	UG/L	6010	05/06/2008 14:41	
Cadmium - Total	2.1		1.0	UG/L	6010	05/06/2008 14:41	
Calcium - Total	1160000		5000	UG/L	6010	05/06/2008 16:40	
Chromium - Total	89.9	N*	4.0	UG/L	6010	05/06/2008 14:41	
Cobalt - Total	14.4	N*	4.0	UG/L	6010	05/06/2008 14:41	
Copper - Total	112	N*	10.0	UG/L	6010	05/06/2008 14:41	
Iron - Total	83000	N*	50.0	UG/L	6010	05/06/2008 14:41	
Lead - Total	27.4	N	5.0	UG/L	6010	05/06/2008 14:41	
Magnesium - Total	272000	E*	200	UG/L	6010	05/06/2008 14:41	
Manganese - Total	4610	N*	3.0	UG/L	6010	05/06/2008 14:41	
Mercury - Total	0.990		0.200	UG/L	7470	05/05/2008 13:49	
Nickel - Total	75.8	N*	10.0	UG/L	6010	05/06/2008 14:41	
Potassium - Total	16700	EN*	500	UG/L	6010	05/06/2008 14:41	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 14:41	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 14:41	
Sodium - Total	102000	*	1000	UG/L	6010	05/06/2008 14:41	
Thallium - Total	ND	N*	200	UG/L	6010	05/06/2008 16:40	
Vanadium - Total	107	N*	5.0	UG/L	6010	05/06/2008 14:41	
Zinc - Total	194	N	10.0	UG/L	6010	05/06/2008 14:41	
Wet Chemistry Analysis							
Sulfate	2570		200	MG/L	300.0	05/14/2008 14:42	AEG

Sample ID: MW-6
Lab Sample ID: A8485405
Date Collected: 05/01/2008
Time Collected: 11:10

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	0.022	J	0.047	UG/L	8081	05/10/2008 14:40	TCH
4,4'-DDE	0.034	J	0.047	UG/L	8081	05/10/2008 14:40	TCH
4,4'-DDT	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Aldrin	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
alpha-BHC	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
alpha-Chlordane	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
beta-BHC	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
delta-BHC	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Dieldrin	0.032	J	0.047	UG/L	8081	05/10/2008 14:40	TCH
Endosulfan I	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Endosulfan II	0.029	J	0.047	UG/L	8081	05/10/2008 14:40	TCH
Endosulfan Sulfate	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Endrin	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Endrin aldehyde	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Endrin ketone	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
gamma-BHC (Lindane)	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
gamma-Chlordane	0.040	J	0.047	UG/L	8081	05/10/2008 14:40	TCH
Heptachlor	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Heptachlor epoxide	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Methoxychlor	ND		0.047	UG/L	8081	05/10/2008 14:40	TCH
Toxaphene	ND		0.47	UG/L	8081	05/10/2008 14:40	TCH

Sample ID: MW-12
Lab Sample ID: A8483407
Date Collected: 04/30/2008
Time Collected: 11:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Wet Chemistry Analysis							
Sulfide	1.2		1.0	MG/L	4500-S F	05/03/2008 15:00	TL

Sample ID: MW-12
Lab Sample ID: A8483507
Date Collected: 04/30/2008
Time Collected: 11:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYSDEC - AQUEOUS-SW8463 TCL 8260							
1,1,1-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,1,2,2-Tetrachloroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,1,2-Trichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,1-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,1-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,2,4-Trichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,2-Dibromo-3-chloropropane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,2-Dibromoethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,2-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,2-Dichloroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,2-Dichloropropane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,3-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
1,4-Dichlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
2-Butanone	ND		5.0	UG/L	8260	05/11/2008 20:44	ND
2-Hexanone	ND		5.0	UG/L	8260	05/11/2008 20:44	ND
4-Methyl-2-pentanone	ND		5.0	UG/L	8260	05/11/2008 20:44	ND
Acetone	4.0	J	5.0	UG/L	8260	05/11/2008 20:44	ND
Benzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Bromodichloromethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Bromoform	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Bromomethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Carbon Disulfide	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Carbon Tetrachloride	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Chlorobenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Chloroethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Chloroform	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Chloromethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
cis-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
cis-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Cyclohexane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Dibromochloromethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Dichlorodifluoromethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Ethylbenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Isopropylbenzene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Methyl acetate	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Methyl-t-Butyl Ether (MTBE)	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Methylcyclohexane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Methylene chloride	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Styrene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Tetrachloroethene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Toluene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Total Xylenes	ND		3.0	UG/L	8260	05/11/2008 20:44	ND
trans-1,2-Dichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
trans-1,3-Dichloropropene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Trichloroethene	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Trichlorofluoromethane	ND		1.0	UG/L	8260	05/11/2008 20:44	ND
Vinyl chloride	ND		1.0	UG/L	8260	05/11/2008 20:44	ND

Sample ID: MW-12
Lab Sample ID: A8483507
Date Collected: 04/30/2008
Time Collected: 11:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
1,2,4-Trichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:32	MD
1,2-Dichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:32	MD
1,3-Dichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:32	MD
1,4-Dichlorobenzene	ND		10	UG/L	8270	05/06/2008 18:32	MD
2,2'-Oxybis(1-Chloropropane)	ND		5	UG/L	8270	05/06/2008 18:32	MD
2,4,5-Trichlorophenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
2,4,6-Trichlorophenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
2,4-Dichlorophenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
2,4-Dimethylphenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
2,4-Dinitrophenol	ND		10	UG/L	8270	05/06/2008 18:32	MD
2,4-Dinitrotoluene	ND		5	UG/L	8270	05/06/2008 18:32	MD
2,6-Dinitrotoluene	ND		5	UG/L	8270	05/06/2008 18:32	MD
2-Chloronaphthalene	ND		5	UG/L	8270	05/06/2008 18:32	MD
2-Chlorophenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
2-Methylnaphthalene	ND		5	UG/L	8270	05/06/2008 18:32	MD
2-Methylphenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
2-Nitroaniline	ND		10	UG/L	8270	05/06/2008 18:32	MD
2-Nitrophenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
3,3'-Dichlorobenzidine	ND		5	UG/L	8270	05/06/2008 18:32	MD
3-Nitroaniline	ND		10	UG/L	8270	05/06/2008 18:32	MD
4,6-Dinitro-2-methylphenol	ND		10	UG/L	8270	05/06/2008 18:32	MD
4-Bromophenyl phenyl ether	ND		5	UG/L	8270	05/06/2008 18:32	MD
4-Chloro-3-methylphenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
4-Chloroaniline	ND		5	UG/L	8270	05/06/2008 18:32	MD
4-Chlorophenyl phenyl ether	ND		5	UG/L	8270	05/06/2008 18:32	MD
4-Methylphenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
4-Nitroaniline	ND		10	UG/L	8270	05/06/2008 18:32	MD
4-Nitrophenol	ND		10	UG/L	8270	05/06/2008 18:32	MD
Acenaphthene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Acenaphthylene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Anthracene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Benzo(a)anthracene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Benzo(a)pyrene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Benzo(b)fluoranthene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Benzo(ghi)perylene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Benzo(k)fluoranthene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Bis(2-chloroethoxy) methane	ND		5	UG/L	8270	05/06/2008 18:32	MD
Bis(2-chloroethyl) ether	ND		5	UG/L	8270	05/06/2008 18:32	MD
Bis(2-ethylhexyl) phthalate	ND		5	UG/L	8270	05/06/2008 18:32	MD
Butyl benzyl phthalate	ND		5	UG/L	8270	05/06/2008 18:32	MD
Carbazole	ND		5	UG/L	8270	05/06/2008 18:32	MD
Chrysene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Di-n-butyl phthalate	ND		5	UG/L	8270	05/06/2008 18:32	MD
Di-n-octyl phthalate	ND		5	UG/L	8270	05/06/2008 18:32	MD
Dibenzo(a,h)anthracene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Dibenzofuran	ND		5	UG/L	8270	05/06/2008 18:32	MD
Diethyl phthalate	ND		5	UG/L	8270	05/06/2008 18:32	MD
Dimethyl phthalate	ND		5	UG/L	8270	05/06/2008 18:32	MD
Fluoranthene	ND		5	UG/L	8270	05/06/2008 18:32	MD

Sample ID: MW-12
Lab Sample ID: A8483507
Date Collected: 04/30/2008
Time Collected: 11:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
NYDEC AQ- SW8463 8270 - TCL SVOA ORGANIC							
Fluorene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Hexachlorobenzene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Hexachlorobutadiene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Hexachlorocyclopentadiene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Hexachloroethane	ND		5	UG/L	8270	05/06/2008 18:32	MD
Indeno(1,2,3-cd)pyrene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Isophorone	ND		5	UG/L	8270	05/06/2008 18:32	MD
N-Nitroso-Di-n-propylamine	ND		5	UG/L	8270	05/06/2008 18:32	MD
N-nitrosodiphenylamine	ND		5	UG/L	8270	05/06/2008 18:32	MD
Naphthalene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Nitrobenzene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Pentachlorophenol	ND		10	UG/L	8270	05/06/2008 18:32	MD
Phenanthrene	ND		5	UG/L	8270	05/06/2008 18:32	MD
Phenol	ND		5	UG/L	8270	05/06/2008 18:32	MD
Pyrene	ND		5	UG/L	8270	05/06/2008 18:32	MD
NYSDEC - AQUEOUS-SW8463 8081 - TCL PESTICIDES							
4,4'-DDD	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
4,4'-DDE	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
4,4'-DDT	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Aldrin	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
alpha-BHC	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
alpha-Chlordane	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
beta-BHC	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
delta-BHC	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Dieldrin	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Endosulfan I	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Endosulfan II	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Endosulfan Sulfate	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Endrin	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Endrin aldehyde	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Endrin ketone	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
gamma-BHC (Lindane)	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
gamma-Chlordane	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Heptachlor	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Heptachlor epoxide	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Methoxychlor	ND		0.050	UG/L	8081	05/03/2008 20:35	TCH
Toxaphene	ND		0.50	UG/L	8081	05/03/2008 20:35	TCH
Metals Analysis							
Aluminum - Total	269000	N*	200	UG/L	6010	05/06/2008 14:48	
Antimony - Total	ND	N	20.0	UG/L	6010	05/06/2008 14:48	
Arsenic - Total	82.1	N*	10.0	UG/L	6010	05/06/2008 14:48	
Barium - Total	2700	N*	2.0	UG/L	6010	05/06/2008 14:48	
Beryllium - Total	11.7	N*	2.0	UG/L	6010	05/06/2008 14:48	
Cadmium - Total	ND		1.0	UG/L	6010	05/06/2008 14:48	
Calcium - Total	1620000		5000	UG/L	6010	05/06/2008 16:45	
Chromium - Total	435	N*	4.0	UG/L	6010	05/06/2008 14:48	
Cobalt - Total	178	N*	4.0	UG/L	6010	05/06/2008 14:48	

Sample ID: MW-12
Lab Sample ID: A8483507
Date Collected: 04/30/2008
Time Collected: 11:40

Date Received: 05/01/2008
Project No: NY5A946109
Client No: L10190
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
Metals Analysis							
Copper - Total	467	N*	10.0	UG/L	6010	05/06/2008 14:48	
Iron - Total	381000	N*	50.0	UG/L	6010	05/06/2008 14:48	
Lead - Total	107	N	5.0	UG/L	6010	05/06/2008 14:48	
Magnesium - Total	213000	E*	200	UG/L	6010	05/06/2008 14:48	
Manganese - Total	16400	N*	3.0	UG/L	6010	05/06/2008 14:48	
Mercury - Total	2.5		0.200	UG/L	7470	05/05/2008 13:51	
Nickel - Total	388	N*	10.0	UG/L	6010	05/06/2008 14:48	
Potassium - Total	43200	EN*	500	UG/L	6010	05/06/2008 14:48	
Selenium - Total	ND	N	15.0	UG/L	6010	05/06/2008 14:48	
Silver - Total	ND	N	3.0	UG/L	6010	05/06/2008 14:48	
Sodium - Total	10200	*	1000	UG/L	6010	05/06/2008 14:48	
Thallium - Total	ND	N*	200	UG/L	6010	05/06/2008 16:45	
Vanadium - Total	497	N*	5.0	UG/L	6010	05/06/2008 14:48	
Zinc - Total	959	N	10.0	UG/L	6010	05/06/2008 14:48	
Wet Chemistry Analysis							
Sulfate	1650		100	MG/L	300.0	05/14/2008 14:42	AEG

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
NYSDEC	Glenn May	5-1-08	394106
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
270 Michigan Ave	716-851-7220	—	
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14203	G. May	B. Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Barker Chemical, 932119	—		
Contract/Purchase Order/Quote No.			
—			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: VOC 8260	SVOC 8270	Pesticides	TAL Metals	Sulfate	Sulfide	Special Instructions/ Conditions of Receipt
MW-1	5-1-08	1020		X			2								X				
MW-2	"	1030		X			2								X				
MW-3	"	1050		X			2								X				
MW-5	"	1105		X			2								X				
MW-6	"	1110		X			1								X				
SW-8	"	1155		X			5		1	2		1	X	X	X	X	X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☒ Archive For 1 Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 10 day TAT

QC Requirements (Specify)
ASP B

1. Relinquished By	Date	Time	1. Received By	Date	Time
Glenn M May	5-1-08	1425		5/1/08	1425
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

2.0°

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
NYSDEC	Glenn May	4-30-08	394107
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
270 Michigan Ave	716-851-7220	—	
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14203	G. May	B. Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Barker Chemical, 932119	—		
Contract/Purchase Order/Quote No.			
—			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TCL 8260	SVOC 8270	Pesticides	TAL Metals	Sulfate	Sulfide	Special Instructions/ Conditions of Receipt
MW-1	4/30/08	1000		X					1	2		1	X			X	X	X	
MW-2	"	1030		X								1	X			X	X	X	
MW-3	"	1040		X					1	2		1	X			X	X	X	Sample reacted to Acid & base preserv.
MW-4	"	1315		X			5		1	2		1	X	X	X	X	X	X	
MW-5	"	1100		X					1	2		1	X			X	X	X	
MW-6	"	1115		X						2		1	X			X	X	X	
MW-12	"	1140		X			5		1	2		1	X	X	X	X	X	X	
SW-6	"	1345		X			5		1	2		1	X	X	X	X	X	X	
SW-7	"	1425		X			5		1	2		1	X	X	X	X	X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For 1 Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 10 days

QC Requirements (Specify)
ASP B

1. Relinquished By	Date	Time	1. Received By	Date	Time
Glenn M May	5/1/08	0830		5/1/08	0830
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments
3 @ 2.0°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

APPENDIX C

SOILS MANAGEMENT PLAN

1.0 OVERVIEW AND OBJECTIVES

The Former Barker Chemical Site is located at 8473 West Somerset Road in the Village of Barker, Town of Somerset, Niagara County, New York (Report Figure 1-1). The total area of the property is approximately 10 acres. The Site is located in a mixed agricultural and residential setting, and is bordered to the north and east by woodlands, to the south by West Somerset Road and to the west by a vacant field (Report Figure 1-2). Residences are located near the Site to the west, south and east, with eleven residences located within 1/4 mile of the property. The property was formerly operated as a fungicide/herbicide manufacturing, warehousing and distribution facility by the Barker Chemical Corporation from 1930 to the early 1970s. The property has remained largely vacant since that time.

The Site has been characterized by the NYSDEC during a Site Investigation completed in 2003 and a Supplemental Site Investigation completed in 2008. The user should refer to the investigation reports for more detail, as needed.

The objective of this Soils Management Plan (SMP) is to set guidelines for management of contaminated soil and waste material encountered during any future excavation activities at the Site. This SMP addresses environmental concerns related to soil management and has been prepared by the New York State Department of Environmental Conservation (NYSDEC).

2.0 NATURE AND EXTENT OF CONTAMINATION

The only waste remaining at the Former Barker Chemical Site is associated with the Filled and South lagoons, although the waste in the South Lagoon was stabilized with Portland cement and weathered lime during the EPA removal action. A soil boring completed in the South Lagoon during the 2003 Site Investigation revealed, however, that the stabilization effort was incomplete; lagoon sludge contained crystallized sulfur and lime, and layers of gray-white powder believed to be Portland cement. The waste material in the Filled Lagoon consists predominantly of very loose, coarse grained, lime-like material that contains alternating layers of blue-gray, yellow, orange-brown, and whitish-gray waste. This waste directly overlies a saturated, black sludge with blue-green mottling.

Sulfur is the principle contaminant of concern in both the lime-like material and sludge, with concentrations ranging from 10,000 to 352,000 mg/kg in the lime-like material (Report Table 6-1), and from 7,700 to 551,000 mg/kg in the sludge (Report Table 6-2).

The contaminants of concern for surface water consist primarily of semivolatile organic compounds (SVOCs), pesticides, metals, sulfate and sulfide. The primary SVOC contaminants of concern in surface water include pentachlorophenol and phenol, while the primary pesticides of concern include alpha-BHC, beta-BHC, delta-BHC, gamma-BHC, dieldrin, endosulfan II and heptachlor (Report Table 4-2). Numerous metals were also detected in the surface water samples collected from the Site. Of these compounds, eight were detected at concentrations that exceeded the NYSDEC surface water standards or guidance values, with three of these metals being EPA priority pollutant metals. USEPA priority pollutant metals are toxic metals for which technology-based effluent limitations and guidelines are required by Federal law. The priority pollutant metals exceeding the NYSDEC surface water standards or guidance values include arsenic, beryllium and nickel (Report Table 4-2). Sulfate and sulfide were also detected in surface water at the Former Barker Chemical Site at significant concentrations. Concentrations of sulfate ranged from 118,000 to 2,600,000 µg/L, while concentrations of sulfide ranged from 1,200 to 3,200 µg/L (Report Table 4-2).

Low pH surface water is also prevalent at the Former Barker Chemical Site. Surface water in the Central Drainage Ditch and Low pH Trough (pH-3, pH-4, pH-13 and pH-15) had pH values ranging from 3.04 to 6.55 standard pH units (Report Table 4-4). The lowest pH values were associated with location pH-15 (3.04 to 3.21 standard pH units), which was located in the Central Drainage Ditch near the Filled Lagoon and former Lime Waste Area (Report Figure 3-3). Some of the lowest pH values measured at the Site were associated with the Ponded Water Area (pH-5 and pH-14), with pH values ranging from 3.15 to 3.75 standard pH units (Report Table 4-4). The pH of surface water in the Eastern Boundary Ditch (pH-6 and pH-12) and North Lagoon (pH-7, pH-8, pH-9 and pH-11) had relatively neutral pH, ranging from 6.74 to 7.37 standard pH units for the Eastern Boundary Ditch, and from 6.90 to 7.49 standard pH units for the North Lagoon (Report Table 4-4).

The contaminants of concern for groundwater consist primarily of volatile organic compounds (VOCs), pesticides, metals, sulfate and sulfide. The primary VOC contaminants of concern in groundwater include acetone, 2-butanone and chlorobenzene, while the primary pesticides of concern include alpha-BHC and dieldrin (Report Table 4-3). Numerous metals were also detected in the groundwater samples collected from the Site. Of these compounds, twelve were detected at concentrations that exceeded the NYSDEC groundwater standards or guidance values, with seven of these metals being EPA priority pollutant metals. The priority pollutant metals exceeding the groundwater standards or guidance values include arsenic, beryllium, chromium, copper, lead, mercury and nickel (Report Table 4-3).

Sulfate and sulfide were also detected in groundwater at the Former Barker Chemical Site at significant concentrations. Concentrations of sulfate ranged from 32,100 to 2,570,000 µg/L, while concentrations of sulfide ranged from 1,200 to 2,470,000 µg/L (Report Table 4-3).

3.0 CONTEMPLATED USE

The Former Barker Chemical property has remained largely vacant since the early 1970s, and the property is now abandoned. There is no contemplated future use.

4.0 PURPOSE AND DESCRIPTION OF THE SURFACE COVER SYSTEM

Following the stabilization of the South Lagoon during the EPA removal action, the area was capped with at least one foot of clay and one foot of topsoil within the original confines of the lagoon (Report Figure 4-9). The cap was graded to promote surface water runoff into the Central Drainage Ditch and North Lagoon. The final cap was hydro seeded to provide a vegetative cover. The purpose of the surface cover system was to eliminate the potential for human contact with contaminated waste material in the South Lagoon and to eliminate the potential for contaminated runoff from the property. In addition, the EPA placed topsoil within the confines of the Filled Lagoon area to enrich the existing soil. This topsoil layer may provide some protection against direct contact exposures, but is not a true surface cover system.

5.0 MANAGEMENT OF SOILS/WASTE AND MAINTENANCE OF THE COVER SYSTEM

The purpose of this section is to provide environmental guidelines for management of subsurface soils/waste and the maintenance of the cover system during any future intrusive work that generates excavated soil/waste or breaches the cover system. The Soils Management Plan includes the following conditions:

- Any breach of the cover system, including for the purposes of construction or utilities work, must be replaced or repaired using an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. The repaired area must be covered with at least one foot of clay and one foot of topsoil, and reseeded to prevent erosion;

- Control of surface erosion and run-off from the property at all times, including during construction activities. This includes proper maintenance of the vegetative cover established on the property;

- Site soil/waste that is excavated and is intended to be removed from the property must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives;

- Soil/waste excavated at the Site may be reused as backfill material on-site provided it contains no visual or olfactory evidence of contamination, and it is placed beneath a surface cover system as described in Section 4;

- Any off-Site fill material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. Off-site borrow sources should be subject to collection of one representative composite sample per source. The sample should be analyzed for Target Compound List (TCL) VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, and Target Analyte List (TAL) metals plus cyanide. The soil will be acceptable for use as cover material provided that all parameters meet the NYSDEC recommended commercial soil cleanup objectives included in Part 375-6.7(d) for Imported Backfill;

- Prior to any construction activities, workers are to be notified of the Site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety; and

- The Owner shall complete and submit to the NYSDEC an annual report by January 15th of each year. Such annual report shall certify that the surface cover system has been maintained, and that the conditions at the Site are protective of public health and the environment. If excavation work has been performed during the year covered by that Annual Report, the owner of the property shall include in the annual report a certification that all excavation work was performed in conformance with this Soils Management Plan.

5.1 EXCAVATED AND STOCKPILED SOIL/FILL DISPOSAL

Soil/waste that is excavated as part of Site development that can not be used as fill below the cover system or elsewhere on Site will be further characterized prior to transportation off-site for disposal at a permitted facility. For excavated soil/waste with visual evidence of contamination (i.e., staining or elevated PID measurements), one composite sample and a duplicate sample will be collected for each 100 cubic yards of stockpiled material. For excavated soil/waste that does not exhibit visual evidence of contamination but must be sent for off-site disposal, one composite sample and a duplicate sample will be collected for each 2,000 cubic yards of stockpiled material, and a minimum of 1 sample will be collected for volumes less than 2,000 cubic yards.

The composite sample will be collected from five locations within each stockpile. A duplicate composite sample will also be collected. PID measurements will be recorded for each of the five individual locations. One grab sample will be collected from the individual location with the highest PID measurement. If none of the five individual sample locations exhibit PID readings, one location will be selected at random. The composite sample will be analyzed by a NYSDOH ELAP-certified laboratory for pH (EPA Method 9045C), TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals, cyanide and sulfur. The grab sample will be analyzed for TCL VOCs.

Samples will be composited by placing equal portions of soil/waste from each of the five composite sample locations into a pre-cleaned, stainless steel (or Pyrex glass) mixing bowl. The soil/waste will be thoroughly homogenized using a stainless steel scoop or trowel and transferred to pre-cleaned jars provided by the laboratory. Sample jars will then be labeled and a chain-of-custody form will be prepared.

Additional characterization sampling for off-Site disposal may be required by the disposal facility. To potentially reduce off-Site disposal requirements/costs, the owner or Site developer may also choose to characterize each stockpile individually. If the analytical results indicate that concentrations exceed the standards for RCRA characteristics, the material will be considered a hazardous waste and must be properly disposed off-site at a permitted disposal facility within 90 days of excavation. If the analytical results indicate that the soil/waste is not a hazardous waste, the material will be properly disposed off-site at a non-hazardous waste facility. Stockpiled soil/waste cannot be transported on or off-site until the analytical results are received.

5.2 SUBGRADE MATERIAL

Subgrade material used to backfill excavations or placed to increase Site grades or elevation shall meet the following criteria:

- Excavated on-Site soil/waste that appears to be visually impacted shall be sampled and analyzed. If analytical results indicate that the contaminants, if any, are present at concentrations below the appropriate recommended soil cleanup objectives of Part 375, and also below 10,000 parts per million (ppm) sulfur, the soil/waste can be used as backfill on-site;

- Any off-Site fill material brought to the Site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination;

- Off-Site soils intended for use as Site backfill cannot otherwise be defined as a solid waste in accordance with 6 NYCRR Part 360-1.2(a);

- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use;

- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and cyanide. The soil will be acceptable for use as backfill provided that all parameters meet the appropriate recommended soil cleanup objectives of Part 375; and

- Non-virgin soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-Site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the appropriate recommended soil cleanup objectives of Part 375, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the appropriate recommended soil cleanup objectives of Part 375.