PRE-DESIGN INVESTIGATION AND FINAL DESIGN REPORT

FORMER BUFFALO COLOR CORPORATION SITE - AREA C NYSDEC BCP SITE #C915231 BUFFALO, NEW YORK

Prepared for:

SOUTH BUFFALO DEVELOPMENT LLC
Buffalo, New York

Prepared by:

Mactec Engineering and Consulting, Inc.
Pittsburgh, Pennsylvania

December 2010

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SOUTH BUFFALO DEVELOPMENT LLC
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1.0 INTRODUCTION

Mactec Engineering and Consulting, Inc. (Mactec) has prepared this Pre-Design Investigation (PDI) and Final Design Report (Report) on behalf of South Buffalo Development LLC (SBD). This Report summarizes the results of the PDI work completed by Mactec in 2009-2010 and presents the final design information for Area C of the Former Buffalo Color Corporation (BCC) Site (Site). This Report replaces the Area C PDI/50% Design Report issued by Mactec in June 2010.

SBD has teamed with Honeywell to facilitate the demolition of the former BCC dye plant and remediate the property under a Brownfield Cleanup Agreement (BCA) executed between SBD and the New York State Department of Environmental Conservation (NYSDEC). The Site has been assigned NYSDEC Brownfield Cleanup Program (BCP) Site #C915231. The remediation and redevelopment approach for the Site utilizes the Track 4 cleanup track in accordance with the New York BCP regulations to transform the Site from an abandoned and blighted property into viable commercial/industrial property. The goal for this Site is to remediate and create new, environmentally sustainable commercial/industrial facilities that will support jobs and promote the economic stability of the region. A web site has been established by SBD that provides information about the project. The web site address is: http://www.buffalocolorredevelopment.com.

1.1 SITE HISTORY

Originally founded as the Schoellkopf Aniline and Dye Company in 1879, the plant produced dyes and organic chemicals based primarily on aniline and various aniline derivatives. The company was reorganized into the National Aniline Chemical Company in 1916. It became one of the five companies that merged to create Allied Chemical Corporation (Allied Chemical) in 1920. The existing dye-making facility and the right to produce certain dyes and intermediates were sold by Allied Chemical to BCC on July 1, 1977. At the time of the sale, the plant was divided into eight areas designated with the letters A, B, C, D, E, F, G, and H. BCC purchased the manufacturing

areas A through E, while Allied Chemical retained the acid plant (which was sold to PVS Chemical, Inc. in 1981), the research and development facility on Area F, and the parking lots on Areas G (Elk Street) and H (Smith Street).

In 2005, BCC filed for bankruptcy. During the bankruptcy proceedings, some of the facility's production equipment was sold and removed from the site. In conjunction with the bankruptcy, the office building and former plant hospital located at 100 Lee Street on Area B and the warehouse building (Building 322) located near Elk Street on Area E, along with some of the land under and around those buildings, were sold to other parties. Agreements are in place to preserve access rights to the land for the purposes of any required environmental investigation and remediation activities. The remaining buildings and property on Areas A, B, C, D and E were purchased by SBD in 2008.

1.2 SUMMARY OF 2007 REMEDIAL INVESTIGATION

Numerous environmental investigations have been completed for the Buffalo Color property, including Area C, dating back to the 1980s. In 2007, Mactec completed a Remedial Investigation (RI) to build off of prior studies and characterize the nature and extent of contamination at the site. The results of prior studies and the 2007 RI are described in detail in the following reports:

- *Final Report on RCRA Facility Investigation, Buffalo Color Corporation*, Golder Associates, 1997.
- *Addendum to Final Report on RCRA Facility Investigation, Buffalo Color Corporation*, Golder Associates, 1998.
- *Remedial Investigation Report, Former Buffalo Color Corporation, Area ABCE Site*, Mactec, August 2008.

Generally, the RI determined that site soil contained concentrations of certain metals and organic substances that exceeded the NY Commercial Soil Cleanup Objectives (SCOs). Shallow groundwater on the northern half of Area C was found to contain concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) that exceeded the NY Class GA standards (fresh groundwater standards).

Below is a summary of site conditions when the RI was performed in 2007, supplemented by PDI work completed by Mactec in 2009-2010:

1.2.1 Area C Soil

Metals (primarily arsenic and mercury) and polycyclic aromatic hydrocarbons (PAHs) were found across Area C, in both surface and subsurface soil, at concentrations that exceed the SCOs. For the direct contact pathway, surface soil samples are considered the most relevant data points. A background study completed by Mactec suggests that the majority of the soil samples collected during the RI contained metals and PAHs at concentrations that are within the calculated Site-specific background standards. The data also suggest that the locations with concentrations of metals and PAHs are not sources of groundwater contamination. No correlation between shallow soil VOC concentrations and VOCs in groundwater was found during the RI, and thus no specific VOC source areas were identified above the water table in Area C. Roughly 50% of Area C is currently covered by pavement or buildings which have concrete floor slabs.

1.2.2 Area C Groundwater

Shallow groundwater on the northern half of Area C was found to contain concentrations of VOCs (principally chlorobenzene and dichlorobenzenes) and SVOCs (primarily aniline and nitrobenzene) at concentrations that exceed the NY Class GA standards. Total VOC levels exceeded 100 milligrams per liter (mg/L) and total SVOCs exceeded 10 mg/L at certain monitoring points on Area C, as described in detail in Section 3.0 of this Report. Visual evidence of a thin accumulation of dense non-aqueous phase liquids (DNAPL) was found in monitoring wells MW-C02 and MW-C03. The specific source of the groundwater contamination has not been determined, but it is likely related to prior use and storage of chemicals that occurred on the northern half of Area C. The RI and PDI data indicate that the Area C VOC groundwater plume has not migrated off-Site.

1.2.3 Area C Site-Related Soil Vapor Intrusion

Soil vapor intrusion sampling was not performed on Area C. Concentrations of VOCs in shallow groundwater indicate that the vapor intrusion (VI) pathway may exist and therefore will be

addressed for existing and future structures on-site. Requirements for evaluation and mitigation of the VI pathway are presented in the Engineering and Institutional Control Plan (Chapter 2) of the Area C Site Management Plan.

1.2.4 Area C Sewers

The former site process sewers are connected to the nearby Buffalo Sewer Authority (BSA) sewer lines. The RI sampling completed in 2007 identified the presence of residual contaminants in solids within the former facility process sewers (including sediments or sludge). Shallow groundwater may infiltrate portions of facility storm and/or process sewers. Additional investigation of the Area C storm sewers was completed in 2010, as described in Section 3.9.

1.3 PROPOSED REMEDY FOR AREA C

The Site will be remediated in accordance with the NYSDEC-approved Remedial Action Work Plan, specifically the remedial alternatives presented in Section 9.0 of the Alternatives Analysis Report (AAR) (Mactec, 2009), as well as the NYSDEC-approved remedial design documents. Specific details regarding the remedial construction activities will be documented in the Area C Final Engineering Report (FER).

The following is a summary of the Remedial Actions that will be performed at the Site:

- Limited excavation of VOC-contaminated soil on the northern half of Area C to the top of the glaciolacustrine clay unit (aquitard).
- Utilization of an integrated site-wide cover system consisting of either a minimum of one foot of clean soil (seeded with native grasses) or clean gravel, existing/new pavement (asphalt or concrete), or existing buildings. The cover system will limit human exposure to remaining contamination at the site, consistent with the presumptive remedy as identified in 6 New York Codes Rules, and Regulations Part 375;
- Abandonment/plugging of unused process sewers and the existing storm sewer system;
- Execution and recording of an Environmental Easement to restrict land use and limit future exposure to contamination remaining at the site. Elements of the Environmental Easement include prohibiting groundwater use, providing protocols for disturbance of Site soils

and/or groundwater, limiting future land use to commercial or industrial use, and requiring that occupied structures associated with future development at the Site are constructed such that the vapor intrusion pathway is eliminated; and

- Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.

2.0 EXISTING CONDITIONS

2.1 DESCRIPTION OF AREA C

The former Buffalo Color Site, consisting of Areas A, B, C and E, is located on the south side of the City of Buffalo, Erie County, New York, in an area of heavy industrial development that dates to the mid-1800s. The Site occupies approximately 47 acres near and adjacent to the Buffalo River (Figure 1). The former BCC Site is subject to three separate BCAs: Areas A&B, Area C, and Area E.

Area C, the focus of this report, covers approximately six acres and is located on the northwestern corner of the former BCC Site (Figure 2). It is fenced and accessible by vehicle from Area B and gated entrances along Lee Street. Area C includes the former powerhouse building and former ice house, along with other structures that SBD intends to preserve for adaptive reuse by a third party. SBD at present has completed the removal of residual chemicals and asbestos from Area C buildings and has demolished ancillary structures. Area C is bounded by Elk Street to the north (across which is the Honeywell Buffalo Research Laboratory facility), Lee Street to the east, a rail spur and Area B to the south, and railroad tracks to the west.

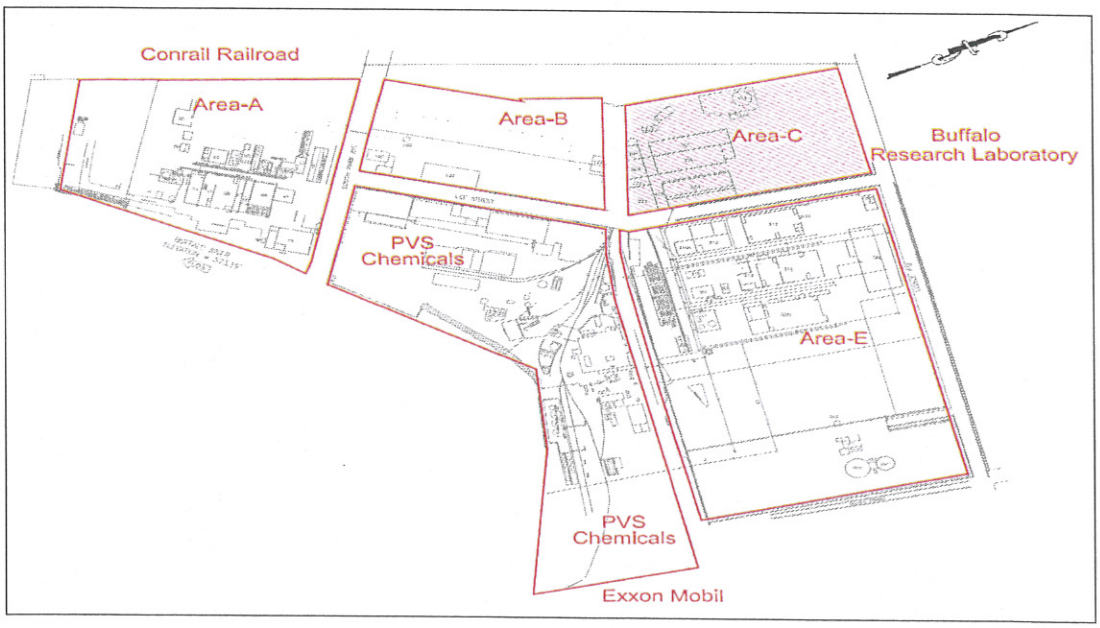


Illustration 1: Area C at BCC Site

2.2 SITE LITHOLOGY

2.2.1 *Site-Specific Geology*

The RI report (Mactec, August 2008) identifies a number of subsurface zones at the site with contrasting hydrogeologic properties. In order of increasing depth, these zones include:

Fill: This unconsolidated material is found over the majority of the surface of the site. It typically consists of clay, silt, crushed stone, gravel, bricks, and miscellaneous building demolition debris. Concrete pads and foundations associated with former structures are known to exist within the fill layer on Area C. The fill thickness generally ranges from 4 feet to greater than 10 feet, with the maximum thickness occurring at the former powerhouse building, which has a basement.

Clay and Silt Tills (Upper Tills): This unit is unconsolidated fine-grained clay and silt tills, with varying amounts of sand and sand seams. The thickness of this material on Area C generally ranges 5 to 10 feet.

Glaciolacustrine Clay: This unit is primarily soft clay, with limited occurrence of fine sands. This unit underlies the entire site and has a thickness that ranges from 24 to 36 feet. Grain size analysis shows that this unit is comprised almost entirely of clay sized particles. These materials have a relatively low hydraulic conductivity and the unit is considered an aquitard between the shallow and underlying confined water-bearing units.

Basal Till: This unit is a mixture of sand, silt, gravel, and minor amount of clay. This unit was encountered beneath the glaciolacustrine clay in all deep borings advanced at the former Buffalo Color property, and was encountered immediately above the bedrock. Thickness of this unit ranged from 2 to 5 feet.

Onondaga Limestone: This bedrock unit was described as fractured and weathered, dark gray limestone. Only the upper few feet of this unit were penetrated during site investigation activities. The bedrock surface slopes gently to the south, at a rate of approximately 1.2 feet per 100 feet.

2.2.2 Site-Specific Hydrogeology

Two aquifers have been identified at the site. The first aquifer encountered, the shallow aquifer, is a saturated unconfined system within the fill and sediments above the glaciolacustrine clay unit. The second aquifer, the confined aquifer, occurs within the basal till and weathered upper surface of the bedrock. The RCRA Facility Investigation (RFI) report (Golder, 1997) concluded that the thick, low conductivity glaciolacustrine clay unit acts as an aquitard, separating these aquifers and providing a confining layer for the deeper aquifer. Although both are part of the shallow aquifer, variability in groundwater conductivity and flow direction has been found in the saturated portion of the fill unit compared to the saturated portion of the underlying upper till unit. Thus, groundwater contours were mapped separately for wells screened in the fill unit during the 1997 RFI and the 2007 RI.

Groundwater flow in the shallow aquifer is generally towards the Buffalo River. However, it was concluded that subsurface utilities and other manmade features influence local flow conditions. Sewer lines and associated backfill are below the water table at various locations and were found to act as groundwater discharge points because depressions in the water table coincided with the location of utilities. Such a depression was identified between Area B and Area C. At Area C, the first zone of saturation is typically encountered within 3 to 5 feet of the ground surface, and varies seasonally.

During the 1997 RFI (Golder), the water levels for the confined aquifer were measured in 12 monitoring wells located across the Buffalo Color facility that were screened within the basal till unit (four of which were installed during the RFI, and eight of which were installed prior to the RFI). The groundwater in the confined aquifer exists under apparent confined conditions within the basal till unit and upper portion of the Onondoga Limestone beneath the base of the glaciolacustrine clay. During the RFI, the confined aquifer contours were interpreted by Golder to indicate a groundwater divide on the eastern side of Area E. Groundwater flow is shown within the confined aquifer as to the east and west of the divide area, parallel to the Buffalo River. Golder reported that gradient in the confined aquifer ranged from 0 feet to 0.008 feet on two separate occasions in 1997.

3.0 PRE-DESIGN INVESTIGATION

Subsequent to the 2007 RI, quarterly groundwater monitoring was completed during 2008 for the entire BCC Site, including Area C, in accordance with the ICM Operations, Maintenance & Monitoring Plan (Mactec, March 2006). In 2009 and 2010, PDI work was conducted to support design of the remedy for Area C, consistent with the AAR (Mactec, February 2009), Pre-Design Investigation Work Plan Buffalo Color Site – Area A, B, C, & E (Mactec, August 2009), Area C&E In-Situ Treatment Pre-Design Investigation Work Plan (Mactec, December 2009), storm sewer study work plan (Mactec, February, 2010), and supplemental soil borings advanced to obtain chemical and geotechnical information. The scope of work and results associated with these activities are described in the sections below.

3.1 2008 GROUNDWATER MONITORING WELL SAMPLING AND ANALYSIS

During 2008, four rounds of groundwater sampling were completed at monitoring wells located on the BCC property, including Area C. During each sampling event, a water level survey of the Site wells was also completed. The water level survey data is summarized in Table 1. The 2008 quarterly groundwater elevation data and associated groundwater contours for selected 2008 groundwater monitoring events are provided for the fill unit, shallow aquifer, and confined aquifer in Figures 3.1 through 3.8.

3.1.1 Methods

Samples were collected from three Area C wells during the 2008 groundwater monitoring events: wells RFI-20 and RFI-31 are shallow aquifer wells and well RFI-21D is confined aquifer well. Samples were collected from well RFI-20 during all four quarters, RFI-31 during the first, third, and fourth quarters, and RFI-21D during the first quarter. Groundwater samples were collected using low flow sampling techniques. During the 2008 quarterly sampling events, water levels were measured in the above wells along with shallow (fill unit) wells PS-04, PS-05, and PS-06.

The groundwater analytical methods used are summarized below with the 2008 sampling round(s) indicated in parentheses:

- Target Compound List (TCL) VOCs by SW-846 Method 8260B (Q1, Q2, Q3, Q4);
- TCL SVOCs, including aniline, by SW-846 Method 8270C (Q1, Q2, Q3, Q4);
- Target Analyte List (TAL) Metals (except mercury) by SW-846 Method 6010B (Q1, Q2, Q3, Q4);
- Mercury by SW-846 Methods 7470A (Q1, Q2, Q3, Q4);
- Total Cyanide by SW-846 Method 9012A (Q1, Q2, Q3, Q4);
- Sulfide by United States Environmental Protection Agency (USEPA) Water/Wastewater Method 376.1 (Q1, Q2);
- Sulfide by USEPA Water/Wastewater Method 4500-S F (Q1, Q2, Q3);
- Sulfide by USEPA SW-846 Method 9030B/9034 (Q4);
- Sulfate by American Society for Testing and Materials (ASTM) Method 375.4 (Q1, Q2, Q3);
- Sulfate by ASTM Method D-516-90 (Q1, Q2, Q3);
- Sulfate by USEPA Water/Wastewater Method 300.0 (Q4);
- Chloride by USEPA Water/Wastewater Method 300.0 (Q1, Q2, Q3, Q4);
- Nitrate/Nitrite by NYSDEC Method 353.2 (Q1, Q2, Q3, Q4);
- Ferrous Iron by USEPA Water/Wastewater 3500D (Q1, Q2); and
- Total Recoverable Phenolics by USEPA Water/Wastewater Method 420.4 (Q1, Q2).

Container size and type, preservative, and holding time requirements for groundwater samples are determined for each analytical group by their respective analytical method. The laboratory provided the appropriate sample containers to Mactec.

Sample analyses for the First through Third Quarters of 2008 were completed by TestAmerica Laboratories in Amherst, New York. Sample analyses for the Fourth Quarter of 2008 were completed by TestAmerica Laboratories in Pittsburgh, Pennsylvania. TestAmerica's Pittsburgh and Amherst laboratories are certified by the State of New York and the National Environmental Laboratory Accreditation Program (NELAP)

3.1.2 2008 Groundwater Monitoring Results

The results of the 2008 groundwater sampling at wells in Area C are presented in Table 2. The laboratory reports for the 2008 groundwater monitoring episodes are presented on a CD in Appendix A. Groundwater results were compared to the NYSDEC Class GA (fresh groundwater) water quality standards.

Data from the 2008 groundwater sampling were compared to data presented in RI Report (Mactec, August 2008). The 2008 groundwater analytical data for Area C were similar to the 2007 RI results and indicated the continued presence of VOC contamination (chlorobenzene, dichlorobenzenes, and other compounds) in shallow groundwater on the northern half of Area C.

Groundwater contours for the 2008 quarterly groundwater monitoring events are presented in Figures 3.1 through 3.8. Groundwater flow within the fill unit and shallow aquifer on Area C is generally to the southeast, toward the Buffalo River. Groundwater flow direction in the confined aquifer is to the northwest. These flow directions are consistent with the 2007 RI and 1997 RFI.

3.2 2009 DIRECT PUSH GROUNDWATER SAMPLING – SEPTEMBER 2009

Based upon the RI data, the chlorobenzene plume at Area C was previously estimated to be approximately 135 feet by 450 feet (60,750 square feet). In September 2009, direct-push drilling equipment was used to collect groundwater samples across the plume area using an approximate 50-foot-on-center grid configuration (Figure 4). Thirty borings, designated PDI-C01 through PDI-C30, were advanced via direct-push equipment during September 2009 investigation. The work was performed in accordance with the PDI Work Plan (Mactec, August 2009).

Shallow groundwater samples were collected from the direct push borings within the upper zone of saturation for off-site laboratory analysis of TCL VOCs by Method 8260B and TCL SVOCs, including aniline, by Method 8270C, with a subset of the samples (25%) also analyzed for biochemical oxygen demand, chemical oxygen demand, diesel range organics, and gasoline range organics (Table 3).

The groundwater samples were collected directly from the open bore hole using a peristaltic pump and dedicated tubing. During sampling, attempts were made to collect SVOCs and inorganic samples with turbidity measuring below 50 Nephelometric Turbidity Units (NTUs). If the field turbidity measurements could not be reduced below 50 NTUs at a particular boring, filtered samples were collected through a 0.45 micron filter for SVOCs and inorganics analyses.

The 2009 Area C PDI direct push soil boring logs are presented in Appendix B. The logs indicate that the surface soils consist of fill material to a depth of three to seven feet. The fill material overlies the upper till layer. Most of the PDI direct push soil borings were advanced to 8 feet below grade, except for borings PDI-C04, PDI-C05, PDI-C07, PDI-C08, and PDI-C12, which were advanced to 12 feet below grade. The boring logs include PID readings, soil descriptions and classifications, and observations relative to potential contamination.

The analytical results of the September 2009 Area C direct push groundwater samples are summarized in Table 3 and the laboratory report is presented on a CD in Appendix C. The Area C direct push groundwater sample analytical results are also summarized on Figure 4. Total VOCs and SVOCs were used to develop iso-concentration lines shown on Figure 4 at intervals of 1 and 10 ppm (parts per million). At Area C, there are two locations with VOC and SVOC concentrations in groundwater greater than 10 ppm (Figure 4): one area is located near monitoring well RFI-31 and the other is located near monitoring wells MW-C02 and MW-C03.

3.3 INSTALLATION OF GROUNDWATER MONITORING WELLS

Based on the results of the Area C direct push boring investigation described above, Mactec installed three additional monitoring wells within the chlorobenzene plume areas (MW-C01 through MW-C03) in October 2009. These wells were used to further define the extent of the VOC-contaminated shallow groundwater. An additional monitoring well, MW-C04, was installed along Lee Street (Figure 2) in August of 2010 to supplement the previously added monitoring wells on Area C.

The locations of the new monitoring wells are shown on Figure 2 and subsequent figures. Boring logs and well construction diagrams were prepared for these monitoring wells; copies of the logs are provided in Appendix D. The logs include Uniform Soil Classification System descriptions and other pertinent information.

The borings for the monitoring wells were advanced using hallow stem auger augers. The monitoring wells consist of two-inch diameter Schedule 40 polyvinyl chloride (PVC) riser pipe and 10-foot well screens with a 0.02-inch slot size. The well screens were installed with the bottom of screen ranging from 12.5 to 15 feet below ground surface (bgs). The annular space around the well screen was filled with a sand pack of suitable size to be retained by the screen. The top of the sandpack is one to two feet above the top of the screen. One to two feet of bentonite pellets were placed on top of the sand pack in the annular space and hydrated to create a seal. The remainder of the annular space was filled with a bentonite/cement mixture. A protective steel cover was placed over the well and anchored in a cement collar. A locking compression cap was placed on the top of the well riser.

During drilling activities, split-barrel samples were collected at 2-foot intervals. Mactec visually inspected the soil samples for evidence of contamination such as odor, discoloration, staining, or liquid-phase contaminants. A photoionization detector (PID) was used to screen the borings for organic vapors. The boring logs include information regarding evidence of contamination and PID readings.

Each well was developed in accordance with standard well installation procedures to remove sediment. Mactec subsequently collected groundwater samples from selected Area C monitoring wells as described below in Section 3.4.

3.4 NOVEMBER 2009 GROUNDWATER MONITORING WELL SAMPLING AND ANALYSIS

As part of the PDI activities, the following monitoring wells/piezometers on Area C were sampled in November 2009: RFI-20, RFI-31, PS-04, PS-05, PS-06, MW-C01, MW-C02, and MW-C03.

3.4.1 Sampling Methods

Each well was gauged using a water level meter to determine water levels prior to sampling. Low-flow groundwater sampling techniques were employed during sampling consistent with USEPA guidance. The wells were sampled using peristaltic pumps with dedicated tubing. The tubing was securely fastened to the well casing or cap during sampling to prevent disturbance of any sediments in the well. Pumps were operated at less than 200 milliliters per minute during purging and sampling. Well purging/sampling logs for the November 2009 groundwater monitoring event are provided in Appendix E.

Groundwater samples were submitted for analytical testing in accordance with USEPA SW-846 analytical procedures, as specified in the PDI Work Plan (Mactec, August 2009). Groundwater analytical methods and parameters are summarized below:

- Target Compound List (TCL) VOCs by Method 8260B with reporting of Tentatively Identified Compounds (TICs) per Contract Laboratory Program (CLP) guidelines
- Target Compound List (TCL) SVOCs by Method 8270C, to include aniline, with reporting of TICs per CLP guidelines
- Resource Conservation and Recovery Act (RCRA) Metals by Method 6010B including mercury by Methods 7470A and 7471A

Investigation-derived wastes were managed consistent with the methods presented in the PDI Work Plan (Mactec, August 2009).

3.4.2 *November 2009 Groundwater Monitoring Well Sampling Results*

The results of the November 2009 Area C groundwater monitoring well sampling are summarized in Table 4, with the NY Class GA groundwater criteria provided for comparison. The laboratory report is provided on the CD located in Appendix F. The highest VOC concentrations in Area C groundwater were found in samples collected from monitoring wells MW-C02 and MW-C03. In Area C, as shown on Figure 4, there are two areas with VOC and SVOC concentrations greater than 10 ppm. These areas were further investigated to determine concentrations of saturated soil at depth during the sampling detailed in Section 3.6.

3.5 AREA C DNAPL INVESTIGATION

The VOC concentrations identified in groundwater on the northern half of the property indicated that potential separate-phase liquids may exist. Because chlorobenzene and other Site-related solvents, in their pure state, are denser than water, Mactec inspected monitoring wells with the highest VOC concentrations for the presence of dense non-aqueous phase liquids (DNAPL). A field investigation was conducted by Mactec on March 8, 2010. An oil/water interface probe was lowered to the bottom of wells RFI-20, MW-C02 and MW-C03. The probe did not detect DNAPL in any of the wells; however, the approximate bottom two inches of the probe was found coated with a viscous dark green substance when it was extracted from wells MW-C02 and MW-C03. This material exhibited a solvent-like odor. Slightly more of this material was observed on the probe tip at MW-C03 compared to MW-C02. Thus, a disposable bailer was then slowly lowered to the bottom of well MW-C03. Upon retrieval, the bottom 2 inches of the outside of the bailer was coated with the same viscous dark green substance. The groundwater in the bailer was observed to have a light green color, as it had during PDI sampling activities. From this it was determined that DNAPL was present in the vicinity of wells MW-C02 and MW-C03.

3.6 DEPTH DISCRETE SOIL SAMPLING

3.6.1 Sampling Methods

To better define the vertical distribution of VOCs within the saturated portion of the upper till layer (below the first zone of saturation encountered at the base of the fill layer), six additional direct push borings (designated DDC-01 through DDC-06) were advanced at Area C in the areas of highest VOC groundwater concentrations on March 18 and 19, 2010. An additional boring (DDC-07) was advanced on August 6, 2010. Soil samples were collected into the upper zone of saturation and were analyzed for TCL VOCs, TCL SVOCs, and total organic carbon. As shown on Figure 5, four soil borings (DDC-01 through DDC-04, and DDC-07) were placed around well MW-C02 to evaluate contamination over depth in the upper zone of saturation. Two additional borings (DDC-05 and DDC-06) were completed near well RFI-31.

The soil boring logs for the depth-discrete sample borings are presented in Appendix G. The boring logs indicate the PID readings, USCS soil descriptions and classifications, and observations relative to potential contamination.

The borings were completed to a depth of 12 feet bgs with the exception of boring DDC-02 and DDC-07, which were completed to a total depth of 16 feet and 14 feet bgs respectively. At each boring, soil samples were collected from selected intervals within the upper till unit (below the first zone of saturation) for laboratory testing to help define the vertical distribution of VOC contamination.

3.6.2 Depth Discrete Borings Results

Consistent with the prior results, the soil boring logs indicate that surface soil consists of fill material to between a depth of 3.5 (DDC-06) and 6 (DDC-03) feet bgs, and the fill material overlies the upper till unit.

Analytical results from the depth-discrete soil samples are summarized in Table 5. Cross section lines are shown in plan view on Figure 6, and cross sections that include the depth discrete soil sample analytical results greater than 1 milligram per kilogram (mg/kg) are provided as Figure 7 (Cross Section A-A'), Figure 8 (Cross Section B-B'), and Figure 9 (Cross Section C-C').

The saturated soil sample results indicate that, in the area of wells MW-C02 and MW-C03, concentrations of VOCs, including 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, 1,3-dichlorobenzene, 1,2-dichlorobenzene, chlorobenzene, benzene, and toluene, greater than 1 mg/kg are present below the water table within the upper till.

In the plume area near well MW-31, boring DDC-05 had saturated soil VOC/SVOC concentrations greater than 1 mg/kg. The parameters greater than 1 mg/kg at DDC-05 were 1,2,4-trichlorobenzene and chlorobenzene. The concentration of trichlorobenzene (1,700 mg/kg) in the 4 to 6 foot sample at DDC-05 was much greater than VOC level in the 6 to 8 foot interval.

3.7 TEST PITS

On August 5 and 6, 2010, two test pits (TP-C1 and TP-C2) were excavated within the Area C VOC plume/source areas (Figure 6). The purpose of the work was to evaluate the stability of the soils in an open-cut scenario, as well as to collect some samples for analytical and chemical oxidation bench testing, as described in a Mactec email to NYSDEC dated August 2, 2010.

Ontario Specialty Contracting (OSC) used a trackhoe to excavate the test pits under Mactec's direction. Mactec personnel were on Site to collect samples and evaluate geotechnical issues. Mactec prepared logs for each test pit, copies of which are provided in Appendix H.

The test pits were excavated until the soft glaciolacustrine clay unit was identified at approximately 12.5 feet bgs. The following samples were collected by Mactec from the test pits:

- Samples were collected from each test pit from discrete depth intervals for TCL VOCs and TCL SVOCs analyses at TestAmerica's Amherst, NY laboratory. Samples were collected from depths of 3'-5', 5'-7', 7'-9', and 9'-11' from both test pits. The analytical results for these samples are summarized on Table 6. The analytical report for these samples is provided on a CD in Appendix I.

- Composite soil samples were collected at each test pit from the till unit and provided to OSC for waste characterization testing (TCLP and other analyses). The samples were submitted by OSC to Paradigm Environmental Services, Inc. (Paradigm) of Rochester, NY. The analytical results for these samples are summarized on Table 6 and copies of the Paradigm analytical reports are provided in Appendix J.

- Bulk soil samples for chemical oxidation bench testing were collected by Mactec from the Area C test pits. The samples were composited from the upper till material (in large glass containers) and shipped to Regenesis in San Clemente, California for chemical oxidation bench testing.

The test pits were excavated with near-vertical sidewalls, with no significant caving or sloughing observed. Only minimal quantities of groundwater were encountered, although it should be noted that the work occurred during a dry period of the summer. Based on the results of the test pit activities and geotechnical evaluations (see Appendix K), it was determined that open-cut methods could be utilized for remedial excavations on Area C to the top of the glaciolacustrine clay layer, which was encountered at an approximate depth of 13 feet bgs on Area C.

3.8 AREA C IN-SITU TREATMENT TREATABILITY STUDY

The AAR identified in-situ enhanced bioremediation of the shallow VOC plume at Area C as the preferred remedy for groundwater. The AAR:

- recommended a pre-design investigation, including a treatability study, be conducted to collect site-specific data related to geochemical and biological processes at the Site in order to determine the appropriate amendments for enhanced bioremediation;

- recommended that a pilot-scale test be conducted on-Site based upon the results of the treatability study to determine the injection locations, spacing, and effectiveness; and
- indicated that full-scale implementation would be based upon the results of the treatability and pilot-scale tests.

A treatability study was conducted as part of the pre-design investigation to support the design and implementation of in-situ treatment for Area C groundwater. The treatability study was conducted consistent with the scope of work presented in the AAR and the Area C&E In-Situ Treatment Pre-Design Investigation Work Plan (Mactec, December 2009). The treatability study consisted of both a field pilot-study and a bench-scale laboratory study for Area C. Mactec subcontracted Environmental Remediation and Financial Services (ERFS) to conduct treatability studies to evaluate site-specific in-situ groundwater treatment approaches under the field oversight of Mactec.

The objectives of the field pilot-study and a bench-scale laboratory study efforts on Area C and E were to:

1. Collect site-specific data related to geochemical processes at the Site through laboratory and/or bench-scale testing in order to determine the appropriate amendments for enhanced bioremediation or a combined bioremediation and chemical oxidation approach; and
2. Evaluate the injection of such amendments into the contaminated aquifer through implementation of a pilot-scale test (Field Pilot-Study Test).

3.8.1 *In-situ Treatment Bench-Scale Testing*

Bench-scale treatability testing in Area C consisted of two primary components as follows:

1. In-situ Chemical Oxidation Bench Testing; and
2. Microbial Sampling and Analysis.

3.8.1.1 In-situ Chemical Oxidation Bench Testing

To evaluate the application of chemical oxidation technology at the site, Mactec subcontracted ERFS to conduct a chemical oxidation bench-scale test to evaluate the chemical oxidation technology implemented during the Area C field pilot-study described in Section 3.8.2. The chemical oxidation bench-scale test utilized groundwater and soil samples collected during installation of the infiltration trench and monitoring wells associated with the chemical oxidation pilot-test (refer to Section 3.8.2) which were prepared into five soil-groundwater mixtures (including an unamended control) to evaluate the ability of two different catalyzed chemical oxidation reagents (catalyzed hydrogen peroxide and initiated persulfate), at two different reagent concentrations (1 and 3% hydrogen peroxide and 15 g/L and 30 g/L persulfate), to degrade chlorobenzene under site-specific conditions. Each of the five experimental conditions was run in duplicate.

The parameters residual oxidant (amended samples only), pH, and oxidation-reduction potential (ORP) were measured periodically throughout the tests.

Each amended test setup received 4 doses of reagents allowed to react to completion. Laboratory analysis for VOCs by Method 8260, including chlorobenzene, were run at baseline, following the second reagent dose, and following the fourth (final) reagent dose.

The chemical oxidation bench-scale testing results indicate:

1. The site soils are highly organic and can absorb large amounts of contaminants
2. The chemical oxygen demand measured in soil used during the test was measured at a relatively high value of 34.45 grams per kilogram.
3. Hydrogen peroxide was rapidly depleted after each dosing during bench-scale testing (e.g. within 3-4 hours of dosing) – this may explain why only low concentrations of hydrogen peroxide were observed in the monitoring points during the field pilot-scale.
4. Persulfate reactions ceased unexpectedly after two doses. Persulfate was depleted by 80% within about 48 hours of the first dosing, but showed little depletion after over 200 hours following the second dose and continued additions of iron and peroxide as an initiator failed to cause further initiation of the persulfate.

5. Reduction in chlorobenzene concentrations ranged from 95% (15 grams per liter persulfate) to greater than 99% (3% peroxide) under test conditions; however, results for the control sample indicated a reduction in chlorobenzene concentrations on the order of 99%. This is believed to be due to the adsorption of chlorobenzene to the soil matrix (i.e., chlorobenzene initially present in the groundwater when mixed with the soil sample partitioned to [adsorbed onto] the soil organic matter). The potential for losses via volatilization are not considered significant for the target analytes.

ERFS prepared a report that summarizes the results of the testing, (refer to Appendix L).

3.8.1.2 Microbial Sampling and Analysis

To evaluate the amended and unamended biodegradation of chlorobenzene in-situ within site groundwater, two bio-trap® passive samplers were installed by Mactec within the screened interval of monitoring well MW-C02, which is generally representative of maximum VOC conditions. Microbial study results are referenced in Appendix M. One bio-trap® was baited with Oxygen Release Compound Advanced (ORC-A®), the other unbaited (unamended control); both were also baited with a specially synthesized form of chlorobenzene containing ^{13}C labeled carbon, as part of a sampling procedure known as stable isotope probing (SIP). Since ^{13}C is rare, making up approximately 1.1% of natural occurring carbon, carbon originating from the labeled chlorobenzene is readily distinguished from the other stable carbon isotope, ^{12}C,, which accounts for approximately 98.9% of naturally occurring carbon. The samplers were assembled in the field, installed within the screened interval of monitoring well MW-C2, and allowed to incubate in the well for 28 days prior to retrieval in accordance with the vendor instructions. After the required incubation period, Mactec retrieved the bio-traps and sent them to Microbial Insights for both the SIP analysis and CENSUS® analysis.

The SIP analysis included the following three approaches to demonstrate biodegradation of chlorobenzene:

1. The loss of the labeled compound, ^{13}C, provides an estimate of the degradation rate.
2. Quantification of ^{13}C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.

3. Quantification of ^{13}C enriched dissolved inorganic carbon indicates contaminant mineralization.

The bio-trap® samplers were each baited with 0.62 milligrams per bead of ^{13}C. The unamended control sampler experienced a reduction of 32% in ^{13}C, while the ORC-A® trap exhibited a 22% loss.

The total measured biomass (cells/bd) for both of the samplers was similar, on the order of 10^5 to 10^6 total measured biomass (cells/bd), which is considered a moderate biomass (by PLFA quantification) population. Incorporation of ^{13}C into the biomass was on the order of 1.13% of the biomass for the control sampler and 3.44% of the biomass for the ORC-A® baited sampler. Since the microbial community responsible for the desired biodegradation may be a small percentage of the total microbial population present, ^{13}C incorporation has also been reported as a delta value, which is a comparison of the ratio of $^{13}C/^{12}C$ in the sample to the standard $^{13}C/^{12}C$ value of 0.011180. The average PLFA values for the control and amended samplers are considered moderate and high, respectively. Additionally, evaluation of the bacterial mineralization of ^{13}C, through quantification of ^{13}C enrichment of carbon dioxide, indicates a high level of mineralization for both the control and amended samplers.

Evaluation of the microbial community that comprises the PLFA biomass identified on the samplers, indicates that 56.1% of the biomass measured for the control sampler is associated with proteobacteria, compared to 72.2% in the amended sampler. Proteobacteria include the majority of known hydrocarbon utilizing bacteria, typically the dominant community found at hydrocarbon contaminated sites, and include both aerobic and anaerobic bacteria. Evaluation of the physiological status of the proteobacteria suggests stress due to environmental conditions, as indicated by slowed growth and decreased permeability.

The CENSUS® analysis provides data to evaluate key microbial communities and functional genes associated with aerobic biodegradation of chlorobenzene through quantification of phenol hydroxylase and toluene dioxygenase genes for the microbes present in both the baited and

unbaited bio-trap samplers. The CENSUS® analysis results for the control and amended samplers indicate no significant difference in phenol hydroxylase and toluene dixoygenase genes.

Both the amended and unamended samplers showed a high incorporation of ^{13}C into dissolved inorganic carbon, which support aerobic biodegradation of chlorobenzene as an effective technology for this site. The total measured biomass was higher in the ORC-A® amended sampler, suggesting that the ORC-A® promotes bacterial growth in the Site. ^{13}C was incorporated into the biomass communities in both samples, however the degree of incorporation was higher in the ORC-A® sampler at 3.44%, compared to the unamended sampler at 1.13%.

3.8.2 In-situ Treatment Field Pilot-Study

The field pilot-study testing in Area C consisted of a Chemical Oxidation Field Pilot-Study. The pilot-scale test was conducted concurrently with the bench-scale tests. This was possible because the focus of the pilot-scale test was on effectivenss of delivery mechanisms to distribute reagent rather than overall treatment effectiveness. Therefore, implementation of the optimum treatment chemistry was not necessary for the pilot work. Mactec prepared and submitted an application for an Underground Injection Control Permit by Rule to the USEPA, Region 2, Groundwater Compliance Section. The USEPA indicated to Mactec that completion and submittal of an USEPA Office of Ground Water and Drinking Water Inventory of Injection Wells and "Additional Information" as identified on USEPA Region 2 Supplemental Instruction for Completing Inventory of Injection Wells shall be considered authorization to complete the injection activities described in the following subsections. A copy of the application is included as Appendix N.

Mactec subcontracted ERFS to conduct a field pilot-study at Area C to evaluate the ability to apply chemical oxidants to the contaminated aquifer and the resulting lateral distribution under Site-specific conditions using both an infiltration trench and two direct push injection locations (Figure 10). These tests were conducted to evaluate the appropriate approach and installation spacing requirements for full-scale implementation. The Area C field pilot-study included the following activities:

- Installation of a 20-foot long injection trench, approximately 3 feet deep by 3 feet wide, at the location shown on Figure 10;
- Installation of 10 temporary well points around the injection trench to collect lateral distribution data as shown on Figure 10;
- Collection of samples of soil and groundwater for the Area C Chemical Oxidation Bench-Scale Test, described in Section 3.7.1, while installing the pilot test trench and temporary monitoring points;
- Injection of nearly equal volumes of 3% to 6% hydrogen peroxide and 3% to 6% ferrous sulfate via the infiltration trench;
- Injection of nearly equal volumes of 3% to 6% hydrogen peroxide and 3% to 6% ferrous sulfate at each of two direct push points, as shown on Figure 10, to test for distribution and resurfacing potential;
- Collection of field parameter data from the temporary well points to evaluate distribution and effectiveness of reagents delivered via the injection trench;
- SiteVision™ survey at baseline and multiple times during treatment to track reagent migration in the subsurface;
- Preparation and submittal of daily logs.

During installation of the infiltration trench, concrete and asphalt pavement were encountered between one to two feet bgs. The infiltration trench was installed within a 1.5- to 2-foot vertical interval immediately above the water table. The trench consisted of a 20-foot long, 4-inch diameter Schedule 40 PVC, 20-slot slotted screen within a bed of three-quarter-inch crushed stone, completed by placing geotextile fabric over the upper stone layer and backfilling using excavated soil. The debris removed during excavation was stockpiled next to the trench.

The temporary well points were installed using 3-inch push rods driven to 7.5 feet bgs, with each consisting of a 2-inch diameter, Schedule 40 PVC well screen (5 feet long) and riser (5 feet long). Sand was tremied into the annular space as the rods were withdrawn and the riser was sealed with bentonite and grouted at the surface. The well points were each developed for approximately 15 to 30 minutes; however, the purge water remained silty and discolored.

The proposed scope of work for injection of reagents via the infiltration trench included the injection of between 1,000 and 2,000 gallons of nearly equal volumes of 3% to 6% hydrogen peroxide and 3% to 6% ferrous sulfate. The reagents were mixed on-site with potable water; hydrogen peroxide was mixed as a 4% to 7% solution and ferrous sulfate was mixed as a 3% to 6% solution. The reagents were applied to the infiltration trench using gravity feed to avoid reagent surfacing. The storage volume of the trench void space was estimated at between 150 to 200 gallons.

On December 16, 2009, approximately 220 gallons of hydrogen peroxide solution was added to the trench, and it was noted that some reagent surfaced around the trench riser, possibly due to mild reactions with the contaminated and organic-laden surrounding soils.

On December 17, 2009, 200 gallons of ferrous sulfate (iron catalyst) solution was applied and allowed to drain over the course of the work day. At the end of the day, 160 gallons of hydrogen peroxide solution was added, followed by an additional 160 gallons the following morning and reagent surfacing was noted either just after the total volume was added or after two-thirds of the volume was added.

A final addition of 90 gallons of iron catalyst was applied mid-day on December 18, 2009, with no surfacing observed.

In summary, a total of 540 gallons of 4% to 7% hydrogen peroxide and 290 gallons of 3% to 6% ferrous sulfate were injected over a period of three days via the infiltration trench. The infiltration trench effective volume based upon quantities of material injected appears to be similar to the estimated storage volume, although the reagents required 6 to 8 hours to migrate out of the trench. This slow ex-filtration is interpreted to be due to the low permeability soils and the high organic content (contaminants and backfill debris/organic soil). A high organic content can result in quick reaction of the oxidizer, producing reaction by-product gases which may bind to the soil matrix, further reducing permeability.

The proposed scope of work for injection of reagents via the direct push points included injection of 750 gallons per injection point (1,500 gallons total) of nearly equal volumes of 3% to 6% hydrogen peroxide and 3% to 6% ferrous sulfate at each of the two direct push points. As discussed above, the reagents were mixed on-site with potable water; hydrogen peroxide was mixed as a 4% to 7% solution and ferrous sulfate was mixed as a 3% to 6% solution. The direct push point injections were conducted to evaluate the approximate lateral dispersion of reagents when applied through vertically driven nozzles under pressure. Reagents were injected at two direct push injection points at injection pressures ranging from 50 to 100 pounds per square inch, with injection flow rates ranging from 1.6 to 6 gallons per minute. A total of 230 gallons of peroxide and 130 gallons of iron catalyst solution was injected into direct push point TP-1 over approximately 2.5 hours of injection time on December 17, 2009. Subsequent injection at direct push point TP-2 resulted in

breakthrough of reagents following injection of only 50 gallons of peroxide and 20 gallons of iron catalyst.

ERFS conducted a SiteVision™ survey at baseline and multiple times during treatment to track reagent migration in the subsurface. ERFS used the SiteVision technology, which includes high resolution electrical resistivity equipment and imaging software, in conjunction with the On-Contact Remediation Process®, to monitor and document the distribution of chemical reagents as they were injected into the subsurface. Further discussion of the implementation of the SiteVision survey is provided in ERFS's SiteVision™ Report – Buffalo Color Pilot Project Treatment Area C, Buffalo, NY provided in Appendix L.

Monitoring of groundwater parameters within both existing and temporary monitoring points, as well as interpretations of the SiteVision survey results, suggest that lateral distribution of reagents was generally on the order of 10 feet, with some evidence of influence as great as 15 to 20 feet. The SiteVision survey results also provide evidence that injection of reagents via the infiltration trench results in vertical distribution of reagents within the interval of 4 to 10 feet bgs. These results were generally within the expected range; however, the consistency and uniformity of the results was less than desired.

Observations made during the field pilot-study confirmed the suspected condition that breakthrough, or surfacing, within areas of Area C may be impacted by buried concrete and pavement present at one to two feet below grade, hindering upward movement of the injected reagents such that little to no reagent volume reaches the surface. The lateral and vertical distributions of reagents are limited by the low and variable permeability of the soil and fill materials. Concentrations of chlorobenzene in MW-C03, downgradient of the injection trench fluctuated from 94 mg/L prior to the field pilot-study (November 19, 2009), to 87 mg/L on January 6, 2010, to 110 mg/L on January 20, 2010, both of which were subsequent to the implementation of the field pilot-study. Based upon lateral influence observed during the field pilot-study, impacts to groundwater concentrations at MW-C03 during this time-frame would not be expected given the distance of monitoring well MW-C03 from the reagent application.

3.8.3 Additional Bench Testing – August 2010

During the August 2010 test pit work, bulk samples for chemical oxidation bench testing were collected by Mactec from test pits excavated with the VOC plume location on Area C. The samples were composited from the upper till material (in large glass containers) and shipped to Regenesis in San Clemente, California for chemical oxidation bench testing.

Regenesis used the samples to conduct experiments to determine the effect of RegenOx, if any, on the amount of Priority Pollutant Metals (PPM) and hexavalent chromium present in the bulk samples. The results of this type of laboratory study provide a proof-of-concept for use of in-situ chemical oxidation (ISCO) reagents like RegenOx to degrade a significant fraction of the subject contaminants. Although bench scale tests alone are not accurate means of determining optimal loadings for field-scale applications of ISCO agents, the results are taken into consideration as the field-scale loadings are determined in the Regenesis design software, which considered crucial factors including for example contaminant concentrations, hydrogeology, and oxidation stoichiometries.

The bench testing completed by Regenesis in August 2010 involved testing of the Site soil samples (with appropriate control samples) to evaluate the effects of RegenOx on Site metals and VOC concentrations. The scope of work, and interpretation of results, is provided in the report issued by Regenesis dated September 27, 2010, a copy of which is provided in Appendix O.

Bench-scale testing was conducted to evaluate the potential effectiveness of in-situ chemical oxidation of chlorobenzenes using RegenOx. In addition, the potential for mobilization of Priority Pollutant Metals (PPMet) and hexavalent chromium in site groundwater as a result of in-situ chemical oxidation using RegenOx was assessed. Six amber glass jars with Teflon®-lined lids containing site soil were provided by Mactec to Regenesis in San Clemente, CA for the bench-scale laboratory testing. Two areas were sampled to obtain the minimum 20 pound requirement for soil material. Upon receipt by Regenesis, the soil was homogenized in a plastic-lined 5 gallon bucket and repacked into the original containers. When manipulating the soil, it was noted by Regenesis that soils contained rocks and some pieces of debris (wood chips, twigs). The

consistency of the soil was very dense clay that was naturally formed into large chunks making the soil difficult to homogenize. This is consistent with previously logged site conditions. The soil was kept in sealed containers at 4°C prior to initiating the testing.

The chlorobenzene treatment test setups consisted of duplicate, air-tight, 250 mL glass containers with Teflon®-lined lids. Duplicate soil samples were analyzed at the beginning of the experiment to establish baseline concentrations of chlorobenzenes, and again at 7 days and 14 days. Chlorobenzenes concentrations were determined by EPA method 8260B for volatile organic compounds. Each experimental sample was prepared with 250 g of contaminated soil and 125 mL of purified laboratory water. The RegenOx-amended test setups received a 125 mL solution of RegenOx Part A (oxidant) and RegenOx Part B (activator) in the purified laboratory water. The RegenOx loading of the test setup was 0.74% on a per weight basis (RegenOx to soil); a 1:1 ratio of part A to part B was used. In addition to the RegenOx, each treated reaction vessel was also dosed with 0.33% hydrogen peroxide on a per weight basis (hydrogen peroxide to soil).

The metals mobilization test setups consisted of duplicate, air-tight, 2 L plastic containers with Teflon®-lined lids. Duplicate soil samples were analyzed at the beginning of the experiment to establish baseline metals concentrations in the soil samples. Each test setup was prepared with 1000 g of contaminated soil and 1500 mL of purified laboratory water. For the control tests, 1500 mL of purified lab water was the only additive in the reaction vessel. For the amended test setups, a single RegenOx loading of 0.74% w/w versus soil of total RegenOx were used with a 1:1 ratio of part A to part B. In addition to the RegenOx, each treated reaction vessel was also dosed with 0.33% w/w versus soil of hydrogen peroxide. The supernatant water samples were collected and filtered through a 0.45µm syringe filter prior to submittal for analysis. All laboratory equipment used was composed of plastic in order to avoid metals contamination from laboratory borosilicate glass. Metals levels in soil were determined by EPA method 6010B and EPA method 7471A for mercury. Dissolved metals levels in water were quantified using EPA method 6020 and EPA method 7470A for mercury.

The chlorobenzene treatment test results provide evidence that the RegenOx ISCO technology has the potential for oxidative degradation of monochlorobenzene and dichlorobenzene at the site, though persistence of trichlorobenzene was observed. The metals mobilization test results indicate the potential for RegenOx treatment to result in mobilization of priority pollutant metals and the generation of hexavalent chromium. It should be noted, however, that available literature suggests

that post-ISCO chromium levels begin to approach pre-ISCO concentrations at 6 to 12 months and are back to pre-ISCO concentrations by 12 to 24 months (Moore, 2008).

A copy of the complete Regenesis' Laboratory Report dated September 27, 2010 is provided in Appendix O.

3.9 AREA C STORM SEWER EVALUATION

Mactec conducted an evaluation of the Area C storm sewer system in accordance with a work plan transmitted to NYSDEC via email on February 16, 2010. Currently, the storm sewer system in Area C consists of storm drain inlets (catch basins) and manholes interconnected with underground storm sewer piping (Figure 10). The Area C storm sewer system discharges to a lift station located in former BCC Building 222. The lift station in Area C reportedly has not been in operation since Buffalo Color ceased operations in the mid 2000s. Prior to that time, stormwater in Area C (and likely all or portions of Area B) was pumped via the lift station to Area E, where it then gravity drained to the Buffalo River via Outfall 011. Without the operation of the lift station, stormwater in Area C has been unable to drain via the storm sewer system. Consequently, stormwater has accumulated in the pipes and is most likely exfiltrating into surrounding soils. On occasion, basement areas in adjacent Area C buildings have flooded, likely due to the lack of a discharge for the storm sewer system with the lift station shut down.

Select storm sewer manholes in Area C were visually inspected by Mactec personnel on February 18 and 19, 2010. Mactec observed the general condition of the manholes, focusing on the presence of standing water and sediment as well as signs of structural deterioration and inflow/infiltration. Mactec measured the depth from ground surface to standing water/ice (if present), manhole inverts or top of sediment, and pipe inverts (whenever visible and accessible). Field measurements concluded that storm sewer manhole inverts are $\geq$ 7 feet bgs. Significant amounts of accumulated water (approximately 1.4' to 3.5') and sediment (unknown amount – soft bottom detected) were observed in the manholes. All of the manholes inspected are constructed of brick and appeared to be in good general condition with negligible structural deterioration and inflow/infiltration.

Closed circuit television (CCTV) inspection of select storm sewer reaches in Area C was performed by a contractor (National Vacuum) in March 2010. However, significant amounts of sediment and debris obstructed the camera and prevented the reaches from being inspected.

Review of available CCTV inspection video from the March 2010 inspection revealed:

- Pipes are constructed of vitrified clay, which is consistent with historical information shown on Site plans.
- Pipe segments appear to be 3 feet in length (i.e., joint spacing is approximately 3 feet).
- Two pipe breaks and associated sediment were identified.
- The 36-inch influent pipe to Area C lift station appears to have been rehabilitated (lined) in the past or replaced with a reinforced concrete pipe.

In May 2010, National Vacuum removed sediment from certain segments of the Area C storm sewers and completed additional CCTV inspection. The CCTV report has been included as Appendix P. Review of the National Vacuum CCTV inspection video and report revealed the following:

- Pipe from manhole DMH-C10 to manhole DMH-C8 is noted on a BCC site plan as a 24-inch diameter pipe, but it was documented in the CCTV inspection as a 36-inch diameter pipe.
- 36-inch pipe from manhole DMH-C11 to manhole DMH-C8 is in poor structural condition (collapsed portions) and likely cannot be rehabilitated.
- The CCTV inspection camera was not able to make a connection between manhole DMH-C18 and manhole DMH-C10.
- The location of manhole DMH-C11 shown on Figure 10 is estimated. Connections from DMH-C11 toward Area B are uncertain (not videoed) and have been approximated.
- Groundwater infiltration at joints was evidenced in the form of encrustations at a number of joints in non-damaged sections of Area C storm sewer piping (±5%).

In summary, the storm sewer system on Area C is in poor condition, with numerous damaged segments, and has no current point of discharge. Based on this information, SBD has chosen to abandon the existing system. New storm sewer piping and infrastructure will be installed at a later date to support redevelopment of the site. Requirements for the abandonment of the existing

system are provided in Section 4. Through abandonment of the existing storm sewer system, the remedial requirement specified in the AAR of preventing the discharge of infiltrated, contaminated groundwater from Area C to the Buffalo River will be met.

3.10 AREA C GEOTECHNICAL INVESTIGATION

Mactec completed a geotechnical investigation of soils at the Area C VOC plume areas on May 20, 2010 through June 2, 2010. The work was completed in accordance with the scope of work presented in an email from Mactec to NYSDEC dated May 18, 2010. Drilling activities were completed by SJB Drilling using a CME 550 drilling rig. During this investigation, four borings (GB-C01 through GB-C04) were advanced to sampler refusal on apparent bedrock. The approximate boring locations are shown on Figure 5.

The borings were advanced using a combination of hollow stem auger, rotary wash with driven casing (drive and wash), and rotary wash without casing (open-hole mud rotary drilling) techniques. Hollow stem augering techniques were completed in the upper five (5) feet of drilling through the fill unit. Drive and wash drilling was then performed beginning at five (5) feet extended into the glaciolacustrine clay unit. Drive and wash drilling continued until a thin-wall undisturbed sample was collected at each boring location. Open-hole mud rotary drilling was then performed until boring completion as determined by sampler refusal, which was encountered between 39.8 and 41 feet bgs.

During drilling activities, Standard Penetration Tests (SPT) were performed using a split-barrel sampler at a frequency of approximately one SPT every 5 feet. Soils from the split spoons were collected and placed in 8 ounce jars for geotechnical laboratory testing as determined by Mactec's Geotechnical Engineer. At each boring location, one thin-walled tube sampler (Shelby Tube) was used to collect an undisturbed soil sample for geotechnical laboratory testing. Also, field vane shear tests were performed approximately every 10 feet after encountering the glaciolacustine clay unit.

Boring logs for the geotechnical borings are provided in Appendix B, and laboratory test reports for the geotechnical borings are provided in Appendix Q.

3.11 DATA VALIDATION

Data validation for test results associated with the soil and groundwater samples collected during the 2009-2010 PDI work was completed by Mactec chemists in accordance with the Honeywell Remediation program Level II and III data validation procedures described in the RI Quality Assurance Project Plan (QAPP) (Mactec, 2006) and the current NYSDEC Data Usability Summary Report (DUSR) guidelines. Ten percent of samples for each matrix were also validated using Level IV procedures (full EPA Guideline validation). Validation levels are documented for each set of investigation data in validation reports, copies of which are provided on CD in Appendix R. Project quality control (QC) criteria and a summary of validation actions and observations are also documented in the data validation reports in Appendix R.

During the Level II data validation, the following data quality indicators were reviewed:

- Case Narrative
- Sample Collection and Holding Times
- QC Blanks
- Laboratory Control Samples
- Matrix Spike/Matrix Spike Duplicates
- Laboratory and Field Duplicates
- Surrogate Spikes
- TICs
- Reporting Limits
- Data Completeness
- Electronic Data Verification

The following additional checks were added to the Level II review based on data review procedures included in the NYSDEC DUSR guidance:

- Initial Calibrations
- Continuing Calibrations
- Instrument Performance Checks (Tune)
- Internal standards
- Calculation and transcription checks
- Raw data verification
- Analyte concentration quantization

During the Level IV review, the following data quality indicators were also reviewed:

- Calculation checks specified in USEPA Guidelines
- Raw data verification
- Analyte concentration quantitation

Data quality reviews for the items listed above were completed using professional judgment and general data validation procedures described in USEPA validation guidelines (USEPA, 1999; USEPA, 2004; USEPA, 2005; USEPA, 2006a; USEPA, 2006b). Data qualifications were completed if necessary in accordance with the validation guidelines and professional judgment using the following qualifiers:

U = The target compound was not detected at concentrations greater than the associated quantization limit

J = The reported concentration is considered an estimated value

N = The reported concentration is considered to be presumptive

R = Data is rejected and is not usable

4.0 REMEDIAL DESIGN – AREA C

The data obtained from the 2009-2010 PDI work, as well as prior data obtained during the 2007 RI and earlier studies, has been used to develop the final remedial design for Area C, as presented in the following sections.

4.1 AREA C SOURCE REMOVAL

Based upon results of the PDI soil and groundwater sampling, the identified location and magnitude of contamination, and the results of the PDI treatability studies, the proposed remedial action for Area C groundwater is excavation of VOC source area soils. Source area soils are defined as soils and groundwater located within areas where saturated soil or groundwater contains total VOCs greater than or equal to 10 mg/kg or 10 mg/L, respectively. Vertically, the source soils extend to the interface between the upper till unit and the underlying glaciolacustrine clay unit encountered at a depth of approximately 13 feet bgs on Area C.

The proposed excavation areas are identified as Areas C1 and C2. Both excavation areas will be extended to the top of the soft, gray glacial clay unit (encountered at an approximate depth of 13 feet below existing grade). The work will be completed via open cut excavation (i.e., without sheeting, shoring or bracing). Sidewalls will be sloped back as specified by Mactec, and modified as necessary by the Contractor based on field conditions, to maintain excavation stability and protect adjacent structures/utilities. The work will be completed in segments, as specified by Mactec and the Contractor, to minimize water handling, prevent sidewall sloughing, and protect adjacent structures.

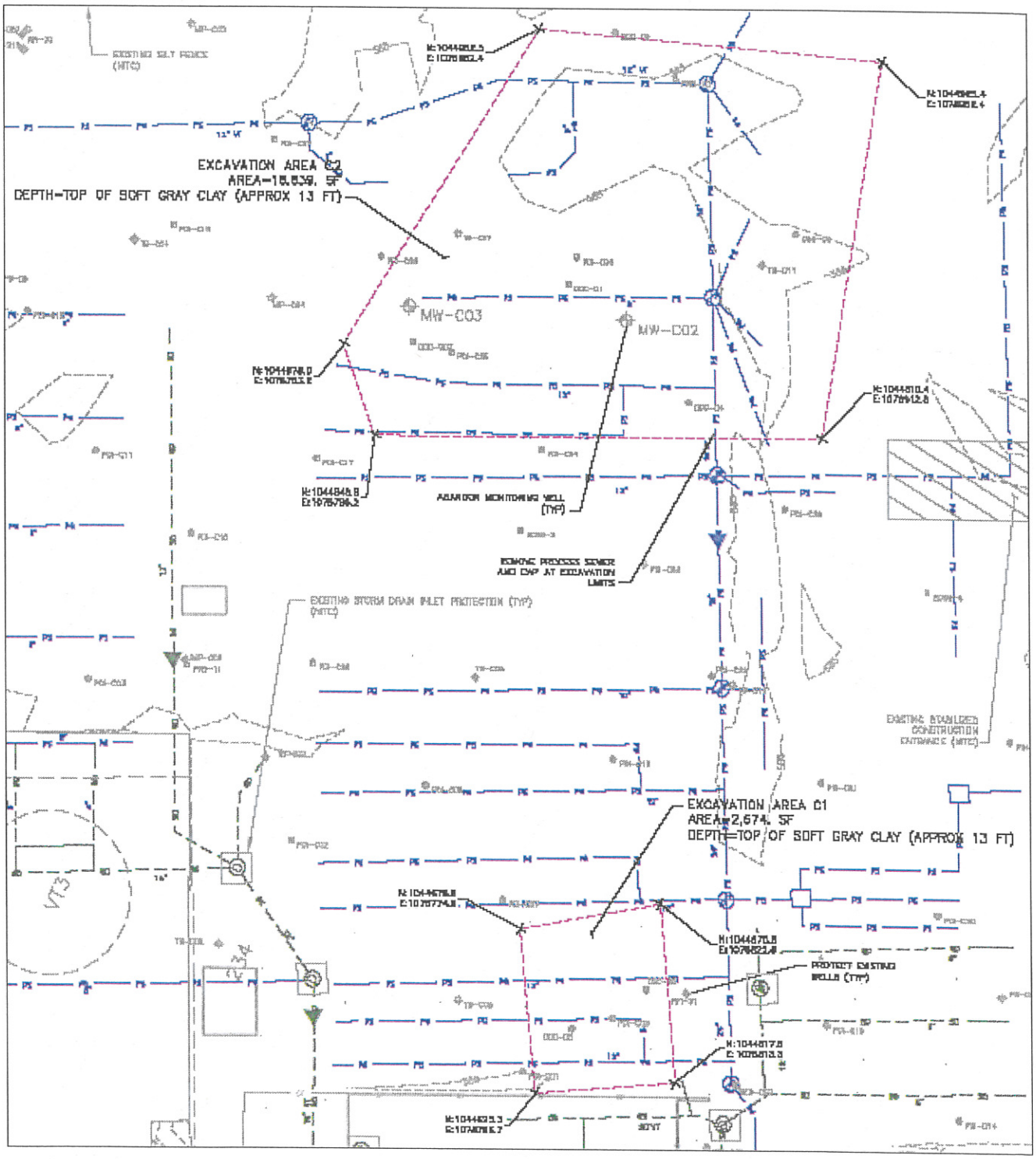


Illustration 2: Area C Proposed Excavation Areas

Excavations on Area C can be further described as follows (all quantities are approximate):

Area C1

The smaller of the two excavation areas depicted on Figure 11 and the design drawings (Appendix S) will be removed to an average depth of 13 feet. The surface area of excavation = ~2,674 SF; total in-place volume = ~1,287 CY.

Area C2

The area depicted on Figure 11 and the design drawings (Appendix S) will be removed to an average depth of 13 feet. The surface area of excavation = ~18,839 SF; total in-place volume = ~9,070 CY.

General – Area C Excavations

- Caution must be exercised where excavations are near the Elk Street ramp/northern property line, near former BCC Building 208 (which is to remain), active storm/process sewers, and other structures. The memo provided in Appendix K includes specific instructions for the completion of the C2 excavation adjacent to the Elk Street ramp and bridge.
- It is assumed that the vast majority of the material excavated from this location can be disposed off-Site as non-hazardous waste. Additional waste characterization testing will be completed as necessary to meet disposal facility requirements.
- Prior to excavation, remove concrete (including former building floor slabs and foundations) that are present within the limits of excavation; segregate concrete (crush/reuse if appropriate).
- Remove any abandoned utilities, including process or storm sewer laterals, which may be encountered within the excavations. Any exposed sections of the process sewer will be removed and disposed along with excavated soils, with remaining open ends plugged with concrete. Clay backfill will be used where appropriate along exposed segments of sewer pipe to minimize the potential for the backfill to act as a preferential contaminant pathway.

- Stockpile or direct load material designated for off-site disposal as necessary.
- Monitoring wells located inside the excavation areas (MWC-C02 and MW-C03) will require proper abandonment.
- Frost walls/concrete foundations may be present within the excavation limits and will require removal.
- Control excavation water as needed; assume water will be treated/filtered onsite and discharged to the BSA sewer under permit held by the Contractor.
- Contractor will provide odor and dust control equipment/material on-site for use as needed
- Contractor will provide air monitoring as necessary during excavation activities to monitor the worker breathing zone and determine required PPE levels in accordance with the Contractor's site-specific Health and Safety Plan.
- Backfill will be placed in 12-inch lifts with approved crushed demolition brick/concrete and/or clay borrow material.
- A reagent powder or slurry (Regenesis ORC-A) will be added to the backfill material as it is placed, as specified on the design drawings and specifications (Appendix S). Supporting calculations for the quantity of ORC-A to be added to each excavation are provided in Appendix T.
- The excavated areas will receive final cover (12-inch layer of clean soil/topsoil or new pavement), as directed by SBD.
- A NY-licensed surveyor will survey the final excavation limits; the survey data will be used to prepare the record drawings.

The final excavation areas and volumes may vary based on field conditions and the results of confirmation samples. Detailed specifications for the Area C source removal effort, including requirements for confirmation sampling, are provided in Appendix S.

4.2 AREA C GROUNDWATER

Based upon results of the PDI soil and groundwater sampling, the identified location and magnitude of contamination, and the results of the PDI treatability studies, the proposed remedial action for VOC-contaminated groundwater located on the northern side of Area C is source removal combined with the addition of a biostimulant (Regenesis ORC-A) to the backfill material for residual cleanup of groundwater, as described in Section 4.1.

The selected remedy in the AAR report (Mactec, February 2009) included enhanced in-situ biological treatment of the shallow aquifer to reduce contaminant mass. During the treatability study, biological tests demonstrated that biodegradation of chlorobenzene is possible and that oxygen and nutrient addition improved biodegradation over existing conditions. However, treatability studies conducted on the VOC plume at Area E suggested that the contaminant load in source areas may represent a higher oxygen demand than can be reasonably delivered. For this reason, biological approaches, including natural attenuation, are recommended to address residual contamination subsequent to removal of the existing source areas. Therefore, the selected remedy involves source removal via excavation of contaminated soils as described in Section 4.1.

4.3 AREA C STORM SEWERS

As noted in Section 3.9, the existing storm sewer system is in disrepair, does not discharge stormwater, and will no longer be used. Abandoning of the existing storm sewer system will be accomplished primarily by fracturing the bottoms of existing manholes, plugging pipes connecting to the manholes with approximately two linear feet of grout, and filling the manholes with sand and/or gravel. Storm sewer pipes exposed during the remedial excavation work will also be plugged with concrete. A record drawing will be provided in the Final Engineering Report that shows the locations of removed and abandoned sections of the storm sewer system.

In the future, SBD will install new storm sewer infrastructure that will support redevelopment and reuse of the property. This work will be completed in accordance with City of Buffalo and NYSDEC storm water regulations. Installation of a new storm sewer system at Area C will occur as part of site development activities and is not considered part of the remediation required under the BCA.

4.4 AREA C COVER SYSTEM

The final remedy specified in the AAR requires that Site be provided with a cover system that consists of a combination of 12 inches of clean soil or gravel (with underlying demarcation layer), pavement, concrete slabs from former structures and new or existing buildings. This cover system, once installed, will be maintained for the life of the property in accordance with the final Site Management Plan to be prepared for the Site as required under the BCA. The following sections provide design requirements for the soil cover system, which will be placed in all areas of the Site not covered by pavement or buildings.

4.4.1 Soil Cover System Materials

Appendix U includes drawings, specifications and other details regarding the components of the soil cover system. Proposed locations of the soil cover for the entire BCC plant site, including Area C, are shown on the figure titled "Proposed Final Cover" in Appendix U. The intent of the cover system is to provide a physical barrier between potential receptors and the existing site soils.

For areas that will not be covered by pavement, concrete or buildings, the cover system will consist of not less than 12-inches of clean soil. The Owner intends to meet this requirement by placing not less than 10-inches of clean borrow material and not less than 2-inches of topsoil. The borrow material is from a local source identified and tested by the Owner and approved by the NYSDEC. Copies of the gradation and chemical test results for the borrow material are provided in Appendix U.

The overall thickness of the cover system will not be less than 12-inches, although it may be greater than 12-inches in some areas to achieve final grades. The cover system will be underlain by a demarcation layer. The intent of the demarcation layer is to create a visible separation between the cap materials and the existing site soils. The demarcation layer will consist of a woven geotextile that was selected by the Owner and has been approved by the Engineer and the NYSDEC. The specification sheet for the selected material is included Appendix U.

4.4.2 *Placement of Soil Cover System Materials*

The Contractor will clear the existing surface of snow, ice and deleterious materials prior to the placement of the cover system. Rough grading of the existing ground surface will be conducted to minimize high and low points such that a more uniform cover system thickness may be placed. The demarcation layer will be placed by hand directly on top of the rough graded surface. The demarcation fabric will be overlapped by 1-foot at the joints and staples placed at a minimum of every 20 feet along the outer edges and at overlaps/joints. Prior to placement of cover soils, the demarcation layer will be visually inspected by the Contractor for tears. All tears, holes or damaged geotextile will be repaired by placing a patch with a minimum of one-foot overlap or by replacing the entire panel if damage is excessive.

Clean borrow material will be placed over the demarcation layer by bulldozer or front end loader. Care will be taken such that the equipment will not tear or otherwise damage the demarcation layer during installation of cover soils. If the demarcation layer is damaged it will be repaired as described above. Clean borrow will be placed to a post-compaction thickness of at least 10-inches. Compaction will be achieved via 2 to 3 passes made by a 12,000-lb. vibratory roller, with additional compaction achieved via passes by the dozer/front end loader. No quantitative compaction requirements (i.e. moisture-density tests) are required for the cover system soils. The final thickness of the topsoil layer will be at least 2-inches. Additional topsoil may be required in some areas to reach design grades for surficial drainage. Compaction of the topsoil layer will be achieved via the use of the 12,000-lb. vibratory roller, with additional compaction achieved via passes from the dozer/front end loader. After placement of the topsoil layer, the cover system will be seeded in accordance with the SWPPP (Mactec, March 2010).

Existing manholes and storm sewer structures within the soil cover areas will be raised by 12-inches, using materials and methods approved by the BSA, to accommodate the cover system. Drawings and specifications associated with manhole extensions are included in Appendix U.

Construction and post-construction soil erosion and sedimentation control measures will be implemented as described in the SWPPP.

4.4.3 *Transition Zone Requirements*

Edges of the cover system must transition to meet existing pavement, buildings, or property boundaries, without increasing potential for erosion and such that the required 12-inch thickness of the soil cover is carried to the edges of the cover. To ensure that these requirements are met, edges and transition zones will be constructed with a 5:1 slope over a 5-foot wide edge, as depicted on the Cover Details drawing included in Appendix U. This approach was reviewed with and approved by NYSDEC.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance/quality control (QA/QC) procedures will be utilized throughout the project and will be consistent with the latest version of DER-10.

5.1 INSPECTION AND DOCUMENTATION

Remedial construction activities will undergo inspection by the Engineer, as well as the Honeywell site representative. Completion of the work will be documented via the following:

- Field log books and daily construction reports;
- Photographs of each task;
- Instrument calibration records and equipment logs;
- Shipping manifests, disposal facility receipts, and other waste disposal records;
- Laboratory analytical reports for waste characterization and confirmation samples;
- Field sketches and construction drawing markups; and
- Other records as appropriate.

These documents will be used to prepare the FER and record drawings that will be submitted upon completion of the project.

5.2 COVER SYSTEM CONSTRUCTION QA/QC

A copy of the QA/QC plan (Mactec, March 2010) for placement of the soil cover is included as Appendix U.

5.3 GENERAL REMEDIAL CONSTRUCTION QA/QC

Standard specifications for general remedial construction activities are provided in Appendix V for the following:

- Submittal Procedures;
- Contractor Quality Control;
- Field Engineering and Surveying;
- Waste Removal and Handling; and
- Off-Site Transportation and Disposal.

These specifications, or similar ones provided by the Contractor and approved by the Engineer, will be implemented for the project.

5.4 FIELD SAMPLING AND LABORATORY ANALYSES QA/QC

A QAPP for field sampling and laboratory analyses is provided as Appendix W. This QAPP, or similar QAPP approved by NYSDEC, will be utilized for all sampling and laboratory testing required during remedial construction.

6.0 LIST OF ACRONYMS

AAR	Alternatives Analysis Report
ASTM	American Society for Testing and Materials
BCA	Brownfield Cleanup Agreement
BCC	Buffalo Color Corporation
BCP	Brownfield Cleanup Program
bgs	Below Ground Surface
BSA	Buffalo Sewer Authority
CCTV	Closed Circuit Television
CLP	Contract Laboratory Program
DNAPL	Dense Non-Aqueous Phase Liquids
DUSR	Data Usability Summary Report
ERFS	Environmental Remediation and Financial Services
FER	Final Engineering Report
Mactec	Mactec Engineering and Consulting, Inc.
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MSDS	Material Safety Data Sheet
NELAP	National Environmental Laboratory Accreditation Program
NTUs	Nephelometric Turbidity Units
NYSDEC	New York State Department of Environmental Conservation
ORC-A®	Oxygen Release Compound Advanced
ORP	Oxidation-Reduction Potential
PAHs	Polycyclic Aromatic Hydrocarbons
PDI	Pre-Design Investigation
PID	Photoionization Detector
PLFA	Phospholipid Fatty Acids
ppm	Parts per Million
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SBD	South Buffalo Development LLC
SCOs	Soil Cleanup Objectives
SIP	Stable Isotope Probing
SPDES	State Pollutant Discharge Elimination System
SPT	Standard Penetration Testing
SSALs	Site-Specific Action Levels
SVOCs	Semi-Volatile Organic Compounds
SWPPP	Storm Water Pollution Protection Plan
TAL	Target Analyte List
TCL	Target Compound List
TICs	Tentatively Identified Compounds
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

7.0 REFERENCES

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U.S. Environmental Protection Agency (USEPA), 2005. "Validation of Metals Data for the Contract Laboratory Program (CLP)"; USEPA Region II; HW-2; Revision 13; September 2005.

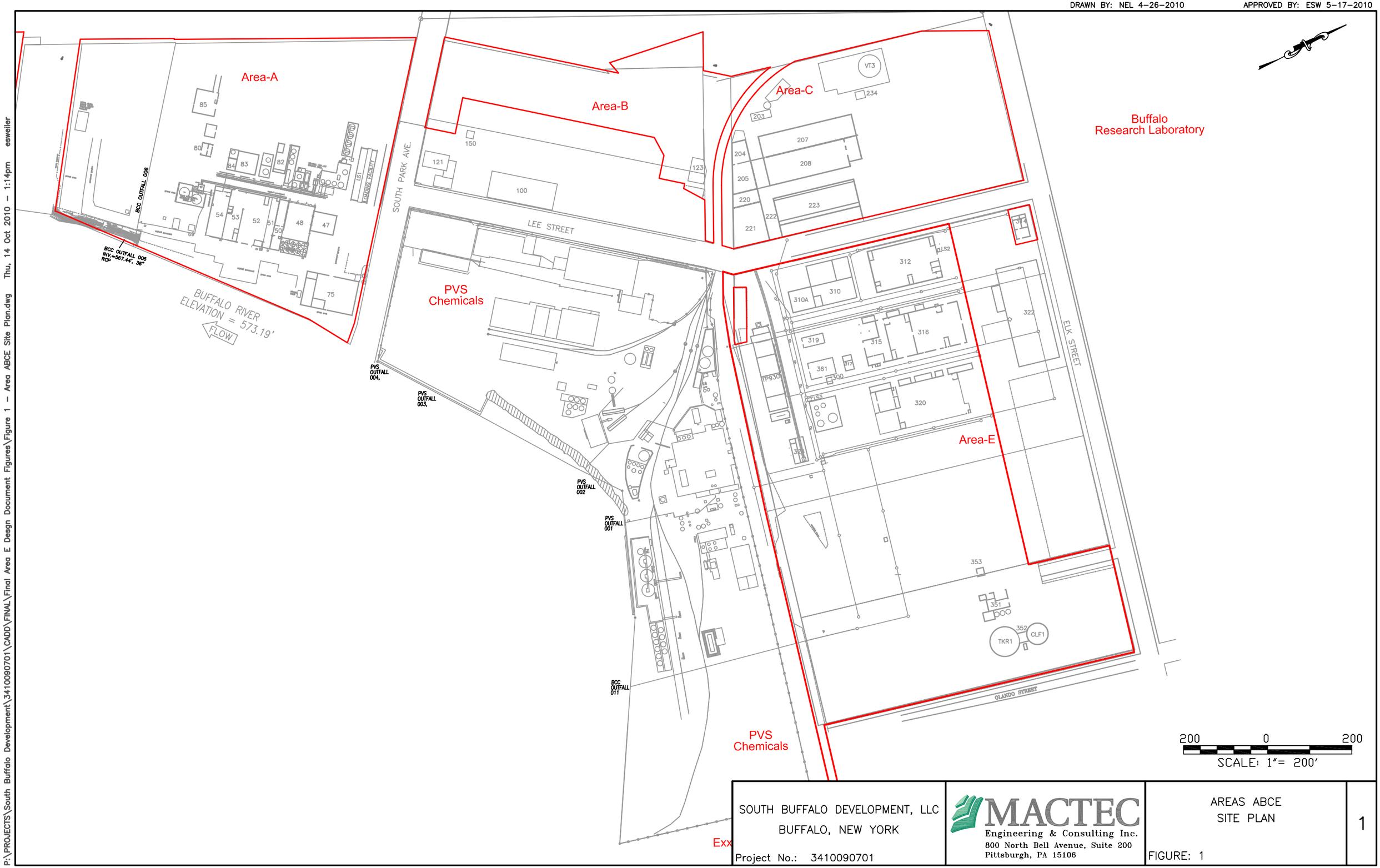
U.S. Environmental Protection Agency (USEPA) Region II, 2006a. "Standard Operating Procedure for Validating Semivolatile Organic Compounds Using SW-846 Method 8270D"; SOP No. HW-22, Revision 2; October 2006.

REFERENCES

U.S. Environmental Protection Agency (USEPA), 2006b. "Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B"; USEPA Region II; HW-24; Revision 2; October 2006.

FIGURES

DRAWN BY: NEL 4-26-2010 APPROVED BY: ESW 5-17-2010



SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREAS ABCE SITE PLAN FIGURE: 1	1

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area E Desgn Document Figures\Figure 1 - Area ABCE Site Plan.dwg Thu, 14 Oct 2010 - 1:14pm esweiler

DRAWN BY: NEL 4-26-2010 APPROVED BY: ESW 5-17-2010

LEGEND

- PS-14 Existing Monitoring Well
- PZ-109 Monitoring Well (PZ)
- MW-C03 Destroyed or Abandoned Monitoring Well
- PDI-C20 PDI Boring Locations

Area-C

PS-05 RFI-21D RFI-20 PS-06 RFI-30 RFI-07 RFI-PZ-26 RFI-18 RFI-19D RFI-PZ-25 RFI-29 RFI-31 PS-04

PDI-C19 PDI-C13 PDI-C12 PDI-C03 PDI-C11 PDI-C18 PDI-C27 PDI-C10 PDI-C17 PDI-C26 PDI-C09 PDI-C02 PDI-C25 MW-C03 PDI-C08 PDI-C07 PDI-C24 PDI-C30 PDI-C01 PDI-C23 MW-C02 PDI-C16 PDI-C06 PDI-C22 PDI-C29 PDI-C21 PDI-C05 PDI-C15 MW-C01 PDI-C04 PDI-C20 PDI-C14 PDI-C28 MW-C04

VT3 234 203 207 208 204 205 123 220 223 222 221 314

60 0 60
SCALE: 1"=60'

SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREA C SITE PLAN AND PDI BORING LOCATIONS FIGURE: 2	2

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 2 - Area C Site Plan.dwg Tue, 19 Oct 2010 - 9:30am esweiler

DRAWN BY: NEL 5-5-2010 APPROVED BY: ESW 10-18-10

100 0 100
SCALE: 1"= 100'

PS-07
582.36

RFI-30

RFI-PZ-26

PS-06
582.09

PS-05
583.24

RFI-21D

RFI-20

583

582.50
PS-08

RFI-18

RFI-19D

RFI-PZ-25

RFI-35

RFI-29

RFI-31

582.39
PS-04

PZ-119

RFI-PZ-24

RFI-37

581.61
PS-11

582

RFI-33

RFI-36

RFI-32

PS-13

PS-12

EE STREET

ELK STREET

VT3

234

203

207

204

208

205

220

223

222

221

314

LS2

312

310

310A

322

316

319

315

361

317

300

TP930

LS3

123

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY **CLAY** TO CLAYEY **SILT.** MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO, NEW YORK

Project No.: 3410090701

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AREA C
GROUNDWATER CONTOURS
FILL UNIT, APRIL 2008

FIGURE: 3.1

3.1

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 3.1 through 3.8 - 2008 Area C GW Contours.dwg Mon, 08 Nov 2010 - 1:37pm esweiler

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100 0 100
SCALE: 1"= 100'

583

RFI-21D
RFI-20
PS-05
583.05

VT3
234

582.08
PS-07
RFI-30
PS-06
581.69
RFI-PZ-26
203
207
204
208
205
220
223
222
221
123
RFI-31
582.29
PS-04
PS-08
RFI-18
RFI-19D
RFI-PZ-25
RFI-35
LEE STREET
314
LS2
312
582
RFI-29
310
310A
PZ-119
587
322
316
315
319
317
361
300
580
RFI-37
RFI-PZ-24
PS-11
ELK STREET
P930
RFI-33
LS3
RFI-36
RFI-32
PS-13
PS-12

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY **CLAY** TO CLAYEY **SILT**. MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO, NEW YORK
Project No.: 3410090701

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AREA C
GROUNDWATER CONTOURS
FILL UNIT, OCTOBER 2008
FIGURE: 3.2

3.2

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 3.1 through 3.8 - 2008 Area C GW Contours.dwg Mon, 08 Nov 2010 - 1:37pm esweiler

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100 0 100
SCALE: 1"= 100'

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PS-07
582.42
RFI-30
578.70
RFI-PZ-26
PS-06
RFI-21D
PS-05
RFI-20
581.79
VT3
234
203
582
123
581
207
204
208
205
220
223
222
221
RFI-31
580.51
PS-04
PS-08
580.08
RFI-18
RFI-19D
RFI-35
580.32
RFI-PZ-25
RFI-29
581.59
LS2
312
310
310A
314
PZ-119
322
316
315
319
PS-11
317
361
300
ELK STREET
581.85
RFI-37
RFI-PZ-24
P9
581.66
RFI-36
RFI-32
PS-13
PS-12
S3
RFI-33

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

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SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO, NEW YORK
Project No.: 3410090701

MACTEC Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

AREA C
GROUNDWATER CONTOURS
SHALLOW AQUIFER, JANUARY 2008
FIGURE: 3.3

3.3

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100 0 100
SCALE: 1"= 100'

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 3.1 through 3.8 - 2008 Area C GW Contours.dwg Mon, 08 Nov 2010 - 1:38pm esweiler

PS-07 582.36
RFI-30 579.66
RFI-PZ-26
PS-06
PS-05
RFI-21D
RFI-20 581.85
VT3
234
203
207
208
204
205
220
221
222
223
RFI-31 580.63
PS-04
582
581
123
PS-08
580.19
RFI-18
RFI-19D
RFI-PZ-25
EE STREET
RFI-35 575.38
581.33
RFI-29
312
LS2
310
310A
314
PZ-119
582
322
316
315
319
317
361
300
ELK STREET
PS-11
RFI-PZ-24
581.95
RFI-37
TP930
LS3
582.23
RFI-36
581.53
RFI-32
PS-13
PS-12
RFI-33 581.00

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY CLAY TO CLAYEY SILT. MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO, NEW YORK
Project No.: 3410090701

MACTEC Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

AREA C
GROUNDWATER CONTOURS
SHALLOW AQUIFER, APRIL 2008
FIGURE: 3.4

3.4

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100 0 100
SCALE: 1"= 100'

RFI-21D
PS-05
RFI-20
581.77
VT3
PS-06
234
PS-07
RFI-30
RFI-PZ-26
203
207
204
208
RFI-31
580.57
205
220
223
PS-04
222
221
123
581
PS-08
580.24
RFI-18
RFI-19
RFI-PZ-25
EE STREET
RFI-35
579.91
314
LS2
312
RFI-29
581.64
310
310A
PZ-119
322
316
315
319
PS-11
581.95
RFI-37
RFI-PZ-24
317
361
300
P930
ELK STREET
RFI-33
581.73
581.15
RF -36
RFI-32
PS-12
LS3
PS-13

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY **CLAY** TO CLAYEY **SILT.** MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

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AREA C
GROUNDWATER CONTOURS
SHALLOW AQUIFER, JULY 2008
FIGURE: 3.5

3.5

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100 0 100
SCALE: 1"= 100'

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PS-07
582.08
RFI-30
RFI-PZ-26
PS-06
RFI-21D
PS-05
RFI-20
581.77
VT3
234
203
207
204
208
205
220
223
222
221
RFI-31
580.56
PS-04
582
584
123
LEE STREET
PS-08
579.86
RFI-18
RFI-19D
RFI-35
579.80
RFI-PZ-25
RFI-29
580.74
312
LS2
310
310A
314
PZ-119
322
316
315
319
PS-11
317
361
300
ELK STREET
RFI-37
RFI-PZ-24
P930
RFI-33
581.05
582.25
581.75
RFI-36
RFI-32
PS-12
PS-13
LS3

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY **CLAY** TO CLAYEY **SILT.** MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

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AREA C
GROUNDWATER CONTOURS
SHALLOW AQUIFER, OCTOBER 2008

FIGURE: 3.6

3.6

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100 0 100
SCALE: 1"= 100'

572.69
573.25
576.26

RFI-21D
RFI-20
PS-05
PS-06
VT3
234
203
RFI-30
PS-07
RFI-PZ-26
207
208
204
205
220
223
222
221
123
RFI-31
PS-04
PS-08
RFI-18
RFI-19D
RFI-35
RFI-PZ-25
RFI-29
314
LS2
312
310
310A
PZ-119
322
316
315
319
317
361
300
P930
RFI-PZ-24
RFI-37
PS-11
ELK STREET
RFI-33
320
LS3
RFI-36
RFI-32
PS-13
PS-12
573
574
575
576
577

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY **CLAY** TO CLAYEY **SILT.** MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

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AREA C
GROUNDWATER CONTOURS
CONFINED AQUIFER, APRIL 2008

FIGURE: 3.7

3.7

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100 0 100
SCALE: 1"= 100'

572

573

571.75
RFI-21D
RFI-20
PS-05
PS-06
VT3
234
203
RFI-30
PS-07
RFI-PZ-26
207
208
204
205
220
223
222
221
123
RFI-31
PS-04
PS-08
RFI-18
572.66
RFI-19D
RFI-35
RFI-PZ-25
RFI-29
314
LS2
312
310
310A
PZ-119
322
316
315
319
317
361
300
RFI-37
RFI-PZ-24
PS-11
TP930
LS3
RFI-36
RFI-32
PS-12
ELK STREET
EE STREET

LEGEND:

- RFI-16 MONITORING WELL
- PZ-108 PIEZOMETER
- 576.26 GROUNDWATER ELEVATION (FT ABOVE MSL)
- GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL) (DASHED WHERE INFERRED)

NOTE:

* DATA NOT USED FOR CONTOUR DEVELOPMENT

RFI-20, RFI-30, RFI-31 AND RFI-32: THESE WELLS ARE SCREENED IN A LOW-PERMEABILITY GLOACIO-LACUSTRINE, SILTY **CLAY** TO CLAYEY **SILT**. MACTEC DOES NOT BELIEVE THESE WATER LEVELS REFLECT THE SHALLOW AQUIFER DUE TO SCREENED INTERVALS IN AN AQUITARD.

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BUFFALO, NEW YORK

Project No.: 3410090701

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AREA C
GROUNDWATER CONTOURS
CONFINED AQUIFER, OCTOBER 2008
FIGURE: 3.8

3.8

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LEGEND

- PS-14 — Existing Monitoring Well
- PZ-109 — Monitoring Well (PZ)
- MW-C03 — Abandoned or Destroyed Monitoring Well
- PDI-C20 — PDI Boring Location
- Chlorobenzene 19 — Groundwater Exceedances (ug/L) of the NY Class GA Standards
- J — Estimated Value
- Groundwater Plume Boundary >1 mg/l
- Groundwater Plume Boundary >10 mg/l

Area C

PS-05
Chlorobenzene 700
1,2-Dichlorobenzene 5.0

PDI-C13
Benzo(a)anthracene 0.56 J
Benzo(a)pyrene 0.95 J
Benzo(b)fluoranthene 0.52 J
Benzo(k)fluoranthene 0.89 J
Indeno(1,2,3-c,d)pyrene 1.6 J

PDI-C19
Benzo(a)anthracene 0.68 J
Benzo(a)pyrene 1.2 J
Benzo(b)fluoranthene 0.79 J
Benzo(k)fluoranthene 1.2 J
Chrysene 0.61 J
Indeno(1,2,3-c,d)pyrene 2 J

RFI-20
Chlorobenzene 5,900
1,2,4-Trichlorobenzene 130
1,2-Dichlorobenzene 11
Benzene 7.6

PDI-C26
Chlorobenzene 1600
1,2,4-Trichlorobenzene 7.9
1,2-Dichlorobenzene 9.4
1,3-Dichlorobenzene 30
1,4-Dichlorobenzene 29
Benzene 73
Benzo(a)anthracene 0.76 J
Benzo(a)pyrene 0.49 J
Benzo(b)fluoranthene 0.53 J
Benzo(k)fluoranthene 0.39 J
Chrysene 0.51 J
Indeno(1,2,3-c,d)pyrene 0.38 J

PDI-C25
Chlorobenzene 130000
1,2,4-Trichlorobenzene 7400
1,2-Dichlorobenzene 42000
1,3-Dichlorobenzene 460
1,4-Dichlorobenzene 7500
Benzene 480
Aniline 1600
Nitrobenzene 4900
1,1,1-Trichloroethane 9.2 J
Acetone 160
Chloroform 9.4 J
Toluene 420
2,4-Dichlorophenol 810
Phenol 90 J
Naphthalene 330

PDI-C11
Benzo(a)pyrene 0.34 J
Indeno(1,2,3-c,d)pyrene 0.64 J

PDI-C12
Benzo(a)pyrene 0.51 J
Benzo(b)fluoranthene 0.41 J
Benzo(k)fluoranthene 0.42 J
Indeno(1,2,3-c,d)pyrene 0.96 J

PDI-C03
Benzo(a)pyrene 0.32 J
Indeno(1,2,3-c,d)pyrene 0.51 J

PDI-C18
Chlorobenzene 520
1,2-Dichlorobenzene 16
1,3-Dichlorobenzene 24
1,4-Dichlorobenzene 36
Benzene 2.6
Aniline 90

PDI-C09
Chlorobenzene 19
Benzo(a)anthracene 0.45 J
Benzo(b)fluoranthene 0.38 J
Benzo(k)fluoranthene 0.31 J
Chrysene 0.47 J
Indeno(1,2,3-c,d)pyrene 0.48 J

Arsenic 106

PDI-C02
Benzo(a)anthracene 1.8 J
Benzo(a)pyrene 1.6 J
Benzo(b)fluoranthene 1.3 J
Benzo(k)fluoranthene 1.4 J
Indeno(1,2,3-c,d)pyrene 2.2 J

PDI-C10
Benzo(a)pyrene 0.31 J
Benzo(k)fluoranthene 0.26 J
Indeno(1,2,3-c,d)pyrene 0.64 J

PDI-C17
Chlorobenzene 220
1,2-Dichlorobenzene 90
Naphthalene 2600

MW-C03
Chlorobenzene 94,000
1,2,4-Trichlorobenzene 2,700
1,2-Dichlorobenzene 26,000
1,3-Dichlorobenzene 240
1,4-Dichlorobenzene 5,100
Benzene 860
Chloroform 23 J
Toluene 130
Nitrobenzene 2,400
Phenol 1,300 J
Aniline 13,000
2,4-Dichlorophenol 1,100 J
3-Nitroaniline 27 J
Diethyl Phthalate 83
Naphthalene 640
Mercury 1.1

PDI-C06
Chlorobenzene 230
1,2,4-Trichlorobenzene 12000
1,2-Dichlorobenzene 2300
1,3-Dichlorobenzene 930
1,4-Dichlorobenzene 690
Benzene 38
Ethylbenzene 17 J
Xylenes 53
4-Chloroaniline 11 J
Aniline 47 J
Biphenyl 7.5 J
Naphthalene 12 J

PDI-C01
Chlorobenzene 970
1,2,4-Trichlorobenzene 190
1,2-Dichlorobenzene 160
1,3-Dichlorobenzene 290
1,4-Dichlorobenzene 530
Benzene 33
Isopropylbenzene 15 J

PDI-C08
Chlorobenzene 5.8
1,2-Dichlorobenzene 10
Benzene 3.5
Aniline 61

PDI-C16
Chlorobenzene 99
1,2-Dichlorobenzene 68
1,4-Dichlorobenzene 9.4
1,1,1-Trichloroethane 15
1,1-Dichloroethane 53
Benzene 13
Chloroethane 10

PDI-C30
Chlorobenzene 8100
1,2,4-Trichlorobenzene 3200
1,2-Dichlorobenzene 3100
1,3-Dichlorobenzene 2000
1,4-Dichlorobenzene 1000
Benzene 58 J
Benzo(a)pyrene 2.1 J
Benzo(a)anthracene 2.2 J
Benzo(b)fluoranthene 1.9 J
Benzo(k)fluoranthene 1.3 J
Chrysene 1.8 J
Indeno(1,2,3-c,d)pyrene 2.4 J

PDI-C24
Chlorobenzene 78
1,2,4-Trichlorobenzene 19
1,2-Dichlorobenzene 110
1,4-Dichlorobenzene 15
Benzene 14
2,4-Dichlorophenol 9.3
Aniline 31
Benzo(a)anthracene 0.4 J
Benzo(a)pyrene 0.33 J
Benzo(b)fluoranthene 0.37 J
Benzo(k)fluoranthene 0.35 J
Chrysene 0.29 J
Indeno(1,2,3-c,d)pyrene 0.27 J
Nitrobenzene 1.8 J
Pentachlorophenol 21

RFI-31
Chlorobenzene 830
1,2,4-Trichlorobenzene 1,200
1,2-Dichlorobenzene 8.6 J
1,3-Dichlorobenzene 1,600
1,4-Dichlorobenzene 110
Benzene 9.6 J
2,4-Dichlorophenol 7.9

PDI-C05
Chlorobenzene 6.5
Benzene 9.6

PDI-C29
Chlorobenzene 540
1,3-Dichlorobenzene 65 J
1,4-Dichlorobenzene 59 J
Aniline 22
Benzo(b)pyrene 0.24 J
Benzo(b)fluoranthene 0.22 J
Benzo(k)fluoranthene 0.27 J
Diethyl phthalate 53

MW-C01
1,2,4-Trichlorobenzene 24
1,3-Dichlorobenzene 6.8
Ammonia 2,320

PDI-C15
Chlorobenzene 7.6
Toluene 8.4

PDI-C20
Naphthalene 23

PDI-C04
1,2,4-Trichlorobenzene 79
1,2-Dichlorobenzene 6.9
Benzene 1.6
Aniline 39
Benzo(a)pyrene 0.46 J
Benzo(a)anthracene 0.39 J
Benzo(b)fluoranthene 0.51 J
Benzo(k)fluoranthene 0.35 J
Chrysene 0.32 J
Indeno(1,2,3-c,d)pyrene 0.41 J

PDI-C14
Chlorobenzene 93
Benzene 2.9 J
Benzo(a)anthracene 3.2 J

PDI-C22
Benzene 2.1
Xylenes 40
Benzo(a)anthracene 2.1 J
Benzo(a)pyrene 2 J
Benzo(b)fluoranthene 2 J
Benzo(k)fluoranthene 1.2 J
Chrysene 1.6 J
Indeno(1,2,3-c,d)pyrene 1.2 J

PDI-C23
Chlorobenzene 2300
1,2,4-Trichlorobenzene 150
1,2-Dichlorobenzene 1500
1,3-Dichlorobenzene 29 J
1,4-Dichlorobenzene 420
Benzene 84
2,4-Dimethylphenol 6.6 J
Aniline 48 J
Benzo(a)anthracene 2.3 J
Benzo(a)pyrene 1.7 J
Chrysene 1.7 J
Naphthalene 160

MW-C02
Chlorobenzene 75,000
1,2,4-Trichlorobenzene 5,600
1,2-Dichlorobenzene 24,000
1,3-Dichlorobenzene 190
1,4-Dichlorobenzene 4,900
Benzene 1,000
Toluene 85
Nitrobenzene 2,000
2,4-Dichlorophenol 430
2,4-Dinitrotoluene 190 J
2,6-Dinitrotoluene 73
2-Nitroaniline 72 J
3-Nitroaniline 7.7 J
Aniline 270 J
Diethyl Phthalate 67
Naphthalene 140 J
Phenol 48 J
Mercury 7.1

1 mg/l
10 mg/l

PS-06 PS-05 PS-04 RFI-21 RFI-20 RFI-31 MW-C01 MW-C02 MW-C03

60 0 60
SCALE: 1"=60'

SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREA C GROUNDWATER SAMPLE RESULTS SEPTEMBER/NOVEMBER 2009 FIGURE: 4	4

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LEGEND

- PS-14 Existing Monitoring Well
- PZ-109 Monitoring Well (PZ)
- MW-C03 Abandoned or Destroyed Monitoring Well
- DDC-05 Depth Discrete Boring
- GB-C02 Location of Geotechnical Borings
- PDI-C20 PDI Boring Location

Area-C

PS-05 RFI-21D RFI-20 PS-06 RFI-30 RFI-PZ-26 RFI-31 PS-04 MW-C01 MW-C02 MW-C03 MW-C04 RFI-18 RFI-19D RFI-PZ-25 RFI-29

PDI-C19 PDI-C13 PDI-C12 PDI-C03 PDI-C11 PDI-C10 PDI-C18 PDI-C27 PDI-C17 PDI-C26 PDI-C09 PDI-C02 DDC-07 GB-C01 PDI-C25 PDI-C08 PDI-C07 PDI-C01 PDI-C24 DDC-01 PDI-C30 DDC-02 GB-C04 PDI-C23 PDI-C16 DDC-06 GB-C03 PDI-C06 PDI-C22 DDC-04 GB-C02 DDC-05 PDI-C29 DDC-03 PDI-C05 PDI-C21 PDI-C15 PDI-C04 PDI-C20 PDI-C14 PDI-C28

VT3 234 203 207 204 208 123 205 220 223 222 221 314

60 0 60
SCALE: 1"=60'

SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREA C DEPTH DISCRETE AND GEOTECHNICAL SOIL BORING LOCATIONS FIGURE: 5	5

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 5 - Area C DD and Geotech Boring Locations.dwg Tue, 19 Oct 2010 - 10:07am esweiler

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LEGEND:

- MONITORING WELL
- PDI-E07 PDI Boring Locations
- MW-E03 Abandoned or Destroyed Monitoring Well
- Storm Sewer
- Process Sewer
- BSA Sewer
- DDC-01 Depth Discrete Boring Locations
- GB-C02 Geotechnical Soil Boring Locations
- A — A' Cross Section Locations
- TP-C1 Area C Test Pit Locations

Area-C

Excavation Area E1
Area = 2,674 sf
Depth = Top of Soft Gray Clay (Approx 13 ft)

Excavation Area C2
Area = 18,839 sf
Depth = Top of Soft Gray Clay (Approx 13 ft)

PS-05 PS-06 PS-04 RFI-21D RFI-20 RFI-31 VT3 LIFT STATION 223

PDI-C01 PDI-C02 PDI-C03 PDI-C04 PDI-C05 PDI-C06 PDI-C07 PDI-C08 PDI-C09 PDI-C10 PDI-C11 PDI-C12 PDI-C13 PDI-C14 PDI-C15 PDI-C16 PDI-C17 PDI-C18 PDI-C19 PDI-C20 PDI-C21 PDI-C22 PDI-C23 PDI-C24 PDI-C25 PDI-C26 PDI-C27 PDI-C28 PDI-C29 PDI-C30

DDC-01 DDC-02 DDC-03 DDC-04 DDC-05 DDC-06 DDC-07

GB-C01 GB-C02 GB-C03 GB-C04

MW-C01 MW-C02 MW-C03 MW-C04

TP-C1 TP-C2

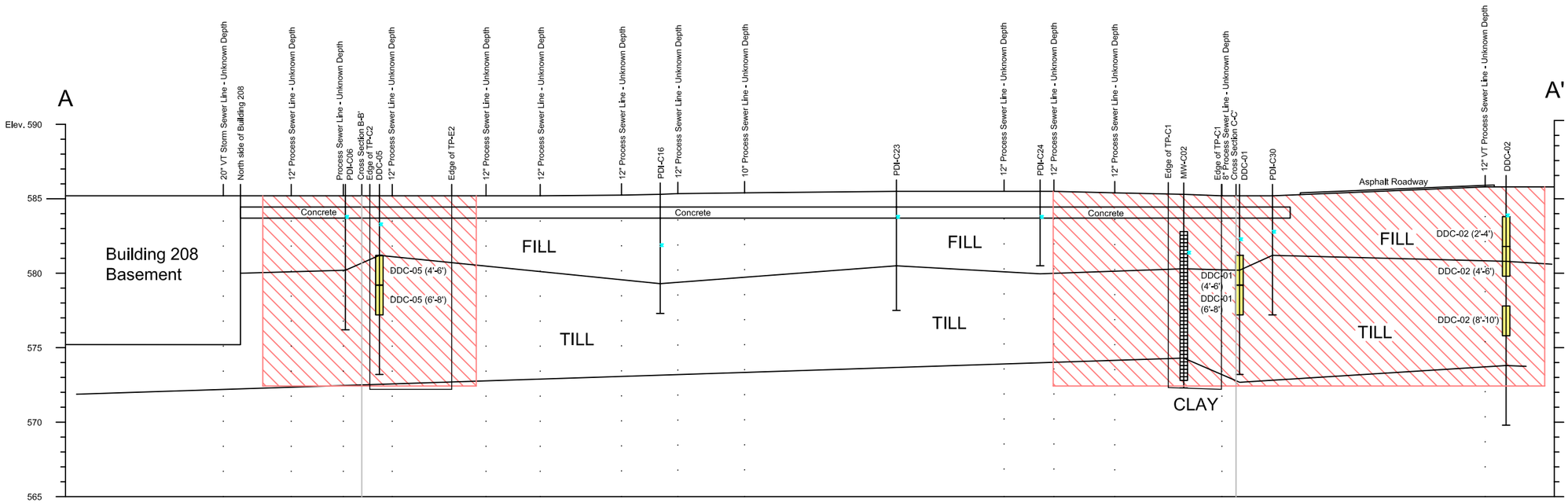
50 0 50
SCALE: 1"=50'

SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREA C CROSS SECTIONS WITH UNDERGROUND SEWER LINES FIGURE: 6	6

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 6 - Area C Cross Sections with Sewer Lines.dwg Tue, 19 Oct 2010 - 10:12am esweiler

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CROSS-SECTION A-A'



DDC-05 (4'-6')
1,2,4-Trichlorobenzene 1700 mg/kg

DDC-05 (6'-8')
1,2,4-Trichlorobenzene 1.1 mg/kg
Chlorobenzene 2.2 mg/kg

DDC-01 (4'-6')
1,2,4-Trichlorobenzene 21 mg/kg
1,2-Dichlorobenzene 56 mg/kg
1,4-Dichlorobenzene 15 mg/kg
Benzene 2.3 mg/kg
Chlorobenzene 20 mg/kg
Cyclohexane 5.9 mg/kg
Ethylbenzene 2.8 mg/kg
Isopropylbenzene 1.2 mg/kg
Methylcyclohexane 16 mg/kg
Toluene 9.4 mg/kg
Total Xylenes 16 mg/kg

DDC-01 (6'-8')
1,2,4-Trichlorobenzene 23 mg/kg
1,2-Dichlorobenzene 16 mg/kg
1,4-Dichlorobenzene 4.5 mg/kg
Chlorobenzene 16 mg/kg

DDC-02 (2'-4')
Benzene 29 mg/kg
Total Xylenes 5.7 mg/kg

DDC-02 (4'-6')
1,2-Dichlorobenzene 2.9 mg/kg
1,4-Dichlorobenzene 6.4 mg/kg
Chlorobenzene 18 mg/kg

DDC-02 (8'-10')
1,2,4-Trichlorobenzene 58 mg/kg
1,2-Dichlorobenzene 80 mg/kg
1,3-Dichlorobenzene 1 J mg/kg
1,4-Dichlorobenzene 16 mg/kg
Benzene 8.6 mg/kg
Chlorobenzene 13 mg/kg
Toluene 1 J mg/kg
Total Xylenes 11 mg/kg

40 0 40

HORIZONTAL SCALE: 1"= 40'
VERTICAL SCALE: 1"= 40'

Legend

- Groundwater Elevation
- CS-16 (2'-3') Soil Sample Location Interval
- Monitoring Well Screen Interval
- Deep Excavation Area

Fill - Clay, Silt, Crushed Stone, Gravel, Brick, and Miscellaneous Building Demolition Debris
Till - Clay and Silt Tills, with varying amounts of Sand and Sand Seams
Clay - Gray, Soft, Clay with limited occurrence of fine Sand Seams
J - Indicates a laboratory estimated value

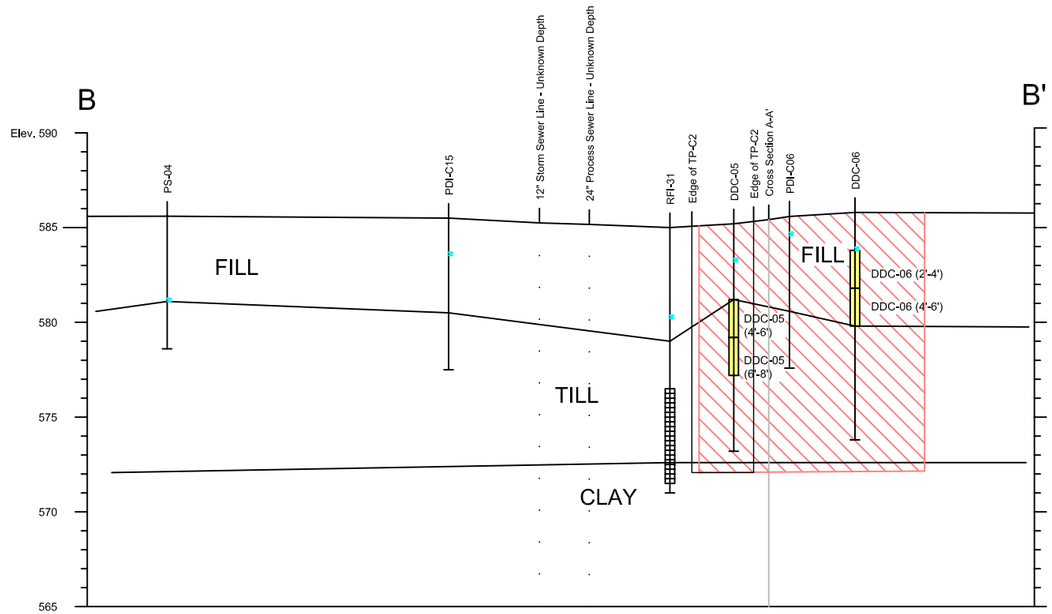
SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO COLOR AREAS ABCE
PROJECT NO.: 3410090701

MACTEC Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

AREA C CROSS-SECTION A-A'
SOUTH BUFFALO DEVELOPMENT
BUFFALO, NEW YORK
FIGURE: 7

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CROSS-SECTION B-B'



DDC-05 (4'-6')
1,2,4-Trichlorobenzene 1700 mg/kg

DDC-05 (6'-8')
1,2,4-Trichlorobenzene 1.1 mg/kg
Chlorobenzene 2.2 mg/kg

DDC-06 (4'-6')
1,2-Dichlorobenzene 19 mg/kg

Legend

- Groundwater Elevation
- CS-16 (2'-3') Soil Sample Location Interval
- Monitoring Well Screen Interval
- Deep Excavation Area

Fill - Clay, Silt, Crushed Stone, Gravel, Brick, and Miscellaneous Building Demolition Debris
Till - Clay and Silt Tills, with varying amounts of Sand and Sand Seams
Clay - Gray, Soft, Clay with limited occurrence of fine Sand Seams
J - Indicates a laboratory estimated value

40 0 40
HORIZONTAL SCALE: 1"= 40'
VERTICAL SCALE: 1"= 40'

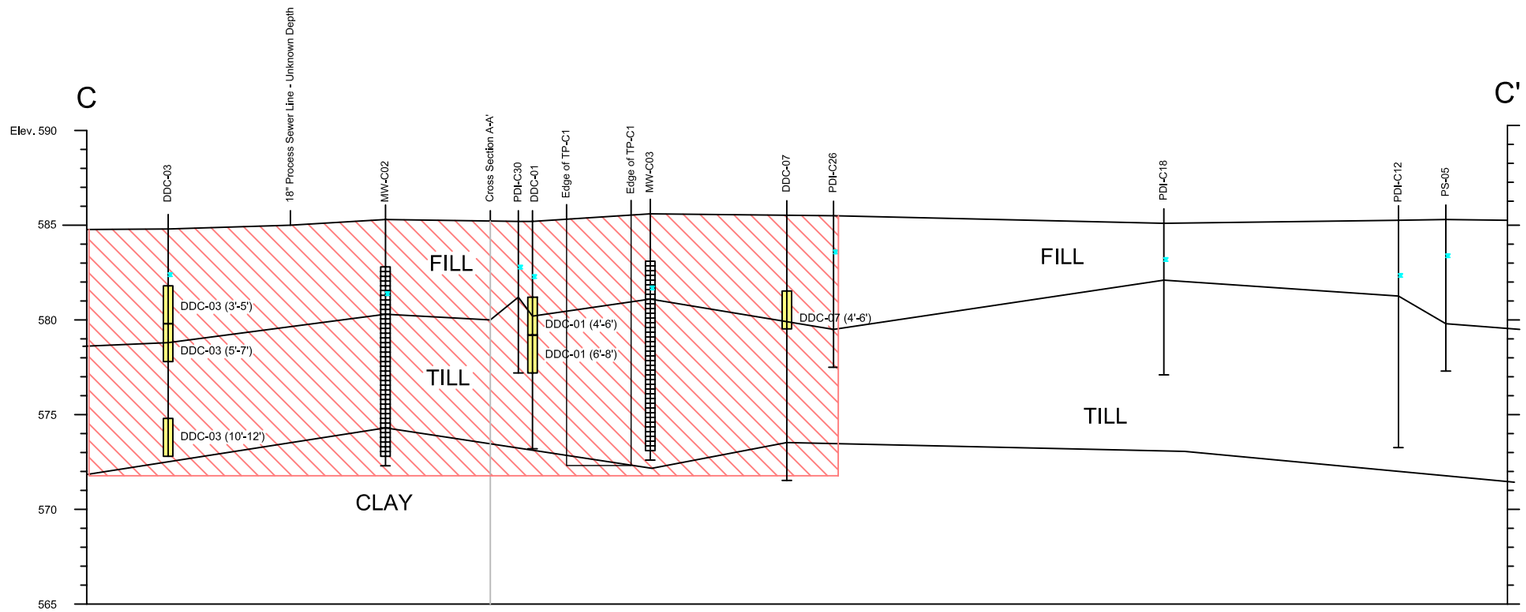
SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO COLOR AREAS ABCE
PROJECT NO.: 3410090701

MACTEC
Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

AREA C CROSS-SECTION B-B'
SOUTH BUFFALO DEVELOPMENT
BUFFALO, NEW YORK
FIGURE: 8

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CROSS-SECTION C-C'



DDC-03 (3'-5')

1,2,4-Trichlorobenzene	7.3 mg/kg
1,2-Dichlorobenzene	73 mg/kg
1,4-Dichlorobenzene	9.5 mg/kg
Chlorobenzene	5.1 mg/kg

DDC-03 (5'-7')

1,2,4-Trichlorobenzene	32 mg/kg
Chlorobenzene	2 mg/kg

DDC-03 (10'-12')

1,2,4-Trichlorobenzene	1,3 mg/kg
Chlorobenzene	67 mg/kg

DDC-01 (4'-6')

1,2,4-Trichlorobenzene	21 mg/kg
1,2-Dichlorobenzene	56 mg/kg
1,4-Dichlorobenzene	15 mg/kg
Benzene	2,3 mg/kg
Chlorobenzene	20 mg/kg
Cyclohexane	5.9 mg/kg
Ethylbenzene	2.8 mg/kg
Isopropylbenzene	1.2 mg/kg
Methylcyclohexane	16 mg/kg
Toluene	9.4 mg/kg
Total Xylenes	16 mg/kg

DDC-01 (6'-8')

1,2,4-Trichlorobenzene	23 mg/kg
1,2-Dichlorobenzene	16 mg/kg
1,4-Dichlorobenzene	4.5 mg/kg
Chlorobenzene	16 mg/kg

DDC-07 (4'-6')

1,2,4-Trichlorobenzene	400 mg/kg
1,2-Dichlorobenzene	280 mg/kg
1,3-Dichlorobenzene	4 mg/kg
1,4-Dichlorobenzene	52 mg/kg
Chlorobenzene	150 mg/kg

Legend

- Groundwater Elevation
- CS-16 (2'-3') Soil Sample Location Interval
- Monitoring Well Screen Interval
- Deep Excavation Area

Fill - Clay, Silt, Crushed Stone, Gravel, Brick, and Miscellaneous Building Demolition Debris

Till - Clay and Silt Tills, with varying amounts of Sand and Sand Seams

Clay - Gray, Soft, Clay with limited occurrence of fine Sand Seams

J - Indicates a laboratory estimated value

40 0 40

HORIZONTAL SCALE: 1"= 40'
VERTICAL SCALE: 1"= 40'

SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO COLOR AREAS ABCE
PROJECT NO.: 3410090701

MACTEC
Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

AREA C CROSS-SECTION C-C'
SOUTH BUFFALO DEVELOPMENT
BUFFALO, NEW YORK
FIGURE: 9

DRAWN BY: NEL 7-31-2009 APPROVED BY: ESW 5-17-2010

Two Direct Push Injection Points

20 foot Long Trench

Buffalo Research Laboratory

2 Concentric Monitoring Perimeters
10 Direct Push Installed Temporary Piezometers

Area-C

RFI-30 PS-06 PS-05 RFI-21D RFI-20 RFI-31 PS-04 RFI-18 RFI-19D RFI-29

MW-C01 MW-C04

LIFT STATION 223

LIFT STATIONS 312

END OF OVERHEAD SEWER

24" RCP

VT3 234 203 207 204 208 123 205 220 222 221 314 310 310A LS2

CS-01 CS-34 CS-04 CS-03 PIEZ13

LEGEND

- MONITORING WELL
- MONITORING WELL (PZ)
- Storm Sewer
- Process Sewer
- BSA Sewer

80 0 80
SCALE: 1"= 80'

SOUTH BUFFALO DEVELOPMENT
BUFFALO, NEW YORK
Project No.: 3410090701

MACTEC
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Pittsburgh, PA 15106

AREA C
PILOT STUDY LOCATIONS WITH UNDERGROUND SEWER LINES
FIGURE: 10

10

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DRAWN BY: NEL 4-8-2010-2009 APPROVED BY: ESW 5-17-2010

LEGEND:

- MONITORING WELL
- MW-E03 Abandoned or Destroyed Monitoring Well
- PDI-E07 PDI Boring Locations
- Storm Sewer
- Process Sewer
- BSA Sewer
- DDC-01 Depth Discrete Boring Locations
- TP-C1 Area C Test Pit Locations
- GB-C02 Geotechnical Soil Boring Locations

Area-C

Excavation Area E1
Area = 2,674 sf
Depth = Top of Soft Gray Clay (Approx 13 ft)

Excavation Area C2
Area = 18,839 sf
Depth = Top of Soft Gray Clay (Approx 13 ft)

PS-05 PS-06 PS-04 RFI-21D RFI-20 RFI-31 VT3 LIFT STATION 223

PDI-C19 PDI-C13 PDI-C12 PDI-C03 PDI-C11 PDI-C18 PDI-C27 PDI-C10 PDI-C17 PDI-C26 PDI-C09 PDI-C02 PDI-C08 PDI-C07 PDI-C01 PDI-C16 PDI-C23 PDI-C22 PDI-C21 PDI-C15 PDI-C20 PDI-C14 PDI-C28 PDI-C05 PDI-C04 PDI-C24 PDI-C30 PDI-C25 PDI-C29 DDC-07 DDC-01 DDC-02 DDC-04 DDC-03 DDC-06 DDC-05 GB-C01 GB-C04 GB-C02 GB-C03 TP-C1 TP-C2 MW-C03 MW-C02 MW-C01 MW-C04

50 0 50
SCALE: 1"=50'

SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREA C EXCAVATION LIMITS FIGURE: 11	11

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Figure 11 - Area C Excavation Limits.dwg Tue, 19 Oct 2010 - 10:42am esweiler

TABLES

Table 1
Pre-Design Investigation and FInal Design
2008-2009 Groundwater Elevation Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Measuring Point Location	Area	Measuring Point Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)
			1/21 - 1/22/2008		4/21/2008		7/23/2008		10/13/2008		11/16/2009	
EW-1	A	582.49	11.23	571.26	10.45	572.04	10.94	571.55	12.33	570.16		NO DTW
EW-2	A	582.64	10.94	571.70	10.60	572.04	12.78	569.86	16.05	566.59		NO DTW
EW-3	A	583.84	15.32	568.52	11.85	571.99	14.34	569.50	16.17	567.67		NO DTW
EW-4	A	583.28	12.80	570.48	11.24	572.04	11.86	571.42	13.19	570.09		NO DTW
EW-5	A	585.50	19.89	565.61	13.56	571.94	15.09	570.41	22.98	562.52		NO DTW
ICM-101	A	586.37	13.28	573.09	12.98	573.39	13.03	573.34	14.15	572.22	13.91	572.46
ICM-102	A	583.24	11.46	571.78	11.10	572.14	11.28	571.96	12.58	570.66	12.38	570.86
ICM-103	A	586.88	15.09	571.79	15.18	571.70	14.77	572.11	15.88	571.00	15.96	570.92
ICM-104	A	586.84	15.36	571.48	14.90	571.94	14.93	571.91	16.19	570.65	16.03	570.81
ICM-105	A	586.84	15.74	571.10	15.45	571.39	15.60	571.24	16.69	570.15	16.55	570.29
PS-14	A	585.49	6.07	579.42	6.33	579.16	6.36	579.13	6.37	579.12	6.32	579.17
PS-15	A	587.25	8.05	579.20	6.97	580.28	8.09	579.16	8.15	579.10	8.27	578.98
PZ-101	A	585.51	13.71	571.80	13.29	572.22	13.65	571.86	14.85	570.66	14.45	571.06
PZ-102	A	584.09	12.29	571.80	12.03	572.06	12.21	571.88	13.57	570.52		NO DTW
PZ-103	A	583.46	11.73	571.73	11.37	572.09	11.56	571.90	12.91	570.55		NO DTW
PZ-104	A	583.48	11.71	571.77	10.95	572.53	11.34	572.14	12.62	570.86		NO DTW
PZ-105	A	583.38	11.61	571.77	11.37	572.01	11.67	571.71	13.02	570.36		NO DTW
PZ-106	A	583.40	11.30	572.10	11.34	572.06	11.27	572.13	12.45	570.95		NO DTW
PZ-107	A	583.94	12.29	571.65	11.87	572.07	11.85	572.09	12.98	570.96		NO DTW
PZ-108	A	583.91	12.40	571.51	12.02	571.89	12.10	571.81	13.50	570.41		NO DTW
PZ-109	A	583.99	9.69	574.30	9.87	574.12	12.21	571.78	10.73	573.26		NO DTW
PZ-110	A	584.74	13.00	571.74	12.18	572.56	12.36	572.38	13.54	571.20	13.31	571.43
PZ-111	A	584.31	13.44	570.87	12.24	572.07	12.56	571.75	13.84	570.47		NO DTW
PZ-112	A	584.41	12.22	572.19	11.36	573.05	11.94	572.47	13.14	571.27		NO DTW
PZ-113	A	585.13	9.58	575.55	9.28	575.85	9.26	575.87	9.93	575.20		NO DTW
PZ-114	A	585.89	14.87	571.02	13.90	571.99	13.81	572.08	15.11	570.78		NO DTW
PZ-115	A	585.50	8.76	576.74	8.77	576.73	8.69	576.81	9.13	576.37		NO DTW
PZ-116	A	583.54	11.32	572.22	11.04	572.50	11.33	572.21	12.54	571.00	12.18	571.36
PZ-117	A	586.25	14.56	571.69	14.48	571.77	14.17	572.08	15.43	570.82	15.52	570.73
PZ-118	A	587.50	15.42	572.08	15.47	572.03	15.38	572.12	16.47	571.03	16.31	571.19
RFI-16	A	585.83	13.85	571.98	13.42	572.41	13.27	572.56	12.99	572.84		NO DTW
RFI-22	A	590.11	18.34	571.77	18.09	572.02	18.02	572.09	19.18	570.93	19.15	570.96
RFI-23D	A	590.37	18.50	571.87	18.20	572.17	18.08	572.29	18.96	571.41		NO DTW
RFI-24	A	583.60	12.12	571.48	11.60	572.00	11.74	571.86	12.98	570.62	12.81	570.79
RFI-25	A	586.25	14.66	571.59	14.27	571.98	14.44	571.81	15.78	570.47		NO DTW
RFI-26	A	587.33	15.58	571.75	15.15	572.18	14.22	573.11	16.39	570.94		NO DTW
River Gage	A	569.69	1.61	571.30	2.58	572.27	2.40	572.09	0.95	570.64		NO DTW
W6-R-R	A	588.53	15.90	572.63	15.61	572.92	16.02	572.51	17.17	571.36		NO DTW
PS-07	B	586.96	4.54	582.42	4.60	582.36	5.10	581.86	4.88	582.08	4.84	582.12
PS-08	B	587.76	5.18	582.58	5.26	582.50	6.81	580.95		NO DTW	5.8	581.96
PS-09	B	587.82	4.49	583.33	4.84	582.98	6.07	581.75		NO DTW	4.95	582.87
RFI-18	B	588.13	8.05	580.08	7.94	580.19	7.89	580.24	8.27	579.86	8.35	579.78
RFI-19D	B	588.27	15.12	573.15	15.02	573.25	14.83	573.44	15.61	572.66		NO DTW
RFI-27	B	587.01	5.11	581.90	5.08	581.93	5.48	581.53	5.24	581.77	5.27	581.74
RFI-28	B	588.09	7.33	580.76	7.61	580.48	8.38	579.71	8.44	579.65	7.58	580.51
RFI-34	B (PVS)	585.66	13.59	572.07	13.33	572.33		NO DTW		NO DTW		NO DTW
RFI-35	B (PVS)	584.26	3.94	580.32	8.88	575.38	4.35	579.91	4.36	579.90		NO DTW
RFI-37	B (PVS)	583.33	1.48	581.85	1.38	581.95		NO DTW		NO DTW		NO DTW
RFI-38	B (PVS)	582.25	9.48	572.77	10.98	571.27		NO DTW		NO DTW		NO DTW
RFI-39	B (PVS)	584.78		NO DTW	8.57	576.21		NO DTW	8.94	575.84		NO DTW
RFI-40	B (PVS)	585.27		NO DTW	12.67	572.60		NO DTW		NO DTW		NO DTW
RFI-41	B (PVS)	584.89		NO DTW		NO DTW		NO DTW		NO DTW		NO DTW
RFI-44	B (PVS)	582.76	10.74	572.02	10.67	572.09		NO DTW		NO DTW		NO DTW
RFI-45	B (PVS)	582.67	10.82	571.85	10.53	572.14		NO DTW	11.34	571.33		NO DTW
RFI-46	B (PVS)	582.21		NO DTW	11.69	570.52		NO DTW		NO DTW		NO DTW
RFI-47	B (PVS)	582.37		NO DTW		NO DTW		NO DTW		NO DTW		NO DTW
RFI-48	B (PVS)	582.49		NO DTW	9.44	573.05		NO DTW		NO DTW		NO DTW
RFI-50	B (PVS)	581.31		NO DTW		NO DTW		NO DTW		NO DTW		NO DTW
RFI-PZ-19	B (PVS)	585.79		NO DTW	11.85	573.94		NO DTW	12.25	573.54		NO DTW
RFI-PZ-20	B (PVS)	585.63		NO DTW	11.65	573.98		NO DTW		NO DTW		NO DTW
PS-04	C	587.70	5.25	582.45	5.31	582.39	6.07	581.63	5.41	582.29	5.41	582.29
PS-05	C	587.35	4.16	583.19	4.11	583.24	4.25	583.10	4.30	583.05	5.32	582.03
PS-06	C	587.67	5.40	582.27	5.58	582.09	6.36	581.31	5.98	581.69	5.97	581.70
RFI-20	C	587.52	5.73	581.79	5.67	581.85	5.75	581.77	5.75	581.77	5.81	581.71
RFI-21D	C	587.83	15.26	572.57	15.14	572.69	15.09	572.74	16.08	571.75		NO DTW
RFI-30	C	587.53	8.83	578.70	7.87	579.66	7.93	579.60	8.06	579.47	Destroyed	NO DTW
RFI-31	C	587.86	7.35	580.51	7.23	580.63	7.29	580.57	7.30	580.56	7.41	580.45

See notes at end of table

Table 1
Pre-Design Investigation and FInal Design
2008-2009 Groundwater Elevation Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Measuring Point Location	Area	Measuring Point Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)
			1/21 - 1/22/2008		4/21/2008		7/23/2008		10/13/2008		11/16/2009	
ICM-PZ-02N	E	586.26		NO DTW	8.46	577.80		NO DTW	13.27	572.99	8.69	577.57
ICM-PZ-02S	E	586.03		NO DTW	11.12	574.91		NO DTW	11.28	574.75	11.3	574.73
ICM-PZ-03N	E	586.35		NO DTW	9.49	576.86	9.62	576.73	12.70	573.65	9.26	577.09
ICM-PZ-03S	E	586.24		NO DTW	11.66	574.58	12.14	574.10	12.24	574.00	11.81	574.43
ICM-PZ-04S	E	586.24		NO DTW	13.33	572.91	13.39	572.85	12.60	573.64	13.12	573.12
PD-01	E	586.58		NO DTW	13.29	573.29	13.17	573.41		NO DTW		NO DTW
PD-02	E	587.60		NO DTW	14.23	573.37	14.54	573.06		NO DTW		NO DTW
PD-03	E	587.07		NO DTW	12.98	574.09		NO DTW		NO DTW		NO DTW
PS-01	E	587.27		NO DTW	11.34	575.93	12.51	574.76		NO DTW	11.09	576.18
PS-02	E	587.41		NO DTW	10.62	576.79	11.81	575.60		NO DTW	Destroyed	NO DTW
PS-03	E	587.26		NO DTW	11.61	575.65	13.34	573.92		NO DTW	Destroyed	NO DTW
PS-10	E	585.05	3.52	581.53	3.85	581.20	7.17	577.88		NO DTW	4.58	580.47
PS-11	E	585.66		NO DTW	4.05	581.61	3.31	582.35		NO DTW		NO DTW
PS-12	E	586.12	5.16	580.96	5.27	580.85	5.83	580.29		NO DTW		NO DTW
R-01	E	584.59	9.01	575.58	8.56	576.03	8.58	576.01	8.49	576.10		NO DTW
R-02	E	585.85	9.03	576.82	9.55	576.30	8.92	576.93		NO DTW		NO DTW
R-03	E	586.93		NO DTW	10.67	576.26	9.12	577.81		NO DTW		NO DTW
R-04	E	586.70	12.19	574.51	12.10	574.60	11.87	574.83	12.17	574.53		NO DTW
R-05	E	587.05	13.25	573.80	12.15	574.90	11.94	575.11		NO DTW		NO DTW
R-06	E	586.24	11.42	574.82	11.46	574.78	6.98	579.26		NO DTW		NO DTW
R-07	E	587.97	10.99	576.98	10.84	577.13	10.87	577.10		NO DTW	10.82	577.15
R-08	E	589.46		NO DTW	7.13	582.33	6.96	582.50		NO DTW	6.9	582.56
R-09	E	588.88		NO DTW	12.30	576.58	12.34	576.54		NO DTW	12.31	576.57
R-10	E	588.75	6.36	582.39	6.46	582.29	6.42	582.33		NO DTW	6.55	582.20
R-11	E	586.31		NO DTW	5.23	581.08	5.84	580.47		NO DTW	5.3	581.01
R-12	E	586.33		NO DTW	11.58	574.75	12.60	573.73		NO DTW		NO DTW
R-13	E	587.03		NO DTW	11.25	575.78	11.65	575.38		NO DTW	11.13	575.90
R-14	E	588.89		NO DTW	14.73	574.16	15.02	573.87	14.89	574.00	15.19	573.70
R-15	E	588.36	6.13	582.23	6.20	582.16	6.18	582.18	6.18	582.18	6.29	582.07
RFI-17	E	585.73	6.08	579.65	6.22	579.51	8.50	577.23	6.68	579.05	6.51	579.22
RFI-29	E	585.82	4.23	581.59	4.49	581.33	4.18	581.64	5.08	580.74	5.29	580.53
RFI-32	E	586.44	4.78	581.66	4.91	581.53	5.29	581.15	4.69	581.75	5.46	580.98
RFI-33	E	582.53		NO DTW	1.53	581.00	0.80	581.73	1.48	581.05		NO DTW
RFI-36	E	587.39	5.06	582.33	5.16	582.23	5.16	582.23	5.14	582.25	5.81	581.58
RFI-43	E	586.50	4.77	581.73	5.00	581.50	4.31	582.19	4.54	581.96	Destroyed	NO DTW
RFI-51	E	586.90	4.36	582.54	4.29	582.61	4.64	582.26	4.57	582.33	4.55	582.35
RFI-PZ-16	E	586.71	5.45	581.26	5.95	580.76		NO DTW		NO DTW	7.08	579.63
RFI-PZ-17	E	585.97		NO DTW	12.09	573.88	12.51	573.46	12.31	573.66	12.02	573.95
RFI-PZ-18	E	587.32		NO DTW	9.51	577.81	12.58	574.74	12.21	575.11	10.19	577.13
RFI-PZ-21	E	586.5		NO DTW		NO DTW		NO DTW		NO DTW		NO DTW
RFI-PZ-22	E	586.85		NO DTW		NO DTW		NO DTW		NO DTW	Destroyed	NO DTW
RFI-PZ-23	E	586.78		NO DTW		NO DTW		NO DTW		NO DTW		NO DTW
RFI-PZ-24	E	584.34		NO DTW		NO DTW		NO DTW		NO DTW		NO DTW

Notes:
DTW = Depth to Water
NO DTW = No DTW measurement collected

Table 2
Pre-Design Investigation and Final Design
Area C 2008 Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	Sample ID: / Location: / Date: NYSDEC Values [5]	RFI-20-0108 RFI-20 01/31/08	RFI-20-0408 RFI-20 04/24/08	RFI-20-0708 RFI-20 07/28/08	RFI-20-1008 RFI-20 10/15/08	RFI-21D-0108 RFI-21D 01/31/08	RFI-31-0108 RFI-31 02/05/08	RFI-31-0708 RFI-31 07/28/08	RFI-31-1008 RFI-31 10/15/08
VOCs										
1,1,1-Trichloroethane	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,1,2,2-Tetrachloroethane	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,1,2-Trichloroethane	ug/L	1	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,1,2-Trichlorotrifluoroethane	ug/L	5	80 U	250 U	80 U	200 UJ	1 U	8 U	8 U	25 UJ
1,1-Dichloroethane	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,1-Dichloroethene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,2,4-Trichlorobenzene	ug/L	5	80 U	250 U	80 U	**110** J	1 U	**62**	8 U	**580**
1,2-Dibromo-3-Chloropropane	ug/L	0.04	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,2-Dibromoethane	ug/L	0.0006	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,2-Dichlorobenzene	ug/L	3	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,2-Dichloroethane	ug/L	0.6	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,2-Dichloropropane	ug/L	1	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
1,3-Dichlorobenzene	ug/L	3	80 U	250 U	80 U	200 U	1 U	**34**	**110**	**110**
1,4-Dichlorobenzene	ug/L	3	80 U	250 U	80 U	200 U	0.68 J	**4.7** J	**13**	**14** J
2-Butanone	ug/L	50	400 U	1200 U	400 U	1000 U	5 U	40 U	40 U	120 U
2-Hexanone	ug/L	50	400 U	1200 U	400 U	1000 U	5 U	40 U	40 U	120 U
4-Methyl-2-Pentanone	ug/L		400 U	1200 U	400 U	1000 U	5 U	40 U	40 U	120 U
Acetone	ug/L	50	400 U	1200 U	400 U	1000 U	5 U	40 U	40 U	120 U
Benzene	ug/L	1	**4800**	**1200**	**430**	200 U	**7.4**	8 U	**11**	**9.7** J
Bromodichloromethane	ug/L	50	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Bromoform	ug/L	50	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Bromomethane	ug/L	5	80 U	250 U	80 UJ	200 UJ	1 U	8 U	8 UJ	25 UJ
Carbon Disulfide	ug/L	60	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Carbon Tetrachloride	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Chlorobenzene	ug/L	5	**21000**	**15000**	**9900**	**5300**	**21**	**89**	**660**	**560**
Chlorodibromomethane	ug/L	50	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Chloroethane	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Chloroform	ug/L	7	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Chloromethane	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
cis-1,2-Dichloroethene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
cis-1,3-Dichloropropene [1]	ug/L	0.4	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Cyclohexane	ug/L		80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Dichlorodifluoromethane	ug/L	5	80 U	250 U	80 UJ	200 U	1 U	8 U	8 UJ	25 U
Ethylbenzene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Isopropylbenzene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Methyl Acetate	ug/L		80 U	250 UJ	80 U	200 U	1 U	8 U	8 U	25 U
Methyl Tert-Butyl Ether	ug/L	10	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Methylcyclohexane	ug/L		80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Methylene Chloride	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Styrene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Tetrachloroethene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Toluene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Trans-1,2-Dichloroethene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Trans-1,3-Dichloropropene [1]	ug/L	0.4	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Trichloroethene	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Trichlorofluoromethane	ug/L	5	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Vinyl Chloride	ug/L	2	80 U	250 U	80 U	200 U	1 U	8 U	8 U	25 U
Xylenes, Total	ug/L	5	240 U	750 U	240 U	600 U	3 U	24 U	24 U	75 U

See notes at end of table

Produced by: WCG 11/20/09
Checked by: TLC 11/23/09

Table 2
Pre-Design Investigation and Final Design
Area C 2008 Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	Sample ID: / Location: / Date: NYSDEC Values [5]	RFI-20-0108 RFI-20 01/31/08	RFI-20-0408 RFI-20 04/24/08	RFI-20-0708 RFI-20 07/28/08	RFI-20-1008 RFI-20 10/15/08	RFI-21D-0108 RFI-21D 01/31/08	RFI-31-0108 RFI-31 02/05/08	RFI-31-0708 RFI-31 07/28/08	RFI-31-1008 RFI-31 10/15/08
SVOCs										
1,1'-Biphenyl	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
2,2'-Oxybis(1-Chloropropane)	ug/L	5	5 U	5 U	5 U	0.19 U	5 U	5 UJ	5 U	0.95 UJ
2,4,5-Trichlorophenol	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	1 J	1.1 J
2,4,6-Trichlorophenol	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 U
2,4-Dichlorophenol	ug/L	5	5 U	5 U	5 U	0.93	5 U	**6**	**6**	1.7
2,4-Dimethylphenol	ug/L	1	5 U	5 U	5 U	0.96 U	5 U	5 UJ	5 U	4.8 U
2,4-Dinitrophenol	ug/L	1	10 U	10 U	11 U	4.8 U	10 U	10 U	10 U	24 U
2,4-Dinitrotoluene	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
2,6-Dinitrotoluene	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
2-Chloronaphthalene	ug/L	10	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
2-Chlorophenol	ug/L		11	10	14	9.4	5 U	2 J	2 J	1.6 J
2-Methylnaphthalene	ug/L		5 U	5 U	5 UJ	0.19 U	5 U	5 U	5 UJ	0.95 UJ
2-Methylphenol	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 UJ	5 U	4.8 U
2-Nitroaniline	ug/L	5	10 U	10 U	11 U	4.8 U	10 U	10 U	10 U	24 UJ
2-Nitrophenol	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 U
3,3'-Dichlorobenzidine	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
3-Nitroaniline	ug/L	5	10 U	10 U	11 U	4.8 U	10 U	10 U	10 U	24 UJ
4,6-Dinitro-2-Methylphenol	ug/L		10 U	10 U	11 U	4.8 U	10 U	10 U	10 UJ	24 U
4-Bromophenyl Phenyl Ether	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	5 UJ	4.8 UJ
4-Chloro-3-Methylphenol	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 U
4-Chloroaniline	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
4-Chlorophenyl Phenyl Ether	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
4-Methylphenol	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 UJ	5 U	4.8 U
4-Nitroaniline	ug/L	5	10 U	10 U	11 U	4.8 U	10 U	10 U	10 U	24 UJ
4-Nitrophenol	ug/L		10 U	10 U	11 U	4.8 U	10 U	10 UJ	10 U	24 U
Acenaphthene	ug/L	20	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Acenaphthylene	ug/L		5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Acetophenone	ug/L		0.2 J	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
Aniline	ug/L	5	**30**	2 J	11 U	0.96 U	10 U	10 UJ	10 U	4.8 UJ
Anthracene	ug/L	50	5 U	5 U	5 U	0.057 J	5 U	5 U	5 UJ	1.4 J
Atrazine	ug/L	7.5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
Benzaldehyde	ug/L		R	5 U	5 U	0.96 U	R	R	5 U	4.8 UJ
Benzo(a)anthracene	ug/L	0.002	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Benzo(a)pyrene [2]	ug/L	0	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Benzo(b)fluoranthene	ug/L	0.002	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Benzo(g,h,i)perylene	ug/L		5 U	5 U	5 U	0.027 J	5 U	5 U	5 U	0.18 J
Benzo(k)fluoranthene	ug/L	0.002	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Bis(2-chloroethoxy)methane	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 UJ	5 U	4.8 UJ
Bis(2-chloroethyl)ether	ug/L	1	5 U	5 U	5 U	0.19 U	5 U	5 UJ	5 U	0.95 UJ
Bis(2-ethylhexyl)phthalate	ug/L	5	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
Butylbenzyl Phthalate	ug/L	50	5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
Caprolactam	ug/L		5 UJ	5 UJ	5 UJ	0.36 J	5 UJ	5 UJ	5 UJ	24 UJ
Carbazole	ug/L		5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Chrysene	ug/L	0.002	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Dibenzo(a,h)anthracene	ug/L		5 U	5 U	5 U	0.053 J	5 U	5 U	5 U	4.8 UJ
Dibenzofuran	ug/L		5 U	5 U	5 U	0.96 U	5 U	5 U	5 U	4.8 UJ
Diethyl Phthalate	ug/L	50	5 U	5 U	5 U	0.19 U	5 U	3 J	4 J	0.95 UJ
Dimethyl Phthalate	ug/L	50	5 U	5 U	5 U	0.051 J	5 U	5 U	0.5 J	4.8 UJ
Di-n-Butyl Phthalate	ug/L	50	5 U	5 U	5 U	0.96 U	5 U	0.3 J	5 UJ	4.8 UJ
Di-n-Octyl Phthalate	ug/L	50	5 U	5 U	6 U	0.96 U	5 U	5 U	5 U	4.8 UJ
Fluoranthene	ug/L	50	5 U	5 U	5 U	0.19 U	5 U	5 U	5 UJ	0.95 UJ
Fluorene	ug/L	50	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Hexachlorobenzene	ug/L	0.04	5 U	5 U	5 U	0.19 U	5 U	5 U	5 UJ	0.95 UJ
Hexachlorobutadiene	ug/L	0.5	5 U	5 U	5 UJ	0.19 U	5 U	5 U	5 UJ	0.95 UJ
Hexachlorocyclopentadiene	ug/L	5	5 UJ	5 U	5 UJ	0.96 U	5 UJ	5 UJ	5 UJ	4.8 UJ
Hexachloroethane	ug/L	5	5 U	5 U	5 UJ	0.96 U	5 U	5 UJ	5 UJ	4.8 UJ
Indeno(1,2,3-cd)pyrene	ug/L	0.002	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ
Isophorone	ug/L	50	5 U	5 U	5 U	0.96 U	5 U	5 UJ	5 U	4.8 UJ
Naphthalene	ug/L	10	6	0.3 J	8 J	0.19 U	5 U	5	5 UJ	0.95 UJ
Nitrobenzene	ug/L	0.4	5 U	5 U	5 U	0.19 U	5 U	5 UJ	5 U	0.95 UJ
N-Nitroso-di-n-Propylamine	ug/L		5 U	5 U	5 U	0.19 U	5 U	5 UJ	5 U	0.95 UJ
N-Nitrosodiphenylamine	ug/L	50	5 U	5 U	5 U	0.19 U	5 U	5 U	5 UJ	0.95 UJ
Pentachlorophenol [3]	ug/L	1	10 U	10 U	11 U	0.96 U	10 U	10 U	10 UJ	4.8 U
Phenanthrene	ug/L	50	5 U	5 U	5 U	0.14 J	5 U	5 U	5 UJ	0.73 J
Phenol [3]	ug/L	1	5 U	**2** J	5 U	0.59	5 U	5 UJ	5 U	**1.6**
Pyrene	ug/L	50	5 U	5 U	5 U	0.19 U	5 U	5 U	5 U	0.95 UJ

See notes at end of table

Produced by: WCG 11/20/09
Checked by: TLC 11/23/09

Table 2
Pre-Design Investigation and Final Design
Area C 2008 Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	RFI-20-0108 RFI-20 01/31/08	RFI-20-0408 RFI-20 04/24/08	RFI-20-0708 RFI-20 07/28/08	RFI-20-1008 RFI-20 10/15/08	RFI-21D-0108 RFI-21D 01/31/08	RFI-31-0108 RFI-31 02/05/08	RFI-31-0708 RFI-31 07/28/08	RFI-31-1008 RFI-31 10/15/08
Metals										
Aluminum	ug/L		330	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Antimony	ug/L	3	20 U	20 U	20 U	10 U	20 U	20 U	20 U	10 U
Arsenic	ug/L	25	10 U	10 U	10 U	5.1	10 U	10 U	10 U	2.8
Barium	ug/L	1000	18	19	19	19.5	340	38	44	44
Beryllium	ug/L	3	2 U	2 U	2 U	4 U	2 U	2 U	2 U	4 U
Cadmium	ug/L	5	1 U	1 U	1 U	5 U	1 U	1 U	1 U	5 U
Calcium	ug/L		405000	360000	399000	389000	76900	84000	165000	154000
Chromium	ug/L	50	4 U	4 U	4 U	1.6	4 U	12	6.5	3.9
Cobalt	ug/L		4 U	4 U	4 U	1.5	4 U	4 U	4 U	3.5
Copper	ug/L	200	10 U	10 U	10 U	25 U	10 U	10 U	10 U	25 U
Iron	ug/L	300	**2700**	**3400** J	**2600**	**2050**	50 U	**530**	**460**	**747**
Lead	ug/L	25	5 U	5 U	5 U	3 U	5 U	5 U	5 U	3 U
Magnesium	ug/L	35000	**165000**	**120000**	**140000**	**125000**	**59100**	16100	**39300**	**37300**
Manganese	ug/L	300	**1900**	**1600** J	**1700**	**1640**	3 U	**370**	**820**	**841**
Mercury	ug/L	0.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.016
Nickel	ug/L	100	10 U	10 U	10 U	3	10 U	23	21	27.6
Potassium	ug/L		3700	5700	6500	7320 J	5000	26800	34800	32500 J
Selenium	ug/L	10	15 U	15 U	15 U	5 U	15 U	15 U	15 U	5 U
Silver	ug/L	50	3 U	3 U	3 U	5 U	3 U	3 U	3 U	5 U
Sodium	ug/L	20000	**157000**	**131000**	**153000**	**144000**	**147000**	**2080000**	**2500000**	**2360000**
Thallium	ug/L	0.5	20 U	20 U	20 U	10 U	20 U	20 U	20 U	10 U
Vanadium	ug/L		5 U	5 U	5 U	4.5	5 U	5 U	5 U	3
Zinc	ug/L	2000	10 U	10 U	10 U	20 U	10 U	22	25	42
Additional Analyses										
Chloride	ug/L	250000	**364000**	216000	**305000** J	214000	225000	**2770000**	**2780000** J	**2960000**
Cyanide	ug/L	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ferrous Iron	ug/L		2500 J	2300 J			100 R	100 UJ		
Nitrogen, Nitrate-Nitrite	ug/L	10000		50 U	1300				110	
Nitrogen, Nitrate-Nitrite	ug/L	10000	50 U			100 U	50 U	500		280
Sulfate	ug/L	250000		**782000**	**1050000**				**854000**	
Sulfate	ug/L	250000				**1000000**				**851000**
Sulfate	ug/L	250000	**1210000**				154000	**918000**		
Sulfide	ug/L	50	1000 U				**28800** J	1000 U		
Sulfide	ug/L	50		1000 U	1000 U				1000 U	
Sulfide	ug/L	50				3000 U				3000 U
Total Recoverable Phenolics [3]	ug/L	1	10 U				10 U			
Total Recoverable Phenolics [3]	ug/L	1		10 U				**15**		

Notes:
(1) NYSDEC value of 0.4 ug/L is the standard for the sum of these substances
(2) The NYSDEC standard for benzo(a)pyrene is actually "ND" (non-detect), 0 is used for table compatibility
(3) NYSDEC value of 1 ug/L is the standard for the sum of these substances
(4) Units: ug/L = micrograms per liter
(5) New York State Department of Environmental Conservation, Technical and Operational Guidance Series
Ambient Water Quality Standards, Class GA, Table 1
Ambient Water Quality Guidance Values, Class GA, Table 1
Qualifiers: U = not detected; J = estimated value; UJ = non-detect reported, reporting limit qualified as estimated; R = data rejected during validation
Shaded value = exceedance of standard or guidance value

Produced by: WCG 11/20/09
Checked by: TLC 11/23/09

Table 3
Pre-Design Investigation and FInal Design
Area C 2009 Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PS-04-1109 Location: PS-04 Date: 11/19/2009	Sample ID: PS-05-1109 Location: PS-05 Date: 11/17/2009	Sample ID: PS-06-1109 Location: PS-06 Date: 11/17/2009	Sample ID: RFI-20-1109 Location: RFI-20 Date: 11/19/2009	Sample ID: RFI-31-1109 Location: RFI-31 Date: 11/19/2009	Sample ID: MW-C01-1109 Location: TB-C01 Date: 11/18/2009	Sample ID: MW-C02-1109 Location: TB-C02 Date: 11/19/2009	Sample ID: MW-C03-1109 Location: TB-C03 Date: 11/19/2009
VOCs										
1,1,1-TRICHLOROETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,1,2,2-TETRACHLOROETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,1,2-TRICHLOROETHANE	ug/L	1	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,1,2-TRICHLOROTRIFLUOROETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,1-DICHLOROETHANE	ug/L	5	1 U	1 U	0.8 J	1 U	20 U	5 U	40 U	40 U
1,1-DICHLOROETHENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,2,4-TRICHLOROBENZENE	ug/L	5	1 U	1 U	1 U	**130**	**1200**	**24**	**5600**	**2700**
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.04	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,2-DIBROMOETHANE	ug/L	0.0006	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,2-DICHLOROBENZENE	ug/L	3	1 U	**5**	1 U	**11**	**8.6** J	5 U	**24000**	**26000**
1,2-DICHLOROETHANE	ug/L	0.6	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,2-DICHLOROPROPANE	ug/L	1	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
1,3-DICHLOROBENZENE	ug/L	3	1 U	1 U	1 U	1 U	**1600**	**6.8**	**190**	**240**
1,4-DICHLOROBENZENE	ug/L	3	1 U	0.76 J	1 U	2	**110**	2.8 J	**4900**	**5100**
2-BUTANONE	ug/L	50	5 U	5 U	5 U	5 U	100 U	25 U	200 U	200 U
2-HEXANONE	ug/L	50	5 U	5 U	5 U	5 U	100 U	25 U	200 U	200 U
4-METHYL-2-PENTANONE	ug/L		5 U	5 U	5 U	5 U	100 U	25 U	200 U	200 U
ACETONE	ug/L	50	5 U	5 U	5 U	5 UJ	100 U	25 UJ	200 UJ	410 UJ
BENZENE	ug/L	1	1 U	0.97 J	0.61 J	**7.6**	**9.6** J	5 U	**1000**	**860**
BROMODICHLOROMETHANE	ug/L	50	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
BROMOFORM	ug/L	50	1 UJ	1 U	1 U	1 U	20 UJ	5 U	40 U	40 U
BROMOMETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CARBON DISULFIDE	ug/L	60	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CARBON TETRACHLORIDE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CHLOROBENZENE	ug/L	5	0.81 J	**700**	1 U	**5900**	**830**	5 U	**75000**	**94000**
CHLORODIBROMOMETHANE	ug/L	50	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CHLOROETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CHLOROFORM	ug/L	7	1 U	1 U	1 U	1 U	20 U	5 U	40 U	**23** J
CHLOROMETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CIS-1,2-DICHLOROETHENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CIS-1,3-DICHLOROPROPENE [1]	ug/L	0.4	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
CYCLOHEXANE	ug/L		1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
DICHLORODIFLUOROMETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
ETHYLBENZENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
ISOPROPYLBENZENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
METHYL ACETATE	ug/L		1 UJ	1 U	1 U	1 UJ	20 UJ	5 UJ	40 UJ	40 UJ
METHYL TERT-BUTYL ETHER	ug/L	10	1 U	1 U	0.52 J	1 U	20 U	5 U	40 U	40 U
METHYLCYCLOHEXANE	ug/L		1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
METHYLENE CHLORIDE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
STYRENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
TETRACHLOROETHENE	ug/l	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
TOLUENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	**85**	**130**
TRANS-1,2-DICHLOROETHENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
TRANS-1,3-DICHLOROPROPENE [1]	ug/L	0.4	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
TRICHLOROETHENE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
TRICHLOROFLUOROMETHANE	ug/L	5	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
VINYL CHLORIDE	ug/L	2	1 U	1 U	1 U	1 U	20 U	5 U	40 U	40 U
XYLENES, TOTAL	ug/L	5	2 U	2 U	2 U	2 U	40 U	10 U	80 U	80 U

See notes at end of table

Table 3
Pre-Design Investigation and FInal Design
Area C 2009 Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: / Location: / Date: PS-04-1109 / PS-04 / 11/19/2009	PS-05-1109 / PS-05 / 11/17/2009	PS-06-1109 / PS-06 / 11/17/2009	RFI-20-1109 / RFI-20 / 11/19/2009	RFI-31-1109 / RFI-31 / 11/19/2009	MW-C01-1109 / TB-C01 / 11/18/2009	MW-C02-1109 / TB-C02 / 11/19/2009	MW-C03-1109 / TB-C03 / 11/19/2009
SVOCs										
1,1'-BIPHENYL	ug/L	5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
2,2'-OXYBIS(1-CHLOROPROPANE)	ug/L	5	5 U	3.9 U	20 U	4 U	4.4 U	4 U	4 U	20 U
2,4,5-TRICHLOROPHENOL	ug/L		6.2 U	4.9 UJ	25 U	5 U	1.5 J	5 U	3.7 J	25 U
2,4,6-TRICHLOROPHENOL	ug/L		6.2 U	4.9 UJ	25 U	5 U	5.5 U	5 U	430	440
2,4-DICHLOROPHENOL	ug/L	5	6.2 U	4.9 UJ	25 U	5 U	**7.9**	5 U	**430**	**1100** J
2,4-DIMETHYLPHENOL	ug/L	1	6.2 U	4.9 UJ	25 U	5 U	5.5 U	5 U	5 U	25 U
2,4-DINITROPHENOL	ug/L	1	12 U	9.8 UJ	50 U	9.9 U	11 U	10 U	10 U	50 U
2,4-DINITROTOLUENE	ug/L	5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	**190** J	25 U
2,6-DINITROTOLUENE	ug/L	5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	**73**	25 U
2-CHLORONAPHTHALENE	ug/L	10	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
2-CHLOROPHENOL	ug/L		6.2 U	2.9 J	25 U	5.4	1.6 J	5 U	280	360
2-METHYLNAPHTHALENE	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
2-METHYLPHENOL	ug/L		6.2 U	4.9 UJ	25 U	5 U	5.5 U	5 U	9.1	25 U
2-NITROANILINE	ug/L	5	12 U	9.8 U	50 U	9.9 U	11 U	10 U	**7.2** J	50 U
2-NITROPHENOL	ug/L		6.2 U	4.9 UJ	25 U	5 U	5.5 U	5 U	5 U	25 U
3,3'-DICHLOROBENZIDINE	ug/L	5	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
3-NITROANILINE	ug/L	5	12 U	9.8 U	50 U	9.9 U	11 U	10 U	**7.7** J	**27** J
4,6-DINITRO-2-METHYLPHENOL	ug/L		12 U	9.8 UJ	50 U	9.9 UJ	11 UJ	10 UJ	10 UJ	50 UJ
4-BROMOPHENYL PHENYL ETHER	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
4-CHLORO-3-METHYLPHENOL	ug/L		6.2 U	4.9 UJ	25 U	5 U	5.5 U	5 U	5 U	25 U
4-CHLOROANILINE	ug/L	5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
4-CHLOROPHENYL PHENYL ETHER	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
4-METHYLPHENOL	ug/L		12 UJ	9.8 UJ	50 U	9.9 UJ	11 UJ	10 UJ	10 UJ	50 UJ
4-NITROANILINE	ug/L	5	12 U	9.8 U	50 U	9.9 U	11 U	10 U	10 U	50 U
4-NITROPHENOL	ug/L		12 UJ	9.8 UJ	50 UJ	9.9 UJ	11 UJ	10 UJ	10 UJ	50 UJ
ACENAPHTHENE	ug/L	20	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	0.74 J	25 U
ACENAPHTHYLENE	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
ACETOPHENONE	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	9.5	17 J
ANILINE	ug/L	5	12 U	9.8 U	50 U	9.9 U	11 U	10 U	**270** J	**13000**
ANTHRACENE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
ATRAZINE	ug/L	7.5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BENZO(A)ANTHRACENE	ug/L	0.002	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BENZO(A)PYRENE [2]	ug/L	0	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BENZO(B)FLUORANTHENE	ug/L	0.002	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BENZO(G,H,I)PERYLENE	ug/L		6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BENZO(K)FLUORANTHENE	ug/L	0.002	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BIS(2-CHLOROETHOXY)METHANE	ug/L	5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BIS(2-CHLOROETHYL)ETHER	ug/L	1	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BIS(2-ETHYLHEXYL)PHTHALATE	ug/L	5	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
BUTYLBENZYL PHTHALATE	ug/L	50	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
CAPROLACTAM	ug/L		6.2 UJ	4.9 UJ	25 UJ	5 UJ	5.5 UJ	5 UJ	5 UJ	25 UJ
CARBAZOLE	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	0.42 J	25 U
CHRYSENE	ug/L	0.002	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
DI-N-BUTYL PHTHALATE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	0.75 J	25 U
DI-N-OCTYL PHTHALATE	ug/L	50	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
DIBENZO(A,H)ANTHRACENE	ug/L		6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
DIBENZOFURAN	ug/L		12 U	9.8 U	50 U	9.9 U	11 U	10 U	10 U	50 U
DIETHYL PHTHALATE	ug/L	50	6.2 U	4.9 U	25 U	5 U	4 J	5 U	**67**	**83**
DIMETHYL PHTHALATE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5.2	25 U
ENDRIN ALDEHYDE	ug/L	5	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
FLUORANTHENE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
FLUORENE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
HEXACHLOROBENZENE	ug/L	0.04	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
HEXACHLOROBUTADIENE	ug/L	0.5	6.2 U	4.9 UJ	25 UJ	5 U	5.5 U	5 U	5 U	25 U
HEXACHLOROCYCLOPENTADIENE	ug/L	5	6.2 U	4.9 UJ	25 UJ	5 U	5.5 U	5 U	5 U	25 U
HEXACHLOROETHANE	ug/L	5	6.2 U	4.9 UJ	25 UJ	5 U	5.5 U	5 U	5 U	25 U
INDENO(1,2,3-CD)PYRENE	ug/L	0.002	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
ISOPHORONE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
N-NITROSO-DI-N-PROPYLAMINE	ug/L		6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
N-NITROSODIPHENYLAMINE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
NAPHTHALENE	ug/L	10	6.2 U	2 J	25 U	5	1.5 J	5 U	**140** J	**640**
NITROBENZENE	ug/L	0.4	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	**2000**	**2400**
PENTACHLOROPHENOL [3]	ug/L	1	12 U	9.8 UJ	50 U	9.9 U	11 U	10 U	10 U	50 U
PHENANTHRENE	ug/L	50	6.2 U	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U
PHENOL [3]	ug/L	1	6.2 UJ	4.9 UJ	25 UJ	5 UJ	0.47 J	5 UJ	**48** J	**1300** J
PYRENE	ug/L	50	6.2 UJ	4.9 U	25 U	5 U	5.5 U	5 U	5 U	25 U

See notes at end of table

Produced by: KJC 02/15/10
Checked by: NCF 05/05/10

Table 3
Pre-Design Investigation and FInal Design
Area C 2009 Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PS-04-1109 Location: PS-04 Date: 11/19/2009	Sample ID: PS-05-1109 Location: PS-05 Date: 11/17/2009	Sample ID: PS-06-1109 Location: PS-06 Date: 11/17/2009	Sample ID: RFI-20-1109 Location: RFI-20 Date: 11/19/2009	Sample ID: RFI-31-1109 Location: RFI-31 Date: 11/19/2009	Sample ID: MW-C01-1109 Location: TB-C01 Date: 11/18/2009	Sample ID: MW-C02-1109 Location: TB-C02 Date: 11/19/2009	Sample ID: MW-C03-1109 Location: TB-C03 Date: 11/19/2009
Total Metals										
ARSENIC	ug/L	25	14	10 U	**983**	10 U	10 U	10 U	10 U	10 U
BARIUM	ug/l	1000	24.8	75.1	927	16.7	28.3	123	31.6	24.9
CADMIUM	ug/L	5	1 U	1 U	**30.8**	1 U	1 U	1 U	1 U	1 U
CHROMIUM	ug/L	50	4 U	4 U	**262**	4 U	5.4	4.8	4 U	27.7
LEAD	ug/L	25	5 U	5 U	**848**	5 U	5 U	5 U	5 U	5 U
MERCURY	ug/l	0.7	0.4	0.2 U	**9.4**	0.2 U	0.2 U	0.2 U	**7.1**	**1.1**
SELENIUM	ug/l	10	15 U	15 U	**35.3**	15 U	15 U	15 U	15 U	15 U
SILVER	ug/l	50	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Dissolved Metals										
ARSENIC	ug/L		13.1		106					
BARIUM	ug/l		23.6		19.2					
CADMIUM	ug/L		1 U		1 U					
CHROMIUM	ug/L		4 U		4 U					
LEAD	ug/L		5 U		5 U					
MERCURY	ug/l		0.2 U		0.2 U					
SELENIUM	ug/l		15 U		15 U					
SILVER	ug/l		3 U		3 U					
Additional Analyses										
AMMONIA (AS N)	mg/L	2	0.199			0.241	1.24	**2.32**	0.318	1.62
DISSOLVED OXYGEN	mg/L		2.71 J			2.37 J	4.08 J	6.97 J	6.56 J	4.87 J
NITRATE-NITRITE	mg/L	10	0.102			0.05 U	0.05 U	1.43	0.05 U	0.05 U
NITROGEN, KJELDAHL, TOTAL	mg/L		0.57			0.79	3.1	2.7	2.3	7.1
pH	S.U.		7.09 J			7.36 J	7.36 J	7.93 J	7.33 J	7 J
PHOSPHORUS	mg/L		0.0255			0.01 U	0.01 U	0.01 U	0.0386	0.0087 J
TOTAL ALKALINITY	mg/L		170 J			484 J	540 J	183 J	753 J	804 J

Notes:
(1) NYSDEC value of 0.4 ug/L is the standard for the sum of these substances
(2) The NYSDEC standard for benzo(a)pyrene is actually "ND" (non-detect), 0 is used for table compatibility
(3) NYSDEC value of 1 ug/L is the standard for the sum of these substances
(4) Units: ug/L = micrograms per liter; mg/L = milligrams per liter; S.U. = standard units
(5) New York State Department of Environmental Conservation, Technical and Operational Guidance Series
Ambient Water Quality Standards, Class GA, Table 1
Ambient Water Quality Guidance Values, Class GA, Table 1
Qualifiers: U = not detected; J = estimated value; UJ = non-detect reported, reporting limit qualified as estimated
Shaded value = exceedance of standard or guidance value

Produced by: KJC 02/15/10
Checked by: NCF 05/05/10

Table 4
Pre-Design Investigation and Final Design
Area C PDI Direct Push Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PDI-C01-0909 Location: PDI-C01 Date: 09/15/09	PDI-C02-0909 PDI-C02 09/08/09	PDI-C03-0909 PDI-C03 09/08/09	PDI-C04-0909 PDI-C04 09/14/09	PDI-C05-0909 PDI-C05 09/14/09	PDI-C06-0909 PDI-C06 09/15/09	PDI-C07-0909 PDI-C07 09/09/09	PDI-C08-0909 PDI-C08 09/15/09	PDI-C09-0909 PDI-C09 09/11/09	PDI-C10-0909 PDI-C10 09/08/09	PDI-C11-0909 PDI-C11 09/08/09	PDI-C12-0909 PDI-C12 09/08/09	PDI-C13-0909 PDI-C13 09/08/09	PDI-C14-0909 PDI-C14 09/15/09	PDI-C15-0909 PDI-C15 09/14/09	PDI-C16-0909 PDI-C16 09/14/09	PDI-C17-0909 PDI-C17 09/15/09
VOCs																			
1,1,1-Trichloroethane	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	15	20 U
1,1,2,2-Tetrachloroethane	ug/L	5	20 U	1 UJ	1 UJ	1 U	1 U	20 U	5 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	4 U	1 U	1 U	20 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
1,1,2-Trichloroethane	ug/L	1	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
1,1-Dichloroethane	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	53	20 U
1,1-Dichloroethene	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	2.1	20 U
1,2,4-Trichlorobenzene	ug/L	5	190	1 U	1 U	79	2	12000	3.1 J	0.98 J	1 U	1 U	1 U	1 U	1 U	4 U	0.9 J	0.66 J	20 U
1,2-Dibromo-3-chloropropane	ug/L	0.04	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
1,2-Dibromoethane	ug/L	0.0006	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
1,2-Dichlorobenzene	ug/L	3	160	1 U	1 U	6.9	1.1	2300	5 U	10	1 U	1 U	1 U	1 U	1 U	4 U	1 U	68	90
1,2-Dichloroethane	ug/L	0.6	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
1,2-Dichloroethene, Total	ug/L	5	40 U					40 U		2 U						8 U			40 U
1,2-Dichloropropane	ug/L	1	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
1,3-Dichlorobenzene	ug/L	3	290	1 U	1 U	0.57 J	1 U	930	5 U	0.51 J	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1.8	20 U
1,4-Dichlorobenzene	ug/L	3	530	1 U	1 U	2.2	0.54 J	690	5 U	2.6	1 U	1 U	1 U	1 U	1 U	4 U	1 U	9.4	20 U
2-Butanone	ug/L	50	100 U	5 U	5 U	3.1 J	5 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	100 U
2-Hexanone	ug/L	50	100 U	5 U	5 U	5 U	5 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	100 U
4-Methyl-2-pentanone	ug/L		100 U	5 U	5 U	5 U	5 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	100 U
Acetone	ug/L	50	100 U	6.3	5 U	22	3.7 J	100 U	31	2.5 J	2.2 J	3.6 J	5 U	5 U	12	27	17	3.9 J	100 U
Benzene	ug/L	1	33	1 U	1 U	1.6	9.6	38	5 U	3.5	1 U	1 U	1 U	1 U	1 U	2.9 J	1 U	13	20 U
Bromodichloromethane	ug/L	50	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Bromoform	ug/L	50	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Bromomethane	ug/L	5	20 UJ	1 U	1 U	1 U	1 U	20 U	5 U	1 UJ	1 U	1 U	1 U	1 U	1 U	4 UJ	1 U	1 U	20 UJ
Carbon disulfide	ug/L	60	20 U	1 U	1 U	0.54 J	0.96 J	20 U	5 U	1 U	1 U	1 U	1 U	1 U	2.3	4 U	0.93 J	1 U	20 U
Carbon Tetrachloride	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Chlorobenzene	ug/L	5	970	4.6	1 U	2.3	6.5	230	5 U	5.8	19	1 U	1 U	1 U	1 U	93	7.6	99	220
Chloroethane	ug/L	5	20 UJ	1 U	1 U	1 U	1 U	20 U	5 U	1 UJ	1 U	1 U	1 U	1 U	1 U	4 UJ	1 U	10	20 UJ
Chloroform	ug/L	7	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Chloromethane	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
cis-1,2-Dichloroethene	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
cis-1,3-Dichloropropene [1]	ug/L	0.4	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Cyclohexane	ug/L		20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Dibromochloromethane	ug/L	50	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Dichlorodifluoromethane	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Ethylbenzene	ug/L	5	20 U	1 U	1 U	1 U	1 U	17 J	5 U	0.69 J	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Isopropylbenzene	ug/L	5	15 J	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Methyl Acetate	ug/L		20 U	1 UJ	1 UJ	1 U	1 U	20 U	5 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	4 U	1 U	1 U	20 U
Methyl-t-Butyl Ether (MTBE)	ug/L	10	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Methylcyclohexane	ug/L		20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Methylene Chloride	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Styrene	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Tetrachloroethene	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Toluene	ug/L	5	20 U	0.63 J	1 U	1.2	4.7	20 U	2.8 J	1.5	1 U	1 U	1 U	1 U	1 U	4.6	8.4	0.96 J	20 U
trans-1,2-Dichloroethene	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
trans-1,3-Dichloropropene [1]	ug/L	0.4	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Trichloroethene	ug/L	5	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Trichlorofluoromethane	ug/L	5	20 U	1 UJ	1 UJ	1 U	1 U	20 U	5 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	4 U	1 U	1 U	20 U
Vinyl acetate	ug/L		100 U					100 U		5 U						20 U			100 U
Vinyl chloride	ug/L	2	20 U	1 U	1 U	1 U	1 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	1 U	1 U	20 U
Xylenes, total	ug/L	5	40 U	2 U	2 U	2 U	2 U	53	10 U	1.9 J	2 U	2 U	2 U	2 U	2 U	8 U	2 U	2 U	40 U

See notes at end of table

Produced by: WCG 11/20/09
Checked by: TLC 11/23/09

Table 4
Pre-Design Investigation and Final Design
Area C PDI Direct Push Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PDI-C01-0909 Location: PDI-C01 Date: 09/15/09	PDI-C02-0909 PDI-C02 09/08/09	PDI-C03-0909 PDI-C03 09/08/09	PDI-C04-0909 PDI-C04 09/14/09	PDI-C05-0909 PDI-C05 09/14/09	PDI-C06-0909 PDI-C06 09/15/09	PDI-C07-0909 PDI-C07 09/09/09	PDI-C08-0909 PDI-C08 09/15/09	PDI-C09-0909 PDI-C09 09/11/09	PDI-C10-0909 PDI-C10 09/08/09	PDI-C11-0909 PDI-C11 09/08/09	PDI-C12-0909 PDI-C12 09/08/09	PDI-C13-0909 PDI-C13 09/08/09	PDI-C14-0909 PDI-C14 09/15/09	PDI-C15-0909 PDI-C15 09/14/09	PDI-C16-0909 PDI-C16 09/14/09	PDI-C17-0909 PDI-C17 09/15/09
SVOCs																			
2,2'-Oxybis(1-Chloropropane)	ug/L	5	39 UJ	21 U	4.2 U	4 UJ	4 UJ	40 UJ	21 U	3.9 UJ	4.2 U	4.2 U	4 U	4.4 U	6.6 U	44 UJ	13 UJ	21 UJ	200 UJ
2,4,5-Trichlorophenol	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
2,4,6-Trichlorophenol	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
2,4-Dichlorophenol	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
2,4-Dimethylphenol	ug/L	1	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
2,4-Dinitrophenol	ug/L	1	97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 UJ
2,4-Dinitrotoluene	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
2,6-Dinitrotoluene	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
2-Chloronaphthalene	ug/L	10	49 U	26 U	5.3 U	5.1 U	0.21 J	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
2-Chlorophenol	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
2-Methylnaphthalene	ug/L		49 U	1.1 J	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	0.45 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
2-Methylphenol	ug/L		49 U	26 U	5.3 U	0.77 J	5.1 U	50 U	26 U	4.9 U	0.48 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
2-Nitroaniline	ug/L	5	97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 U
2-Nitrophenol	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
3,3'-Dichlorobenzidine	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
3-Nitroaniline	ug/L	5	97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 U
4,6-Dinitro-2-methylphenol	ug/L		97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 UJ
4-Bromophenyl phenyl ether	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
4-Chloro-3-methylphenol	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
4-Chloroaniline	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	11 J	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
4-Chlorophenyl phenyl ether	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
4-Methylphenol	ug/L		97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 UJ
4-Nitroaniline	ug/L	5	97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 U
4-Nitrophenol	ug/L		97 UJ	52 U	11 U	10 U	10 U	99 UJ	53 U	9.8 UJ	11 UJ	11 U	10 U	11 U	16 U	110 UJ	32 U	52 U	500 UJ
Acenaphthene	ug/L	20	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	0.75 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Acenaphthylene	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Acetophenone	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Aniline	ug/L	5	97 U	52 U	11 U	39	10 U	47 J	53 U	61	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 U
Anthracene	ug/L	50	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	0.41 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Atrazine	ug/L	7.5	49 UJ	26 UJ	5.3 UJ	5.1 UJ	5.1 UJ	50 UJ	26 UJ	4.9 UJ	5.3 UJ	5.3 UJ	5.1 UJ	5.5 UJ	8.2 UJ	56 UJ	16 UJ	26 UJ	250 UJ
Benzaldehyde	ug/L		49 U	26 U	5.3 U	0.69 J	5.1 U	50 U	26 U	4.9 U	5.3 U	0.32 J	5.1 U	1.2 J	0.67 J	56 U	2.3 J	26 U	250 U
Benzo(a)anthracene	ug/L	0.002	49 U	1.8 J	5.3 U	0.39 J	5.1 U	50 U	26 U	4.9 U	0.45 J	5.3 U	5.1 U	5.5 U	0.56 J	3.2 J	16 U	26 U	250 U
Benzo(a)pyrene [2]	ug/L	0	49 U	1.6 J	0.32 J	0.46 J	5.1 U	50 U	26 U	4.9 U	5.3 U	0.31 J	0.34 J	0.51 J	0.95 J	56 U	16 U	26 U	250 U
Benzo(b)fluoranthene	ug/L	0.002	49 U	1.3 J	5.3 U	0.51 J	5.1 U	50 U	26 U	4.9 U	0.38 J	5.3 U	5.1 U	0.41 J	0.52 J	56 U	16 U	26 U	250 U
Benzo(ghi)perylene	ug/L		49 U	2.3 J	0.4 J	0.48 J	5.1 U	50 U	26 U	4.9 U	0.48 J	0.47 J	0.56 J	0.69 J	1.4 J	56 U	16 U	26 U	250 U
Benzo(k)fluoranthene	ug/L	0.002	49 U	1.4 J	5.3 U	0.35 J	5.1 U	50 U	26 U	4.9 U	0.31 J	0.26 J	5.1 U	0.42 J	0.89 J	56 U	16 U	26 U	250 U
Biphenyl	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	7.5 J	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Bis(2-chloroethoxy)methane	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Bis(2-chloroethyl)ether	ug/L	1	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Bis(2-ethylhexyl) phthalate	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Butyl benzyl phthalate	ug/L	50	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Caprolactam	ug/L		49 UJ	26 UJ	10 J	5.1 UJ	5.1 UJ	50 UJ	26 UJ	4.9 UJ	5.3 UJ	40 J	5.1 UJ	5.5 UJ	8.2 UJ	56 UJ	23 J	26 UJ	250 UJ
Carbazole	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Chrysene	ug/L	0.002	49 U	26 U	5.3 U	0.32 J	5.1 U	50 U	26 U	4.9 U	0.47 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Di-n-butyl phthalate	ug/L	50	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	0.34 J	5.3 U	5.1 U	0.37 J	8.2 U	56 U	16 U	26 U	250 U
Di-n-octyl phthalate	ug/L	50	49 U	26 U	1.2 J	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Dibenzo(a,h)anthracene	ug/L		49 U	2.3 J	0.58 J	0.31 J	5.1 U	50 U	26 U	4.9 U	0.45 J	0.71 J	0.65 J	0.98 J	1.7 J	56 U	16 U	26 U	250 U
Dibenzofuran	ug/L		97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 U
Diethyl phthalate	ug/L	50	49 U	5 J	5.3 U	2.8 U	1.3 U	2.9 U	11 J	0.67 U	1.4 J	1 J	3 J	7.8	7.7 J	23 U	3 U	26 U	250 U
Dimethyl phthalate	ug/L	50	49 U	26 U	5.3 U	0.51 J	0.37 J	50 U	2.4 J	4.9 U	5.3 U	5.3 U	0.67 J	1.4 J	2.1 J	56 U	16 U	26 U	250 U
Fluoranthene	ug/L	50	49 U	3 J	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	0.82 J	5.3 U	5.1 U	5.5 U	8.2 U	3 J	16 U	26 U	250 U
Fluorene	ug/L	50	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Hexachlorobenzene	ug/L	0.04	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Hexachlorobutadiene	ug/L	0.5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Hexachlorocyclopentadiene	ug/L	5	49 UJ	26 U	5.3 U	5.1 U	5.1 U	50 UJ	26 U	4.9 UJ	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 UJ	16 U	26 U	250 UJ
Hexachloroethane	ug/L	5	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Indeno(1,2,3-cd)pyrene	ug/L	0.002	49 U	2.2 J	0.51 J	0.41 J	5.1 U	50 U	26 U	4.9 U	0.48 J	0.64 J	0.64 J	0.96 J	1.6 J	56 U	16 U	26 U	250 U
Isophorone	ug/L	50	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
N-Nitrosodi-n-propylamine	ug/L		49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
N-Nitrosodiphenylamine	ug/L	50	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	1.2	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Naphthalene	ug/L	10	49 U	4.9 J	5.3 U	2.1 J	0.22 J	12 J	26 U	1.1 J	4.9 J	5.3 U	3.8 J	0.48 J	8.2 U	56 U	1 J	26 U	2600
Nitrobenzene	ug/L	0.4	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 U	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Pentachlorophenol [3]	ug/L	1	97 U	52 U	11 U	10 U	10 U	99 U	53 U	9.8 U	11 U	11 U	10 U	11 U	16 U	110 U	32 U	52 U	500 UJ
Phenanthrene	ug/L	50	49 U	2.5 J	5.3 U	0.51 J	5.1 U	50 U	26 U	4.9 U	0.32 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U
Phenol [3]	ug/L	1	49 U	26 U	5.3 U	5.1 U	5.1 U	50 U	26 U	4.9 U	5.3 UJ	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 UJ
Pyrene	ug/L	50	49 U	2.8 J	5.3 U	0.43 J	5.1 U	50 U	26 U	4.9 U	0.82 J	5.3 U	5.1 U	5.5 U	8.2 U	56 U	16 U	26 U	250 U

See notes at end of table

Produced by: WCG 11/20/09
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Table 4
Pre-Design Investigation and Final Design
Area C PDI Direct Push Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PDI-C01-0909 Location: PDI-C01 Date: 09/15/09	PDI-C02-0909 PDI-C02 09/08/09	PDI-C03-0909 PDI-C03 09/08/09	PDI-C04-0909 PDI-C04 09/14/09	PDI-C05-0909 PDI-C05 09/14/09	PDI-C06-0909 PDI-C06 09/15/09	PDI-C07-0909 PDI-C07 09/09/09	PDI-C08-0909 PDI-C08 09/15/09	PDI-C09-0909 PDI-C09 09/11/09	PDI-C10-0909 PDI-C10 09/08/09	PDI-C11-0909 PDI-C11 09/08/09	PDI-C12-0909 PDI-C12 09/08/09	PDI-C13-0909 PDI-C13 09/08/09	PDI-C14-0909 PDI-C14 09/15/09	PDI-C15-0909 PDI-C15 09/14/09	PDI-C16-0909 PDI-C16 09/14/09	PDI-C17-0909 PDI-C17 09/15/09
Additional Analyses																			
Chemical Oxygen Demand	mg/L		47.8											42.4 J				90.4	62.8
Biochemical Oxygen Demand	mg/L		5											19				29.6	2 UJ
Diesel range organics	mg/L		2.5											0.51 UJ				0.54	3.6
Oil Range Organics [C28-C40]	mg/L		0.49 U											0.51 UJ				0.52 U	0.52 U
Gasoline Range Organics	ug/L		1500											4.3 J				210	5000 U

See notes at end of table

Table 4
Pre-Design Investigation and Final Design
Area C PDI Direct Push Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PDI-C18-0909 Location: PDI-C18 Date: 09/11/09	PDI-C19-0909 PDI-C19 09/08/09	PDI-C20-0909 PDI-C20 09/15/09	PDI-C21-0909 PDI-C21 09/14/09	PDI-C22-0909 PDI-C22 09/14/09	PDI-C23-0909 PDI-C23 09/15/09	PDI-C24-0909 PDI-C24 09/15/09	PDI-C25-0909 PDI-C25 09/15/09	PDI-C25-0909 F PDI-C25 F 09/15/09	PDI-C26-0909 PDI-C26 09/11/09	PDI-C27-0909 PDI-C27 09/11/09	PDI-C27-0909 F PDI-C27 F 09/11/09	PDI-C28-0909 PDI-C28 09/14/09	PDI-C29-0909 PDI-C29 09/15/09	PDI-C30-0909 PDI-C30 09/11/09	PDI-C30-0909 F PDI-C30 F 09/11/09
VOCs																		
1,1,1-Trichloroethane	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	9.2 J		1 U	1 U		1 U	100 U	1 U	
1,1,2,2-Tetrachloroethane	ug/L	5	1 UJ	1 UJ	1 U	5 U	1 U	40 U	10 U	20 U		1 UJ	1 U		1 U	100 U	1 UJ	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,1,2-Trichloroethane	ug/L	1	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,1-Dichloroethane	ug/L	5	1 U	1 U	1 U	5 U	0.67 J	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,1-Dichloroethene	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,2,4-Trichlorobenzene	ug/L	5	2.2	1 U	1 U	5 U	0.75 J	150	19	7400		7.9	1 U		1 U	100 U	3200	
1,2-Dibromo-3-chloropropane	ug/L	0.04	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,2-Dibromoethane	ug/L	0.0006	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,2-Dichlorobenzene	ug/L	3	16	1 U	1 U	5 U	1.7	1500	110	42000		9.4	1 U		1 U	100 U	3100	
1,2-Dichloroethane	ug/L	0.6	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,2-Dichloroethene, Total	ug/L	5			2 U			80 U		40 U								
1,2-Dichloropropane	ug/L	1	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
1,3-Dichlorobenzene	ug/L	3	24	1 U	1 U	5 U	1 U	29 J	10 U	460		30	1 U		1 U	65 J	2000	
1,4-Dichlorobenzene	ug/L	3	36	1 U	1 U	5 U	1 U	420	15	7500		29	1 U		1 U	59 J	1000	
2-Butanone	ug/L	50	5 U	5 U	5 U	25 U	5 U	200 U	50 U	100 U		5 U	5 U		5 U	500 U	5 U	
2-Hexanone	ug/L	50	5 U	5 U	5 U	25 U	5 U	200 U	50 U	100 U		5 U	5 U		5 U	500 U	5 U	
4-Methyl-2-pentanone	ug/L		5 U	5 U	5 U	25 U	5 U	200 U	50 U	100 U		5 U	5 U		5 U	500 U	5 U	
Acetone	ug/L	50	4.8 J	3 J	8.4	13 J	7.8	200 U	50 U	160		8.1	5 U		27	500 U	5 U	
Benzene	ug/L	1	2.6	1 U	1 U	5 U	2.1	84	14	480		73	1 U		0.87 J	100 U	58 J	
Bromodichloromethane	ug/L	50	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Bromoform	ug/L	50	1 U	1 U	1 U	5 U	1 U	40 U	10 UJ	20 U		1 U	1 UJ		1 UJ	100 U	1 U	
Bromomethane	ug/L	5	1 U	1 U	1 UJ	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Carbon disulfide	ug/L	60	1 U	0.61 J	0.56 J	5 U	1 U	40 U	10 U	20 U		1 U	0.67 J		2.1	100 U	1 U	
Carbon Tetrachloride	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Chlorobenzene	ug/L	5	520	1 U	0.51 J	5 U	0.63 J	2300	78	130000		1600	1.6		1 U	540	8100	
Chloroethane	ug/L	5	1 U	1 U	1 UJ	5 U	1 U	40 U	10 U	20 U		1 U	1 U		0.63 J	100 U	1 U	
Chloroform	ug/L	7	1 U	1 U	1 U	5 U	1 U	40 U	10 U	9.4 J		1 U	1 U		1 U	100 U	1 U	
Chloromethane	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		0.64 J	100 U	1 U	
cis-1,2-Dichloroethene	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
cis-1,3-Dichloropropene [1]	ug/L	0.4	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Cyclohexane	ug/L		1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Dibromochloromethane	ug/L	50	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Dichlorodifluoromethane	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 UJ	20 U		1 U	1 UJ		1 UJ	100 U	1 U	
Ethylbenzene	ug/L	5	1 U	1 U	1 U	5 U	0.56 J	40 U	10 U	20 U		1 U	1 U		1 U	100 U	2 J	
Isopropylbenzene	ug/L	5	1 U	1 U	1 U	5 U	3	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1.4 J	
Methyl Acetate	ug/L		1 UJ	1 UJ	1 U	5 U	1 U	40 U	10 U	20 U		1 UJ	1 U		1 U	100 U	1 UJ	
Methyl-t-Butyl Ether (MTBE)	ug/L	10	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Methylcyclohexane	ug/L		1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Methylene Chloride	ug/L	5	1 U	1 U	1 U	2.4 J	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Styrene	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Tetrachloroethene	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Toluene	ug/L	5	1 U	1 U	0.58 J	5 U	1.1	40 U	10 U	420		0.62 J	1 U		0.83 J	100 U	1.7 J	
trans-1,2-Dichloroethene	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
trans-1,3-Dichloropropene [1]	ug/L	0.4	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Trichloroethene	ug/L	5	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Trichlorofluoromethane	ug/L	5	1 UJ	1 UJ	1 U	5 U	1 U	40 U	10 U	20 U		1 UJ	1 U		1 U	100 U	1 UJ	
Vinyl acetate	ug/L				5 U			200 U		100 U								
Vinyl chloride	ug/L	2	1 U	1 U	1 U	5 U	1 U	40 U	10 U	20 U		1 U	1 U		1 U	100 U	1 U	
Xylenes, total	ug/L	5	2 U	2 U	2 U	10 U	40	80 U	20 U	40 U		2 U	2 U		2 U	200 U	2.5 J	

See notes at end of table

Produced by: WCG 11/20/09
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Table 4
Pre-Design Investigation and Final Design
Area C PDI Direct Push Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PDI-C18-0909 Location: PDI-C18 Date: 09/11/09	PDI-C19-0909 PDI-C19 09/08/09	PDI-C20-0909 PDI-C20 09/15/09	PDI-C21-0909 PDI-C21 09/14/09	PDI-C22-0909 PDI-C22 09/14/09	PDI-C23-0909 PDI-C23 09/15/09	PDI-C24-0909 PDI-C24 09/15/09	PDI-C25-0909 PDI-C25 09/15/09	PDI-C25-0909 F PDI-C25 F 09/15/09	PDI-C26-0909 PDI-C26 09/11/09	PDI-C27-0909 PDI-C27 09/11/09	PDI-C27-0909 F PDI-C27 F 09/11/09	PDI-C28-0909 PDI-C28 09/14/09	PDI-C29-0909 PDI-C29 09/15/09	PDI-C30-0909 PDI-C30 09/11/09	PDI-C30-0909 F PDI-C30 F 09/11/09
SVOCs																		
2,2'-Oxybis(1-Chloropropane)	ug/L	5	4.1 U	4 U	3.9 UJ	4.1 UJ	21 UJ	22 UJ	4.2 UJ	200 UJ	190 UJ	3.9 U	39 U	4 U		3.8 UJ	21 U	4 U
2,4,5-Trichlorophenol	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	1.4 J
2,4,6-Trichlorophenol	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	11	150 J	120 J	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2,4-Dichlorophenol	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	9.3	810	600 J	4.9 U	49 U	5 U		4.8 U	4.2 J	1.4 J
2,4-Dimethylphenol	ug/L	1	5.1 U	5 U	4.9 U	5.2 U	26 U	6.6 J	5.3 U	250 U	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2,4-Dinitrophenol	ug/L	1	10 U	10 U	9.8 U	10 U	52 U	55 U	11 U	510 U	470 UJ	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
2,4-Dinitrotoluene	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2,6-Dinitrotoluene	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	4.1 J	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2-Chloronaphthalene	ug/L	10	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2-Chlorophenol	ug/L		1.1 J	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	140 J	150 J	2 J	49 U	5 U		4.8 U	9.9 J	2.9 J
2-Methylnaphthalene	ug/L		5.1 U	5 U	2.2 J	5.2 U	26 U	15 J	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2-Methylphenol	ug/L		5.1 U	5 U	1 J	5.2 U	26 U	7 J	0.73 J	250 U	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	5 U
2-Nitroaniline	ug/L	5	10 U	10 U	9.8 U	10 U	52 U	55 U	11 U	510 U	470 U	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
2-Nitrophenol	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	5 U
3,3'-Dichlorobenzidine	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
3-Nitroaniline	ug/L	5	10 U	10 U	9.8 U	10 U	52 U	55 U	11 U	510 U	470 U	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
4,6-Dinitro-2-methylphenol	ug/L		10 U	10 U	9.8 U	10 U	52 U	55 U	11 U	510 U	470 UJ	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
4-Bromophenyl phenyl ether	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
4-Chloro-3-methylphenol	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	5 U
4-Chloroaniline	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
4-Chlorophenyl phenyl ether	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
4-Methylphenol	ug/L		10 U	10 U	9.8 U	10 U	52 U	55 U	11 U	510 U	470 UJ	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
4-Nitroaniline	ug/L	5	10 U	10 U	9.8 U	10 U	52 U	55 U	1.6 J	510 U	470 U	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
4-Nitrophenol	ug/L		10 U	10 U	9.8 UJ	10 U	52 UJ	55 UJ	11 UJ	510 UJ	470 UJ	9.8 U	98 U	9.9 U		9.5 UJ	52 U	10 U
Acenaphthene	ug/L	20	5.1 U	5 U	3.3 J	5.2 U	26 U	19 J	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	3 J	5 U
Acenaphthylene	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Acetophenone	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Aniline	ug/L	5	90	10 U	9.8 U	10 U	52 U	48 J	31	1400	1600	9.8 U	98 U	9.9 U		22	52 U	10 U
Anthracene	ug/L	50	5.1 U	5 U	4.9 U	5.2 U	26 U	1.9 J	0.22 J	250 U	240 U	0.48 J	49 U	5 U		4.8 U	1.4 J	5 U
Atrazine	ug/L	7.5	5.1 UJ	5 UJ	4.9 UJ	5.2 UJ	26 UJ	27 UJ	5.3 UJ	250 UJ	240 UJ	4.9 UJ	49 UJ	5 UJ		4.8 UJ	26 UJ	5 UJ
Benzaldehyde	ug/L		5.1 U	5 U	4.9 U	5.2 J	26 U	27 U	1.3 J	250 U	240 U	0.59 J	49 U	5 U		0.81 J	26 U	5 U
Benzo(a)anthracene	ug/L	0.002	5.1 U	0.68 J	4.9 U	5.2 U	2.1 J	2.3 J	0.4 J	250 U	240 U	0.76 J	49 U	5 U		4.8 U	2.2 J	0.4 J
Benzo(a)pyrene [2]	ug/L	0	5.1 U	1.2 J	4.9 U	5.2 U	2 J	1.7 J	0.33 J	250 U	240 U	0.49 J	49 U	5 U		0.24 J	2.1 J	5 U
Benzo(b)fluoranthene	ug/L	0.002	5.1 U	0.79 J	4.9 U	5.2 U	2 J	27 U	0.37 J	250 U	240 U	0.53 J	49 U	5 U		0.22 J	1.9 J	0.33 J
Benzo(ghi)perylene	ug/L		5.1 U	1.6 J	4.9 U	5.2 U	1.3 J	27 U	0.26 J	250 U	240 U	4.9 U	49 U	5 U		4.8 U	2.1 J	5 U
Benzo(k)fluoranthene	ug/L	0.002	5.1 U	1.2 J	4.9 U	5.2 U	1.2 J	27 U	0.35 J	250 U	240 U	0.39 J	49 U	5 U		0.27 J	1.3 J	0.29 J
Biphenyl	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Bis(2-chloroethoxy)methane	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Bis(2-chloroethyl)ether	ug/L	1	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Bis(2-ethylhexyl) phthalate	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Butyl benzyl phthalate	ug/L	50	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Caprolactam	ug/L		5.1 UJ	5 UJ	4.9 UJ	5.2 UJ	26 UJ	27 UJ	5.3 UJ	250 UJ	240 UJ	4.9 UJ	49 UJ	5 UJ		4.8 UJ	26 UJ	5 UJ
Carbazole	ug/L		5.1 U	5 U	3.1 J	5.2 U	26 U	20 J	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	1 J	5 U
Chrysene	ug/L	0.002	5.1 U	0.61 J	4.9 U	5.2 U	1.6 J	1.7 J	0.29 J	250 U	240 U	0.51 J	49 U	5 U		4.8 U	1.8 J	0.37 J
Di-n-butyl phthalate	ug/L	50	0.34 J	0.31 J	4.9 U	5.2 U	26 U	27 U	0.72 J	250 U	240 U	0.49 J	49 U	5 U		0.44 J	26 U	0.61 J
Di-n-octyl phthalate	ug/L	50	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Dibenzo(a,h)anthracene	ug/L		5.1 U	2.1 J	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	2.1 J	0.43 J
Dibenzofuran	ug/L		10 U	10 U	9.8 U	10 U	52 U	55 U	11 U	510 U	470 U	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
Diethyl phthalate	ug/L	50	0.89 J	5.9	12 U	5.2 U	10 U	3.4 U	8.2 U	64 U	72 U	3 J	49 U	5.6		53	26 U	1.7 J
Dimethyl phthalate	ug/L	50	5.1 U	1.2 J	2.1 J	5.2 U	26 U	27 U	5.3 U	250 U	240 U	0.52 J	49 U	5 U		4.8 U	26 U	5 U
Fluoranthene	ug/L	50	5.1 U	5 U	0.39 J	5.2 U	1.7 J	3.9 J	5.3 U	250 U	240 U	1.1 J	49 U	5 U		4.8 U	3.6 J	5 U
Fluorene	ug/L	50	5.1 U	5 U	1.3 J	5.2 U	26 U	8.4 J	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Hexachlorobenzene	ug/L	0.04	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Hexachlorobutadiene	ug/L	0.5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Hexachlorocyclopentadiene	ug/L	5	5.1 U	5 U	4.9 UJ	5.2 U	26 U	27 UJ	5.3 U	250 UJ	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Hexachloroethane	ug/L	5	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Indeno(1,2,3-cd)pyrene	ug/L	0.002	5.1 U	2 J	4.9 U	5.2 U	1.2 J	27 U	0.27 J	250 U	240 U	0.38 J	49 U	5 U		4.8 U	2.4 J	0.45 J
Isophorone	ug/L	50	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
N-Nitrosodi-n-propylamine	ug/L		5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
N-Nitrosodiphenylamine	ug/L	50	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	0.45	250 U	240 U	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Naphthalene	ug/L	10	5.1 U	5 U	23	5.2 U	26 U	160	0.55 J	250 U	330	1 J	49 U	5 U		0.27 J	7 J	5.8
Nitrobenzene	ug/L	0.4	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	1.8 J	4900	3800	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Pentachlorophenol [3]	ug/L	1	10 U	10 U	9.8 U	10 U	52 U	55 U	21	510 U	470 UJ	9.8 U	98 U	9.9 U		9.5 U	52 U	10 U
Phenanthrene	ug/L	50	5.1 U	5 U	0.76 J	5.2 U	2.2 J	6 J	0.31 J	250 U	240 U	0.62 J	49 U	5 U		4.8 U	2.2 J	5 U
Phenol [3]	ug/L	1	5.1 U	5 U	4.9 U	5.2 U	26 U	27 U	5.3 U	90 J	240 UJ	4.9 U	49 U	5 U		4.8 U	26 U	5 U
Pyrene	ug/L	50	5.1 U	0.24 J	4.9 U	5.2 U	3.2 J	3.4 J	0.38 J	250 U	240 U	0.84 J	49 U	5 U		4.8 U	3.7 J	5 U

See notes at end of table

Produced by: WCG 11/20/09
Checked by: TLC 11/23/09

Table 4
Pre-Design Investigation and Final Design
Area C PDI Direct Push Groundwater Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [4]	NYSDEC Values [5]	Sample ID: PDI-C18-0909 Location: PDI-C18 Date: 09/11/09	PDI-C19-0909 PDI-C19 09/08/09	PDI-C20-0909 PDI-C20 09/15/09	PDI-C21-0909 PDI-C21 09/14/09	PDI-C22-0909 PDI-C22 09/14/09	PDI-C23-0909 PDI-C23 09/15/09	PDI-C24-0909 PDI-C24 09/15/09	PDI-C25-0909 PDI-C25 09/15/09	PDI-C25-0909 F PDI-C25 F 09/15/09	PDI-C26-0909 PDI-C26 09/11/09	PDI-C27-0909 PDI-C27 09/11/09	PDI-C27-0909 F PDI-C27 F 09/11/09	PDI-C28-0909 PDI-C28 09/14/09	PDI-C29-0909 PDI-C29 09/15/09	PDI-C30-0909 PDI-C30 09/11/09	PDI-C30-0909 F PDI-C30 F 09/11/09
Additional Analyses																		
Chemical Oxygen Demand	mg/L						48.2			436							44.8 J	
Biochemical Oxygen Demand	mg/L						7.7			61.2							9.5	
Diesel range organics	mg/L						1.4			37							4.4	
Oil Range Organics [C28-C40]	mg/L						0.52 U			5.3 U							0.5 U	
Gasoline Range Organics	ug/L						90			210000							12000	

Notes:
(1) NYSDEC value of 0.4 ug/L is the standard for the sum of these substances
(2) The NYSDEC standard for benzo(a)pyrene is actually "ND" (non-detect), 0 is used for table compatibility
(3) NYSDEC value of 1 ug/L is the standard for the sum of these substances
(4) Units: ug/L = micrograms per liter; mg/L = milligrams per liter
(5) New York State Department of Environmental Conservation, Technical and Operational Guidance Series
Ambient Water Quality Standards, Class GA, Table 1
Ambient Water Quality Guidance Values, Class GA, Table 1
Qualifiers: U = not detected; J = estimated value; UJ = non-detect reported, reporting limit qualified as estimated
Shaded value = exceedance of standard or guidance value
F = Filtered Lab Sample Results

Produced by: WCG 11/20/09
Checked by: TLC 11/23/09

Table 5
Pre-Design Investigation and Final Design
Area C Depth Discrete Soil Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [1]	NYSDEC Values [2] Commercial Use	NYSDEC Values [2] Protection of GW	Sample ID / Date / Depth DDC-01-0406 03/18/10 4-6'	DDC-01-0608 03/18/10 6-8'	DDC-02-0204 03/18/10 2-4'	DDC-02-0406 03/18/10 4-6'	DDC-02-0810 03/18/10 8-10'	DDC-03-0305 03/18/10 3-5'	DDC-03-0507 03/18/10 5-7'	DDC-03-1012 03/18/10 10-12'	DDC-04-0305 03/18/10 3-5'	DDC-04-0507 03/18/10 5-7'	DDC-05-0406 03/18/10 4-6'	DDC-05-0608 03/18/10 6-8'	DDC-06-0204 03/19/10 2-4'	DDC-06-0406 03/19/10 4-6'	DDC-07-0406 08/06/10 4-6'
VOCs																		
1,1,1-TRICHLOROETHANE	ug/kg	500,000	680	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,1,2,2-TETRACHLOROETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,1,2-TRICHLOROETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,1,2-TRICHLOROTRIFLUOROETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,1-DICHLOROETHANE	ug/kg	240,000	270	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,1-DICHLOROETHENE	ug/kg	500,000	330	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,2,4-TRICHLOROBENZENE	ug/kg			21000	23000	470 U	410 U	58000	7300	32000	1300	12000	3800 J	1700000	1100	39	16	400000
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,2-DIBROMOETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,2-DICHLOROBENZENE	ug/kg	500,000	1,100	**56000**	**16000**	470 U	**2900**	**80000**	**73000**	270 J	1000 U	**2800**	**29000**	26000 U	34 J	6.4 U	**19000**	**280000**
1,2-DICHLOROETHANE	ug/kg	30,000	20	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,2-DICHLOROPROPANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
1,3-DICHLOROBENZENE	ug/kg	280,000	2,400	470 U	470 U	470 U	400 J	1000 J	800 J	380 J	1000 U	280 U	5200 U	26000 U	81	6.4 U	56	**4000**
1,4-DICHLOROBENZENE	ug/kg	130,000	1,800	**15000**	**4500**	470 U	**6400**	**16000**	**9500**	510 U	1000 U	330	**6600**	26000 U	40 J	9.3	33	**52000**
2-BUTANONE	ug/kg	500,000	120	**420** J	2300 U	2300 U	2100 U	7300 U	7500 U	2500 U	5200 U	1400 U	26000 U	130000 U	270 U	32 U	26 U	2300 U
2-HEXANONE	ug/kg			2300 U	2300 U	2300 U	2100 U	7300 U	7500 U	2500 U	5200 U	1400 U	26000 U	130000 U	270 U	32 U	26 U	2300 U
4-METHYL-2-PENTANONE	ug/kg			460 J	2300 U	2300 U	2100 U	7300 U	7500 U	2500 U	5200 U	1400 U	26000 U	130000 U	270 U	32 U	26 U	2300 U
ACETONE	ug/kg	500,000	50	2300 U	2300 U	2300 U	2100 U	7300 U	7500 U	2500 U	5200 U	1400 U	26000 U	130000 U	270 U	3.9 J	14 J	2300 U
BENZENE	ug/kg	44,000	60	**2300**	470 U	**29000**	410 U	**8600**	1500 U	510 U	1000 U	280 U	5200 U	26000 U	**300**	17	11	460 U
BROMODICHLOROMETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
BROMOFORM	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
BROMOMETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CARBON DISULFIDE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	2.6 J	460 U
CARBON TETRACHLORIDE	ug/kg	22,000	760	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CHLOROBENZENE	ug/kg	500,000	1,100	**20000**	**16000**	470 U	**18000**	**13000**	**5100**	**2000**	**67000**	**8200**	**200000**	26000 U	**2200**	6.4 U	78	**150000**
CHLORODIBROMOMETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CHLOROETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CHLOROFORM	ug/kg	350,000	370	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CHLOROMETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CIS-1,2-DICHLOROETHENE	ug/kg	500,000	250	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CIS-1,3-DICHLOROPROPENE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
CYCLOHEXANE	ug/kg			5900	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
DICHLORODIFLUOROMETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
ETHYLBENZENE	ug/kg	390,000	1,000	**2800**	470 U	360 J	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	47 J	6.4 U	24	460 U
ISOPROPYLBENZENE	ug/kg			1200	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	27	460 U
METHYL ACETATE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	45 J	6.4 U	5.2 U	460 U
METHYL TERT-BUTYL ETHER	ug/kg	500,000	930	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
METHYLCYCLOHEXANE	ug/kg			16000	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	2.4 J	460 U
METHYLENE CHLORIDE	ug/kg	500,000	50	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
STYRENE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
TETRACHLOROETHENE	ug/kg	150,000	1,300	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
TOLUENE	ug/kg	500,000	700	**9400**	470 U	470	410 U	**1000** J	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
TRANS-1,2-DICHLOROETHENE	ug/kg	500,000	190	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
TRANS-1,3-DICHLOROPROPENE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
TRICHLOROETHENE	ug/kg	200,000	470	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
TRICHLOROFLUOROMETHANE	ug/kg			470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
VINYL CHLORIDE	ug/kg	13,000	20	470 U	470 U	470 U	410 U	1500 U	1500 U	510 U	1000 U	280 U	5200 U	26000 U	53 U	6.4 U	5.2 U	460 U
XYLENES, TOTAL	ug/kg	500,000	1,600	**16000**	930 U	**5700**	830 U	**11000**	3000 U	1000 U	2100 U	560 U	10000 U	52000 U	130	7.5 J	10	920 U
Additional Analyses																		
TOTAL ORGANIC CARBON	mg/kg			64600	10300	158000	7120	6430	32200	18700	4980	58700	100000	22600	8490	50600	24400	

Notes:
(1) Units: ug/kg = micrograms per kilogram; mg/kg = milligrams per kilogram
(2) New York State Department of Environmental Conservation, Restricted Use Soil Cleanup Objectives, Commercial Use and Protection of Groundwater, Table 375-6.8(b)
Qualifiers: U = not detected; J = estimated value
Shaded value = exceedance of Restricted Use Soil Cleanup Objective

Produced by: WCG 05/06/10
Checked by: NCF 05/07/10

Table 6
Pre-Design Investigation and Final Design
Area C Composite Test Pit Soil Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [1]	NYSDEC Values [2] Commercial Use	NYSDEC Values [2] Protection of GW	Sample ID: TP-C1 Date: 08/05/10 Depth: 3-12'	TP-C2 08/07/10 4-12'	TP-C1-0305 08/05/10 3-5'	TP-C1-0507 08/05/10 5-7'	TP-C1-0709 08/05/10 7-9'	TP-C1-0911 08/05/10 9-11'	TP-C2-0305 08/06/10 3-5'	TP-C2-0507 08/06/10 5-7'	TP-C2-0709 08/06/10 7-9'	TP-C2-0911 08/06/10 9-11'
VOCs													
1,1,1-Trichloroethane	ug/kg	500,000	680	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,1,2,2-Tetrachloroethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,1,2-Trichloroethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,1-Dichloroethane	ug/kg	240,000	270	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,1-Dichloroethene	ug/kg	500,000	330	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,2,4-Trichlorobenzene	ug/kg			92,700	NA	5,300	2,300	140,000	420,000	15,000	260,000	500,000	28,000,000
1,2-Dibromo-3-chloropropane	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,2-Dibromoethane	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,2-Dichlorobenzene	ug/kg	500,000	1,100	**70,100**	32 U	**12,000**	**31,000**	**150,000**	**690,000**	510	130	2,200 U	630
1,2-Dichloroethane	ug/kg	30,000	20	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,2-Dichloropropane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
1,3-Dichlorobenzene	ug/kg	280,000	2,400	7,580 U	177	360	**3,700**	1,400	**11,000**	**48,000**	**52,000**	2,200 U	460 U
1,4-Dichlorobenzene	ug/kg	130,000	1,800	**13,300**	21.7	**2,500**	**9,000**	**36,000**	**150,000**	**19,000**	**4,000**	2,200 U	**3,100**
2-Butanone (MEK)	ug/kg	500,000	120	15,200 U	64.1 U	280 U	1,700 U	5,400 U	6,700 U	290 U	240 U	11,000 U	2,300 U
2-Chloroethyl vinyl ether	ug/kg			15,200 U	64.1 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	ug/kg			7,580 U	32 U	280 U	1,700 U	5,400 U	6,700 U	290 U	240 U	11,000 U	2,300 U
4-Methyl-2-pentanone (MIBK)	ug/kg			7,580 U	32 U	280 U	1,700 U	5,400 U	6,700 U	290 U	240 U	11,000 U	2,300 U
Acetone	ug/kg	500,000	50	15,200 U	**123**	280 U	1,700 U	5,400 U	6,700 U	290 U	240 U	11,000 U	2,300 U
Benzene	ug/kg	44,000	60	3,030 U	12.8 U	31 J	350 U	1,100 U	**880** J	32 J	49 U	2,200 U	460 U
Bromodichloromethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Bromoform	ug/kg			7,580 U	32 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Bromomethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Carbon disulfide	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Carbon Tetrachloride	ug/kg	22,000	760	7,580 U	32 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Chlorobenzene	ug/kg	500,000	1,100	**23,500**	40.1	**5,800**	**20,000**	**92,000**	**340,000**	**7,900**	**1,500**	2,200 U	**7,200**
Chloroethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Chloroform	ug/kg	350,000	370	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Chloromethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
cis-1,2-Dichloroethene	ug/kg	500,000	250	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
cis-1,3-Dichloropropene	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Cyclohexane	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Dibromochloromethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Dichlorodifluoromethane	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Ethylbenzene	ug/kg	390,000	1,000	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Isopropylbenzene	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Methyl Acetate	ug/kg			NA	NA	57 U	350 U	1,100 U	1,300 U	160	49 U	2,200 U	460 U
Methyl tert-Butyl Ether (MTBE)	ug/kg	500,000	930	NA	NA	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Methylcyclohexane	ug/kg			NA	NA	54 J	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Methylene Chloride	ug/kg	500,000	50	7,580 U	32 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Styrene	ug/kg			7,580 U	32 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Tetrachloroethene	ug/kg	150,000	1,300	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Toluene	ug/kg	500,000	700	3,030 U	12.8 U	110	350 U	1,100 U	**710** J	58 U	49 U	2,200 U	460 U
trans-1,2-Dichloroethene	ug/kg	500,000	190	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
trans-1,3-Dichloropropene	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Trichloroethene	ug/kg	200,000	470	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Trichlorofluoromethane	ug/kg			3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Vinyl acetate	ug/kg			7,580 U	32 U	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	ug/kg	13,000	20	3,030 U	12.8 U	57 U	350 U	1,100 U	1,300 U	58 U	49 U	2,200 U	460 U
Xylenes, total	ug/kg	500,000	1,600	3,030 U	12.8 U	33 J	700 U	2,200 U	2,700 U	120 U	98 U	4,300 U	930 U

See notes at end of table

Produced by: NCF 10/01/10
Checked by: GSO 10/04/10

Table 6
Pre-Design Investigation and Final Design
Area C Composite Test Pit Soil Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [1]	NYSDEC Values [2] Commercial Use	NYSDEC Values [2] Protection of GW	Sample ID: TP-C1 Date: 08/05/10 Depth: 3-12'	TP-C2 08/07/10 4-12'	TP-C1-0305 08/05/10 3-5'	TP-C1-0507 08/05/10 5-7'	TP-C1-0709 08/05/10 7-9'	TP-C1-0911 08/05/10 9-11'	TP-C2-0305 08/06/10 3-5'	TP-C2-0507 08/06/10 5-7'	TP-C2-0709 08/06/10 7-9'	TP-C2-0911 08/06/10 9-11'
SVOCs													
2,2'-Oxybis(1-Chloropropane)	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2,4,5-Trichlorophenol	ug/kg			17,800 U	NA	1100 U	210 U	180 U	1,100 U	220 U	280	290	100 J
2,4,6-Trichlorophenol	ug/kg			7,110 U	NA	150 J	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2,4-Dichlorophenol	ug/kg			7,110 U	NA	680 J	210 U	180 U	1,100 U	33 J	200 J	47 J	32 J
2,4-Dimethylphenol	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2,4-Dinitrophenol	ug/kg			17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
2,4-Dinitrotoluene	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2,6-Dichlorophenol	ug/kg			7,110 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2-Chloronaphthalene	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2-Chlorophenol	ug/kg			7,110 U	NA	1100 U	210 U	48 J	1,100 U	220 U	210 U	11 J	220 U
2-Methylnaphthalene	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	9 J	210 U	200 U	220 U
2-Methylphenol	ug/kg	500,000	330	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
2-Nitroaniline	ug/kg			17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
2-Nitrophenol	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
3,3'-Dichlorobenzidine	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
3-Nitroaniline	ug/kg			17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
4,6-Dinitro-2-methylphenol	ug/kg			17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
4-Bromophenyl phenyl ether	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
4-Chloro-3-methylphenol	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
4-Chloroaniline	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
4-Chlorophenyl phenyl ether	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
4-Methylphenol	ug/kg	500,000	330	7,110 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
4-Nitroaniline	ug/kg			17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
4-Nitrophenol	ug/kg			17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
Acenaphthene	ug/kg	500,000	98,000	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Acenaphthylene	ug/kg	500,000	107,000	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Acetophenone	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	220 U	210 UJ	200 UJ	220 UJ
Aniline	ug/kg			7,110 U	NA	2,200 U	400 U	280 J	1,100 U	220 U	210 U	200 U	220 U
Anthracene	ug/kg	500,000	1,000,000	7,110 U	NA	1100 U	210 U	180 U	1,100 U	19 J	210 U	200 U	220 U
Atrazine	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	220 U	210 UJ	200 UJ	220 UJ
Benzaldehyde	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Benzidine	ug/kg			17,800 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	ug/kg			17,800 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/kg	5,600	1,000	7,110 U	NA	190 J	210 U	15 J	1,100 U	220 U	210 U	9.1 J	19 J
Benzo(a)pyrene	ug/kg	1,000	22,000	7,110 U	NA	140 J	210 U	180 U	1,100 U	220 U	210 U	200 U	20 J
Benzo(b)fluoranthene	ug/kg	5,600	1,700	7,110 U	NA	180 J	210 U	12 J	1,100 U	220 U	210 U	200 U	19 J
Benzo(ghi)perylene	ug/kg	500,000	1,000,000	7,110 U	NA	93 J	210 U	180 U	1,100 U	220 U	210 U	200 U	20 J
Benzo(k)fluoranthene	ug/kg	56,000	1,700	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	17 J
Benzoic acid	ug/kg			17,800 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	15 J	210 U	200 U	220 U
Bis(2-chloroethoxy)methane	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Bis(2-chloroethyl)ether	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Bis(2-chloroisopropyl)ether	ug/kg			7,110 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Butyl benzyl phthalate	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Caprolactam	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	220 U	210 UJ	200 UJ	220 UJ
Carbazole	ug/kg			NA	NA	1100 U	210 U	180 U	1,100 U	54 J	210 U	200 U	220 U
Chrysene	ug/kg	56,000	1,000	7,110 U	NA	200 J	210 U	15 J	1,100 U	9.8 J	210 U	200 U	34 J
Dibenzo(a,h)anthracene	ug/kg	560	1,000,000	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Dibenzofuran	ug/kg	350,000	210,000	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Diethyl phthalate	ug/kg			7,110 U	NA	1100 U	210 U	12 J	1,100 U	220 U	210 U	200 U	220 U
Dimethyl phthalate	ug/kg			17,800 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Di-n-butyl phthalate	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Di-n-octyl phthalate	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Fluoranthene	ug/kg	500,000	1,000,000	7,110 U	NA	370 J	210 U	28 J	1,100 U	11 J	210 U	200 U	28 J
Fluorene	ug/kg	500,000	386,000	7,110 U	NA	1100 U	210 U	180 U	1,100 U	11 J	210 U	200 U	220 U
Hexachlorobenzene	ug/kg	6,000	3,200	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Hexachlorobutadiene	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Hexachlorocyclopentadiene	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Hexachloroethane	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Indeno(1,2,3-cd)pyrene	ug/kg	5,600	8,200	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	13 J
Isophorone	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Naphthalene	ug/kg	500,000	12,000	7,110 U	NA	390 J	210 U	180 U	1,100 U	30 J	9.6 J	11 J	27 J
Nitrobenzene	ug/kg			7,110 U	NA	810 J	210 U	400	2,200	220 U	210 U	200 U	220 U
N-Nitrosodimethylamine	ug/kg			7,110 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodi-n-propylamine	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
N-Nitrosodiphenylamine	ug/kg			7,110 U	NA	1100 U	210 U	180 U	1,100 U	12 J	210 U	200 U	220 U
Pentachlorophenol	ug/kg	6,700	800	17,800 U	NA	2,200 U	400 U	350 U	2,100 U	420 U	410 U	390 U	420 U
Phenanthrene	ug/kg	500,000	1,000,000	7,110 U	NA	370 J	210 U	28 J	1,100 U	33 J	210 U	200 U	16 J
Phenol	ug/kg	500,000	330	7,110 U	NA	1100 U	210 U	180 U	1,100 U	220 U	210 U	200 U	220 U
Pyrene	ug/kg	500,000	1,000,000	7,110 U	NA	270 J	210 U	19 J	1,100 U	10 J	210 U	200 U	27 J

See notes at end of table

Produced by: NCF 10/01/10
Checked by: GSO 10/04/10

Table 6
Pre-Design Investigation and Final Design
Area C Composite Test Pit Soil Analytical Data
Former Buffalo Color Facility, Buffalo, NY
Project #: 3410090701

Parameter	Units [1]	NYSDEC Values [2] Commercial Use	NYSDEC Values [2] Protection of GW	Sample ID: TP-C1 Date: 08/05/10 Depth: 3-12'	TP-C2 08/07/10 4-12'	TP-C1-0305 08/05/10 3-5'	TP-C1-0507 08/05/10 5-7'	TP-C1-0709 08/05/10 7-9'	TP-C1-0911 08/05/10 9-11'	TP-C2-0305 08/06/10 3-5'	TP-C2-0507 08/06/10 5-7'	TP-C2-0709 08/06/10 7-9'	TP-C2-0911 08/06/10 9-11'
PCBs													
Aroclor 1016	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	1	25	0.372 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA

Parameter	Units [1]	Regulatory Limits	Sample ID: TP-C1 Date: 08/05/10 Depth: 3-12'	TP-C2 08/07/10 4-12'	TP-C1-0305 08/05/10 3-5'	TP-C1-0507 08/05/10 5-7'	TP-C1-0709 08/05/10 7-9'	TP-C1-0911 08/05/10 9-11'	TP-C2-0305 08/06/10 3-5'	TP-C2-0507 08/06/10 5-7'	TP-C2-0709 08/06/10 7-9'	TP-C2-0911 08/06/10 9-11'
TCLP VOCs												
1,1-Dichloroethene	ug/l	700	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	ug/l	500	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/l	7,500	835	40 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ug/l	200,000	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ug/l	500	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	ug/l	500	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	ug/l	100,000	2,740	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	ug/l	6,000	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	ug/l	700	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	ug/l	500	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ug/l	200	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP SVOCs												
2,4-Dinitrotoluene	ug/l	130	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/l	400,000	100 U	100 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	ug/l	2,000	67.8	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Cresols (as m,p,o-Cresol)	ug/l	200,000	80 U	80 U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	ug/l	130	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	ug/l	130	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	ug/l	3,000	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	ug/l	2,000	329	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Pyridine	ug/l	5,000	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	ug/l	100,000	100 U	100 U	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Metals												
Arsenic	mg/l	5	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/l	100	NA	2.01	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/l	1	NA	0.025 U	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	5	NA	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/l	5	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/l	0	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/l	1	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/l	5	NA	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
(1) Units: ug/L = micrograms per liter; ug/kg = micrograms per kilogram; mg/kg = milligrams per kilogram
(2) New York State Department of Environmental Conservation, Restricted Use Soil Cleanup Objectives, Commercial Use and Protection of Groundwater, Table 375-6.8(b)
(3) NA - not analyzed for parameter
Qualifiers: U = not detected; J = estimated value; E = exceeded instrument calibration range, estimated value
Shaded value = exceedance of Restricted Use Soil Cleanup Objective

Produced by: NCF 10/01/10
Checked by: GSO 10/04/10

APPENDIX A (CD)

2008 GROUNDWATER ANALYTICAL REPORTS

APPENDIX B

2009 AREA C PDI DIRECT PUSH AND GEOTECHNICAL BORING LOGS

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C01**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044648.105	**Total Depth:**	8 feet		
Easting:	1078790.93	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		50	Concrete		Water appears Green
2					Brown, Wet, CLAY and SAND, trace brick		
3					Brown, Wet, CLAY and GRAVEL	FILL	
4							
5				80	Black, Wet, GRAVEL, trace sand, trace wood Sheen observed		
6							
7		38.3			Grey, Wet, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C02**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044724.29	**Total Depth:**	8 feet		
Easting:	1078706.721	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Light Grey and Brown, Dry, Angular GRAVEL, trace sand		
2							
3					Dark Brown, Moist, SAND and GRAVEL, trace wood, trace coal	FILL	
4							
5		0		80			
6					Brown and Grey, Wet, firm CLAY		
7						CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
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MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C03**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044791.373	**Total Depth:**	8 feet		
Easting:	1078653.384	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		75	Black and Brown and Grey, Silty SAND, some fine GRAVEL, some Coal fines, trace brick	FILL	
2							
3							
4					Black, Wet, GRAVEL and SAND		
5		0		50			
6					Brown and Grey, Wet, firm CLAY	CL	
7							
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
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MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C04**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/14/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044582.597	**Total Depth:**	12 feet		
Easting:	1078826.55	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Brown, Moist, medium SAND	FILL	
2							
3					Brown, Moist, CLAY and GRAVEL		
4					Brown, Moist, coarse SAND, trace gravel	SW	
5		0		80			
6					Brown some Black, Wet, Silty CLAY, some GRAVEL		
7					Light Grey Siltstone 6 to 6.5 feet		
8					Brown, Moist, firm CLAY		
9		0		100		CL	
10							
11							
12							
13					Bottom of Boring at 12 feet		
14							
15							
16							
17							
18							
19							
20							

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MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C05**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/14/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044606.475	**Total Depth:**	12 feet		
Easting:	1078830.72	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Concrete Dark Brown and Black, Moist, GRAVEL and coarse SAND		
2							
3							
4					Weathered Concrete Encountered Brown, Wet, SAND and CLAY and GRAVEL, trace brick	FILL	
5		0		50			
6							
7							
8					Brown, Wet, CLAY and GRAVEL		
9		0		20			
10						CL	
11							
12							
13					Bottom of Boring at 12 feet		
14							
15							
16							
17							
18							
19							
20							

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MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C06**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044655.71	**Total Depth:**	8 feet		
Easting:	1078786.114	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Concrete		
2					Brown, Wet, SAND and fine GRAVEL		
3					Brown, Wet, CLAY	FILL	
4							
5				70	Brown and Purple, Wet, SAND and fine GRAVEL		
6					Brown and Grey, Wet, firm CLAY		
7		10.8				CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C07**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044689.063	**Total Depth:**	12 feet		
Easting:	1078771.248	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		50	Brown, Dry, SILT and SAND Concrete Dark Brown, Moist, SAND and fine GRAVEL	FILL	
2							
3							
4					Black with Dark Purple, Wet, GRAVEL, trace sand		
5		0		90	Black, Wet, SAND, some Gravel	SW	
6							
7							
8							
9		0		100	Brown, Moist, firm CLAY	CL	
10							
11							
12							
13					Bottom of Boring at 12 feet		
14							
15							
16							
17							
18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C08**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044731.33	**Total Depth:**	12 feet		
Easting:	1078755.146	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				50	Concrete and Angular GRAVEL		
2						FILL	
3					Dark Brown, Wet, SAND and fine GRAVEL		
4		0.3					
5				30	Black some Brown, Wet, CLAY and fine SAND		
6						SC	
7		2.8					
8					Slight purple color		Wood in bottom of Sampler
9				100	Brown and Grey, Wet, firm CLAY		
10						CL	
11							
12		1.8					
13					Bottom of Boring at 12 feet		
14							
15							
16							
17							
18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C09**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044779.096	**Total Depth:**	8 feet		
Easting:	1078727.738	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		80	Brown, Dry, medium GRAVEL, some SAND, trace wood		
2							
3					Black, Moist, SAND and GRAVEL	FILL	
4							
5		0		100	Becomes Wet		
6							
7					Brown and Grey, Wet, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C10**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044829.703	**Total Depth:**	8 feet		
Easting:	1078698.407	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		70	Brown, Dry, SAND, some GRAVEL		
2					Black, Moist, SAND and fine GRAVEL, some Coal and Coal fines	FILL	
3							
4					Black with Dark Purple, Wet, SAND and fine GRAVEL, some Coal and		
5		0		90	Coal fines		
6					Brown and Grey, Wet, firm CLAY		
7						CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
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18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C11**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044863.289	**Total Depth:**	8 feet		
Easting:	1078673.712	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		80	Brown, Dry, SAND and GRAVEL		
2					Brown and Red and Black, Moist, SAND and GRAVEL, trace brick, trace coal fines	FILL	
3							
4					Black, Wet, SAND and GRAVEL, trace coal fines		
5		0		90	Purple Colored water encountered		
6					Brown and Grey, Moist, firm CLAY	CL	
7							
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C12**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044912.928	**Total Depth:**	12 feet		
Easting:	1078662.249	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		80	Brown, Dry, SAND and GRAVEL		
2					Brown and Black, Moist, SAND, some Coal, trace brick		
3						FILL	
4					Black, Wet, fine GRAVEL, some SAND		
5		0		10	Black, Wet, CLAY, trace wood		Piece of Wood caught in end of sampler.
6							
7							
8							
9		0		80	Brown trace Grey, Moist, firm CLAY	CL	
10							
11							
12							
13					Bottom of Boring at 12 feet		
14							
15							
16							
17							
18							
19							
20							

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MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C13**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044956.199	**Total Depth:**	8 feet		
Easting:	1078649.053	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		70	Concrete Grey and Black some Red, Moist, SAND, some GRAVEL, trace coal and coal fines	FILL	
2							
3							
4							
5		0		80			
6					Brown and Grey, Wet, firm CLAY		
7					Turns Moist	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C14**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/14/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044587.009	**Total Depth:**	8 feet		
Easting:	1078938.342	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Brown, Moist, SAND and GRAVEL, trace foundry sand, trace brick	FILL	
2							
3							
4					Black, Wet, medium SAND	SW	
5		0		80	Black, Wet, medium SAND, trace gravel		
6					Brown and Grey, Wet, firm CLAY	CL	
7							
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C15**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044624.08	**Total Depth:**	8 feet		
Easting:	1078867.561	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		50	Brown, Moist, GRAVEL and SAND, trace foundry sand		
2							
3					Black and Purple, Wet, SAND and fine GRAVEL, trace wood	FILL	
4							
5		0		100	Black and Purple, Wet, SAND, trace gravel, trace wood, trace foundry sand		
6					Grey and Brown, Wet, firm CLAY		
7						CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C16**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/14/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044724.959	**Total Depth:**	8 feet		
Easting:	1078819.021	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Black, Moist, SAND and fine GRAVEL		
2							
3						FILL	
4					Becomes Wet at 3.5 feet		
5		0		50	Black, Wet, coarse SAND and fine GRAVEL, trace foundry sand, trace wood		
6							
7					Black, Wet, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C17**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044843.63	**Total Depth:**	8 feet		
Easting:	1078745.067	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		40	Concrete		
2					Black, Wet, GRAVEL and coarse SAND	FILL	
3							
4							
5		0		100			
6					Black, Wet, firm CLAY		
7					Brown and Grey, Moist, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C18**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044928.86	**Total Depth:**	8 feet		
Easting:	1078716.658	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		70	Brown, Dry, SAND and GRAVEL	FILL	
2							
3					Black, Wet, CLAY and GRAVEL, trace wood		
4					Black, Wet, firm CLAY	CL	
5		0		0			
6							
7							
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C19**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/8/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/8/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1045019.254	**Total Depth:**	8 feet		
Easting:	1078686.553	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		80	Brown, Dry, SAND and GRAVEL, trace brick		
2						FILL	
3					Brown and Grey, Moist, SAND		
4							
5		0		100	Brown and Black, Wet, CLAY, some SAND, some fine GRAVEL		
6						CL	
7					Brown and Grey, Moist, firm CLAY		
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C20**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/14/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044650.362	**Total Depth:**	8 feet		
Easting:	1078912.767	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		100	Dark Brown, Moist, SAND and fine GRAVEL	FILL	
2							
3							
4							
5		0		80	Becomes Wet		
6					Light Brown, Moist, Foundry Sand		
7					Brown and Grey, Moist, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C21**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044701.37	**Total Depth:**	8 feet		
Easting:	1078885.002	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		70	Light Brown, Dry, SAND and GRAVEL, some Brick	FILL	
2							
3							
4					Brown, Moist, SAND and CLAY, trace gravel	SC	
5		0		60			
6					Grey and Brown, Moist, firm CLAY	CL	
7							
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C22**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/142009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044743.768	**Total Depth:**	8 feet		
Easting:	1078857.951	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		40	Concrete		
2					Grey, Moist, GRAVEL and SAND Concrete pieces	FILL	
3							
4							
5		0		80	Brown, Wet, SAND and GRAVEL Wood pieces		
6					Black and Grey, Wet, firm CLAY	CL	
7							
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C23**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044784.404	**Total Depth:**	8 feet		
Easting:	1078844.447	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		50	Concrete Brown, Wet, GRAVEL and SAND, trace foundry sand	FILL	
2							
3							
4							
5				80	Black, Wet, GRAVEL and SAND	SW	
6					Black, Wet, CLAY and SAND		
7		8				CL	
8					Brown and Grey, Wet, firm CLAY		
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C24**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044828.925	**Total Depth:**	5 feet		
Easting:	1078819.861	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Concrete Black, Wet, GRAVEL and SAND	FILL	Water is a green color
2							
3							
4							
5		0		30	Black, Wet, GRAVEL and CLAY	GM	
6					Refusal at 5 feet		
7							
8							
9							
10							
11							
12							
13							
14							
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16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C25**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044866.855	**Total Depth:**	8 feet		
Easting:	1078797.712	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		50	Black, wet, GRAVEL and SAND, trace brick	FILL	Water is a green color @4'
2							
3							
4							
5		1238		100	Wood encountered		
6					Brown and Grey, Wet, firm CLAY	CL	
7		3097					
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
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16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C26**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044902.639	**Total Depth:**	8 feet		
Easting:	1078782.183	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		80	Brown, Moist, fine SAND, some GRAVEL, trace brick, trace coal		
2							
3					Dark Brown, Wet, SAND and fine GRAVEL	FILL	
4					Black with Dark Purple, Wet, SAND and fine GRAVEL		
5		0		90			
6							
7					Brown, Wet, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
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20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C27**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044943.804	**Total Depth:**	8 feet		
Easting:	1078794.224	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		60	Brown, Moist, SAND and GRAVEL, trace brick and wood		
2							
3					Dark Brown, Wet, fine GRAVEL, some SAND	FILL	
4					Black, Wet, Angular GRAVEL, trace sand		
5		0		80			
6					Brown some Grey, Wet, firm CLAY		
7						CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
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20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C28**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/14/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/14/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044700.054	**Total Depth:**	8 feet		
Easting:	1078950.231	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		50	Concrete		
2					Brown, Dry, SAND and GRAVEL		
3						FILL	
4					Brown, Wet, SAND and GRAVEL, trace brick		
5		0		80			
6					Brown and Grey, Wet, firm CLAY		
7						CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C29**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/15/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/15/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044790.933	**Total Depth:**	8 feet		
Easting:	1078895.031	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		70	Brown, Wet, Gravel, trace sand, trace wood		
2						FILL	
3					Black, Wet, CLAY, trace wood		
4							
5		13.8		100	Black and Purple, Wet, GRAVEL and SAND	SW	
6		0.4			Light sheen observed at 5 feet		
7					Brown and Grey, Wet, firm CLAY	CL	
8							
9					Bottom of Boring at 8 feet		
10							
11							
12							
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16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

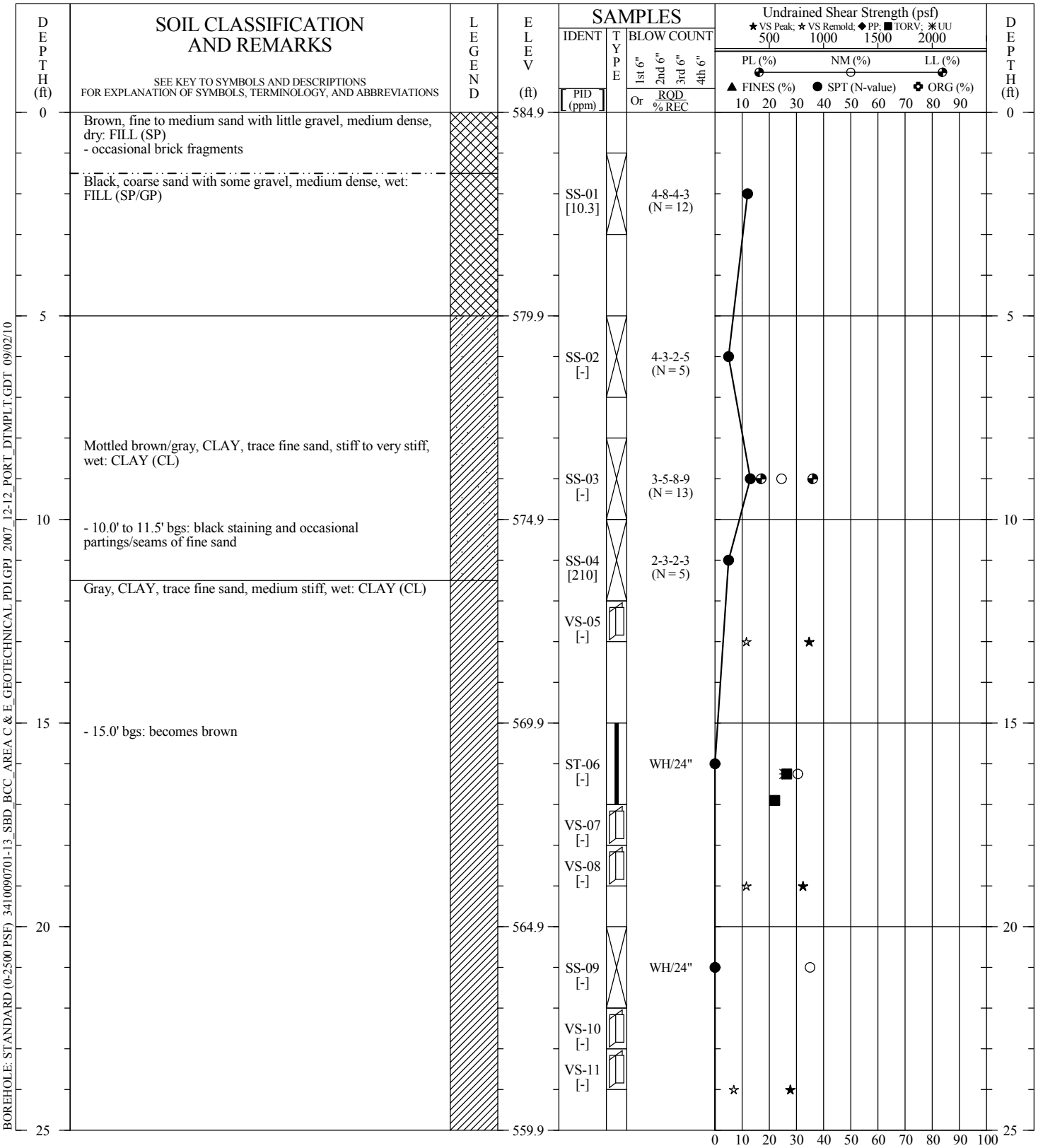
MACTEC

PROJECT:	Pre-Design Investigation	**BORING:**	**PDI-C30**
LOCATION:	Buffalo, NY		
JOB NUMBER:	3410090701	**START:**	9/11/2009
CLIENT:	South Buffalo Development	**FINISH:**	9/11/2009

Driller:	SJB Drilling, Inc.	**Drilling Method:**	Direct Push		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2.5 inches		
Surveyor:	Eric Weiler with GPS	**Auger ID/OD:**	N/A		
Ground Elevation:	Not Measured	**Sampling Device:**	4 foot Barrel with Acetate Liner		
Northing:	1044886.95	**Total Depth:**	8 feet		
Easting:	1078846.773	**Depth to Water:**	Not Measured	**Date:**	
Ref. Elevation:	N/A	**Groundwater Elevation:**	Not Measured	**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1		0		70	Grey and Brown, Dry, SAND and GRAVEL and Concrete		
2						FILL	
3					Light Brown Foundry Sand		
4					Grey, Wet, GRAVEL and CLAY		
5				80	Black, Wet, SAND and CLAY		
6						SC	
7		10.1			Grey and Brown, Wet, firm CLAY		
8					Sheen observed at 6.5 feet	CL	
9					Bottom of Boring at 8 feet		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO



BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

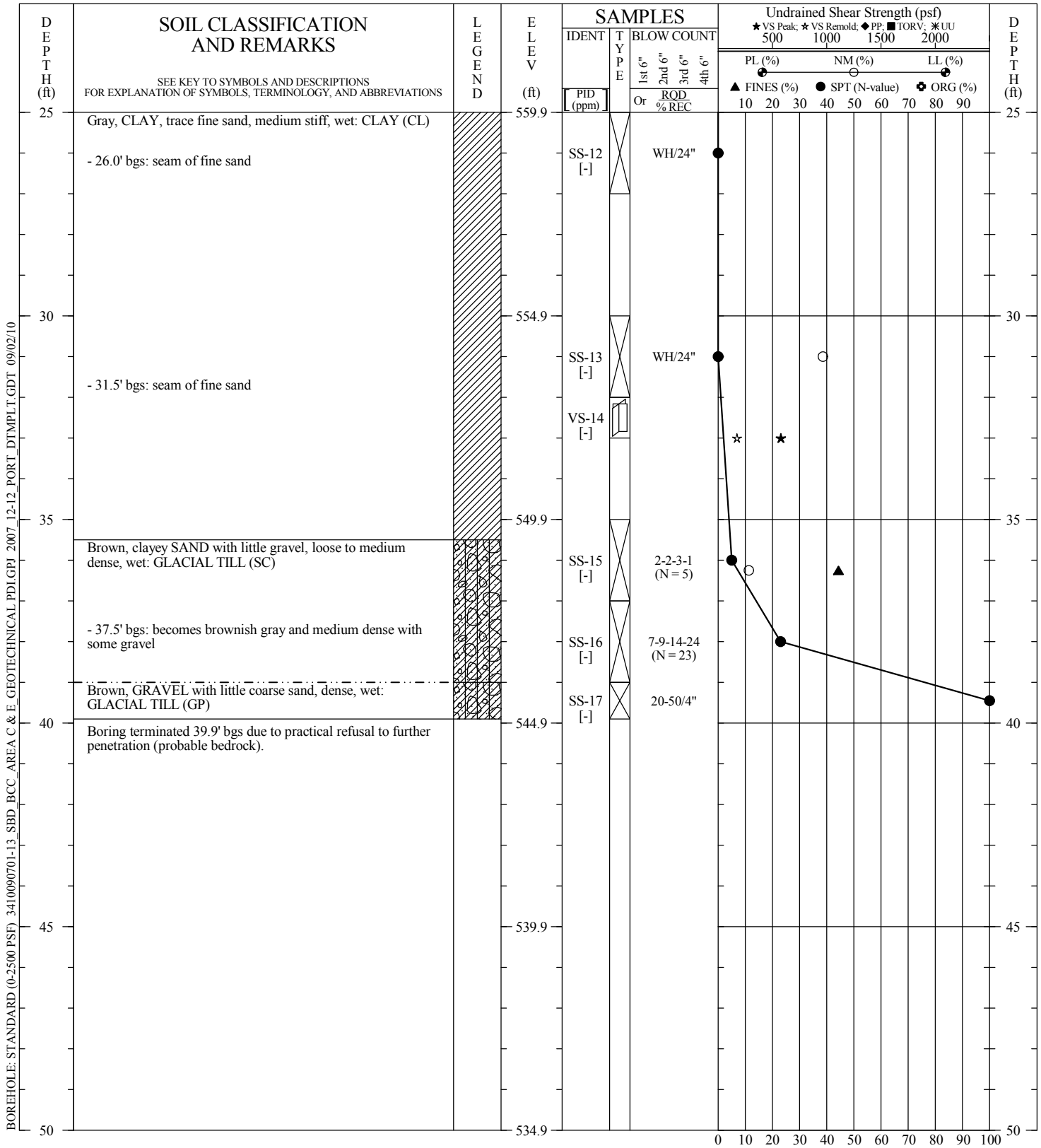
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 15' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C01
DRILLED: 05/27/10 - 05/28/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

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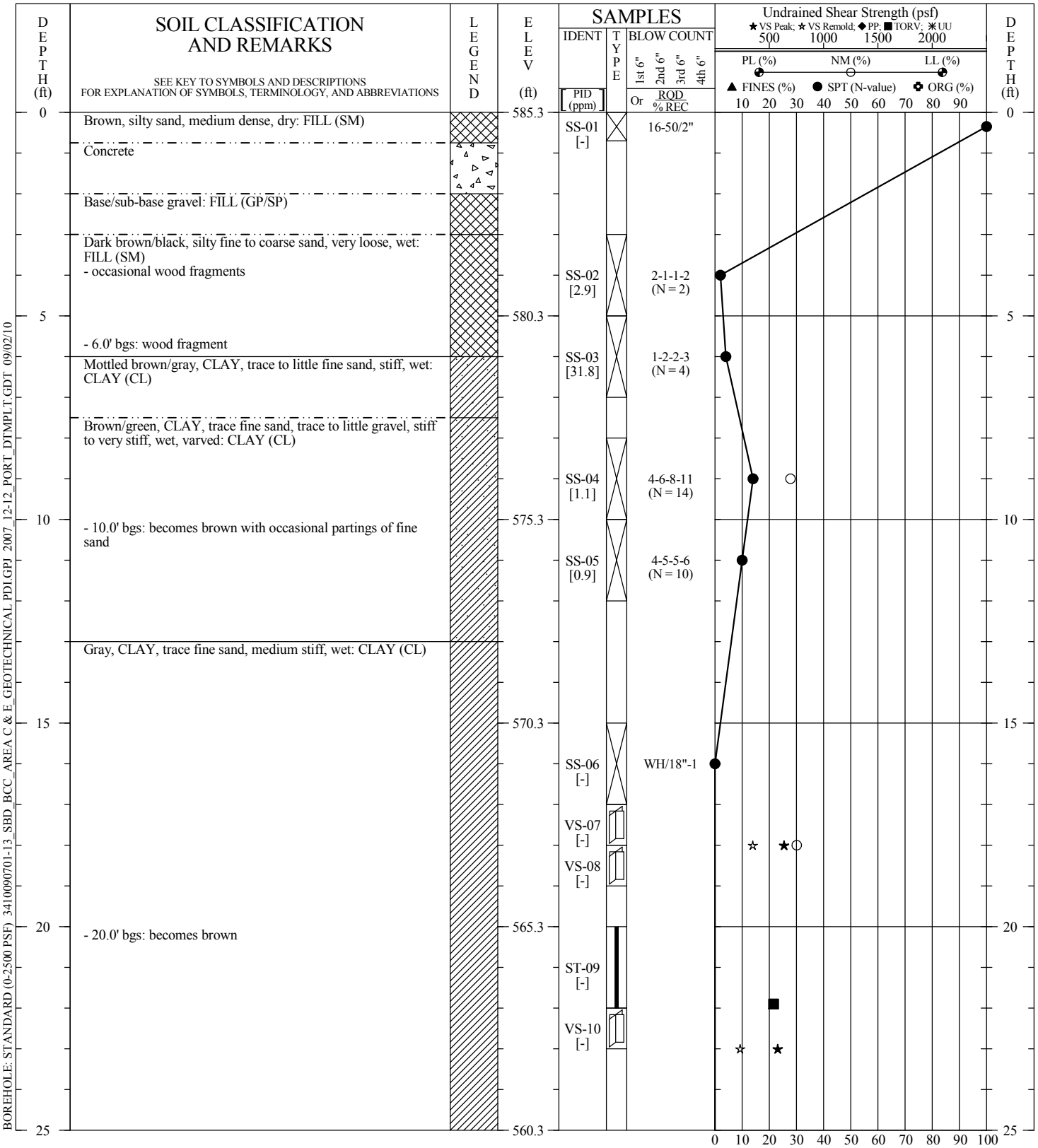
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 15' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C01
DRILLED: 05/27/10 - 05/28/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

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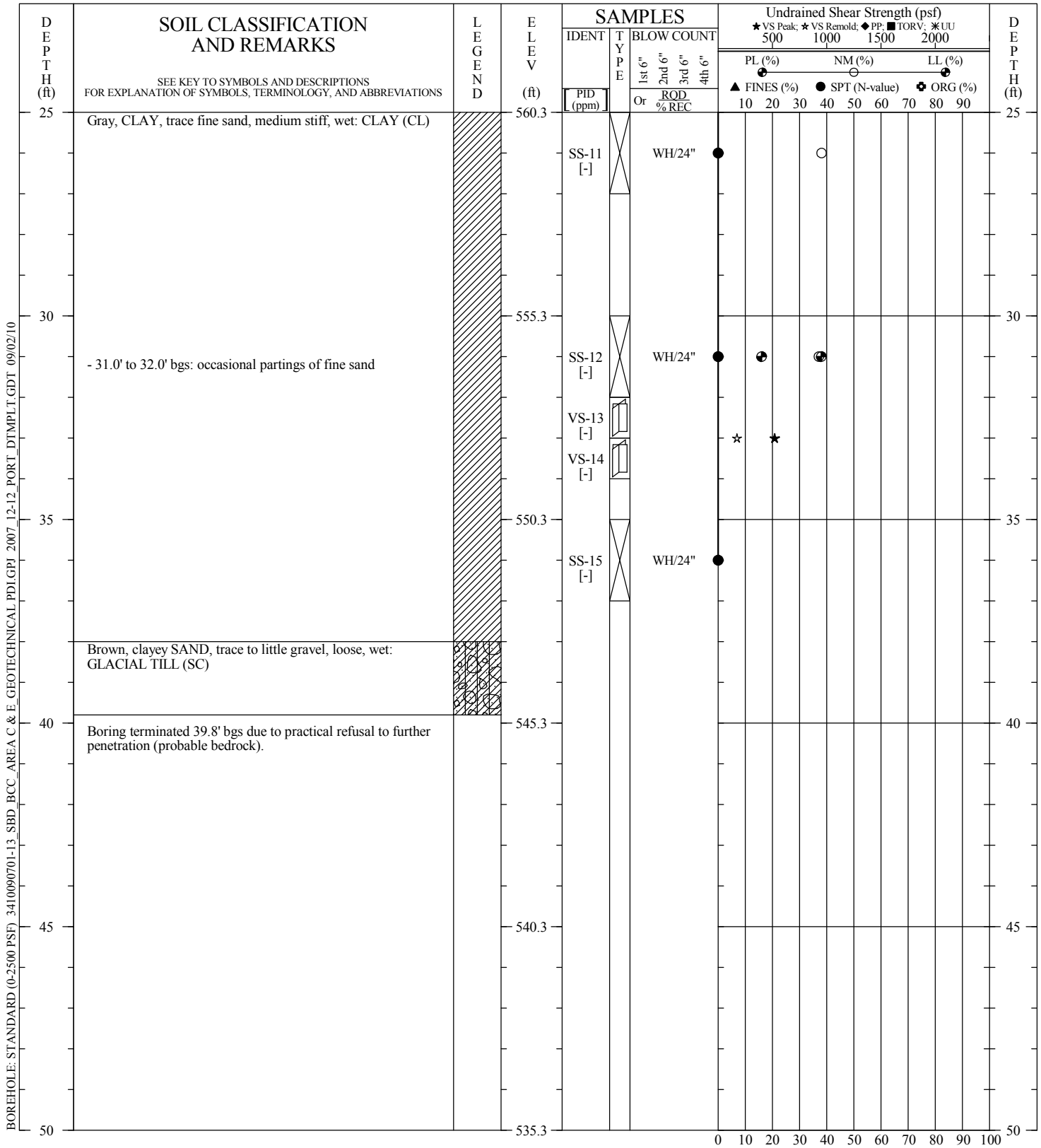
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 20' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C02
DRILLED: 05/26/10 - 05/27/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

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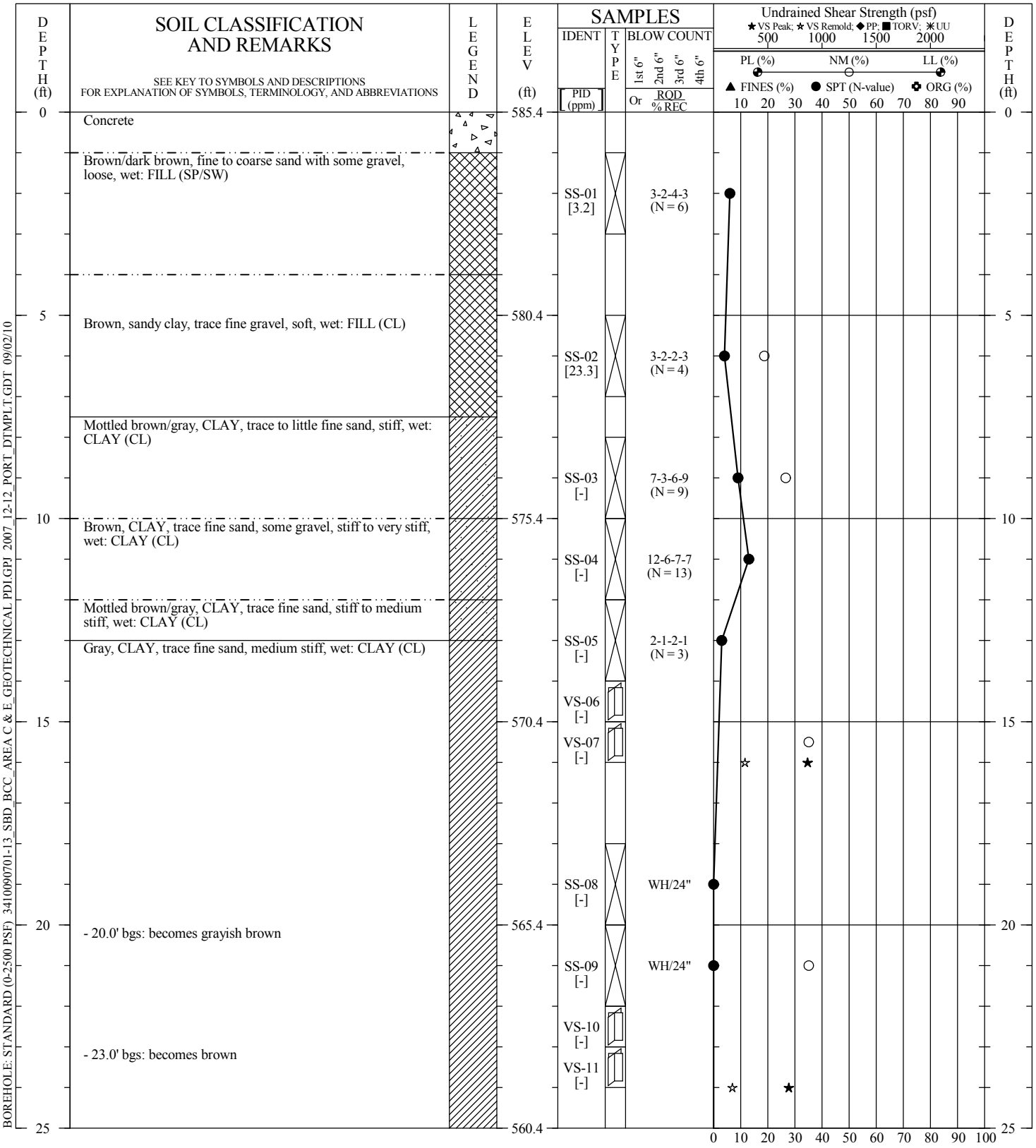
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 20' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C02
DRILLED: 05/26/10 - 05/27/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



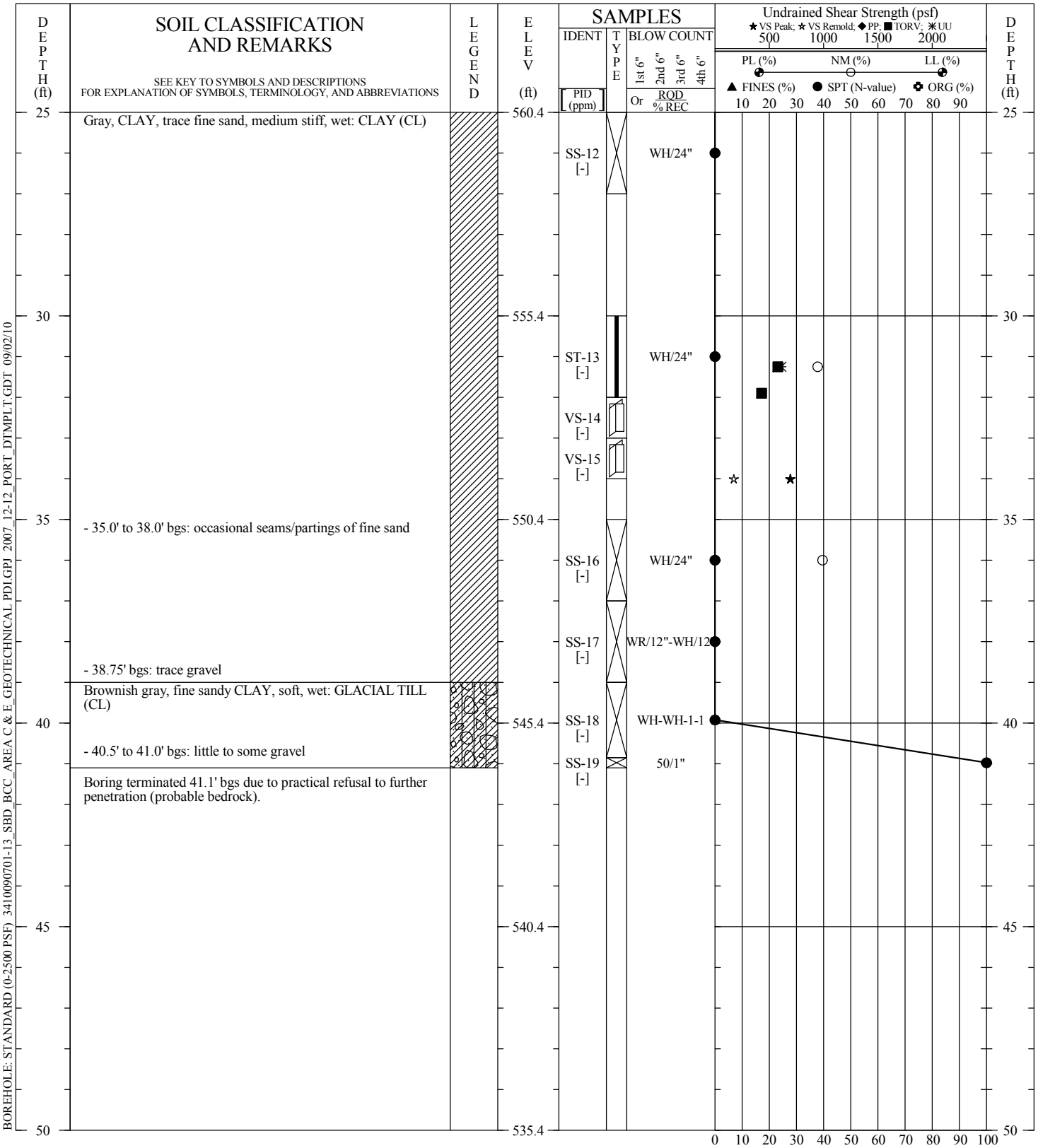
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 30' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C03
DRILLED: 06/01/10 - 06/02/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

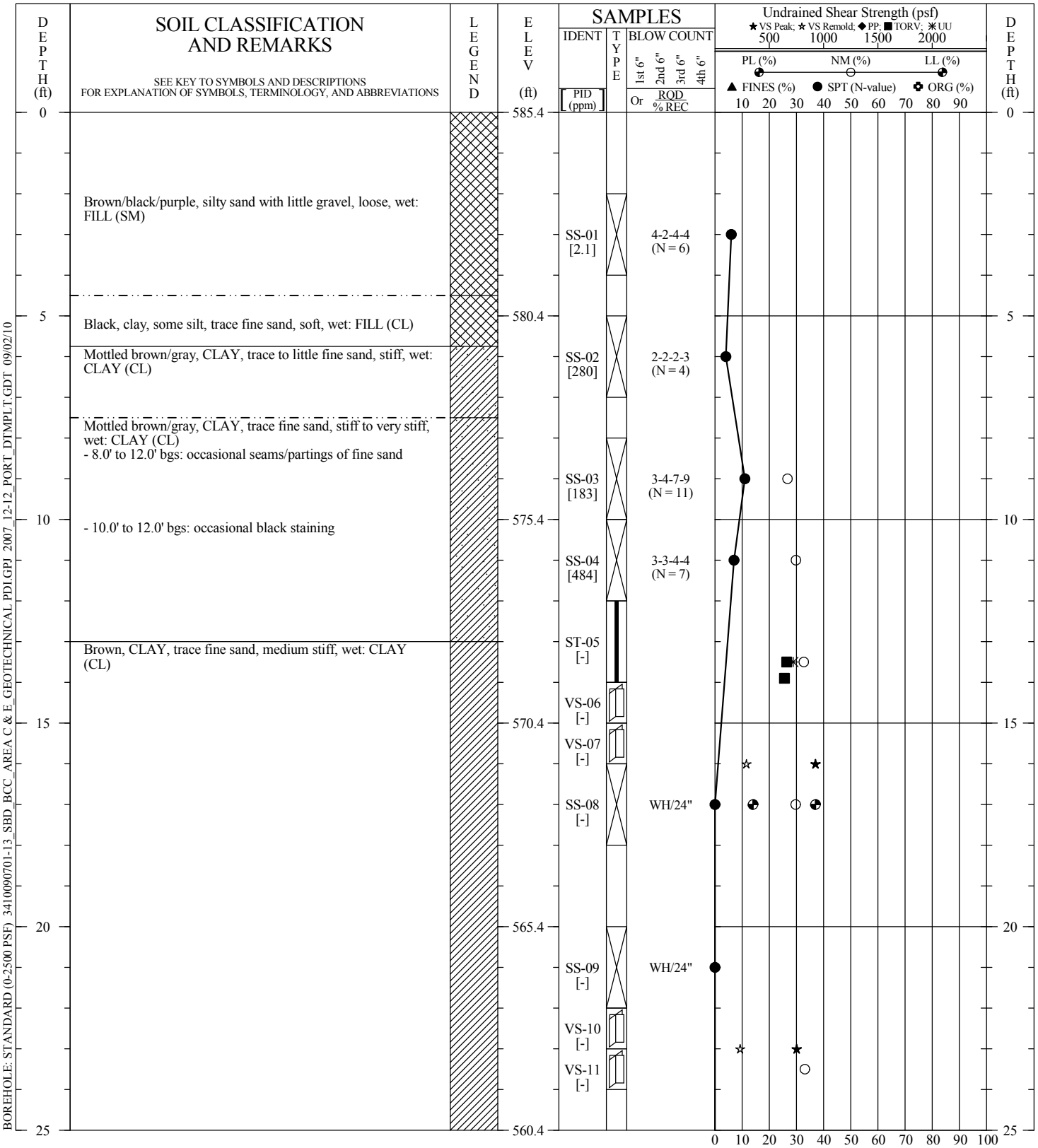
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 30' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C03
DRILLED: 06/01/10 - 06/02/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



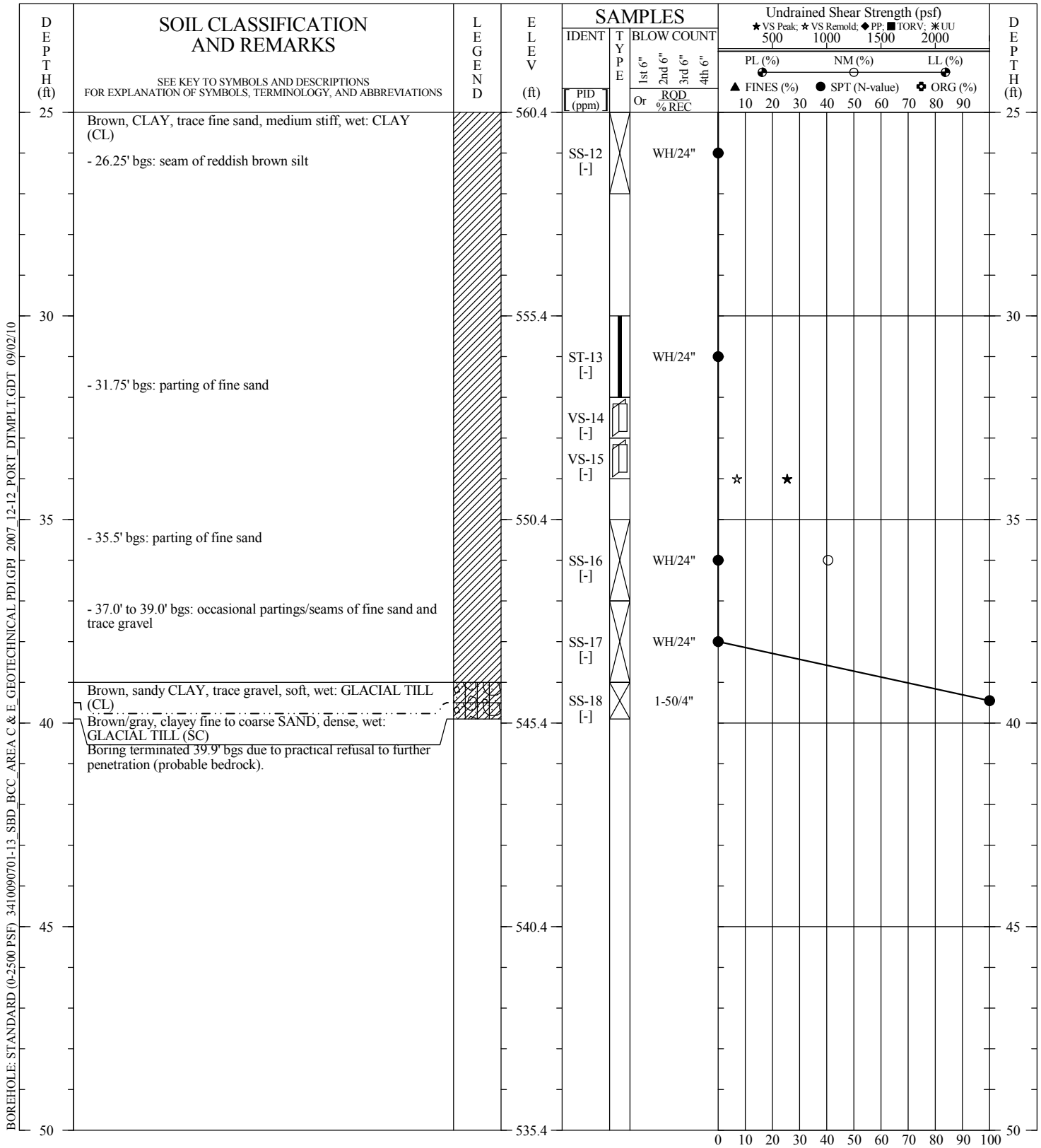
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 12' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C04
DRILLED: 05/28/10 - 06/01/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 12' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C04
DRILLED: 05/28/10 - 06/01/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC

APPENDIX C (CD)

2009 PDI DIRECT PUSH GROUNDWATER ANALYTICAL REPORTS

APPENDIX D

2009 AREA C MONITORING WELL LOGS

MACTEC

PROJECT:	Former Buffalo Color	**BORING:**	MW-C01
LOCATION:	Buffalo, NY	**WELL:**	MW-C01
JOB NUMBER:	3410090701	**START:**	10/27/2009
CLIENT:	South Buffalo Development	**DATE:**	10/27/2009

Driller:	SJB Drillers	**Drilling Method:**	Hallow Stem Auger		
Field Scientist:	Greg Oslosky	**Bore Hole Diameter:**	6.5 inch		
Surveyor:	Niagara Boundary	**Auger Size:**	4 inch		
Ground Elevation:	NA	**Sampling Device:**	Split Spoon		
Northing:	NA	**Total Depth:**			
Easting:	NA	**Depth to Water:**		**Date:**	
Ref. Elevation:	NA	**GW Elevation:**	NA	**Date:**	

DEPTH (ft-bgs)	ANALYTICAL SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	WELL DIAGRAM:
1				0	Asphalt and Concrete		Concrete 0-1'
2					No Recovery		Bentonite Seal 1-3'
3		0.1	2	100	Brown, Moist, silty fine SAND some GRAVEL		
			2				
4			2				
			2				
5			7	0			2" Dia. PVC Riser
			2				
6			4		Becomes Wet		
			1				
7			2	10	Brown, Wet, silty SAND, trace GRAVEL		Sand Pack 3-15'
			2				
8			2				
			1				
9							
10							10 feet of 0.01" Slot Size PVC
11							
12							
13							
14							
15							
16					Bottom of Boring at 15 Feet		
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

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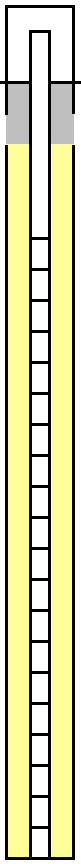
MACTEC

PROJECT:	Former Buffalo Color	**BORING:**	MW-C02
LOCATION:	Buffalo, NY	**WELL:**	MW-C02
JOB NUMBER:	3410090701	**START:**	10/26/2009
CLIENT:	South Buffalo Development	**DATE:**	10/26/2009

Driller:	SJB Drillers	**Drilling Method:**	Hallow Stem Auger		
Field Scientist:	Greg Oslosky	**Bore Hole Diameter:**	6.5 inch		
Surveyor:	Niagara Boundary	**Auger Size:**	4 inch		
Ground Elevation:	NA	**Sampling Device:**	Split Spoon		
Northing:	1044852.19	**Total Depth:**			
Easting:	1078869.26	**Depth to Water:**		**Date:**	
Ref. Elevation:	587.92	**GW Elevation:**	NA	**Date:**	

DEPTH (ft-bgs)	ANALYTICAL SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION
1					Concrete	
2						
3			16	80	Black, Moist, sandy SILT	FILL
			13			
			11			
4			4			
5			1	90	Black, Wet, silty SAND and GRAVEL, Staining	
			2			
6		149	2		Gray, Moist, stiff CLAY	
			4			
7			4	0		
			5			
			8			
8			10			
9		27.8	4	100		CL
			7			
			8			
10			10			
11		58.1	1	100		
			2			
			4		Black, Wet, Soft CLAY	
12			4			
13					Bottom of Boring at 12.5 Feet	
14						
15						
16						
17						
18						
19						
20						

WELL DIAGRAM:



CREATED BY: ESW
CHECKED BY: GSO

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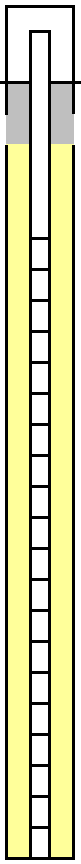
MACTEC

PROJECT:	Former Buffalo Color	**BORING:**	MW-C03
LOCATION:	Buffalo, NY	**WELL:**	MW-C03
JOB NUMBER:	3410090701	**START:**	10/26/2009
CLIENT:	South Buffalo Development	**DATE:**	10/26/2009

Driller:	SJB Drillers	**Drilling Method:**	Hallow Stem Auger		
Field Scientist:	Greg Oslosky	**Bore Hole Diameter:**	6.5 inch		
Surveyor:	Niagara Boundary	**Auger Size:**	4 inch		
Ground Elevation:	NA	**Sampling Device:**	Split Spoon		
Northing:	1044866.74	**Total Depth:**			
Easting:	1078813.33	**Depth to Water:**		**Date:**	
Ref. Elevation:	588.31	**GW Elevation:**	NA	**Date:**	

DEPTH (ft-bgs)	ANALYTICAL SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION
1					Concrete	
2						
3		62.1	4	75	Black, Moist, sandy CLAY, some GRAVEL	FILL
			3			
4			4			
			6			
5		333	4	100	Becomes Wet	
			6		Brown and Gray, Moist, stiff CLAY	
6			8			
			8			
7			8	0		
			8			
8			8			
			8			
9						CL
10						
11						
12						
13					Bottom of Boring at 12.5 Feet	
14						
15						
16						
17						
18						
19						
20						

WELL DIAGRAM:



CREATED BY: ESW
CHECKED BY: GSO

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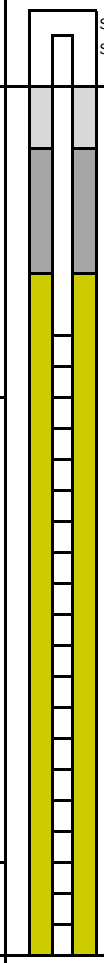
MACTEC

PROJECT:	Former Buffalo Color	**BORING:**	MW-C04
LOCATION:	Buffalo, NY	**WELL:**	MW-C04
JOB NUMBER:	3410090701	**START:**	0915
CLIENT:	South Buffalo Development	**DATE:**	8/24/2010

Driller:	SJB Drilling	**Drilling Method:**	Auger Rotary		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	6.5 inch		
Surveyor:	Niagara Boundary	**Auger Size:**	4.25 inch		
Ground Elevation:	551.84	**Sampling Device:**	Split Spoon		
Northing:	1044766.18	**Total Depth:**	14 feet		
Easting:	1078974.27	**Depth to Water:**	5.96	**Date:**	8/25/2010
Ref. Elevation:	554.24	**GW Elevation:**	548.28	**Date:**	8/25/2010

DEPTH (ft-bgs)	ANALYTICAL SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION
1		0	x	20	Brown, Moist, SILT and SAND	
			x		Concrete	
2			3		Gray, Brown, Dry, GRAVEL, and fine SAND	
			49		Brown and Black, Moist, SAND, SILT, and GRAVEL	
3		0	8	60		FILL
			3			
4			5			
			8			
5		0	3	50	Dark purple, Wet, Coarse SAND, trace fine gravel	
			2			
6			1		Black, Some purple, Wet, Sandy CLAY	
			2			
7		0	5	85	Black, Purple stains, Wet, SAND and CLAY, Sheen observed on water	
			2			
8			2			
			5			
9		0	3	90	Brown and Gray, Mottled, Stiff CLAY, Some fine Sand seams, Moist	CL
			4			
10			7			
			11			
11		0	4	80	Fine Sand partings	
			6			
12			7			
			10			
13		0	9	100		
			8		Gray, Moist, Soft CLAY, trace fine sand partings	CL
14			5			
			4			
15					Boring Completed at 14 feet BGS	
16						
17						
18						
19						
20						

WELL DIAGRAM:



CREATED BY: SCC
CHECKED BY: ESW

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APPENDIX E

2009 GROUNDWATER SAMPLING LOGS

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

3410090701

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: RFI-20-1109
WELL ID: RFI-20
SAMPLING EVENT: SID Pre-Design Investigation
DATE: 11/9/07
TIME: START 0735 END 0830
JOB NUMBER: E-NOTE 3410090701
SAMPLERS: ESW/GO

PROJECT
CLIENT
CATEGORY
SUBMITTED BY ESW

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER

INITIAL DEPTH TO WATER	6.70 FT	WELL DEPTH (TOR)	— FT	PROTECTIVE CASING STICKUP (FROM GROUND)	— FT	PROTECTIVE CASING / WELL DIFFERENCE	— FT
FINAL DEPTH TO WATER	11.82 FT	SCREEN LENGTH	— FT	PID AMBIENT AIR	— PPM	WELL DIAMETER	2 IN
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.83 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	—	PID WELL MOUTH	— PPM	WELL INTEGRITY: CAP / CASING / LOCKED / COLLAR	YES: X / X / X / X; NO: — / — / — / —; N/A: — / — / — / —
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	— GAL			PRESSURE TO PUMP	— PSI		
				REFILL TIMER SETTING	—	DISCHARGE TIMER SETTING	—

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0735	6.70	200	12.05	3.05	7.03	3.39	10.6	62		
0740	~~6.89~~	200	12.22	3.09	6.95	0.61	6.85	26		
0745	7.49	200	12.27	3.03	6.79	0.09	5.39	5		
0750	8.07	200	12.31	2.90	6.80	0	7.94	-95		
0755	8.32	200	12.36	2.80	6.82	0	10.3	-15		
0800	8.48	200	12.26	2.84	6.83	0	10.1	-18		
0805	8.73	200	12.47	2.93	6.80	0	8.93	-18		
0810	8.99	200	12.64	3.06	6.77	0	7.84	-17		
0815	9.15	200	12.63	3.17	6.75	0	9.88	-17		
0820	9.32	200	12.66	3.30	6.73	0	6.30	-17		
0825	10.37	200	12.74	3.34	6.72	0	6.12	-17		
0830	11.82	200	12.70	3.45	6.71	0	5.28	-18		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER
[X] GEOPUMP	[ ] OTHER	[ ] OTHER	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metal				[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: —

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field-blank required~~

SIGNATURE: M. Wil

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	PS-05-1109
WELL ID:	PS-05	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1020 END 1105	JOB NUMBER	3410090701
DATE	11/17/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER: 4.82 FT
FINAL DEPTH TO WATER: 4.85 FT
DRAWDOWN VOLUME: 0.005 GAL
(initial - final x 0.16 {2-inch} or x 0.65 {4-inch})
TOTAL VOL. PURGED: — GAL
(purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

WELL DEPTH (TOR): — FT
SCREEN LENGTH: — FT
RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: —

PROTECTIVE CASING STICKUP (FROM GROUND): — FT
PID AMBIENT AIR: — PPM
PID WELL MOUTH: — PPM
PRESSURE TO PUMP: — PSI
REFILL TIMER SETTING: —

PROTECTIVE CASING / WELL DIFFERENCE: — FT
WELL DIAMETER: 2 IN

WELL INTEGRITY:

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

DISCHARGE TIMER SETTING: —

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1020	4.82	200	12.66	1.90	6.68	0.35	306	-44		
1025	4.85	200	12.49	1.79	6.77	0	65.2	-61		
1025	4.90	200	12.44	1.74	6.84	0	24.7	-67		
1030	4.92	200	12.37	1.69	6.86	0	13.8	-71		
1035	4.95	200	12.41	1.66	6.88	0	8.75	-75		
1040	4.82	200	12.42	1.62	6.90	0	5.49	-78		
1045	4.86	200	12.39	1.63	6.90	0	3.85	-80		
1050	4.82	200	12.45	1.61	6.90	0	3.40	-80		
1055	4.84	200	12.42	1.60	6.90	0	3.31	-85		
1100	4.86	200	12.50	1.59	6.90	0	2.32	-83		
1105	4.85	200	12.47	1.60	6.90	0	2.47	-89		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: C. Wil

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	MW-C01-1109
WELL ID:	MW-C01	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1605 END 1642	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	5.69 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	6.40 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.12 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1612	6.13		13.54	48.5	7.07	1.74	20.6	-16		
1617	6.19		13.26	40.3	7.19	1.96	17.4	-16		
1622	6.28		13.19	27.9	7.34	1.91	12.0	-22		
1627	6.39		13.25	22.2	7.44	1.89	8.44	-27		
1632	6.29		13.08	27.6	7.37	1.74	5.81	-24		
1637	6.30		12.87	26.7	7.41	1.72	6.99	-22		
1642	6.30		13.09	26.3	7.51	1.71	3.34	-25		
	Sample MW-C01-1109 @ 1705									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[ ] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[ ] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metals				[ ]
[X] Other pH, DO				[ ]
[ ] Other Total Alkalinity				[X] Other: TKN, NH_3, NO_3+NO_2, PO_4

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Gregg S. Ogden

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: MW-C02-1109
WELL ID: MW-C02
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/19/09
TIME: START 732 END 0851
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT: [X] TOP OF WELL RISER [ ] TOP OF PROTECTIVE CASING [ ] OTHER

INITIAL DEPTH TO WATER	7.19 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	14.65 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.22 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	2 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
736	7.67		14.04	10.7	6.77	3.67	11.5	65		
741	8.30		14.14	10.9	6.55	3.27	10.8	73		
746	8.60		14.11	10.7	6.46	3.87	4.97	79		
751	9.02		14.10	10.5	6.42	3.77	3.57	81		
756	8.43		14.06	9.8	6.42	3.42	3.66	82		
801	9.94		14.03	9.5	6.41	5.37	5.70	83		
806	10.29		14.08	9.3	6.38	3.30	4.84	84		
811	10.64		13.99	9.2	6.37	3.24	4.72	85		
816	11.04		14.12	9.0	6.35	3.06	5.01	85		
821	11.42		14.37	8.1	6.30	3.08	6.60	85		
826	12.01		14.46	8.5	6.28	2.97	7.97	82		
831	12.35		14.46	8.2	6.35	2.95	5.00	77		
		Sample: MW-C02-1109 @ 0845								

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [ ] QED BLADDER [ ] SIMCO BLADDER [X] GEOPUMP

TYPE OF TUBING: [ ] TEFLON OR TEFLON LINED [X] HIGH DENSITY POLYETHYLENE [ ] OTHER

TYPE OF PUMP MATERIAL: [ ] POLYVINYL CHLORIDE [ ] STAINLESS STEEL [ ] OTHER

TYPE OF BLADDER MATERIAL: [ ] TEFLON [ ] OTHER

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other				[ ]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Oderkirk

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	MW-CØ3-1109
WELL ID:	MW-CØ3	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0918 END 1016	JOB NUMBER	3410090701
DATE	11/9/08	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.40 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	11.19 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.78 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
922	6.93		13.77	12.8	6.49	0.99	258	47		
929	7.55		13.66	12.3	6.28	1.02	50	46		water is
934	7.99		13.50	9.5	6.19	1.00	53	51		greenish
939	8.36		13.34	6.5	6.10	0.98	44	23		
944	8.74		13.13	5.4	6.05	1.05	29	-10		
949	9.01		13.14	5.1	6.03	1.03	25	-15		
954	9.48		13.14	5.1	6.00	1.01	19	-15		
959	9.86		13.18	5.3	5.99	0.97	15	-13		
1004	10.29		13.23	5.6	6.00	1.03	17	-10		
1009	10.79		13.30	6.1	5.99	1.10	14	-6		
1016	11.19		13.37	6.7	6.00	1.12	11	-2		
		Sample:	MW-CØ3	=	1109	@	1042			

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4	_____	_____	[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required.~~

SIGNATURE: Greg S. Oakley

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-31-1109
WELL ID:	RFI-31	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0905 END 1015	JOB NUMBER	3410090701
DATE	11/19/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	7.97 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	14.50 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.06 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	— GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	2 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0905	7.97	200	13.29	21.7	6.54	1.75	19.0	-6		
0910	9.33	200	13.41	21.7	6.69	0.39	19.9	-30		
0915	10.52	200	13.43	19.6	6.96	0.32	19.7	-58		
0920	11.71	200	13.44	16.5	8.05	1.49	36.3	-169		
0925	11.74	200	13.45	16.6	8.19	1.54	34.3	-171		
0930	12.19	200	13.49	15.7	8.60	1.77	35.8	-160		
0935	12.44	200	13.61	15.7	8.57	0.92	25.5	-147		
0940	12.67	200	13.64	16.0	8.43	0.62	20.3	-143		
0945	13.03	200	13.65	16.4	8.04	0.29	14.7	-124		
0950	13.31	200	13.68	17.7	7.66	0.10	17.3	-104		
0955	13.56	200	13.67	18.2	7.44	0	14.9	-87		
1000	13.84	200	13.63	19.0	7.31	0	12.9	-77		
1005	14.12	200	13.66	19.9	7.13	0	9.34	-70		
1010	14.42	200	13.64	20.8	6.99	0	6.20	-66		
1015	14.50	200	13.66	21.0	6.95	0	5.39	-64		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other _____				[ ]
[ ] Other _____				[ ]
[ ] Other _____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	PS-04-1109
WELL ID:	PS-04	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1045 END 1140	JOB NUMBER	3410090701
DATE	11/19/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	5.86 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	6.92 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.17 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	WELL DIAMETER	1 IN

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

DISCHARGE TIMER SETTING: NA

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1045	5.86	200	12.18	1.12	7.36	0.34	too high	-34		
1050	6.69	200	12.31	1.11	6.81	0	—	-29		
1055	6.74	200	12.46	1.04	6.64	0	✓	-27		Turbidity meter
1100	6.87	200	12.45	0.99	6.46	0	✓	-26		stopped working
1105	6.85	200	12.67	0.96	6.47	0	✓	-22		will use probe
1110	6.86	200	12.62	0.94	6.33	0	424	-15		on Horiba U-22
1115	6.84	200	12.56	0.92	6.28	0	191	-10		
1120	6.88	200	12.54	0.91	6.25	0	135	-7		
1125	6.90	200	12.48	0.90	6.22	0	95.8	-4		
1130	6.92	200	12.51	0.90	6.20	0	86.8	-2		
1135	6.93	200	12.47	0.90	6.19	0	82.1	0		
1140	6.92	200	12.44	0.90	6.14	0	81.6	0		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO)

NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. No rinseate/ field blank required

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-32-1109
WELL ID:	RFI-32	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1046 END 1154	JOB NUMBER	3410090701
DATE	11/20/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT: [x] TOP OF WELL RISER [ ] TOP OF PROTECTIVE CASING [ ] OTHER

INITIAL DEPTH TO WATER	4.98 FT	WELL DEPTH (TOR)	15.25 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	13.51 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.04 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.26 ~~NA~~	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	~~NA~~ 4 GAL			PRESSURE TO PUMP	NM PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	x		
CASING	x		
LOCKED	x		
COLLAR	x		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1051	7.11		12.20	1.50	6.90	0.11	11	2		
1056	9.41		11.90	1.50	6.88	0.21	12	-4		
1104	10.62		12.07	1.50	6.91	0.23	15	-7		
1109	10.78		12.22	1.49	6.88	0.24	4	-33		
1114	11.11		12.37	1.48	6.81	0.28	7	-39		
1119	11.46		12.43	1.52	6.77	0.37	6	-43		
1124	11.81		12.55	1.55	6.75	0.44	3	-47		
1129	12.14		12.66	1.57	6.74	0.46	1	-53		
1134	12.38		12.52	1.58	6.75	0.52	2	-57		
1139	12.67		12.93	1.78	6.70	0.48	2	-54		
1144	12.91		12.87	1.68	6.70	0.47	2	-58		
1149	13.21		12.98	1.70	6.69	0.42	2	-61		
1154	13.51		12.81	1.72	6.68	0.53		-64		
well dry		during sampling - return later to collect								
		Sample: RFI-32-1109 @ 1340								

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER
[X] GEOPUMP	[ ] OTHER	[ ] OTHER	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other				[ ]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)

NUMBER OF GALLONS GENERATED: 4

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S Owens

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	MW-EO1-1109
WELL ID:	MW-EO1	SAMPLING EVENT	Pre-Design Investigation
TIME	START 12:24 END 1308	JOB NUMBER	3410090701
DATE	11/20/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT: [X] TOP OF WELL RISER [ ] TOP OF PROTECTIVE CASING [ ] OTHER ____

INITIAL DEPTH TO WATER	3.69 FT	WELL DEPTH (TOR)	15.3 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	5.57 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.26 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1238	4.88		12.91	3.16	8.99	0.14	44	-110		
1233	5.31		13.15	3.16	9.17	0.48	43	-107		
1238	5.54		13.04	3.18	9.24	0.61	42	-100		
1243	5.56		12.69	3.12	9.30	0.67	40	-98		
1248	5.57		12.10	2.95	9.45	0.68	36	-101		
1253	5.57		12.37	2.41	9.43	0.69	25	-94		
1258	5.57		11.80	1.66	8.90	0.75	17	-75		
1303	5.57		11.79	1.65	8.69	0.80	13	-76		
1308	5.57		11.88	1.64	8.66	0.79	12	-82		
	Sample:	MW-EO1-1109	@	1328						

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER ____
[X] GEOPUMP	[ ] OTHER ____	[ ] OTHER ____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other ____				[ ]
[ ] Other ____				[ ]
[ ] Other ____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S Oakley

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	MW-ED2-1109
WELL ID:	MW-ED2	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1602 END 1648	JOB NUMBER	3410090701
DATE	11/19/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	4.41 FT	WELL DEPTH (TOR)	11.5 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	11.20 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.11 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.32	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	3.5 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	~~4~~ 2 IN		
WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1608	5.59		14.29	1.80	7.08	6.41	71	-13		
1613	6.35		13.93	1.73	7.02	6.38	27	4		
1618	6.96		13.94	1.76	6.97	6.13	27	13		
1623	7.53		14.00	1.80	6.94	6.16	22	20		
1628	8.17		14.12	1.82	6.94	6.18	14	24		
1633	8.98		14.32	1.73	6.96	5.77	9	26		
1638	9.67		14.31	1.74	6.97	5.67	5	27		
1643	10.36		14.29	1.93	6.94	5.55	17	27		
1648	11.20		14.61	2.13	6.90	5.36	22	3		~3.5 gals pumped >3 well vols.
well dry during sampling - wait for recharge very slow recharge, sample will be collected tomorrow										
Sample: MW-ED2-1109@1200 on 11/20/09										

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED 3.5

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: Gregory S. Oldham

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	MW-EO3-1109
WELL ID:	MW-EO3	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0906 END 1040	JOB NUMBER	3410090701
DATE	11/20/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	8.60 FT	WELL DEPTH (TOR)	15.5 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	14.73 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.00 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.29	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	3.5 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0909	8.92		13.13	1.12	6.65	0.45	380	-16		
0914	9.24		13.09	1.13	6.63	0.51	190	-25		
0919	9.39		12.90	1.14	6.63	0.55	122	-38		
0924	9.69		13.30	1.13	6.62	0.57	109	-42		
0929	9.99		13.46	1.13	6.63	0.61	85	-45		
0934	10.38		13.45	1.13	6.64	0.64	53	-49		
0939	10.80		13.43	1.13	6.65	0.58	37	-57		
0944	11.25		13.46	1.14	6.65	0.61	25	-53		
0949	11.65		13.47	1.16	6.64	0.55	24	-54		
0954	12.21		13.54	1.17	6.63	0.73	22	-43		
0959	12.50		13.20	1.16	6.62	0.85	21	-39		
1004	12.70		13.06	1.17	6.62	1.20	39	-32		
1009	12.91		13.32	1.17	6.62	1.28	33	-25		
1014	13.04		13.35	1.17	6.62	1.20	32	-23		
		SAMPLE:	MW-EO3-1109	@					1040	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED 3.5

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Oslund

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: PS-12-1109
WELL ID: PS-12
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/19/09
TIME: START 1600 END 1630
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [x] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.05 FT	WELL DEPTH (TOR)	7.60 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	7.60 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 (2-inch) or x 0.65 (4-inch))	.253 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	1 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1600	6.05	200	13.31	2.26	7.36	1.95	475	86		
1605	6.62	200	13.06	2.25	7.06	0	22.2	8		
1610	7.11	200	13.07	2.24	6.99	0	7.6	-16		
1615	7.38	200	13.12	2.24	6.96	0	4.11	-27		
1620	7.49	200	13.12	2.23	6.96	0	18.6	-29		
1625	7.60	200	13.07	2.23	6.96	0	11.2	-31		
1630		200								
				Well	Dry	@	1626			

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] QED BLADDER
- [ ] SIMCO BLADDER
- [x] GEOPUMP

TYPE OF TUBING
- [ ] TEFLON OR TEFLON LINED
- [x] HIGH DENSITY POLYETHYLENE
- [ ] OTHER _____

TYPE OF PUMP MATERIAL
- [ ] POLYVINYL CHLORIDE
- [ ] STAINLESS STEEL
- [ ] OTHER _____

TYPE OF BLADDER MATERIAL
- [ ] TEFLON
- [ ] OTHER _____

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[x] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[x] VOC
[x] SVOC	CLP	4 DEG. C	2 X 1 L AG	[x] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[x] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[x] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: [signature]

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-17-1109		
WELL ID:	RFI-17	SAMPLING EVENT	Pre-Design Investigation	DATE	11/20/09
TIME	START 1045 END 1120	JOB NUMBER	3410090701	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	14.60 FT	WELL DEPTH (TOR)	16.80 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	16.56 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.32 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

DISCHARGE TIMER SETTING: NA

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1045	14.60	150	15.57	2.09	7.19	1.03	5.46	-54		
1050	15.57	150	15.77	2.10	7.14	0	11.7	-80		
1055	15.91	150	15.57	2.10	7.19	0	4.6	-112		
1100	16.12	150	15.47	2.06	7.25	0	3.9	-126		
1105	16.27	150	15.27	2.03	7.26	0	4.2	-131		
1110	16.34	150	15.13	2.04	7.25	0	4.3	-132		
1115	16.47	150	14.86	2.05	7.26	0	4.4	-134		
1120	16.56	150	14.69	2.05	7.26	0	5.1	-135		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: PS-01-1109
WELL ID: PS-01
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/20/09
TIME: START 0940 END 1015
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	13.55 FT	WELL DEPTH (TOR)	16.10 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	14.56 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.16 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0940	13.55	150	13.26	2.40	7.20	1.52	154.0	-80		
0945	13.78	150	12.66	2.54	7.22	0.23	51.6	-108		
0950	13.91	150	12.83	2.52	7.23	0	53.1	-124		
0955	14.03	150	12.64	2.52	7.24	0	61.0	-130		
1000	14.16	150	12.56	2.53	7.29	0	61.3	-134		
1005	14.28	150	12.40	2.52	7.24	0	58.9	-135		
1010	14.40	150	12.49	2.52	7.24	0	50.5	-136		
1015	14.56	150	12.95	2.51	7.24	0	47.6	-136		

TOTAL DEPTH 16.10

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] QED BLADDER
- [ ] SIMCO BLADDER
- [X] GEOPUMP

TYPE OF TUBING
- [ ] TEFLON OR TEFLON LINED
- [X] HIGH DENSITY POLYETHYLENE
- [ ] OTHER _____

TYPE OF PUMP MATERIAL
- [ ] POLYVINYL CHLORIDE
- [ ] STAINLESS STEEL
- [ ] OTHER _____

TYPE OF BLADDER MATERIAL
- [ ] TEFLON
- [ ] OTHER _____

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other				[ ]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: [signature]

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: RFI-PZ-18-1109
WELL ID: RFI-PZ-18
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/20/09
TIME: START 0845 END 0910
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	13.26 FT	WELL DEPTH (TOR)	16.25 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	15.45 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.36 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0845	13.26	200	13.55	1.25	7.03	9.23	50.4	-35		
0850	14.04	200	14.21	1.29	6.94	0	13.6	-41		
0855	14.87	200	14.61	1.30	6.93	0	9.6	-48		
0900	15.26	200	14.44	1.32	6.92	0	11.6	-56		
0905	15.37	200	14.37	1.33	6.91	0	12.3	-57		
0910	15.45	200	14.64	1.34	6.91	0	10.5	-50		
0915		200								
			Well	was about	Dry	only		0.8'	remaining	
				Collect	Sample	@ 0930				

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: N. Wilson

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-36-1109
WELL ID:	RFI-36	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0735 END 0825	JOB NUMBER	3410090701
DATE	11/20/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.62 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	9.02 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.40 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		
DISCHARGE TIMER SETTING	NA		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0735	6.62	200	11.38	3.82	7.14	1.27	142.0	13		
0740	8.54	200	11.38	3.89	6.88	0	88.1	-24		
0745	8.72	200	11.50	3.85	6.79	0	90.6	-39		
0750	8.87	200	11.48	3.81	6.76	0	94.6	-47		
0755	8.92	200	11.50	3.78	6.75	0	83.1	-53		
0800	8.95	200	11.37	3.74	6.75	0	88.9	-58		
0805	8.99	200	11.36	3.72	6.75	0	93.1	-60		
0810	9.01	200	11.51	3.68	6.75	0	89.6	-63		
0815	9.03	200	11.62	3.69	6.75	0	88.4	-65		
0820	9.05	200	11.60	3.74	6.78	0	97.3	-71		
0825	9.06	200	11.64	3.74	6.76	0	104	-71		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-35-1109		
WELL ID:	RFI-35	SAMPLING EVENT	Pre-Design Investigation	DATE	11/18/09
TIME	START 1440 END 1605	JOB NUMBER	3410090701	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	4.77 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	11.88 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.16 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.29	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	4 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

DISCHARGE TIMER SETTING: NA

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1440	4.77	200	17.82	10.7	6.35	1.11	155	3		
1445	6.11	200	17.96	10.7	6.38	0.14	101	-9		
1450	7.37	200	18.18	10.8	6.41	0	95.2	-26		
1455	8.84	200	18.08	10.7	6.65	0	91.8	-39		
1500	10.14	200	17.91	10.4	6.79	509	TOO HIGH	-32		
1505	10.11	200	17.90	10.4	6.81	4.80	326	-30		
1510	10.11	200	17.92	10.4	6.72	4.13	116	-26		
1515	10.12	200	18.05	10.3	5.64	3.37	61.7	-24		
1520	10.22	200	18.22	10.4	6.59	2.03	52.8	-22		
1525	10.35	200	18.26	10.3	6.56	1.63	31.1	-21		
1530	10.57	200	18.31	10.4	6.54	0.94	196	-20		
1535	10.73	200	18.35	10.4	6.52	0.72	152	-19		
1540	10.97	200	18.30	10.5	6.51	0.44	110	-18		
1545	11.18	200	18.23	10.5	6.49	0.19	72.2	-20		
1550	11.42	200	18.13	10.5	6.48	0.07	70.5	-22		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED 4

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: [signature]

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-35-1109
WELL ID:	RFI-35 Cont'nued	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1440 END 1605	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	4.77 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	11.88 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.16 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.29	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	4 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1555	11.65	200	18.08	10.5	6.47	0	33.8	-24		
1600	11.77	200	18.07	10.5	6.47	0	25.6	-25		
1605	11.88	200	18.02	10.5	6.47	0	23.1	-26		
~~1610~~		~~200~~								

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4	_____	_____	[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED ~~NA~~ 4

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-19-1109
WELL ID:	RFI-19	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1105 END 1150	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	11.75 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	12.10 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.062 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.029	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1105	11.75	200	14.27	2.88	10.92	1.57	216	-74		
1110	11.88	200	14.22	2.81	9.18	0	184	-186		
1115	12.04	200	13.71	4.48	6.83	0	63.1	-98		
1120	12.05	200	13.82	4.51	6.51	0	35.4	-89		
1125	12.07	200	13.66	4.52	6.21	0	23.9	-80		
1130	12.08	200	13.66	4.51	6.11	0	22.0	-76		
1135	12.09	200	13.63	4.48	5.99	0	20.1	-68		
1140	12.10	200	13.94	4.46	5.89	0	10.7	-62		
1145	12.10	200	13.84	4.47	5.87	0	8.84	-61		
1150	12.10	200	13.76	4.46	5.86	0	9.21	-60		
~~1155~~	~~12.~~	~~200~~				~~0~~				
~~1200~~		~~200~~				~~0~~				

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO)

NUMBER OF GALLONS GENERATED 2

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-45-1109
WELL ID:	RFI-45	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0945 END 1020	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	11.75 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	11.77 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.003 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.0016	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	2 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0945	11.75	200	13.41	6.22	6.74	1.58	40.5	99		
0950	11.76	200	13.38	6.76	6.33	0	14.3	105		
0955	11.77	200	13.39	6.77	6.27	0	7.88	107		
1000	11.77	200	13.39	6.77	6.25	0	6.99	108		
1005	11.77	200	13.32	6.74	6.24	0	6.10	108		
1010	11.77	200	13.35	6.71	6.24	0	5.81	108		
1015	11.77	200	13.26	6.71	6.24	0	5.53	108		
1020	11.77	200	13.36	6.71	6.24	0	4.08	109		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED 2

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-33-1109
WELL ID:	RFI-33	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0730 END 0840	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	2.53 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	7.85 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.87 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		
DISCHARGE TIMER SETTING	NA		

(purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0730	2.53	200	11.13	3.02	7.59	2.45	9.91	120		
0735	2.98	200	11.50	3.09	7.37	2.30	11.7	117		
0740	4.09	200	12.92	2.57	7.27	1.45	11.6	95		
0745	5.00	200	12.90	1.60	7.38	2.60	17.3	82		
0750	5.22	200	13.00	1.39	7.44	3.00	15.8	73		
0755	5.55	200	13.13	1.34	7.43	2.71	15.0	66		
0800	5.86	200	13.20	1.33	7.41	1.89	8.72	62		
0805	6.10	200	13.30	1.33	7.37	1.56	5.72	55		
0810	6.39	200	13.42	1.35	7.33	0.77	2.63	49		
0815	6.60	200	13.57	1.37	7.23	0.32	1.46	43		
0820	6.86	200	13.73	1.63	7.11	0	1.32	32		
0825	7.11	200	13.80	2.11	6.98	0	0.90	24		
0830	7.48	200	13.82	2.53	6.90	0	0.85	22		
0835	7.77	200	13.94	2.85	6.87	0	0.73	21		
0840	7.85	200	14.13	3.00	6.85	0	0.53	22		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: PS-08-1109
WELL ID: PS-08
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/17/09
TIME: START 1605 END 1710
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.04 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	8.93 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.47 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.24	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	1 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1605	6.04	200	13.11	3.88	7.14	0.89	18.1	-50		
1610	6.29	200	12.90	5.65	7.13	0.14	9.12	-45		
1615	6.65	200	13.00	3.41	7.14	0	4.08	-42		
1620	6.87	200	13.01	3.66	7.01	0	2.94	-47		
1625	7.11	200	12.83	4.00	7.03	0	1.53	-56		
1630	7.16	200	12.85	4.22	7.04	0	3.22	-68		
1635	7.56	200	13.20	4.62	7.05	0	1.27	-84		
1640	7.77	200	13.34	5.64	7.14	0	1.69	-110		
1645	8.05	200	13.69	6.88	7.25	0	1.75	-129		
1650	8.31	200	13.68	7.79	7.32	0	1.70	-140		
1655	8.67	200	13.65	8.88	7.37	0	1.73	-144		
1700	8.90	200	13.85	9.59	7.38	0	1.82	-144		
1705	8.92	200	13.78	9.60	7.37	0	1.80	-144		
1710	8.93	200	13.91	9.62	7.38	0	1.77	-145		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	R-13-1109
WELL ID:	R-13	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1415 END 1515	JOB NUMBER	3410090701
DATE	11/17/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	14.42 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	16.99 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.42 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2.5 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED COLLAR	X		
	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1415	14.42	200	14.08	1.14	7.43	0	391	-121		
1420	14.60	200	14.00	1.15	7.39	0	243	-127		
1425	14.92	200	13.82	1.14	7.37	0	105	-138		
1430	15.20	200	13.80	1.13	7.36	0	53.7	-142		
1435	15.35	200	13.89	1.13	7.36	0	47.5	-145		
1440	15.53	200	13.71	1.13	7.36	0	55.1	-148		
1445	15.62	200	13.59	1.13	7.36	0	49.9	-150		
1450	15.78	200	13.70	1.12	7.36	0	41.0	-152		
1455	15.91	200	13.76	1.11	7.37	0	42.5	-154		
1500	16.21	200	13.98	1.16	7.38	0	39.7	-154		
1505	16.47	200	13.93	1.10	7.38	0	43.9	-160		
1510	16.72	200	13.91	1.10	7.38	0	56.0	-162		
1515	16.99	200	13.94	1.10	7.39	0	41.6	-161		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. No rinseate/ field blank required

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	R-09-1109
WELL ID:	R-09	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1250 END 1340	JOB NUMBER	3410090701
DATE	11/17/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	12.42 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	13.72 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.21 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1250	12.42	200	13.06	1.32	7.69	0.73	64.4	-111		
1255	12.76	200	13.10	1.35	7.49	0	26.2	-114		
1300	12.87	200	12.84	1.41	7.39	0	19.6	-112		
1305	13.04	200	13.05	1.44	7.34	0	15.5	-110		
1310	13.12	200	13.22	1.47	7.31	0	11.8	-109		
1315	13.34	200	13.30	1.48	7.29	0	5.53	-108		
1320	13.40	200	13.01	1.50	7.27	0	4.20	-107		
1325	13.51	200	12.75	1.51	7.25	0	5.55	-106		
1330	13.59	200	12.89	1.52	7.24	0	5.87	-105		
1335	13.66	200	12.60	1.52	7.24	0	8.32	-105		
1340	13.72	200	12.89	1.51	7.24	0	10.1	-106		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: PS-06-1109
WELL ID: PS-06
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/17/09
TIME: START 0855 END 0950
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.58 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	6.82 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.04 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.098	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2.5 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	1 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0855	6.58	200	9.67	2.70	6.50	0.33	too high	-46		
0900	6.67	200	12.64	2.41	6.47	0	645	-63		
0905	6.74	200	12.59	2.40	6.47	0	679	-65		
0910	6.76	200	12.64	2.39	6.46	0	533	-66		
0915	6.98	200	12.90	2.37	6.43	0	495	-71		
0920	6.90	200	12.80	2.35	6.43	0	748	-73		
0925	6.88	200	12.76	2.31	6.43	0	362	-75		
0930	6.86	200	12.95	4.50	6.17	0	532	-67		
0935	6.79	200	12.74	2.23	6.43	0	too high	-79		
0940	6.76	200	13.25	2.68	6.45	0	906	-75		
0945	6.81	200	13.27	2.09	6.44	0	762	-76		
0950	6.82	200	13.29	2.09	6.44	0	397	-76		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: PS-07-1109
WELL ID: PS-07
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/17/09
TIME: START 0740 END 0820
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	5.30 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	5.36 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.609 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.049	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	1 IN		
WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		
DISCHARGE TIMER SETTING	NA		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0740	5.30	200	10.83	1.88	7.66	0.29	too high	-113		
0745	5.23	200	11.19	1.63	7.29	0.12	290	-113		
0750	5.29	200	11.18	1.59	7.15	0	60.7	-117		
0755	5.31	200	11.20	1.57	7.11	0	31.4	-118		
0800	5.32	200	11.42	1.56	7.07	0	25.6	-121		
0805	5.33	200	11.34	1.57	7.08	0	11.8	-123		
0810	5.35	200	11.43	1.56	7.06	0	8.66	-124		
0815	5.36	200	11.14	1.58	7.04	0	6.78	-126		
0820	5.36	200	11.60	1.57	7.03	0	5.92	-126		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[✓] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[✓] VOC
[✓] SVOC	CLP	4 DEG. C	2 X 1 L AG	[✓] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[✓] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[✓] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: _____

LOCATION SKETCH

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	PS-09-1109
WELL ID:	PS-09	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1515 END 1600	JOB NUMBER	3410090701
DATE	11/16/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [x] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	5.40 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	5.95 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.09 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.045	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
WELL INTEGRITY:	YES	NO	N/A
CAP	[x]	[ ]	[ ]
CASING	[x]	[ ]	[ ]
LOCKED	[x]	[ ]	[ ]
COLLAR	[x]	[ ]	[ ]
DISCHARGE TIMER SETTING	NA		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1515	5.40	200	11.87	3.77	5.76	0.44	205	-10		
1520	5.63	200	11.90	3.05	6.15	0	81.6	-49		
1525	5.76	200	11.90	2.91	6.24	0	37.1	-56		
1530	5.35	200	11.92	2.95	6.21	0	33.9	-54		
1535	5.93	200	11.92	3.10	6.13	0	19.3	-50		
1540	5.97	200	11.91	3.21	6.09	0	36.8	-47		
1545	5.96	200	11.75	3.33	6.04	0	41.2	-44		
1550	5.95	200	11.75	3.42	6.02	0	43.8	-42		
1555	5.95	200	11.65	3.46	6.01	0	44.8	-42		
1600	5.95	200	11.62	3.43	6.01	0	43.5	-42		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[x] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[x] VOC
[x] SVOC	CLP	4 DEG. C	2 X 1 L AG	[x] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[x] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[x] TAL INORGANICS
[ ] CYANIDE	335.4	_____	_____	[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-28-1109
WELL ID:	RFI-28	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1630 END 1710	JOB NUMBER	3410090701
DATE	11/16/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [x] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	8.06 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	10.1 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.33 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	0.17	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	2 GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	2 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:	YES	NO	N/A
CAP	x		
CASING	x		
LOCKED	x		
COLLAR	x		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1630	8.06	200	12.23	3.27	6.78	2.10	11.4	-124		
1635	9.09	200	12.77	3.33	7.45	0	4.36	-146		
1640	9.47	200	12.88	3.29	7.79	0	2.83	-169		
1645	9.84	200	12.76	3.24	7.98	0	3.04	-171		
1650	10.07	200	13.02	3.21	7.99	0	2.78	-171		
1655	10.22	200	13.03	3.21	8.00	0	2.80	-172		
1700	10.12	200	12.64	3.24	8.02	0	3.00	-171		
1705	10.10	200	12.74	3.22	8.06	0	3.13	-170		
1710	10.11	200	12.79	3.21	8.07	0	4.06	-168		

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[x] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[x] VOC
[x] SVOC	CLP	4 DEG. C	2 X 1 L AG	[x] SVOC
[x] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[x] TAL INORGANICS
[ ] CYANIDE	335.4	_____	_____	[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO)

NUMBER OF GALLONS GENERATED ~~NA~~ 2

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required.~~

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: PS-10-1109
WELL ID: PS-10
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/17/09
TIME: START 1241 END 1320
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT: [X] TOP OF WELL RISER [ ] TOP OF PROTECTIVE CASING [ ] OTHER

INITIAL DEPTH TO WATER	4.75 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	7.01 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.37 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	WELL DIAMETER	1 IN
WELL INTEGRITY: CAP	YES: X	NO: —	N/A: —
CASING	YES: X	NO: —	N/A: —
LOCKED	YES: X	NO: —	N/A: —
COLLAR	YES: X	NO: —	N/A: —
DISCHARGE TIMER SETTING	NA		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1245	5.85		11.17	0.90	7.36	0.42	71.1	-91		
1250	6.35		11.41	0.991	7.26	0.09	8.06	-96		
1255	6.70		11.54	0.91	7.21	0.12	1.62	-95		
1300	6.95		11.64	0.92	7.14	0.13	2.99	-103		
1305	6.96		11.67	0.96	7.12	0.13	2.61	-107		
1310	6.97		11.68	0.89	7.12	0.15	2.02	-101		
	Sample PS-10-1109 @ 1320									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER
[X] GEOPUMP	[ ] OTHER	[ ] OTHER	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other metals	6010			[ ]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: Greg S Owing

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-27-1109
WELL ID:	RFI-27	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0739 END 0930	JOB NUMBER	3410090701
DATE	11/17/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	5.39 FT	WELL DEPTH (TOR)	19.5 FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	18.01 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	2.06 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	2 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0750	8.20		11.15	3.18	7.21	6.24	80.7	52		
0753	9.07		11.07	3.17	7.37	6.48	55.1	53		
0759	10.27		11.09	3.19	7.34	3.74	92.8	50		
0803	11.19		11.09	3.17	7.38	5.62	87.8	49		
0807	12.02		11.20	3.15	7.42	6.17	83.2	49		
0811	12.88		11.25	3.15	7.45	6.34	73.0	49		
0815	13.70		11.50	3.18	7.46	5.62	69.7	48		
0819	14.43		11.31	3.17	7.47	5.48	56.6	46		
0823	15.20		11.54	3.24	7.39	5.10	57.5	33		
0828	15.44		11.63	3.23	7.30	1.12	136	-3		
0832	15.65		11.57	3.21	7.24	0.86	71.3	-7		
0836	15.86		11.62	3.23	7.23	1.41	35.0	-10		
0840	16.07		11.73	3.23	7.23	1.07	19.5	-14		
0844	16.29		11.76	3.23	7.21	0.92	13.1	-21		
0850	16.57		11.77	3.23	7.18	0.72	10.1	-26		Continue on reverse side of page

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other metals	6010			[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. [illegible]

LOCATION SKETCH

Sample RFI-27-1109 @ 0940

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-30-1109
WELL ID:	RFI-30	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1001 END 1053	JOB NUMBER	3410090701
DATE	11/17/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [x] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	7.02 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	13.36 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	1.03 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	
WELL DIAMETER	2 IN	
DISCHARGE TIMER SETTING	NA	

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1010	10.80		14.45	4.35	6.67	0.02	157	23		
1015	11.76		14.26	4.05	6.71	2.42	83.7	31		
1020	13.05		14.36	4.02	6.88	4.57	48.1	34		
1025	13.27		14.26	4.03	6.95	4.73	41.9	37		
1030	13.29		14.45	4.02	6.93	3.78	40.7	36		
1033	13.30		14.56	4.02	6.87	3.24	31.4	55		
1036	13.31		14.55	4.08	6.79	1.62	9.68	34		
1039	13.32		14.45	4.14	6.71	1.05	7.19	36		
1042	13.32		14.56	4.16	6.67	1.02	11.2	37		
1045	13.33		14.54	4.17	6.65	1.08	9.81	38		
	Sample: RFI-30-1109 @ 1053									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other metals	6010			[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required.~~

SIGNATURE: Greg Sales

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: RFI-17-1109
WELL ID: RFI-17-1109
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/17/09
TIME: START 1337 END 1440
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [x] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.62 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	7.73 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.18 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:

	YES	NO	N/A
CAP	x		
CASING	x		
LOCKED	x		
COLLAR	x		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1344	7.73		11.76	1.09	7.17	7.62	14.1	-8		
1349	7.73		11.26	1.09	7.35	10.32	9.55	-5		
1354	7.73		10.91	1.09	7.54	11.14	8.67	-3		
1359	7.73		10.63	1.08	7.71	11.16	5.37	2		
1409	7.73		11.04	1.08	7.70	10.45	3.49	8		
1414	7.73	10.69-11.26		1.07	7.73	11.28	3.11	12		
1419	7.73		10.48	1.07	7.79	11.50	3.08	13		
1424	7.73		10.28	1.07	7.85	11.62	2.41	14		
	Sample:		RFI-17-1109 @ 1440							

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] QED BLADDER
- [ ] SIMCO BLADDER
- [x] GEOPUMP

TYPE OF TUBING
- [ ] TEFLON OR TEFLON LINED
- [x] HIGH DENSITY POLYETHYLENE
- [ ] OTHER _____

TYPE OF PUMP MATERIAL
- [ ] POLYVINYL CHLORIDE
- [ ] STAINLESS STEEL
- [ ] OTHER _____

TYPE OF BLADDER MATERIAL
- [ ] TEFLON
- [ ] OTHER _____

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[x] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[x] VOC
[x] SVOC	CLP	4 DEG. C	2 X 1 L AG	[x] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[x] Other metals	6010			[x]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required~~

SIGNATURE: Greg S. Owen

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI
SAMPLE I.D. NUMBER: RFI-29-1109
WELL ID: RFI-29
SAMPLING EVENT: Pre-Design Investigation
DATE: 11/17/09
TIME: START 1615 END 1650
JOB NUMBER: 3410090701
SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [x] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER

INITIAL DEPTH TO WATER	5.42 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	6.23 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.13 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1619	6.18		14.57	1.23	8.12		15.2	-164		
1623	6.21		14.60	1.23	8.06		13.4	-179		
1627	6.23		14.67	1.18	8.02		11.3	-193		
1631	6.23		14.63	1.15	7.98		8.60	-200		
1635	6.23		14.65	1.11	7.93		7.91	-205		
	Sample		RFI-29-1109	@	1650					

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER
[X] GEOPUMP	[ ] OTHER	[ ] OTHER	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metals	6010			[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: NA

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Ole

LOCATION SKETCH

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	R-08-1109
WELL ID:	R-08	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0739 END 0818	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	6.98 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	6.98 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT
WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0743	6.98		11.03	2.01	8.52	0.69	18.4	-233		
0748	6.98		11.23	1.99	8.80	0.88	8.70	-260		
0753	6.98		11.38	1.98	8.86	1.12	6.27	-286		
0758	6.98		11.35	1.99	8.89	1.28	6.56	-309		
0803	6.98		11.57	2.00	8.91	1.31	6.11	-322		
0808	6.98		11.37	2.00	8.93	1.47	5.89	-330		
0813	6.98		11.41	2.01	8.92	1.45	5.07	-333		
	Sample:		R-08-1109	@ 0818						

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metals	6010			[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. No rinseate/ field blank required

SIGNATURE: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	R-14-09
WELL ID:	R-14	SAMPLING EVENT	Pre-Design Investigation
TIME	START 0847 END 1015	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER

INITIAL DEPTH TO WATER	15.07 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	17.95 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.47 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	NA IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0850	15.55		13.38	4.41	7.80	0.37	76.7	-236		
0855	16.23		13.41	4.42	7.65	0.47	80.7	-247		
0900	16.83		13.56	4.41	7.64	0.51	76.2	-253		
0905	17.09		13.34	4.38	7.58	2.56	129	-214		
0910	17.75		13.49	4.37	7.61	2.47	73.1	-244		
0915	17.95		13.56	4.38	7.60	2.36	67.2	-241		
0920	17.95		13.76	4.31	7.56	2.42	168	-237		
0925	17.95		13.75	4.30	7.45	2.51	196	-230		
	Sample:		R-14-1109		@	1015				

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER
[X] GEOPUMP	[ ] OTHER	[ ] OTHER	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metals (Total)	6010			[X]
[X] Other Metals (Dissolved)	6010			[X]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO)

NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

Dissolved metals sample field-filtered

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Olsen

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	R-11-1109
WELL ID:	R-11	SAMPLING EVENT	Pre-Design Investigation
TIME	START 1056 END 1203	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	5.42 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	9.86 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.72 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		

WELL INTEGRITY:	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

DISCHARGE TIMER SETTING: NA

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1058	6.14		14.33	0.846	~~7.99~~	1.52	220	-47		
1103	6.78		14.29	0.835	7.89	0.32	90.8	-50		
1108	7.65		14.34	0.833	7.98	0.48	65.0	-55		
1113	8.36		14.45	0.831	8.07	0.58	61.3	-62		
1123 ~~1118~~	9.81		15.02	0.844	8.16	3.49	245	-60		
1128	9.81		14.93	0.844	8.14	0.50	71.4	-75		
1133	9.82		14.96	0.846	8.09	0.48	72.5	-82		
1138	9.83		14.98	0.849	8.06	0.53	70.2	-91		
1143	9.84		15.03	0.854	8.02	0.57	58.9	-93		
1148	9.84		15.16	0.859	8.01	0.51	53.3	-97		
1153	9.85		15.24	0.859	7.98	0.51	48.8	-99		
1158	9.85		15.16	0.866	7.97	0.48	43.5	-102		
1203	9.86		15.19	0.867	7.96	0.46	42.5	-101		
		Sample:	R-11-1109	@ 1230						

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____				[ ]
[ ] Other_____				[ ]
[ ] Other_____				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Olsen

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-18-1109
WELL ID:	RFI-18	SAMPLING EVENT	Pre-Design Investigation
TIME START	~~1427~~ (GO) 1435 END 1545	JOB NUMBER	3410090701
DATE	11/18/09	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER

INITIAL DEPTH TO WATER	8.61 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	14.22 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.27 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1441	9.37		16.57	14.2	~~7.85~~	1.20	~~75.6~~	-35		
1446	10.30		16.58	14.1	6.22	1.31	53.9	-33		
1451	11.15		16.64	14.0	6.20	1.27	39.2	-32		
1456	11.64		16.57	13.8	6.26	1.23	48.5	-34		
1501	11.98		16.53	13.7	6.32	1.36	47.9	-36		
1506	12.25		16.57	13.9	6.28	1.40	44.7	-35		
1511	12.55		16.46	14.1	6.24	1.33	31.1	-36		
1516	12.88		16.47	14.2	6.21	1.18	45.3	-37		
1521	13.20		16.48	14.4	6.20	1.10	31.1	-38		
1526	13.42		16.48	14.4	6.17	1.07	10.4	-38		
~~1531~~	Collect Sample before well goes dry									
	Sample:		RFI-18-1109		@	1545				

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER
[X] GEOPUMP	[ ] OTHER	[ ] OTHER	

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metals	6010			[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Colón

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT	Former Buffalo Color - PDI	SAMPLE I.D. NUMBER	RFI-51-1109		
WELL ID:	RFI-51	SAMPLING EVENT	Pre-Design Investigation	DATE	11/19/09
TIME	START 1102 END 1156	JOB NUMBER	3410090701	SAMPLERS	ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
- [X] TOP OF WELL RISER
- [ ] TOP OF PROTECTIVE CASING
- [ ] OTHER _____

INITIAL DEPTH TO WATER	4.46 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	9.34 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.80 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT		
WELL DIAMETER	2 IN		
WELL INTEGRITY:	YES	NO	N/A
CAP	X	—	—
CASING	X	—	—
LOCKED	X	—	—
COLLAR	X	—	—
DISCHARGE TIMER SETTING	NA		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1106	5-94		13.52	2.8	6.86	0.71	7???	-70		
1111	7.80		13.28	2.7	6.68	0.57	402	-80		
1116	8.45		13.34	2.8	6.71	0.42	253	-89		
1121	6.93		13.46	2.8	6.75	0.37	128	-100		
1126	9.34		13.60	2.8	6.79	0.50	80	-108		
1131	9.54		13.62	2.8	6.84	0.48	59	-116		
1136	9.61		13.60	2.8	6.87	0.40	56	-120		
1141	9.41		13.69	2.8	6.88	0.39	309	-121		
1146	9.36		13.70	2.8	6.91	5.41	88	-124		
1151	9.39		13.73	2.8	6.93	0.44	54	-127		
1156	9.34		13.77	2.8	6.95	0.45	31	-129		
			Sample :			RFI-51-1109@1225				

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
[ ] QED BLADDER	[ ] TEFLON OR TEFLON LINED	[ ] POLYVINYL CHLORIDE	[ ] TEFLON
[ ] SIMCO BLADDER	[X] HIGH DENSITY POLYETHYLENE	[ ] STAINLESS STEEL	[ ] OTHER _____
[X] GEOPUMP	[ ] OTHER _____	[ ] OTHER _____	

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[X] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[X] TAL INORGANICS
[ ] CYANIDE	335.4	_____	_____	[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]
[ ] Other_____	_____	_____	_____	[ ]

1125

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES (NO) NUMBER OF GALLONS GENERATED NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinseate/ field blank required~~

SIGNATURE: Greg S. Dash

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

MACTEC

PROJECT: Former Buffalo Color - PDI | SAMPLE I.D. NUMBER: MW-EO4-1109
WELL ID: MW-EO4 | SAMPLING EVENT: Pre-Design Investigation | DATE: 11/20/09
TIME: START 0743 END 0824 | JOB NUMBER: 3410090701 | SAMPLERS: ESW/GO

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT: [X] TOP OF WELL RISER [ ] TOP OF PROTECTIVE CASING [ ] OTHER

INITIAL DEPTH TO WATER	3.95 FT	WELL DEPTH (TOR)	NA FT	PROTECTIVE CASING STICKUP (FROM GROUND)	NA FT
FINAL DEPTH TO WATER	~~4.05~~ 4.05 FT	SCREEN LENGTH	NA FT	PID AMBIENT AIR	NA PPM
DRAWDOWN VOLUME (initial - final x 0.16 {2-inch} or x 0.65 {4-inch})	0.017 GAL	RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED	NA	PID WELL MOUTH	NA PPM
TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)	NA GAL			PRESSURE TO PUMP	NA PSI
				REFILL TIMER SETTING	NA

PROTECTIVE CASING / WELL DIFFERENCE	NA FT	WELL DIAMETER	2 IN
DISCHARGE TIMER SETTING	NA		

WELL INTEGRITY:

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
0749	4.05		10.54	0.90	7.07	2.81	198	54		
0754	4.05		10.34	0.90	6.69	2.13	124	65		
0759	4.05		9.54	0.90	6.66	2.29	129	77		
0804	4.05		10.11	0.91	6.47	2.01	132	81		
0809	4.05		10.06	0.93	6.49	1.92	66	79		
0814	4.05		9.87	0.92	6.40	1.84	46	84		
0819	4.05		9.81	0.92	6.43	1.76	45	85		
0824	4.05		9.90	0.93	6.44	1.78	27	86		
	Sample: MW-EO4-1109 @ 0842									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [ ] QED BLADDER [ ] SIMCO BLADDER [X] GEOPUMP

TYPE OF TUBING: [ ] TEFLON OR TEFLON LINED [X] HIGH DENSITY POLYETHYLENE [ ] OTHER

TYPE OF PUMP MATERIAL: [ ] POLYVINYL CHLORIDE [ ] STAINLESS STEEL [ ] OTHER

TYPE OF BLADDER MATERIAL: [ ] TEFLON [ ] OTHER

ANALYTICAL PARAMETERS

To Be Collected

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOC- ON-SITE LAB	MOD-8021	HCL / 4 DEG. C	2 X 40 mL	[ ] VOC- ON-SITE LAB
[X] VOC	8260B	HCL / 4 DEG. C	3 X 40 mL	[X] VOC
[X] SVOC	CLP	4 DEG. C	2 X 1 L AG	[X] SVOC
[ ] PEST / PCBs	CLP	4 DEG. C	2 X 1 L AG	[ ] PEST / PCBs
[ ] TAL INORGANICS	CLP	HNO3 to pH <2	1 x 1 L P	[ ] TAL INORGANICS
[ ] CYANIDE	335.4			[ ] CYANIDE
[ ] Maine DRO	MEDEP	HCL / 4 DEG. C	2 X 1 L AG	[ ] Maine DRO
[ ] TOC	USEPA 415.1	H2SO4 to pH <2	2 X 40 ML	[ ] TOC
[ ] TSS	USEPA 160.2	4 DEG. C	1 X 250 mL P	[ ] TSS
[ ] TKN	USEPA 351.2	H2SO4 to pH <2	1 X 1 L P	[ ] TKN
[X] Other Metals	6010			[X]
[ ] Other				[ ]
[ ] Other				[ ]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO) | NUMBER OF GALLONS GENERATED: NA

LOCATION SKETCH

NOTES

All Equipment used either dedicated or deconned prior to arrival on site. ~~No rinsate/ field blank required.~~

SIGNATURE: Gregory S. Osborne

APPENDIX F (CD)

2009 GROUNDWATER MONITORING WELL ANALYTICAL REPORTS

APPENDIX G

2010 AREA C DEPTH DISCRETE BORING LOGS

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-01**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	3/18/2010
CLIENT:	South Buffalo Development	**FINISH:**	3/18/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	NA	**Auger ID/OD:**	NA		
Ground Elevation:	NA	**Sampling Device:**	Acetate Sleeve		
Northing:	1078841.91	**Total Depth:**	12 feet		
Easting:	1044879.17	**Depth to Water:**		**Date:**	
Ref. Elevation:		**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				40	Gray and Brown, Moist, SAND and GRAVEL		
2							
3						FILL	
4					Black and Purple, Wet, coarse SAND and GRAVEL		
5	DDC-01-0406	6.6		40			
6					Gray and Brown, Moist, Sandy CLAY		
7	DDC-01-0608						
8							
9		4.9		80		CL	
10							
11							
12							
13					Boring Complete at 12 feet BGS		
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-02**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	3/18/2010
CLIENT:	South Buffalo Development	**FINISH:**	3/18/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	NA	**Auger ID/OD:**	NA		
Ground Elevation:	NA	**Sampling Device:**	Acetate Sleeve		
Northing:	1078875.10	**Total Depth:**	12 feet		
Easting:	1044945.38	**Depth to Water:**		**Date:**	
Ref. Elevation:		**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				60	Brown, Dry, SAND, GRAVEL, some CONCRETE		
2							
3	DDC-02-0204				Black, Wet, coarse SAND and GRAVEL	FILL	
4		1.3					
5	DDC-02-0406			80			
6					Brown and Black, Moist, CLAY trace sand		
7		1.6			Brown, Moist, medium stiff CLAY		
8							
9	DDC-02-0810			100	Brown and Gray, Moist, stiff CLAY		
10							
11		16.6				CL	
12							
13				40	Brown, Wet, soft CLAY		
14							
15							
16		0.4					
17					Boring Complete at 16 feet BGS		
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-03**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	3/18/2010
CLIENT:	South Buffalo Development	**FINISH:**	3/18/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	NA	**Auger ID/OD:**	NA		
Ground Elevation:	NA	**Sampling Device:**	Acetate Sleeve		
Northing:	1078920.46	**Total Depth:**	12 feet		
Easting:	1044877.21	**Depth to Water:**		**Date:**	
Ref. Elevation:		**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				80	Brown, Moist, fine SAND, some GRAVEL and BRICK		
2							
3					Black and Dark Purple, Wet, SAND, fine GRAVEL	FILL	
4	DDC-03-0305	1.9					
5				90	Black, Wet, soft Sandy CLAY		
6	DDC-03-0507	1.9					
7					Brown and Dark Brown, Moist, stiff CLAY		
8							
9				50	Brown, Moist, medium stiff CLAY	CL	
10							
11	DDC-03-1012	5					
12							
13					Boring Complete at 12 feet BGS		
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-04**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	3/18/2010
CLIENT:	South Buffalo Development	**FINISH:**	3/18/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	NA	**Auger ID/OD:**	NA		
Ground Elevation:	NA	**Sampling Device:**	Acetate Sleeve		
Northing:	1078872.00	**Total Depth:**	12 feet		
Easting:	1044832.21	**Depth to Water:**		**Date:**	
Ref. Elevation:		**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				50	Brown and Light Brown, Very Moist, SILT, fine SAND, GRAVEL, some BRICK, trace concrete	FILL	
2							
3							
4	DDC-04-0305				Becomes Wet at 3 feet		
5		190		70	Dark Brown, Wet, coarse SAND, fine GRAVEL		
6	DDC-04-0507				Brown and Black, Wet, soft Silty CLAY	CL	
7		482			Brown, Moist, medium stiff CLAY		
8							
9				100			
10							
11							
12							
13					Boring Complete at 12 feet BGS		
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-05**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	3/18/2010
CLIENT:	South Buffalo Development	**FINISH:**	3/18/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	NA	**Auger ID/OD:**	NA		
Ground Elevation:	NA	**Sampling Device:**	Acetate Sleeve		
Northing:	1078811.34	**Total Depth:**	12 feet		
Easting:	1044649.36	**Depth to Water:**		**Date:**	
Ref. Elevation:		**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				70	Light Brown and Gray, Dry, fine SAND, Concrete, and Gravel		
2						FILL	
3					Brown, Wet, SAND and GRAVEL		
4					Brown and Gray, Dry, Medium to Fine SAND and GRAVEL		
5	DDC-05-0406	19.1		90	Black, Wet, SAND and CLAY		
6							
7	DDC-05-0608				Dark Brown, Wet, medium stiff CLAY		
8		46.5				CL	
9				100	Brown, Wet, CLAY		
10							
11		1.3					
12							
13					Boring Complete at 12 feet BGS		
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-06**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	3/19/2010
CLIENT:	South Buffalo Development	**FINISH:**	3/19/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	NA	**Auger ID/OD:**	NA		
Ground Elevation:	NA	**Sampling Device:**	Acetate Sleeve		
Northing:	1078783.91	**Total Depth:**	12 feet		
Easting:	1044642.76	**Depth to Water:**		**Date:**	
Ref. Elevation:		**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1				70	Light Brown, Dry, SAND, GRAVEL, and BRICK		
2						FILL	
3	DDC-06-0204	5.7			Black and Dark Brown, Wet, SAND, SILT, BRICK, some GRAVEL		
4					Brown and Gray, Wet, Silty CLAY		
5	DDC-06-0406	28.2		80	Moist at 4 feet		
6					Black some Purple, Wet, Silty CLAY some GRAVEL		
7					Brown and Gray, Moist, stiff Silty CLAY		
8						CL	
9				60			
10							
11							
12							
13					Boring Complete at 12 feet BGS		
14							
15							
16							
17							
18							
19							
20							

CREATED BY: ESW
CHECKED BY: GSO

MACTEC

PROJECT:	Depth Discrete Sampling	**BORING:**	**DDC-07**
LOCATION:	Former Buffalo Color		
JOB NUMBER:	3410090701	**START:**	8/6/2010
CLIENT:	South Buffalo Development	**FINISH:**	8/6/2010

Driller:	SJB Drilling	**Drilling Method:**	Direct Push Drilling		
Field Scientist:	Eric Weiler	**Bore Hole Diameter:**	2-inch		
Surveyor:	Niagara Boundary	**Auger ID/OD:**	NA		
Ground Elevation:	584.92	**Sampling Device:**	Acetate Sleeve		
Northing:	1044872.92	**Total Depth:**	14 feet		
Easting:	1078785.88	**Depth to Water:**		**Date:**	
Ref. Elevation:	-	**Groundwater Elevation:**		**Date:**	

DEPTH (ft-bgs)	SAMPLE	PID READING	SPLIT SPOON BLOWS PER 6 INCHES	% RECOVERY	SOIL DESCRIPTION	SOIL CLASSIFICATION	NOTES
1					Brown, Dry, SAND and GRAVEL Concrete		
2		30.5			Black and Dark Purple, Wet, CLAY some fine SANDS trace wood and fine gravel	FILL	
3							
4							
5	DDC-07-0406	754			Gray and Brown, Moist, Stiff CLAY little fine SAND, Some dark green staining, Strong solvent odor		
6							
7						CL	
8		163					
9		16			Brown, SAND seams at 8 feet to 10 feet		
10							
11					Brown and Dark Brown, Wet, Medium GRAVEL little SILT	GW	
12							
13					Brown and Dark Green, Moist, Soft CLAY, Strong solvent odor	CL	
14							
15					Boring Complete at 14 feet BGS		
16							
17							
18							
19							
20							

CREATED BY: SCC
CHECKED BY: ESW

APPENDIX H

AREA C TEST PIT LOGS

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS	LEGEND	ELEV (ft)	SAMPLES: IDENT	TYPE	RECOV. (%)	MOIST. (%)	OTHER/ REMARKS	DEPTH (ft)
0	Brown, sand with brick and gravel up to 3-inches in diameter, some grass and roots, FILL								0
	Concrete slab, old concrete easily broken with bucket of excavator								
	Brown to black, coarse sand with gravel and brick, some slag material, moist, FILL								
	Brownish gray, CLAY with sand and rust colored fine sand partings, stiff, moist, slightly plastic, CL Black staining on clay to 5.0 feet bgs								
	Concrete footing encountered at northeast corner of test pit at 3 feet bgs and extended to bottom of excavation.								
	8-inch, brown clay pipe running east to west was encountered at 4 feet bgs and 5.5 feet north of south wall of test pit.								
	Liquid from pipe entered the test pit at an estimated rate of 10-15 gpm. Flow was periodically slowed by using the excavator bucket to plug pipe with clay.								
5	Wood timbers encountered between 4-5 feet bgs								5
	12-inch iron pipe running north to south was encountered at 6.75 feet bgs. Continued test pit to the east of pipe leaving pipe in place.								
10	Brownish gray, CLAY, soft, moist, plastic, CH								10
	Bottom of excavation at 13 feet bgs								
15									15

TEST PIT: PID; OTHER/REMARKS 3410090701-04TP.GPJ 2007_12-12_PORT_DTMPLT.GDT 10/29/10

CONTRACTOR: OSC
EQUIPMENT: KOM 200
METHOD:
DIMENSIONS: 17.25' x 14'
REMARKS:

LOGGED BY: BE CHECKED BY/DATE: JS 10/4/10

THIS TEST PIT RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

TEST PIT RECORD

TEST PIT NO.: TP-C1
EXCAVATED: 8/5/10
PROJECT: South Buffalo Development
LOCATION: Buffalo, New York
PROJECT NO.: 3410090701-04 **PAGE 1 OF 1**

MACTEC

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS	LEGEND	ELEV (ft)	SAMPLES: IDENT	TYPE	RECOV. (%)	MOIST. (%)	OTHER/ REMARKS	DEPTH (ft)
0	Brown, sand and gravel, dry, FILL								0
	Concrete slab								
	Brown, fine to medium sand and gravel, moist, FILL								
	Black, sand and clay, some gravel, trace coal and ash, FILL								
	Concrete footing on west side of excavation extends to 4 feet bgs								
	Brown to gray, CLAY with sand seams and partings, stiff, moist, CL								
5	Partings contain staining with odor								5
10	Gray, CLAY with fine sand partings, soft, moist, staining is present in some partings, CH								10
	Bottom of excavation at 13 feet bgs								
15									15

TEST PIT: PID: OTHER/REMARKS 3410090701-04TP.GPJ 2007_12-12_PORT_DTMPLT.GDT 10/29/10

CONTRACTOR: OSC
EQUIPMENT: KOM 200
METHOD:
DIMENSIONS: 15' x 6'
REMARKS:

LOGGED BY: JSH CHECKED BY/DATE: BC 5/23/10

THIS TEST PIT RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

TEST PIT RECORD

TEST PIT NO.: TP-C2
EXCAVATED: 8/6/10
PROJECT: South Buffalo Development
LOCATION: Buffalo, New York
PROJECT NO.: 3410090701-04 **PAGE 1 OF 1**

MACTEC

APPENDIX I (CD)

TEST PIT ANALYTICAL REPORT

Analytical Report

Work Order: RTH0485

Project Description

Honeywell-Former Buffalo Color Area ABCE
Honeywell-Former Buffalo Color Area ABCE

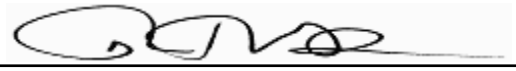
For:

John Scrabis

MACTEC Engineering & Consultants - Alpharetta, GA

800 N. Bell Ave., Suite 200

Carnegie, PA 15106



Ryan VanDette For Brian Fischer

Project Manager

ryan.vandette@testamericainc.com

Tuesday, August 17, 2010

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

TestAmerica Buffalo
Current Certifications

As of 08/16/2010

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA	10026
North Dakota	CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Oregon*	CWA,RCRA	NY200003
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parame ters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

CASE NARRATIVE

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. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

This analyte was detected in the sample at a concentration above the linear range of the initial calibration curve. The sample was re-analyzed at a dilution. Due to the high dilution dictated by other target compounds, this analyte was diluted out in the re-analysis of the sample. Therefore, the value being reported is from the original analysis and is qualified with an E flag.

There are pertinent documents appended to this report, 2 pages, are included and are an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

DATA QUALIFIERS AND DEFINITIONS

B	Analyte was detected in the associated Method Blank.
D08	Dilution required due to high concentration of target analyte(s)
D12	Dilution required due to sample viscosity
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
N1	See case narrative.
W1	Sample was prepared and analyzed utilizing a medium level extraction.
ZX	Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.
NR	Any inclusion of NR indicates that the project specific requirements do not require reporting estimated values below the laboratory reporting limit.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-01 (TP-E1-0507 - Solid)						**Sampled: 08/04/10 10:00**			**Recvd: 08/05/10 17:05**	
Volatile Organic Compounds by EPA 8260B										
Chlorobenzene	**48000**	W1, D08	520	69	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**270**		200	10	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	08/09/10 15:56	JRR	10H0568	Dry Weight
Sample ID: RTH0485-02 (TP-E1-0709 - Solid)						**Sampled: 08/04/10 10:25**			**Recvd: 08/05/10 17:05**	
Volatile Organic Compounds by EPA 8260B										
Chlorobenzene	**110000**	W1, D08	2500	330	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**500**		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
General Chemistry Parameters										
Percent Solids	**50**		0.010	NR	%	1.00	08/09/10 15:58	JRR	10H0568	Dry Weight
Sample ID: RTH0485-03 (TP-E2-0507 - Solid)						**Sampled: 08/04/10 11:50**			**Recvd: 08/05/10 17:05**	
Volatile Organic Compounds by EPA 8260B										
Chlorobenzene	**18000**	W1, D08	240	31	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**84**	J	210	10	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
General Chemistry Parameters										
Percent Solids	**81**		0.010	NR	%	1.00	08/09/10 16:00	JRR	10H0568	Dry Weight
Sample ID: RTH0485-04 (TP-E2-0709 - Solid)						**Sampled: 08/04/10 12:00**			**Recvd: 08/05/10 17:05**	
Volatile Organic Compounds by EPA 8260B										
Chlorobenzene	**17000**	W1, D08	210	28	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
General Chemistry Parameters										
Percent Solids	**83**		0.010	NR	%	1.00	08/09/10 16:02	JRR	10H0568	Dry Weight
Sample ID: RTH0485-05 (TP-E2-0911 - Solid)						**Sampled: 08/04/10 13:40**			**Recvd: 08/05/10 17:05**	
Volatile Organic Compounds by EPA 8260B										
Acetone	**8.7**	J	25	4.2	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
General Chemistry Parameters										
Percent Solids	**76**		0.010	NR	%	1.00	08/09/10 16:04	JRR	10H0568	Dry Weight
Sample ID: RTH0485-06 (TP-E1-0910 - Solid)						**Sampled: 08/04/10 15:20**			**Recvd: 08/05/10 17:05**	
Volatile Organic Compounds by EPA 8260B										
1,4-Dichlorobenzene	**30**	W1,J	50	6.9	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Chlorobenzene	**35**	W1,J	50	6.5	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-06 (TP-E1-0910 - Solid) - cont.					**Sampled: 08/04/10 15:20**			**Recvd: 08/05/10 17:05**		
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 16:06	JRR	10H0568	Dry Weight
Sample ID: RTH0485-07 (TP-C1-0305 - Solid)					**Sampled: 08/05/10 11:00**			**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**5300**	W1	57	21	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dichlorobenzene	**11000**	W1,E	57	14	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,3-Dichlorobenzene	**360**	W1	57	15	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,4-Dichlorobenzene	**2500**	W1	57	7.9	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Benzene	**31**	W1,J	57	2.7	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Chlorobenzene	**5700**	W1,E	57	7.5	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Methylcyclohexane	**54**	W1,J	57	27	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Toluene	**110**	W1	57	15	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Xylenes, total	**33**	W1,J	110	9.5	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2,4,6-Trichlorophenol	**150**	D12,J	1100	74	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4-Dichlorophenol	**680**	D12,J	1100	59	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(a)anthracene	**190**	D12,J	1100	19	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(a)pyrene	**140**	D12,J	1100	27	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(b)fluoranthene	**180**	D12,J	1100	22	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(ghi)perylene	**93**	D12,J	1100	14	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Chrysene	**200**	D12,J	1100	11	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Fluoranthene	**370**	D12,J	1100	16	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Naphthalene	**390**	D12,J	1100	19	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Nitrobenzene	**810**	D12,J	1100	50	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Phenanthrene	**370**	D12,J	1100	24	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Pyrene	**270**	D12,J	1100	7.3	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
General Chemistry Parameters										
Percent Solids	**74**		0.010	NR	%	1.00	08/09/10 16:08	JRR	10H0568	Dry Weight
Sample ID: RTH0485-07RE1 (TP-C1-0305 - Solid)					**Sampled: 08/05/10 11:00**			**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**5300**	D08	280	110	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dichlorobenzene	**12000**	D08	280	72	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,3-Dichlorobenzene	**380**	D08	280	76	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,4-Dichlorobenzene	**2600**	D08	280	40	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Chlorobenzene	**5800**	D08	280	37	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Sample ID: RTH0485-08 (TP-C1-0507 - Solid)					**Sampled: 08/05/10 11:10**			**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**2300**	W1, D08	350	130	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dichlorobenzene	**31000**	W1, D08	350	89	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,3-Dichlorobenzene	**3700**	W1, D08	350	93	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,4-Dichlorobenzene	**9000**	W1, D08	350	49	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Chlorobenzene	**20000**	W1, D08	350	46	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-08 (TP-C1-0507 - Solid) - cont.						**Sampled: 08/05/10 11:10**		**Recvd: 08/05/10 17:05**		
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	08/09/10 16:10	JRR	10H0568	Dry Weight
Sample ID: RTH0485-09 (TP-C1-0709 - Solid)						**Sampled: 08/05/10 11:40**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,3-Dichlorobenzene	**1400**	W1, D08	1100	290	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,4-Dichlorobenzene	**36000**	W1, D08	1100	150	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Chlorobenzene	**92000**	W1, D08	1100	140	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**48**	J	180	9.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Aniline	**280**	J	350	99	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(a)anthracene	**15**	J	180	3.1	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(b)fluoranthene	**12**	J	180	3.5	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Chrysene	**15**	J	180	1.8	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Diethyl phthalate	**12**	J	180	5.5	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Fluoranthene	**28**	J	180	2.6	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Nitrobenzene	**400**		180	8.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Phenanthrene	**28**	J	180	3.8	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Pyrene	**19**	J	180	1.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
General Chemistry Parameters										
Percent Solids	**91**		0.010	NR	%	1.00	08/09/10 16:12	JRR	10H0568	Dry Weight
Sample ID: RTH0485-09RE1 (TP-C1-0709 - Solid)						**Sampled: 08/05/10 11:40**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**140000**	W1, D08	4300	1600	ug/kg dry	100	08/12/10 04:36	CDC	10H0807	8260B
1,2-Dichlorobenzene	**150000**	W1, D08	4300	1100	ug/kg dry	100	08/12/10 04:36	CDC	10H0807	8260B
Sample ID: RTH0485-10 (TP-C1-0911 - Solid)						**Sampled: 08/05/10 12:00**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,3-Dichlorobenzene	**11000**	W1, D08	1300	360	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Benzene	**880**	W1, D08,J	1300	64	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Toluene	**710**	W1, D08,J	1300	360	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Semivolatile Organics by GC/MS										
Nitrobenzene	**2200**	D12	1100	47	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 16:14	JRR	10H0568	Dry Weight
Sample ID: RTH0485-10RE1 (TP-C1-0911 - Solid)						**Sampled: 08/05/10 12:00**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**420000**	W1, D08	27000	10000	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
1,2-Dichlorobenzene	**690000**	W1, D08	27000	6800	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
1,4-Dichlorobenzene	**150000**	W1, D08	27000	3700	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
Chlorobenzene	**340000**	W1, D08	27000	3500	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B

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Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-01 (TP-C2-0305 - Solid)					**Sampled: 08/06/10 10:00**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**510**	W1	58	15	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Benzene	**32**	W1,J	58	2.8	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Methyl Acetate	**160**	W1	58	27	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 15:40	JRR	10H0573	Dry Weight
Sample ID: RTH0556-01RE1 (TP-C2-0305 - Solid)					**Sampled: 08/06/10 10:00**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**15000**	W1, D08,B	580	220	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
1,3-Dichlorobenzene	**48000**	W1, D08	580	150	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
1,4-Dichlorobenzene	**19000**	W1, D08	580	81	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
Chlorobenzene	**7900**	W1, D08	580	76	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
Semivolatile Organics by GC/MS										
2,4-Dichlorophenol	**33**	MNR1,J	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Methylnaphthalene	**9.0**	MNR1,J	220	2.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Anthracene	**19**	MNR1,J	220	5.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Biphenyl	**15**	MNR1,J	220	13	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Carbazole	**54**	MNR1,J	220	2.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Chrysene	**9.8**	MNR1,J	220	2.2	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Fluoranthene	**11**	MNR1,J	220	3.1	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Fluorene	**11**	MNR1,J	220	5.0	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Naphthalene	**30**	MNR1,J	220	3.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
N-Nitrosodiphenylamine	**12**	MNR1,J	220	12	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Phenanthrene	**33**	MNR1,J	220	4.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Pyrene	**10**	MNR1,J	220	1.4	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Sample ID: RTH0556-02 (TP-C2-0507 - Solid)					**Sampled: 08/06/10 10:15**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**130**	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,4-Dichlorobenzene	**4000**	W1	49	6.8	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Chlorobenzene	**1500**	W1	49	6.5	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 15:42	JRR	10H0573	Dry Weight
Sample ID: RTH0556-02RE1 (TP-C2-0507 - Solid)					**Sampled: 08/06/10 10:15**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**260000**	W1, D08	4900	1900	ug/kg dry	100	08/11/10 23:23	CDC	10H0807	8260B
1,3-Dichlorobenzene	**52000**	W1, D08	4900	1300	ug/kg dry	100	08/11/10 23:23	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	**280**	MNR1	210	46	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4-Dichlorophenol	**200**	MNR1,J	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Naphthalene	**9.6**	MNR1,J	210	3.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Sample ID: RTH0556-03 (TP-C2-0709 - Solid)					**Sampled: 08/06/10 10:45**		**Recvd: 08/06/10 17:00**			

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Received: 08/05/10-08/06/10
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Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-03 (TP-C2-0709 - Solid) - cont.						**Sampled: 08/06/10 10:45**		**Recvd: 08/06/10 17:00**		
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	08/09/10 15:44	JRR	10H0573	Dry Weight
Sample ID: RTH0556-03RE1 (TP-C2-0709 - Solid)						**Sampled: 08/06/10 10:45**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**500000**	W1, D08	17000	6600	ug/kg dry	400	08/11/10 23:45	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	**290**	MNR1	200	44	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4-Dichlorophenol	**47**	MNR1,J	200	11	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Chlorophenol	**11**	MNR1,J	200	10	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzo(a)anthracene	**9.1**	MNR1,J	200	3.5	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Naphthalene	**11**	MNR1,J	200	3.3	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Sample ID: RTH0556-04 (TP-C2-0911 - Solid)						**Sampled: 08/06/10 11:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**630**	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,4-Dichlorobenzene	**3100**	D08, W1	460	65	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Chlorobenzene	**7200**	D08, W1	460	61	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 15:46	JRR	10H0573	Dry Weight
Sample ID: RTH0556-04RE1 (TP-C2-0911 - Solid)						**Sampled: 08/06/10 11:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**28000000**	W1, D08	370000	140000	ug/kg dry	8000	08/12/10 00:08	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	**100**	MNR1,J	220	47	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4-Dichlorophenol	**32**	MNR1,J	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(a)anthracene	**19**	MNR1,J	220	3.7	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(a)pyrene	**20**	MNR1,J	220	5.2	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(b)fluoranthene	**19**	MNR1,J	220	4.2	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(ghi)perylene	**20**	MNR1,J	220	2.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(k)fluoranthene	**17**	MNR1,J	220	2.4	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Chrysene	**34**	MNR1,J	220	2.1	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Fluoranthene	**28**	MNR1,J	220	3.1	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	**13**	MNR1,J	220	5.9	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Naphthalene	**27**	MNR1,J	220	3.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Phenanthrene	**16**	MNR1,J	220	4.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Pyrene	**27**	MNR1,J	220	1.4	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C

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Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-05 (DDC-05-0406 - Solid)					**Sampled: 08/06/10 13:20**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,3-Dichlorobenzene	**4000**	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**85**		0.010	NR	%	1.00	08/09/10 15:48	JRR	10H0573	Dry Weight
Sample ID: RTH0556-05RE1 (DDC-05-0406 - Solid)					**Sampled: 08/06/10 13:20**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**400000**	W1, D08	4600	1700	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
1,2-Dichlorobenzene	**280000**	W1, D08	4600	1200	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
1,4-Dichlorobenzene	**52000**	W1, D08	4600	650	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
Chlorobenzene	**150000**	W1, D08	4600	610	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**170**	MNR1, D12,J	970	49	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Sample ID: RTH0556-06 (DDE-07-0810 - Solid)					**Sampled: 08/06/10 14:00**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**3700**	W1, D08	88	33	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,3-Dichlorobenzene	**3500**	W1, D08	88	24	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Benzene	**410**	W1, D08	88	4.2	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Methylcyclohexane	**63**	W1, D08,J	88	41	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Tetrachloroethene	**310**	W1, D08	88	12	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Toluene	**47**	W1, D08,J	88	24	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**79**		0.010	NR	%	1.00	08/09/10 15:50	JRR	10H0573	Dry Weight
Sample ID: RTH0556-06RE1 (DDE-07-0810 - Solid)					**Sampled: 08/06/10 14:00**		**Recvd: 08/06/10 17:00**			
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**140000**	W1, D08	35000	9000	ug/kg dry	800	08/12/10 00:53	CDC	10H0807	8260B
1,4-Dichlorobenzene	**30000**	W1, D08,J	35000	4900	ug/kg dry	800	08/12/10 00:53	CDC	10H0807	8260B
Chlorobenzene	**840000**	W1, D08	35000	4700	ug/kg dry	800	08/12/10 00:53	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**30**	MNR1,J	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(a)anthracene	**29**	MNR1,J	210	3.6	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(a)pyrene	**12**	MNR1,J	210	5.0	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(b)fluoranthene	**9.4**	MNR1,J	210	4.0	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Fluoranthene	**14**	MNR1,J	210	3.0	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Naphthalene	**14**	MNR1,J	210	3.5	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Phenanthrene	**18**	MNR1,J	210	4.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Pyrene	**16**	MNR1,J	210	1.3	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C

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Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-07 (DDE-08-0810 - Solid)						**Sampled: 08/06/10 14:20**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,4-Dichlorobenzene	**2400**	W1	49	6.8	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Methylcyclohexane	**25**	W1,J	49	23	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Toluene	**4100**	W1	49	13	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Xylenes, total	**43**	W1,J	98	8.2	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**80**		0.010	NR	%	1.00	08/09/10 15:52	JRR	10H0573	Dry Weight
Sample ID: RTH0556-07RE1 (DDE-08-0810 - Solid)						**Sampled: 08/06/10 14:20**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**13000**	W1, D08,B	200	74	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
1,2-Dichlorobenzene	**8700**	W1, D08	200	50	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
1,3-Dichlorobenzene	**17000**	W1, D08	200	52	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
Chlorobenzene	**12000**	W1, D08	200	26	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
Semivolatile Organics by GC/MS										
4-Chloroaniline	**770**	MNR1, D08,J	2100	620	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzo(a)anthracene	**87**	MNR1, D08,J	2100	36	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Biphenyl	**370**	MNR1, D08,J	2100	130	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Fluoranthene	**87**	MNR1, D08,J	2100	31	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Hexachlorobenzene	**2600**	MNR1, D08	2100	100	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Nitrobenzene	**14000**	MNR1, D08	2100	93	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Sample ID: RTH0556-08 (CS-48-0204 - Solid)						**Sampled: 08/06/10 14:50**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**2700**	W1	45	17	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dichlorobenzene	**490**	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,3-Dichlorobenzene	**380**	W1	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,4-Dichlorobenzene	**150**	W1	45	6.3	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Chlorobenzene	**120**	W1	45	5.9	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Toluene	**40**	W1,J	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**94**		0.010	NR	%	1.00	08/09/10 15:54	JRR	10H0573	Dry Weight
Sample ID: RTH0556-08RE1 (CS-48-0204 - Solid)						**Sampled: 08/06/10 14:50**		**Recvd: 08/06/10 17:00**		
Semivolatile Organics by GC/MS										
Bis(2-ethylhexyl) phthalate	**1900**	MNR1, D12	900	290	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Sample ID: RTH0556-09 (CS-49-0203 - Solid)						**Sampled: 08/06/10 15:05**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**1300**	W1	49	18	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dichlorobenzene	**890**	W1	49	12	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B

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800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-09 (CS-49-0203 - Solid) - cont.						**Sampled: 08/06/10 15:05**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B - cont.										
1,4-Dichlorobenzene	**120**	W1	49	6.8	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Chlorobenzene	**27**	W1,J	49	6.4	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**97**		0.010	NR	%	1.00	08/09/10 15:56	JRR	10H0573	Dry Weight
Sample ID: RTH0556-09RE2 (CS-49-0203 - Solid)						**Sampled: 08/06/10 15:05**		**Recvd: 08/06/10 17:00**		
Semivolatile Organics by GC/MS										
Benzo(a)anthracene	**42**	MNR1, D12,J	860	15	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Chrysene	**37**	MNR1, D12,J	860	8.5	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Fluoranthene	**37**	MNR1, D12,J	860	12	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Nitrobenzene	**14000**	MNR1, D12	860	38	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Pyrene	**34**	MNR1, D12,J	860	5.5	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Sample ID: RTH0556-10 (CS-50-0204 - Solid)						**Sampled: 08/06/10 15:30**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**280**	W1	58	22	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,3-Dichlorobenzene	**3000**	W1	58	15	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Benzene	**5700**	W1	58	2.8	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Isopropylbenzene	**37**	W1,J	58	8.6	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Methyl Acetate	**130**	W1	58	27	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Methylcyclohexane	**67**	W1	58	27	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Toluene	**44**	W1,J	58	15	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Xylenes, total	**340**	W1	120	9.7	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**77**		0.010	NR	%	1.00	08/09/10 15:58	JRR	10H0573	Dry Weight
Sample ID: RTH0556-10RE1 (CS-50-0204 - Solid)						**Sampled: 08/06/10 15:30**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**22000**	D08, W1,J	29000	7300	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
1,4-Dichlorobenzene	**68000**	D08, W1	29000	4000	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
Chlorobenzene	**670000**	D08, W1	29000	3800	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2,4-Dichlorophenol	**28**	MNR1,J	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Chlorophenol	**510**	MNR1	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Aniline	**240**	MNR1,J	420	120	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzo(a)pyrene	**810**	MNR1	220	5.2	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Naphthalene	**18**	MNR1,J	220	3.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Sample ID: RTH0556-11 (CS-51-0204 - Solid)						**Sampled: 08/06/10 16:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,3-Dichlorobenzene	**4700**	W1	57	15	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B

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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-11 (CS-51-0204 - Solid) - cont.						**Sampled: 08/06/10 16:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B - cont.										
Benzene	**5900**	W1,N1, E	57	2.7	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Ethylbenzene	**5200**	W1	57	17	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Methyl Acetate	**120**	W1	57	27	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Methylcyclohexane	**78**	W1	57	27	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Toluene	**410**	W1	57	15	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Xylenes, total	**170**	W1	110	9.5	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
General Chemistry Parameters										
Percent Solids	**71**		0.010	NR	%	1.00	08/09/10 16:00	JRR	10H0573	Dry Weight
Sample ID: RTH0556-11RE1 (CS-51-0204 - Solid)						**Sampled: 08/06/10 16:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**6500**	W1, D08,J	11000	4300	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
1,2-Dichlorobenzene	**19000**	W1, D08	11000	2900	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
1,4-Dichlorobenzene	**64000**	W1, D08	11000	1600	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
Chlorobenzene	**600000**	W1, D08	11000	1500	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
Semivolatile Organics by GC/MS										
2-Chlorophenol	**150**	MNR1,J	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Anthracene	**14**	MNR1,J	240	6.1	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzaldehyde	**110**	MNR1,J	240	26	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(a)anthracene	**52**	MNR1,J	240	4.1	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(a)pyrene	**39**	MNR1,J	240	5.7	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(b)fluoranthene	**54**	MNR1,J	240	4.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(ghi)perylene	**26**	MNR1,J	240	2.9	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(k)fluoranthene	**28**	MNR1,J	240	2.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Carbazole	**9.4**	MNR1,J	240	2.8	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Chrysene	**53**	MNR1,J	240	2.4	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Fluoranthene	**96**	MNR1,J	240	3.4	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	**19**	MNR1,J	240	6.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Naphthalene	**15**	MNR1,J	240	4.0	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Phenanthrene	**70**	MNR1,J	240	5.0	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Pyrene	**86**	MNR1,J	240	1.5	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C

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800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Sample Summary

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
TP-E1-0507	RTH0485-01	Solid	08/04/10 10:00	08/05/10 17:05	
TP-E1-0709	RTH0485-02	Solid	08/04/10 10:25	08/05/10 17:05	
TP-E2-0507	RTH0485-03	Solid	08/04/10 11:50	08/05/10 17:05	
TP-E2-0709	RTH0485-04	Solid	08/04/10 12:00	08/05/10 17:05	
TP-E2-0911	RTH0485-05	Solid	08/04/10 13:40	08/05/10 17:05	
TP-E1-0910	RTH0485-06	Solid	08/04/10 15:20	08/05/10 17:05	
TP-C1-0305	RTH0485-07	Solid	08/05/10 11:00	08/05/10 17:05	
TP-C1-0507	RTH0485-08	Solid	08/05/10 11:10	08/05/10 17:05	
TP-C1-0709	RTH0485-09	Solid	08/05/10 11:40	08/05/10 17:05	
TP-C1-0911	RTH0485-10	Solid	08/05/10 12:00	08/05/10 17:05	

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
TP-C2-0305	RTH0556-01	Solid	08/06/10 10:00	08/06/10 17:00	
TP-C2-0507	RTH0556-02	Solid	08/06/10 10:15	08/06/10 17:00	
TP-C2-0709	RTH0556-03	Solid	08/06/10 10:45	08/06/10 17:00	
TP-C2-0911	RTH0556-04	Solid	08/06/10 11:00	08/06/10 17:00	
DDC-05-0406	RTH0556-05	Solid	08/06/10 13:20	08/06/10 17:00	
DDE-07-0810	RTH0556-06	Solid	08/06/10 14:00	08/06/10 17:00	
DDE-08-0810	RTH0556-07	Solid	08/06/10 14:20	08/06/10 17:00	
CS-48-0204	RTH0556-08	Solid	08/06/10 14:50	08/06/10 17:00	
CS-49-0203	RTH0556-09	Solid	08/06/10 15:05	08/06/10 17:00	
CS-50-0204	RTH0556-10	Solid	08/06/10 15:30	08/06/10 17:00	
CS-51-0204	RTH0556-11	Solid	08/06/10 16:00	08/06/10 17:00	

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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-01 (TP-E1-0507 - Solid) **Sampled: 08/04/10 10:00** **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	520	140	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	520	85	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,1,2-Trichloroethane	ND	W1, D08	520	110	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	520	260	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,1-Dichloroethane	ND	W1, D08	520	160	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,1-Dichloroethene	ND	W1, D08	520	180	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2,4-Trichlorobenzene	ND	W1, D08	520	200	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	520	260	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2-Dibromoethane	ND	W1, D08	520	20	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2-Dichlorobenzene	ND	W1, D08	520	130	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2-Dichloroethane	ND	W1, D08	520	210	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2-Dichloropropane	ND	W1, D08	520	85	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,3-Dichlorobenzene	ND	W1, D08	520	140	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,4-Dichlorobenzene	ND	W1, D08	520	73	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
2-Butanone	ND	W1, D08	2600	1600	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
2-Hexanone	ND	W1, D08	2600	1100	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
4-Methyl-2-pentanone	ND	W1, D08	2600	170	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Acetone	ND	W1, D08	2600	2100	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Benzene	ND	W1, D08	520	25	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Bromodichloromethane	ND	W1, D08	520	100	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Bromoform	ND	W1, D08	520	260	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Bromomethane	ND	W1, D08	520	110	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Carbon disulfide	ND	W1, D08	520	240	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Carbon Tetrachloride	ND	W1, D08	520	130	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Chlorobenzene	**48000**	W1, D08	520	69	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Dibromochloromethane	ND	W1, D08	520	250	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Chloroethane	ND	W1, D08	520	110	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Chloroform	ND	W1, D08	520	360	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Chloromethane	ND	W1, D08	520	120	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
cis-1,2-Dichloroethene	ND	W1, D08	520	140	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
cis-1,3-Dichloropropene	ND	W1, D08	520	120	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Cyclohexane	ND	W1, D08	520	120	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Dichlorodifluoromethane	ND	W1, D08	520	230	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Ethylbenzene	ND	W1, D08	520	150	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Isopropylbenzene	ND	W1, D08	520	78	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Methyl Acetate	ND	W1, D08	520	250	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	520	200	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Methylcyclohexane	ND	W1, D08	520	240	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Methylene Chloride	ND	W1, D08	520	100	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Styrene	ND	W1, D08	520	130	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Tetrachloroethene	ND	W1, D08	520	70	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Toluene	ND	W1, D08	520	140	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
trans-1,2-Dichloroethene	ND	W1, D08	520	120	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
trans-1,3-Dichloropropene	ND	W1, D08	520	25	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Trichloroethene	ND	W1, D08	520	150	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Trichlorofluoromethane	ND	W1, D08	520	250	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
Vinyl chloride	ND	W1, D08	520	180	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-01 (TP-E1-0507 - Solid) - cont. **Sampled: 08/04/10 10:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1, D08	1000	88	ug/kg dry	10.0	08/12/10 02:01	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*99 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 02:01*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*98 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 02:01*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*103 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 02:01*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		200	44	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		200	13	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		200	11	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		200	54	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		390	70	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		200	31	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		200	49	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2-Chloronaphthalene	ND		200	13	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2-Chlorophenol	**270**		200	10	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2-Methylnaphthalene	ND		200	2.4	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2-Methylphenol	ND		200	6.2	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2-Nitroaniline	ND		390	64	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2-Nitrophenol	ND		200	9.2	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		200	180	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
3-Nitroaniline	ND		390	46	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		390	69	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		200	64	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		200	8.3	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Chloroaniline	ND		200	59	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		200	4.3	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Methylphenol	ND		390	11	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Nitroaniline	ND		390	22	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
4-Nitrophenol	ND		390	49	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Acenaphthene	ND		200	2.4	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Acenaphthylene	ND		200	1.6	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Acetophenone	ND		200	10	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Aniline	ND		390	110	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Anthracene	ND		200	5.1	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Atrazine	ND		200	8.9	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Benzaldehyde	ND		200	22	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Benzo(a)anthracene	ND		200	3.5	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Benzo(a)pyrene	ND		200	4.8	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		200	3.9	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		200	2.4	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		200	2.2	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Biphenyl	ND		200	13	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		200	11	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		200	17	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		200	21	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-01 (TP-E1-0507 - Solid) - cont. **Sampled: 08/04/10 10:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		200	65	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		200	54	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Caprolactam	ND		200	87	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Carbazole	ND		200	2.3	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Chrysene	ND		200	2.0	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		200	2.4	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Dibenzofuran	ND		200	2.1	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Diethyl phthalate	ND		200	6.1	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Dimethyl phthalate	ND		200	5.2	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		200	69	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		200	4.7	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Fluoranthene	ND		200	2.9	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Fluorene	ND		200	4.6	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Hexachlorobenzene	ND		200	10	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Hexachlorobutadiene	ND		200	10	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		200	61	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Hexachloroethane	ND		200	16	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		200	5.6	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Isophorone	ND		200	10	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Naphthalene	ND		200	3.3	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Nitrobenzene	ND		200	8.9	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		200	16	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		200	11	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Pentachlorophenol	ND		390	69	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Phenanthrene	ND		200	4.2	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Phenol	ND		200	21	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
Pyrene	ND		200	1.3	ug/kg dry	1.00	08/10/10 16:36	JLG	10H0489	8270C
2,4,6-Tribromophenol	*74 %*		*Surr Limits: (39-146%)*				*08/10/10 16:36*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*55 %*		*Surr Limits: (37-120%)*				*08/10/10 16:36*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*44 %*		*Surr Limits: (18-120%)*				*08/10/10 16:36*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*52 %*		*Surr Limits: (34-132%)*				*08/10/10 16:36*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*51 %*		*Surr Limits: (11-120%)*				*08/10/10 16:36*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*67 %*		*Surr Limits: (58-147%)*				*08/10/10 16:36*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	08/09/10 15:56	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-02 (TP-E1-0709 - Solid) — **Sampled: 08/04/10 10:25** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	2500	700	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	2500	410	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,1,2-Trichloroethane	ND	W1, D08	2500	530	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	2500	1300	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,1-Dichloroethane	ND	W1, D08	2500	780	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,1-Dichloroethene	ND	W1, D08	2500	870	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2,4-Trichlorobenzene	ND	W1, D08	2500	950	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	2500	1300	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2-Dibromoethane	ND	W1, D08	2500	96	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2-Dichlorobenzene	ND	W1, D08	2500	640	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2-Dichloroethane	ND	W1, D08	2500	1000	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2-Dichloropropane	ND	W1, D08	2500	410	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,3-Dichlorobenzene	ND	W1, D08	2500	670	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,4-Dichlorobenzene	ND	W1, D08	2500	350	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
2-Butanone	ND	W1, D08	13000	7500	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
2-Hexanone	ND	W1, D08	13000	5200	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
4-Methyl-2-pentanone	ND	W1, D08	13000	810	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Acetone	ND	W1, D08	13000	10000	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Benzene	ND	W1, D08	2500	120	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Bromodichloromethane	ND	W1, D08	2500	500	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Bromoform	ND	W1, D08	2500	1300	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Bromomethane	ND	W1, D08	2500	550	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Carbon disulfide	ND	W1, D08	2500	1100	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Carbon Tetrachloride	ND	W1, D08	2500	640	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Chlorobenzene	**110000**	W1, D08	2500	330	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Dibromochloromethane	ND	W1, D08	2500	1200	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Chloroethane	ND	W1, D08	2500	520	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Chloroform	ND	W1, D08	2500	1700	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Chloromethane	ND	W1, D08	2500	600	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
cis-1,2-Dichloroethene	ND	W1, D08	2500	700	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
cis-1,3-Dichloropropene	ND	W1, D08	2500	600	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Cyclohexane	ND	W1, D08	2500	560	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Dichlorodifluoromethane	ND	W1, D08	2500	1100	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Ethylbenzene	ND	W1, D08	2500	730	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Isopropylbenzene	ND	W1, D08	2500	380	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Methyl Acetate	ND	W1, D08	2500	1200	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	2500	950	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Methylcyclohexane	ND	W1, D08	2500	1200	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Methylene Chloride	ND	W1, D08	2500	500	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Styrene	ND	W1, D08	2500	610	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Tetrachloroethene	ND	W1, D08	2500	340	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Toluene	ND	W1, D08	2500	670	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
trans-1,2-Dichloroethene	ND	W1, D08	2500	590	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
trans-1,3-Dichloropropene	ND	W1, D08	2500	120	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Trichloroethene	ND	W1, D08	2500	700	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Trichlorofluoromethane	ND	W1, D08	2500	1200	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
Vinyl chloride	ND	W1, D08	2500	840	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B

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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-02 (TP-E1-0709 - Solid) - cont. **Sampled: 08/04/10 10:25** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1, D08	5000	420	ug/kg dry	25.0	08/11/10 17:10	PJQ	10H0745	8260B
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 17:10*	*PJQ*	*10H0745*	*8260B*
4-Bromofluorobenzene	*94 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 17:10*	*PJQ*	*10H0745*	*8260B*
Toluene-d8	*97 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 17:10*	*PJQ*	*10H0745*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		340	73	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		340	22	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		340	90	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		650	120	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		340	52	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		340	82	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2-Chloronaphthalene	ND		340	22	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2-Chlorophenol	**500**		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2-Methylnaphthalene	ND		340	4.0	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2-Methylphenol	ND		340	10	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2-Nitroaniline	ND		650	110	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2-Nitrophenol	ND		340	15	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		340	290	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
3-Nitroaniline	ND		650	77	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		650	120	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		340	110	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		340	14	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Chloroaniline	ND		340	98	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		340	7.1	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Methylphenol	ND		650	19	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Nitroaniline	ND		650	37	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
4-Nitrophenol	ND		650	81	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Acenaphthene	ND		340	3.9	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Acenaphthylene	ND		340	2.7	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Acetophenone	ND		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Aniline	ND		650	180	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Anthracene	ND		340	8.5	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Atrazine	ND		340	15	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Benzaldehyde	ND		340	37	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Benzo(a)anthracene	ND		340	5.8	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Benzo(a)pyrene	ND		340	8.0	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		340	6.5	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		340	4.0	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		340	3.7	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Biphenyl	ND		340	21	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		340	18	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		340	29	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		340	35	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-02 (TP-E1-0709 - Solid) - cont. **Sampled: 08/04/10 10:25** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		340	110	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		340	89	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Caprolactam	ND		340	140	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Carbazole	ND		340	3.9	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Chrysene	ND		340	3.3	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		340	3.9	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Dibenzofuran	ND		340	3.5	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Diethyl phthalate	ND		340	10	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Dimethyl phthalate	ND		340	8.7	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		340	120	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		340	7.8	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Fluoranthene	ND		340	4.8	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Fluorene	ND		340	7.7	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Hexachlorobenzene	ND		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Hexachlorobutadiene	ND		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		340	100	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Hexachloroethane	ND		340	26	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		340	9.2	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Isophorone	ND		340	17	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Naphthalene	ND		340	5.5	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Nitrobenzene	ND		340	15	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		340	26	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		340	18	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Pentachlorophenol	ND		650	110	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Phenanthrene	ND		340	7.0	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Phenol	ND		340	35	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
Pyrene	ND		340	2.2	ug/kg dry	1.00	08/10/10 16:59	JLG	10H0489	8270C
2,4,6-Tribromophenol	*81 %*		*Surr Limits: (39-146%)*				*08/10/10 16:59*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*61 %*		*Surr Limits: (37-120%)*				*08/10/10 16:59*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*49 %*		*Surr Limits: (18-120%)*				*08/10/10 16:59*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*56 %*		*Surr Limits: (34-132%)*				*08/10/10 16:59*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*58 %*		*Surr Limits: (11-120%)*				*08/10/10 16:59*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*74 %*		*Surr Limits: (58-147%)*				*08/10/10 16:59*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**50**		0.010	NR	%	1.00	08/09/10 15:58	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-03 (TP-E2-0507 - Solid) — **Sampled: 08/04/10 11:50** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	240	65	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	240	38	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,1,2-Trichloroethane	ND	W1, D08	240	49	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	240	120	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,1-Dichloroethane	ND	W1, D08	240	73	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,1-Dichloroethene	ND	W1, D08	240	81	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2,4-Trichlorobenzene	ND	W1, D08	240	89	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	240	120	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2-Dibromoethane	ND	W1, D08	240	8.9	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2-Dichlorobenzene	ND	W1, D08	240	60	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2-Dichloroethane	ND	W1, D08	240	96	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2-Dichloropropane	ND	W1, D08	240	38	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,3-Dichlorobenzene	ND	W1, D08	240	63	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,4-Dichlorobenzene	ND	W1, D08	240	33	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
2-Butanone	ND	W1, D08	1200	700	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
2-Hexanone	ND	W1, D08	1200	480	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
4-Methyl-2-pentanone	ND	W1, D08	1200	75	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Acetone	ND	W1, D08	1200	970	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Benzene	ND	W1, D08	240	11	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Bromodichloromethane	ND	W1, D08	240	47	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Bromoform	ND	W1, D08	240	120	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Bromomethane	ND	W1, D08	240	52	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Carbon disulfide	ND	W1, D08	240	110	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Carbon Tetrachloride	ND	W1, D08	240	60	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Chlorobenzene	**18000**	W1, D08	240	31	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Dibromochloromethane	ND	W1, D08	240	110	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Chloroethane	ND	W1, D08	240	49	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Chloroform	ND	W1, D08	240	160	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Chloromethane	ND	W1, D08	240	56	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
cis-1,2-Dichloroethene	ND	W1, D08	240	65	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
cis-1,3-Dichloropropene	ND	W1, D08	240	56	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Cyclohexane	ND	W1, D08	240	52	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Dichlorodifluoromethane	ND	W1, D08	240	100	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Ethylbenzene	ND	W1, D08	240	68	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Isopropylbenzene	ND	W1, D08	240	35	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Methyl Acetate	ND	W1, D08	240	110	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	240	89	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Methylcyclohexane	ND	W1, D08	240	110	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Methylene Chloride	ND	W1, D08	240	47	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Styrene	ND	W1, D08	240	57	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Tetrachloroethene	ND	W1, D08	240	32	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Toluene	ND	W1, D08	240	63	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
trans-1,2-Dichloroethene	ND	W1, D08	240	56	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
trans-1,3-Dichloropropene	ND	W1, D08	240	11	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Trichloroethene	ND	W1, D08	240	65	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Trichlorofluoromethane	ND	W1, D08	240	110	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
Vinyl chloride	ND	W1, D08	240	79	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-03 (TP-E2-0507 - Solid) - cont. **Sampled: 08/04/10 11:50** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1, D08	470	40	ug/kg dry	5.00	08/12/10 02:23	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 02:23*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*93 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 02:23*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 02:23*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		210	45	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		210	13	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		210	11	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		210	55	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		400	72	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		210	32	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		210	50	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2-Chloronaphthalene	ND		210	14	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2-Chlorophenol	**84**	J	210	10	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2-Methylnaphthalene	ND		210	2.5	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2-Methylphenol	ND		210	6.3	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2-Nitroaniline	ND		400	66	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2-Nitrophenol	ND		210	9.3	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		210	180	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
3-Nitroaniline	ND		400	47	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		400	71	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		210	65	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		210	8.4	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Chloroaniline	ND		210	60	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		210	4.4	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Methylphenol	ND		400	11	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Nitroaniline	ND		400	23	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
4-Nitrophenol	ND		400	50	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Acenaphthene	ND		210	2.4	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Acenaphthylene	ND		210	1.7	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Acetophenone	ND		210	10	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Aniline	ND		400	110	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Anthracene	ND		210	5.2	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Atrazine	ND		210	9.1	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Benzaldehyde	ND		210	22	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Benzo(a)anthracene	ND		210	3.5	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Benzo(a)pyrene	ND		210	4.9	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		210	4.0	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		210	2.5	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		210	2.3	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Biphenyl	ND		210	13	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		210	11	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		210	18	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		210	21	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-03 (TP-E2-0507 - Solid) - cont. **Sampled: 08/04/10 11:50** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		210	66	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		210	55	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Caprolactam	ND		210	88	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Carbazole	ND		210	2.4	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Chrysene	ND		210	2.0	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		210	2.4	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Dibenzofuran	ND		210	2.1	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Diethyl phthalate	ND		210	6.2	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Dimethyl phthalate	ND		210	5.3	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		210	71	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		210	4.8	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Fluoranthene	ND		210	3.0	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Fluorene	ND		210	4.7	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Hexachlorobenzene	ND		210	10	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Hexachlorobutadiene	ND		210	10	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		210	62	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Hexachloroethane	ND		210	16	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		210	5.7	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Isophorone	ND		210	10	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Naphthalene	ND		210	3.4	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Nitrobenzene	ND		210	9.1	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		210	16	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		210	11	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Pentachlorophenol	ND		400	70	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Phenanthrene	ND		210	4.3	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Phenol	ND		210	22	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
Pyrene	ND		210	1.3	ug/kg dry	1.00	08/10/10 17:22	JLG	10H0489	8270C
2,4,6-Tribromophenol	*89 %*		*Surr Limits: (39-146%)*				*08/10/10 17:22*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*66 %*		*Surr Limits: (37-120%)*				*08/10/10 17:22*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*56 %*		*Surr Limits: (18-120%)*				*08/10/10 17:22*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*62 %*		*Surr Limits: (34-132%)*				*08/10/10 17:22*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*65 %*		*Surr Limits: (11-120%)*				*08/10/10 17:22*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*79 %*		*Surr Limits: (58-147%)*				*08/10/10 17:22*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**81**		0.010	NR	%	1.00	08/09/10 16:00	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-04 (TP-E2-0709 - Solid) — **Sampled: 08/04/10 12:00** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	210	58	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	210	34	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,1,2-Trichloroethane	ND	W1, D08	210	44	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	210	110	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,1-Dichloroethane	ND	W1, D08	210	65	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,1-Dichloroethene	ND	W1, D08	210	73	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2,4-Trichlorobenzene	ND	W1, D08	210	80	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	210	110	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2-Dibromoethane	ND	W1, D08	210	8.0	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2-Dichlorobenzene	ND	W1, D08	210	54	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2-Dichloroethane	ND	W1, D08	210	86	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2-Dichloropropane	ND	W1, D08	210	34	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,3-Dichlorobenzene	ND	W1, D08	210	56	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,4-Dichlorobenzene	ND	W1, D08	210	29	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
2-Butanone	ND	W1, D08	1100	630	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
2-Hexanone	ND	W1, D08	1100	430	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
4-Methyl-2-pentanone	ND	W1, D08	1100	67	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Acetone	ND	W1, D08	1100	870	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Benzene	ND	W1, D08	210	10	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Bromodichloromethane	ND	W1, D08	210	42	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Bromoform	ND	W1, D08	210	110	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Bromomethane	ND	W1, D08	210	46	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Carbon disulfide	ND	W1, D08	210	96	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Carbon Tetrachloride	ND	W1, D08	210	54	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Chlorobenzene	**17000**	W1, D08	210	28	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Dibromochloromethane	ND	W1, D08	210	100	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Chloroethane	ND	W1, D08	210	44	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Chloroform	ND	W1, D08	210	140	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Chloromethane	ND	W1, D08	210	50	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
cis-1,2-Dichloroethene	ND	W1, D08	210	58	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
cis-1,3-Dichloropropene	ND	W1, D08	210	50	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Cyclohexane	ND	W1, D08	210	47	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Dichlorodifluoromethane	ND	W1, D08	210	92	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Ethylbenzene	ND	W1, D08	210	61	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Isopropylbenzene	ND	W1, D08	210	32	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Methyl Acetate	ND	W1, D08	210	100	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	210	80	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Methylcyclohexane	ND	W1, D08	210	99	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Methylene Chloride	ND	W1, D08	210	42	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Styrene	ND	W1, D08	210	51	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Tetrachloroethene	ND	W1, D08	210	28	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Toluene	ND	W1, D08	210	56	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
trans-1,2-Dichloroethene	ND	W1, D08	210	50	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
trans-1,3-Dichloropropene	ND	W1, D08	210	10	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Trichloroethene	ND	W1, D08	210	59	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Trichlorofluoromethane	ND	W1, D08	210	99	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
Vinyl chloride	ND	W1, D08	210	71	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-04 (TP-E2-0709 - Solid) - cont. **Sampled: 08/04/10 12:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1, D08	420	35	ug/kg dry	5.00	08/12/10 02:45	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*100 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 02:45*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*99 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 02:45*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*103 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 02:45*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		200	43	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		200	13	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		200	10	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		200	54	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		390	69	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		200	31	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		200	49	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2-Chloronaphthalene	ND		200	13	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2-Chlorophenol	ND		200	10	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2-Methylnaphthalene	ND		200	2.4	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2-Methylphenol	ND		200	6.1	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2-Nitroaniline	ND		390	64	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2-Nitrophenol	ND		200	9.1	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		200	170	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
3-Nitroaniline	ND		390	46	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		390	69	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		200	63	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		200	8.2	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Chloroaniline	ND		200	58	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		200	4.2	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Methylphenol	ND		390	11	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Nitroaniline	ND		390	22	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
4-Nitrophenol	ND		390	48	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Acenaphthene	ND		200	2.3	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Acenaphthylene	ND		200	1.6	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Acetophenone	ND		200	10	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Aniline	ND		390	110	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Anthracene	ND		200	5.1	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Atrazine	ND		200	8.8	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Benzaldehyde	ND		200	22	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Benzo(a)anthracene	ND		200	3.4	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Benzo(a)pyrene	ND		200	4.8	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		200	3.8	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		200	2.4	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		200	2.2	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Biphenyl	ND		200	12	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		200	11	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		200	17	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		200	21	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-04 (TP-E2-0709 - Solid) - cont. **Sampled: 08/04/10 12:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		200	64	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		200	53	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Caprolactam	ND		200	86	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Carbazole	ND		200	2.3	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Chrysene	ND		200	2.0	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		200	2.3	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Dibenzofuran	ND		200	2.1	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Diethyl phthalate	ND		200	6.0	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Dimethyl phthalate	ND		200	5.2	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		200	69	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		200	4.6	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Fluoranthene	ND		200	2.9	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Fluorene	ND		200	4.6	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Hexachlorobenzene	ND		200	9.9	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Hexachlorobutadiene	ND		200	10	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		200	60	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Hexachloroethane	ND		200	15	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		200	5.5	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Isophorone	ND		200	9.9	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Naphthalene	ND		200	3.3	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Nitrobenzene	ND		200	8.8	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		200	16	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		200	11	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Pentachlorophenol	ND		390	68	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Phenanthrene	ND		200	4.2	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Phenol	ND		200	21	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
Pyrene	ND		200	1.3	ug/kg dry	1.00	08/10/10 17:45	JLG	10H0489	8270C
2,4,6-Tribromophenol	*84 %*		*Surr Limits: (39-146%)*				*08/10/10 17:45*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*66 %*		*Surr Limits: (37-120%)*				*08/10/10 17:45*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*56 %*		*Surr Limits: (18-120%)*				*08/10/10 17:45*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*64 %*		*Surr Limits: (34-132%)*				*08/10/10 17:45*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*65 %*		*Surr Limits: (11-120%)*				*08/10/10 17:45*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*74 %*		*Surr Limits: (58-147%)*				*08/10/10 17:45*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**83**		0.010	NR	%	1.00	08/09/10 16:02	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-05 (TP-E2-0911 - Solid) — **Sampled: 08/04/10 13:40** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND		5.0	0.36	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,1,2,2-Tetrachloroethane	ND		5.0	0.81	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,1,2-Trichloroethane	ND		5.0	0.65	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.1	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,1-Dichloroethane	ND		5.0	0.61	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,1-Dichloroethene	ND		5.0	0.61	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2-Dibromo-3-chloropropane	ND		5.0	2.5	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2-Dibromoethane	ND		5.0	0.64	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2-Dichlorobenzene	ND		5.0	0.39	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2-Dichloroethane	ND		5.0	0.25	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2-Dichloropropane	ND		5.0	2.5	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,3-Dichlorobenzene	ND		5.0	0.26	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,4-Dichlorobenzene	ND		5.0	0.70	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
2-Butanone	ND		25	1.8	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
2-Hexanone	ND		25	2.5	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
4-Methyl-2-pentanone	ND		25	1.6	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Acetone	**8.7**	J	25	4.2	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Benzene	ND		5.0	0.24	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Bromodichloromethane	ND		5.0	0.67	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Bromoform	ND		5.0	2.5	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Bromomethane	ND		5.0	0.45	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Carbon disulfide	ND		5.0	2.5	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Carbon Tetrachloride	ND		5.0	0.48	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Chlorobenzene	ND		5.0	0.66	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Dibromochloromethane	ND		5.0	0.64	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Chloroethane	ND		5.0	1.1	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Chloroform	ND		5.0	0.31	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Chloromethane	ND		5.0	0.30	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
cis-1,3-Dichloropropene	ND		5.0	0.72	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Cyclohexane	ND		5.0	0.70	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Dichlorodifluoromethane	ND		5.0	0.41	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Ethylbenzene	ND		5.0	0.34	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Isopropylbenzene	ND		5.0	0.75	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Methyl Acetate	ND		5.0	0.93	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Methyl-t-Butyl Ether (MTBE)	ND		5.0	0.49	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Methylcyclohexane	ND		5.0	0.76	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Methylene Chloride	ND		5.0	2.3	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Styrene	ND		5.0	0.25	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Tetrachloroethene	ND		5.0	0.67	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Toluene	ND		5.0	0.38	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
trans-1,2-Dichloroethene	ND		5.0	0.51	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
trans-1,3-Dichloropropene	ND		5.0	2.2	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Trichloroethene	ND		5.0	1.1	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Trichlorofluoromethane	ND		5.0	0.47	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
Vinyl chloride	ND		5.0	0.61	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-05 (TP-E2-0911 - Solid) - cont. **Sampled: 08/04/10 13:40** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND		9.9	0.84	ug/kg dry	1.00	08/12/10 19:20	PQ	10H0885	8260B
1,2-Dichloroethane-d4	*110 %*		*Surr Limits: (64-126%)*				*08/12/10 19:20*	*PQ*	*10H0885*	*8260B*
4-Bromofluorobenzene	*108 %*		*Surr Limits: (72-126%)*				*08/12/10 19:20*	*PQ*	*10H0885*	*8260B*
Toluene-d8	*113 %*		*Surr Limits: (71-125%)*				*08/12/10 19:20*	*PQ*	*10H0885*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		220	47	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		220	14	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		220	11	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		220	59	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		420	76	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		220	34	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		220	53	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2-Chloronaphthalene	ND		220	15	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2-Chlorophenol	ND		220	11	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2-Methylnaphthalene	ND		220	2.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2-Methylphenol	ND		220	6.7	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2-Nitroaniline	ND		420	70	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2-Nitrophenol	ND		220	9.9	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		220	190	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
3-Nitroaniline	ND		420	50	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		420	75	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		220	69	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		220	8.9	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Chloroaniline	ND		220	64	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		220	4.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Methylphenol	ND		420	12	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Nitroaniline	ND		420	24	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
4-Nitrophenol	ND		420	53	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Acenaphthene	ND		220	2.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Acenaphthylene	ND		220	1.8	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Acetophenone	ND		220	11	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Aniline	ND		420	120	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Anthracene	ND		220	5.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Atrazine	ND		220	9.7	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Benzaldehyde	ND		220	24	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Benzo(a)anthracene	ND		220	3.8	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Benzo(a)pyrene	ND		220	5.2	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		220	4.2	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		220	2.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		220	2.4	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Biphenyl	ND		220	14	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		220	12	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		220	19	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		220	23	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-05 (TP-E2-0911 - Solid) - cont. **Sampled: 08/04/10 13:40** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		220	70	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		220	58	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Caprolactam	ND		220	94	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Carbazole	ND		220	2.5	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Chrysene	ND		220	2.2	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		220	2.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Dibenzofuran	ND		220	2.3	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Diethyl phthalate	ND		220	6.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Dimethyl phthalate	ND		220	5.7	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		220	75	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		220	5.1	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Fluoranthene	ND		220	3.1	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Fluorene	ND		220	5.0	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Hexachlorobenzene	ND		220	11	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Hexachlorobutadiene	ND		220	11	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		220	66	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Hexachloroethane	ND		220	17	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		220	6.0	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Isophorone	ND		220	11	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Naphthalene	ND		220	3.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Nitrobenzene	ND		220	9.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		220	17	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		220	12	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Pentachlorophenol	ND		420	75	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Phenanthrene	ND		220	4.6	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Phenol	ND		220	23	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
Pyrene	ND		220	1.4	ug/kg dry	1.00	08/10/10 18:08	JLG	10H0489	8270C
2,4,6-Tribromophenol	*80 %*		*Surr Limits: (39-146%)*				*08/10/10 18:08*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*56 %*		*Surr Limits: (37-120%)*				*08/10/10 18:08*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*40 %*		*Surr Limits: (18-120%)*				*08/10/10 18:08*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*48 %*		*Surr Limits: (34-132%)*				*08/10/10 18:08*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*49 %*		*Surr Limits: (11-120%)*				*08/10/10 18:08*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*71 %*		*Surr Limits: (58-147%)*				*08/10/10 18:08*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**76**		0.010	NR	%	1.00	08/09/10 16:04	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-06 (TP-E1-0910 - Solid) — **Sampled: 08/04/10 15:20** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	50	14	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,1,2,2-Tetrachloroethane	ND	W1	50	8.0	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,1,2-Trichloroethane	ND	W1	50	10	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	50	25	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,1-Dichloroethane	ND	W1	50	15	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,1-Dichloroethene	ND	W1	50	17	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2,4-Trichlorobenzene	ND	W1	50	19	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2-Dibromo-3-chloropropane	ND	W1	50	25	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2-Dibromoethane	ND	W1	50	1.9	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2-Dichlorobenzene	ND	W1	50	13	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2-Dichloroethane	ND	W1	50	20	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2-Dichloropropane	ND	W1	50	8.0	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,3-Dichlorobenzene	ND	W1	50	13	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,4-Dichlorobenzene	**30**	W1,J	50	6.9	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
2-Butanone	ND	W1	250	150	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
2-Hexanone	ND	W1	250	100	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
4-Methyl-2-pentanone	ND	W1	250	16	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Acetone	ND	W1	250	200	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Benzene	ND	W1	50	2.4	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Bromodichloromethane	ND	W1	50	9.9	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Bromoform	ND	W1	50	25	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Bromomethane	ND	W1	50	11	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Carbon disulfide	ND	W1	50	23	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Carbon Tetrachloride	ND	W1	50	13	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Chlorobenzene	**35**	W1,J	50	6.5	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Dibromochloromethane	ND	W1	50	24	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Chloroethane	ND	W1	50	10	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Chloroform	ND	W1	50	34	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Chloromethane	ND	W1	50	12	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
cis-1,2-Dichloroethene	ND	W1	50	14	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
cis-1,3-Dichloropropene	ND	W1	50	12	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Cyclohexane	ND	W1	50	11	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Dichlorodifluoromethane	ND	W1	50	22	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Ethylbenzene	ND	W1	50	14	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Isopropylbenzene	ND	W1	50	7.4	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Methyl Acetate	ND	W1	50	24	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	50	19	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Methylcyclohexane	ND	W1	50	23	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Methylene Chloride	ND	W1	50	9.8	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Styrene	ND	W1	50	12	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Tetrachloroethene	ND	W1	50	6.7	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Toluene	ND	W1	50	13	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
trans-1,2-Dichloroethene	ND	W1	50	12	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
trans-1,3-Dichloropropene	ND	W1	50	2.4	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Trichloroethene	ND	W1	50	14	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Trichlorofluoromethane	ND	W1	50	23	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
Vinyl chloride	ND	W1	50	17	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-06 (TP-E1-0910 - Solid) - cont. **Sampled: 08/04/10 15:20** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1	99	8.3	ug/kg dry	1.00	08/12/10 03:30	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*97 %*	*W1*	*Surr Limits: (53-146%)*				*08/12/10 03:30*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*96 %*	*W1*	*Surr Limits: (49-148%)*				*08/12/10 03:30*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*102 %*	*W1*	*Surr Limits: (50-149%)*				*08/12/10 03:30*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		220	47	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		220	14	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		220	11	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		220	58	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		420	76	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		220	33	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		220	53	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2-Chloronaphthalene	ND		220	15	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2-Chlorophenol	ND		220	11	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2-Methylnaphthalene	ND		220	2.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2-Methylphenol	ND		220	6.7	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2-Nitroaniline	ND		420	69	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2-Nitrophenol	ND		220	9.9	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		220	190	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
3-Nitroaniline	ND		420	50	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		420	75	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		220	69	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		220	8.9	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Chloroaniline	ND		220	63	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		220	4.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Methylphenol	ND		420	12	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Nitroaniline	ND		420	24	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
4-Nitrophenol	ND		420	52	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Acenaphthene	ND		220	2.5	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Acenaphthylene	ND		220	1.8	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Acetophenone	ND		220	11	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Aniline	ND		420	120	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Anthracene	ND		220	5.5	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Atrazine	ND		220	9.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Benzaldehyde	ND		220	24	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Benzo(a)anthracene	ND		220	3.7	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Benzo(a)pyrene	ND		220	5.2	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		220	4.2	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		220	2.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		220	2.4	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Biphenyl	ND		220	13	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		220	12	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		220	19	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		220	23	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-06 (TP-E1-0910 - Solid) - cont. **Sampled: 08/04/10 15:20** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		220	70	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		220	58	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Caprolactam	ND		220	94	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Carbazole	ND		220	2.5	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Chrysene	ND		220	2.2	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		220	2.5	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Dibenzofuran	ND		220	2.3	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Diethyl phthalate	ND		220	6.5	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Dimethyl phthalate	ND		220	5.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		220	75	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		220	5.1	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Fluoranthene	ND		220	3.1	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Fluorene	ND		220	5.0	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Hexachlorobenzene	ND		220	11	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Hexachlorobutadiene	ND		220	11	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		220	65	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Hexachloroethane	ND		220	17	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		220	6.0	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Isophorone	ND		220	11	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Naphthalene	ND		220	3.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Nitrobenzene	ND		220	9.6	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		220	17	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		220	12	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Pentachlorophenol	ND		420	74	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Phenanthrene	ND		220	4.5	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Phenol	ND		220	23	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
Pyrene	ND		220	1.4	ug/kg dry	1.00	08/10/10 18:31	JLG	10H0489	8270C
2,4,6-Tribromophenol	*88 %*		*Surr Limits: (39-146%)*				*08/10/10 18:31*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*62 %*		*Surr Limits: (37-120%)*				*08/10/10 18:31*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*47 %*		*Surr Limits: (18-120%)*				*08/10/10 18:31*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*53 %*		*Surr Limits: (34-132%)*				*08/10/10 18:31*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*56 %*		*Surr Limits: (11-120%)*				*08/10/10 18:31*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*76 %*		*Surr Limits: (58-147%)*				*08/10/10 18:31*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 16:06	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-07 (TP-C1-0305 - Solid) — **Sampled: 08/05/10 11:00** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	57	16	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,1,2,2-Tetrachloroethane	ND	W1	57	9.2	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,1,2-Trichloroethane	ND	W1	57	12	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	57	28	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,1-Dichloroethane	ND	W1	57	18	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,1-Dichloroethene	ND	W1	57	20	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2,4-Trichlorobenzene	**5300**	W1	57	21	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dibromo-3-chloropropane	ND	W1	57	28	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dibromoethane	ND	W1	57	2.2	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dichlorobenzene	**11000**	W1,E	57	14	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dichloroethane	ND	W1	57	23	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dichloropropane	ND	W1	57	9.2	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,3-Dichlorobenzene	**360**	W1	57	15	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,4-Dichlorobenzene	**2500**	W1	57	7.9	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
2-Butanone	ND	W1	280	170	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
2-Hexanone	ND	W1	280	120	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
4-Methyl-2-pentanone	ND	W1	280	18	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Acetone	ND	W1	280	230	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Benzene	**31**	W1,J	57	2.7	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Bromodichloromethane	ND	W1	57	11	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Bromoform	ND	W1	57	28	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Bromomethane	ND	W1	57	12	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Carbon disulfide	ND	W1	57	26	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Carbon Tetrachloride	ND	W1	57	14	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Chlorobenzene	**5700**	W1,E	57	7.5	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Dibromochloromethane	ND	W1	57	27	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Chloroethane	ND	W1	57	12	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Chloroform	ND	W1	57	39	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Chloromethane	ND	W1	57	13	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
cis-1,2-Dichloroethene	ND	W1	57	16	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
cis-1,3-Dichloropropene	ND	W1	57	14	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Cyclohexane	ND	W1	57	13	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Dichlorodifluoromethane	ND	W1	57	25	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Ethylbenzene	ND	W1	57	16	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Isopropylbenzene	ND	W1	57	8.5	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Methyl Acetate	ND	W1	57	27	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	57	21	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Methylcyclohexane	**54**	W1,J	57	27	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Methylene Chloride	ND	W1	57	11	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Styrene	ND	W1	57	14	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Tetrachloroethene	ND	W1	57	7.6	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Toluene	**110**	W1	57	15	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
trans-1,2-Dichloroethene	ND	W1	57	13	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
trans-1,3-Dichloropropene	ND	W1	57	2.7	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Trichloroethene	ND	W1	57	16	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Trichlorofluoromethane	ND	W1	57	27	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
Vinyl chloride	ND	W1	57	19	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-07 (TP-C1-0305 - Solid) - cont. **Sampled: 08/05/10 11:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	**33**	W1,J	110	9.5	ug/kg dry	1.00	08/12/10 03:52	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*97 %*	*W1*	*Surr Limits: (53-146%)*				*08/12/10 03:52*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*100 %*	*W1*	*Surr Limits: (49-148%)*				*08/12/10 03:52*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*105 %*	*W1*	*Surr Limits: (50-149%)*				*08/12/10 03:52*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	D12	1100	250	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4,6-Trichlorophenol	**150**	D12,J	1100	74	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4-Dichlorophenol	**680**	D12,J	1100	59	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4-Dimethylphenol	ND	D12	1100	300	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4-Dinitrophenol	ND	D12	2200	390	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND	D12	1100	170	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND	D12	1100	280	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2-Chloronaphthalene	ND	D12	1100	75	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2-Chlorophenol	ND	D12	1100	57	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2-Methylnaphthalene	ND	D12	1100	14	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2-Methylphenol	ND	D12	1100	35	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2-Nitroaniline	ND	D12	2200	360	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2-Nitrophenol	ND	D12	1100	51	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND	D12	1100	990	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
3-Nitroaniline	ND	D12	2200	260	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND	D12	2200	390	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND	D12	1100	360	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND	D12	1100	46	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Chloroaniline	ND	D12	1100	330	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND	D12	1100	24	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Methylphenol	ND	D12	2200	63	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Nitroaniline	ND	D12	2200	130	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
4-Nitrophenol	ND	D12	2200	270	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Acenaphthene	ND	D12	1100	13	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Acenaphthylene	ND	D12	1100	9.2	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Acetophenone	ND	D12	1100	58	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Aniline	ND	D12	2200	620	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Anthracene	ND	D12	1100	29	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Atrazine	ND	D12	1100	50	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzaldehyde	ND	D12	1100	120	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(a)anthracene	**190**	D12,J	1100	19	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(a)pyrene	**140**	D12,J	1100	27	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(b)fluoranthene	**180**	D12,J	1100	22	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(ghi)perylene	**93**	D12,J	1100	14	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND	D12	1100	12	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Biphenyl	ND	D12	1100	70	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND	D12	1100	61	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND	D12	1100	97	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND	D12	1100	120	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-07 (TP-C1-0305 - Solid) - cont. **Sampled: 08/05/10 11:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND	D12	1100	360	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Butyl benzyl phthalate	ND	D12	1100	300	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Caprolactam	ND	D12	1100	490	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Carbazole	ND	D12	1100	13	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Chrysene	**200**	D12,J	1100	11	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND	D12	1100	13	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Dibenzofuran	ND	D12	1100	12	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Diethyl phthalate	ND	D12	1100	34	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Dimethyl phthalate	ND	D12	1100	29	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Di-n-butyl phthalate	ND	D12	1100	390	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Di-n-octyl phthalate	ND	D12	1100	26	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Fluoranthene	**370**	D12,J	1100	16	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Fluorene	ND	D12	1100	26	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Hexachlorobenzene	ND	D12	1100	56	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Hexachlorobutadiene	ND	D12	1100	58	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND	D12	1100	340	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Hexachloroethane	ND	D12	1100	87	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND	D12	1100	31	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Isophorone	ND	D12	1100	56	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Naphthalene	**390**	D12,J	1100	19	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Nitrobenzene	**810**	D12,J	1100	50	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND	D12	1100	89	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND	D12	1100	62	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Pentachlorophenol	ND	D12	2200	390	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Phenanthrene	**370**	D12,J	1100	24	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Phenol	ND	D12	1100	120	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
Pyrene	**270**	D12,J	1100	7.3	ug/kg dry	5.00	08/10/10 18:53	JLG	10H0489	8270C
2,4,6-Tribromophenol	*91 %*	*D12*	*Surr Limits: (39-146%)*				*08/10/10 18:53*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*82 %*	*D12*	*Surr Limits: (37-120%)*				*08/10/10 18:53*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*58 %*	*D12*	*Surr Limits: (18-120%)*				*08/10/10 18:53*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*64 %*	*D12*	*Surr Limits: (34-132%)*				*08/10/10 18:53*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*72 %*	*D12*	*Surr Limits: (11-120%)*				*08/10/10 18:53*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*88 %*	*D12*	*Surr Limits: (58-147%)*				*08/10/10 18:53*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**74**		0.010	NR	%	1.00	08/09/10 16:08	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-07RE1 (TP-C1-0305 - Solid)						**Sampled: 08/05/10 11:00**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND	D08	280	79	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,1,2,2-Tetrachloroethane	ND	D08	280	46	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,1,2-Trichloroethane	ND	D08	280	60	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	D08	280	140	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,1-Dichloroethane	ND	D08	280	88	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,1-Dichloroethene	ND	D08	280	98	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2,4-Trichlorobenzene	**5300**	D08	280	110	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dibromo-3-chloropropane	ND	D08	280	140	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dibromoethane	ND	D08	280	11	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dichlorobenzene	**12000**	D08	280	72	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dichloroethane	ND	D08	280	120	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dichloropropane	ND	D08	280	46	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,3-Dichlorobenzene	**380**	D08	280	76	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,4-Dichlorobenzene	**2600**	D08	280	40	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
2-Butanone	ND	D08	1400	840	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
2-Hexanone	ND	D08	1400	580	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
4-Methyl-2-pentanone	ND	D08	1400	91	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Acetone	ND	D08	1400	1200	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Benzene	ND	D08	280	14	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Bromodichloromethane	ND	D08	280	57	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Bromoform	ND	D08	280	140	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Bromomethane	ND	D08	280	62	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Carbon disulfide	ND	D08	280	130	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Carbon Tetrachloride	ND	D08	280	72	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Chlorobenzene	**5800**	D08	280	37	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Dibromochloromethane	ND	D08	280	140	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Chloroethane	ND	D08	280	59	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Chloroform	ND	D08	280	190	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Chloromethane	ND	D08	280	67	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
cis-1,2-Dichloroethene	ND	D08	280	78	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
cis-1,3-Dichloropropene	ND	D08	280	68	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Cyclohexane	ND	D08	280	63	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Dichlorodifluoromethane	ND	D08	280	120	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Ethylbenzene	ND	D08	280	82	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Isopropylbenzene	ND	D08	280	43	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Methyl Acetate	ND	D08	280	130	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Methyl-t-Butyl Ether (MTBE)	ND	D08	280	110	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Methylcyclohexane	ND	D08	280	130	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Methylene Chloride	ND	D08	280	56	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Styrene	ND	D08	280	68	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Tetrachloroethene	ND	D08	280	38	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Toluene	ND	D08	280	76	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
trans-1,2-Dichloroethene	ND	D08	280	67	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
trans-1,3-Dichloropropene	ND	D08	280	14	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Trichloroethene	ND	D08	280	79	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Trichlorofluoromethane	ND	D08	280	130	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
Vinyl chloride	ND	D08	280	95	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-07RE1 (TP-C1-0305 - Solid) - cont.						**Sampled: 08/05/10 11:00**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	D08	570	48	ug/kg dry	5.00	08/12/10 14:20	PJQ	10H0858	8260B
1,2-Dichloroethane-d4	*95 %*	*D08*	*Surr Limits: (53-146%)*				*08/12/10 14:20*	*PJQ*	*10H0858*	*8260B*
4-Bromofluorobenzene	*94 %*	*D08*	*Surr Limits: (49-148%)*				*08/12/10 14:20*	*PJQ*	*10H0858*	*8260B*
Toluene-d8	*98 %*	*D08*	*Surr Limits: (50-149%)*				*08/12/10 14:20*	*PJQ*	*10H0858*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-08 (TP-C1-0507 - Solid) — **Sampled: 08/05/10 11:10** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	350	96	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	350	57	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,1,2-Trichloroethane	ND	W1, D08	350	73	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	350	170	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,1-Dichloroethane	ND	W1, D08	350	110	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,1-Dichloroethene	ND	W1, D08	350	120	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2,4-Trichlorobenzene	**2300**	W1, D08	350	130	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	350	170	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dibromoethane	ND	W1, D08	350	13	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dichlorobenzene	**31000**	W1, D08	350	89	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dichloroethane	ND	W1, D08	350	140	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dichloropropane	ND	W1, D08	350	56	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,3-Dichlorobenzene	**3700**	W1, D08	350	93	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,4-Dichlorobenzene	**9000**	W1, D08	350	49	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
2-Butanone	ND	W1, D08	1700	1000	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
2-Hexanone	ND	W1, D08	1700	710	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
4-Methyl-2-pentanone	ND	W1, D08	1700	110	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Acetone	ND	W1, D08	1700	1400	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Benzene	ND	W1, D08	350	17	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Bromodichloromethane	ND	W1, D08	350	70	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Bromoform	ND	W1, D08	350	170	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Bromomethane	ND	W1, D08	350	77	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Carbon disulfide	ND	W1, D08	350	160	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Carbon Tetrachloride	ND	W1, D08	350	89	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Chlorobenzene	**20000**	W1, D08	350	46	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Dibromochloromethane	ND	W1, D08	350	170	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Chloroethane	ND	W1, D08	350	72	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Chloroform	ND	W1, D08	350	240	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Chloromethane	ND	W1, D08	350	83	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
cis-1,2-Dichloroethene	ND	W1, D08	350	96	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
cis-1,3-Dichloropropene	ND	W1, D08	350	83	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Cyclohexane	ND	W1, D08	350	77	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Dichlorodifluoromethane	ND	W1, D08	350	150	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Ethylbenzene	ND	W1, D08	350	100	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Isopropylbenzene	ND	W1, D08	350	52	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Methyl Acetate	ND	W1, D08	350	170	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	350	130	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Methylcyclohexane	ND	W1, D08	350	160	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Methylene Chloride	ND	W1, D08	350	69	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Styrene	ND	W1, D08	350	84	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Tetrachloroethene	ND	W1, D08	350	47	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Toluene	ND	W1, D08	350	93	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
trans-1,2-Dichloroethene	ND	W1, D08	350	82	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
trans-1,3-Dichloropropene	ND	W1, D08	350	17	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Trichloroethene	ND	W1, D08	350	97	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Trichlorofluoromethane	ND	W1, D08	350	160	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
Vinyl chloride	ND	W1, D08	350	120	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-08 (TP-C1-0507 - Solid) - cont.						**Sampled: 08/05/10 11:10**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1, D08	700	59	ug/kg dry	8.00	08/12/10 04:14	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*98 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 04:14*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*98 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 04:14*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*103 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 04:14*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		210	45	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		210	13	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		210	11	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		210	55	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		400	72	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		210	32	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		210	50	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2-Chloronaphthalene	ND		210	14	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2-Chlorophenol	ND		210	10	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2-Methylnaphthalene	ND		210	2.5	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2-Methylphenol	ND		210	6.3	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2-Nitroaniline	ND		400	66	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2-Nitrophenol	ND		210	9.3	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		210	180	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
3-Nitroaniline	ND		400	47	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		400	71	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		210	65	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		210	8.4	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Chloroaniline	ND		210	60	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		210	4.4	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Methylphenol	ND		400	11	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Nitroaniline	ND		400	23	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
4-Nitrophenol	ND		400	50	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Acenaphthene	ND		210	2.4	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Acenaphthylene	ND		210	1.7	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Acetophenone	ND		210	10	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Aniline	ND		400	110	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Anthracene	ND		210	5.2	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Atrazine	ND		210	9.1	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Benzaldehyde	ND		210	22	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Benzo(a)anthracene	ND		210	3.5	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Benzo(a)pyrene	ND		210	4.9	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND		210	4.0	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		210	2.5	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		210	2.3	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Biphenyl	ND		210	13	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		210	11	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		210	18	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		210	21	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-08 (TP-C1-0507 - Solid) - cont. **Sampled: 08/05/10 11:10** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND		210	66	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		210	55	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Caprolactam	ND		210	88	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Carbazole	ND		210	2.4	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Chrysene	ND		210	2.0	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		210	2.4	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Dibenzofuran	ND		210	2.1	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Diethyl phthalate	ND		210	6.2	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Dimethyl phthalate	ND		210	5.3	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		210	71	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		210	4.8	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Fluoranthene	ND		210	3.0	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Fluorene	ND		210	4.7	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Hexachlorobenzene	ND		210	10	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Hexachlorobutadiene	ND		210	10	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		210	62	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Hexachloroethane	ND		210	16	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		210	5.7	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Isophorone	ND		210	10	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Naphthalene	ND		210	3.4	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Nitrobenzene	ND		210	9.1	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		210	16	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		210	11	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Pentachlorophenol	ND		400	70	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Phenanthrene	ND		210	4.3	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Phenol	ND		210	22	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
Pyrene	ND		210	1.3	ug/kg dry	1.00	08/10/10 19:16	JLG	10H0489	8270C
2,4,6-Tribromophenol	*81 %*		*Surr Limits: (39-146%)*				*08/10/10 19:16*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*57 %*		*Surr Limits: (37-120%)*				*08/10/10 19:16*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*45 %*		*Surr Limits: (18-120%)*				*08/10/10 19:16*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*53 %*		*Surr Limits: (34-132%)*				*08/10/10 19:16*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*53 %*		*Surr Limits: (11-120%)*				*08/10/10 19:16*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*76 %*		*Surr Limits: (58-147%)*				*08/10/10 19:16*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	08/09/10 16:10	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-09 (TP-C1-0709 - Solid) — **Sampled: 08/05/10 11:40** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	1100	300	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	1100	180	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,1,2-Trichloroethane	ND	W1, D08	1100	230	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	1100	540	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,1-Dichloroethane	ND	W1, D08	1100	330	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,1-Dichloroethene	ND	W1, D08	1100	370	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	1100	540	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,2-Dibromoethane	ND	W1, D08	1100	41	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,2-Dichloroethane	ND	W1, D08	1100	440	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,2-Dichloropropane	ND	W1, D08	1100	170	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,3-Dichlorobenzene	**1400**	W1, D08	1100	290	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,4-Dichlorobenzene	**36000**	W1, D08	1100	150	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
2-Butanone	ND	W1, D08	5400	3200	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
2-Hexanone	ND	W1, D08	5400	2200	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
4-Methyl-2-pentanone	ND	W1, D08	5400	350	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Acetone	ND	W1, D08	5400	4400	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Benzene	ND	W1, D08	1100	52	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Bromodichloromethane	ND	W1, D08	1100	220	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Bromoform	ND	W1, D08	1100	540	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Bromomethane	ND	W1, D08	1100	240	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Carbon disulfide	ND	W1, D08	1100	490	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Carbon Tetrachloride	ND	W1, D08	1100	280	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Chlorobenzene	**92000**	W1, D08	1100	140	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Dibromochloromethane	ND	W1, D08	1100	520	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Chloroethane	ND	W1, D08	1100	220	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Chloroform	ND	W1, D08	1100	740	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Chloromethane	ND	W1, D08	1100	260	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
cis-1,2-Dichloroethene	ND	W1, D08	1100	300	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
cis-1,3-Dichloropropene	ND	W1, D08	1100	260	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Cyclohexane	ND	W1, D08	1100	240	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Dichlorodifluoromethane	ND	W1, D08	1100	470	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Ethylbenzene	ND	W1, D08	1100	310	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Isopropylbenzene	ND	W1, D08	1100	160	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Methyl Acetate	ND	W1, D08	1100	510	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	1100	410	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Methylcyclohexane	ND	W1, D08	1100	500	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Methylene Chloride	ND	W1, D08	1100	210	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Styrene	ND	W1, D08	1100	260	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Tetrachloroethene	ND	W1, D08	1100	150	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Toluene	ND	W1, D08	1100	290	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
trans-1,2-Dichloroethene	ND	W1, D08	1100	250	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
trans-1,3-Dichloropropene	ND	W1, D08	1100	52	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Trichloroethene	ND	W1, D08	1100	300	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Trichlorofluoromethane	ND	W1, D08	1100	510	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Vinyl chloride	ND	W1, D08	1100	360	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
Xylenes, total	ND	W1, D08	2200	180	ug/kg dry	25.0	08/11/10 19:52	PJQ	10H0745	8260B
1,2-Dichloroethane-d4	*93 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 19:52*	*PJQ*	*10H0745*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-09 (TP-C1-0709 - Solid) - cont. **Sampled: 08/05/10 11:40** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B - cont.										
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 19:52*	*PJQ*	*10H0745*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 19:52*	*PJQ*	*10H0745*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND		180	39	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND		180	12	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,4-Dichlorophenol	ND		180	9.5	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,4-Dimethylphenol	ND		180	49	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,4-Dinitrophenol	ND		350	63	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND		180	28	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND		180	44	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2-Chloronaphthalene	ND		180	12	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2-Chlorophenol	**48**	J	180	9.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2-Methylnaphthalene	ND		180	2.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2-Methylphenol	ND		180	5.6	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2-Nitroaniline	ND		350	58	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2-Nitrophenol	ND		180	8.3	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND		180	160	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
3-Nitroaniline	ND		350	42	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND		350	62	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND		180	57	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND		180	7.4	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Chloroaniline	ND		180	53	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND		180	3.8	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Methylphenol	ND		350	10	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Nitroaniline	ND		350	20	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
4-Nitrophenol	ND		350	44	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Acenaphthene	ND		180	2.1	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Acenaphthylene	ND		180	1.5	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Acetophenone	ND		180	9.3	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Aniline	**280**	J	350	99	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Anthracene	ND		180	4.6	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Atrazine	ND		180	8.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzaldehyde	ND		180	20	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(a)anthracene	**15**	J	180	3.1	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(a)pyrene	ND		180	4.4	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(b)fluoranthene	**12**	J	180	3.5	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(ghi)perylene	ND		180	2.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND		180	2.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Biphenyl	ND		180	11	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND		180	9.8	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND		180	16	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND		180	19	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Bis(2-ethylhexyl) phthalate	ND		180	58	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Butyl benzyl phthalate	ND		180	48	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-09 (TP-C1-0709 - Solid) - cont. **Sampled: 08/05/10 11:40** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Caprolactam	ND		180	78	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Carbazole	ND		180	2.1	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Chrysene	**15**	J	180	1.8	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND		180	2.1	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Dibenzofuran	ND		180	1.9	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Diethyl phthalate	**12**	J	180	5.5	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Dimethyl phthalate	ND		180	4.7	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Di-n-butyl phthalate	ND		180	62	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Di-n-octyl phthalate	ND		180	4.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Fluoranthene	**28**	J	180	2.6	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Fluorene	ND		180	4.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Hexachlorobenzene	ND		180	9.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Hexachlorobutadiene	ND		180	9.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND		180	55	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Hexachloroethane	ND		180	14	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND		180	5.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Isophorone	ND		180	9.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Naphthalene	ND		180	3.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Nitrobenzene	**400**		180	8.0	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND		180	14	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND		180	9.9	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Pentachlorophenol	ND		350	62	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Phenanthrene	**28**	J	180	3.8	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Phenol	ND		180	19	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
Pyrene	**19**	J	180	1.2	ug/kg dry	1.00	08/11/10 13:39	JLG	10H0489	8270C
2,4,6-Tribromophenol	*82 %*		*Surr Limits: (39-146%)*				*08/11/10 13:39*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*70 %*		*Surr Limits: (37-120%)*				*08/11/10 13:39*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*59 %*		*Surr Limits: (18-120%)*				*08/11/10 13:39*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*67 %*		*Surr Limits: (34-132%)*				*08/11/10 13:39*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*67 %*		*Surr Limits: (11-120%)*				*08/11/10 13:39*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*75 %*		*Surr Limits: (58-147%)*				*08/11/10 13:39*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**91**		0.010	NR	%	1.00	08/09/10 16:12	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-09RE1 (TP-C1-0709 - Solid)						**Sampled: 08/05/10 11:40**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**140000**	W1, D08	4300	1600	ug/kg dry	100	08/12/10 04:36	CDC	10H0807	8260B
1,2-Dichlorobenzene	**150000**	W1, D08	4300	1100	ug/kg dry	100	08/12/10 04:36	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*95 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 04:36*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*94 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 04:36*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 04:36*	*CDC*	*10H0807*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-10 (TP-C1-0911 - Solid) — **Sampled: 08/05/10 12:00** — **Recvd: 08/05/10 17:05**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	1300	370	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	1300	220	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,1,2-Trichloroethane	ND	W1, D08	1300	280	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	1300	670	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,1-Dichloroethane	ND	W1, D08	1300	410	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,1-Dichloroethene	ND	W1, D08	1300	460	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	1300	670	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,2-Dibromoethane	ND	W1, D08	1300	51	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,2-Dichloroethane	ND	W1, D08	1300	550	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,2-Dichloropropane	ND	W1, D08	1300	220	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,3-Dichlorobenzene	**11000**	W1, D08	1300	360	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
2-Butanone	ND	W1, D08	6700	4000	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
2-Hexanone	ND	W1, D08	6700	2700	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
4-Methyl-2-pentanone	ND	W1, D08	6700	430	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Acetone	ND	W1, D08	6700	5500	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Benzene	**880**	W1, D08,J	1300	64	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Bromodichloromethane	ND	W1, D08	1300	270	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Bromoform	ND	W1, D08	1300	670	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Bromomethane	ND	W1, D08	1300	290	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Carbon disulfide	ND	W1, D08	1300	610	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Carbon Tetrachloride	ND	W1, D08	1300	340	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Dibromochloromethane	ND	W1, D08	1300	650	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Chloroethane	ND	W1, D08	1300	280	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Chloroform	ND	W1, D08	1300	920	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Chloromethane	ND	W1, D08	1300	320	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
cis-1,2-Dichloroethene	ND	W1, D08	1300	370	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
cis-1,3-Dichloropropene	ND	W1, D08	1300	320	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Cyclohexane	ND	W1, D08	1300	300	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Dichlorodifluoromethane	ND	W1, D08	1300	580	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Ethylbenzene	ND	W1, D08	1300	390	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Isopropylbenzene	ND	W1, D08	1300	200	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Methyl Acetate	ND	W1, D08	1300	640	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	1300	510	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Methylcyclohexane	ND	W1, D08	1300	630	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Methylene Chloride	ND	W1, D08	1300	260	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Styrene	ND	W1, D08	1300	320	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Tetrachloroethene	ND	W1, D08	1300	180	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Toluene	**710**	W1, D08,J	1300	360	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
trans-1,2-Dichloroethene	ND	W1, D08	1300	320	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
trans-1,3-Dichloropropene	ND	W1, D08	1300	64	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Trichloroethene	ND	W1, D08	1300	370	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Trichlorofluoromethane	ND	W1, D08	1300	630	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Vinyl chloride	ND	W1, D08	1300	450	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
Xylenes, total	ND	W1, D08	2700	220	ug/kg dry	25.0	08/11/10 20:15	PJQ	10H0745	8260B
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 20:15*	*PJQ*	*10H0745*	*8260B*
4-Bromofluorobenzene	*97 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 20:15*	*PJQ*	*10H0745*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 20:15*	*PJQ*	*10H0745*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-10 (TP-C1-0911 - Solid) - cont. **Sampled: 08/05/10 12:00** **Recvd: 08/05/10 17:05**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	D12	1100	230	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,4,6-Trichlorophenol	ND	D12	1100	70	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,4-Dichlorophenol	ND	D12	1100	55	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,4-Dimethylphenol	ND	D12	1100	280	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,4-Dinitrophenol	ND	D12	2100	370	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,4-Dinitrotoluene	ND	D12	1100	160	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,6-Dinitrotoluene	ND	D12	1100	260	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2-Chloronaphthalene	ND	D12	1100	71	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2-Chlorophenol	ND	D12	1100	54	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2-Methylnaphthalene	ND	D12	1100	13	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2-Methylphenol	ND	D12	1100	32	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2-Nitroaniline	ND	D12	2100	340	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2-Nitrophenol	ND	D12	1100	48	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
3,3'-Dichlorobenzidine	ND	D12	1100	920	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
3-Nitroaniline	ND	D12	2100	240	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4,6-Dinitro-2-methylphenol	ND	D12	2100	360	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Bromophenyl phenyl ether	ND	D12	1100	340	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Chloro-3-methylphenol	ND	D12	1100	43	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Chloroaniline	ND	D12	1100	310	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Chlorophenyl phenyl ether	ND	D12	1100	22	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Methylphenol	ND	D12	2100	59	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Nitroaniline	ND	D12	2100	120	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
4-Nitrophenol	ND	D12	2100	260	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Acenaphthene	ND	D12	1100	12	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Acenaphthylene	ND	D12	1100	8.6	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Acetophenone	ND	D12	1100	54	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Aniline	ND	D12	2100	580	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Anthracene	ND	D12	1100	27	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Atrazine	ND	D12	1100	47	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Benzaldehyde	ND	D12	1100	120	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Benzo(a)anthracene	ND	D12	1100	18	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Benzo(a)pyrene	ND	D12	1100	25	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Benzo(b)fluoranthene	ND	D12	1100	20	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Benzo(ghi)perylene	ND	D12	1100	13	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Benzo(k)fluoranthene	ND	D12	1100	12	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Biphenyl	ND	D12	1100	66	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Bis(2-chloroethoxy)methane	ND	D12	1100	57	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Bis(2-chloroethyl)ether	ND	D12	1100	91	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,2'-Oxybis(1-Chloropropane)	ND	D12	1100	110	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Bis(2-ethylhexyl) phthalate	ND	D12	1100	340	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Butyl benzyl phthalate	ND	D12	1100	280	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Caprolactam	ND	D12	1100	460	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Carbazole	ND	D12	1100	12	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Chrysene	ND	D12	1100	11	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Dibenzo(a,h)anthracene	ND	D12	1100	12	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Dibenzofuran	ND	D12	1100	11	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0485-10 (TP-C1-0911 - Solid) - cont. **Sampled: 08/05/10 12:00** **Recvd: 08/05/10 17:05**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	D12	1100	32	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Dimethyl phthalate	ND	D12	1100	27	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Di-n-butyl phthalate	ND	D12	1100	360	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Di-n-octyl phthalate	ND	D12	1100	25	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Fluoranthene	ND	D12	1100	15	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Fluorene	ND	D12	1100	24	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Hexachlorobenzene	ND	D12	1100	52	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Hexachlorobutadiene	ND	D12	1100	54	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Hexachlorocyclopentadiene	ND	D12	1100	320	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Hexachloroethane	ND	D12	1100	82	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Indeno(1,2,3-cd)pyrene	ND	D12	1100	29	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Isophorone	ND	D12	1100	53	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Naphthalene	ND	D12	1100	18	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Nitrobenzene	**2200**	D12	1100	47	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
N-Nitrosodi-n-propylamine	ND	D12	1100	83	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
N-Nitrosodiphenylamine	ND	D12	1100	58	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Pentachlorophenol	ND	D12	2100	360	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Phenanthrene	ND	D12	1100	22	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Phenol	ND	D12	1100	110	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
Pyrene	ND	D12	1100	6.8	ug/kg dry	5.00	08/10/10 20:02	JLG	10H0489	8270C
2,4,6-Tribromophenol	*89 %*	*D12*	*Surr Limits: (39-146%)*				*08/10/10 20:02*	*JLG*	*10H0489*	*8270C*
2-Fluorobiphenyl	*88 %*	*D12*	*Surr Limits: (37-120%)*				*08/10/10 20:02*	*JLG*	*10H0489*	*8270C*
2-Fluorophenol	*65 %*	*D12*	*Surr Limits: (18-120%)*				*08/10/10 20:02*	*JLG*	*10H0489*	*8270C*
Nitrobenzene-d5	*72 %*	*D12*	*Surr Limits: (34-132%)*				*08/10/10 20:02*	*JLG*	*10H0489*	*8270C*
Phenol-d5	*79 %*	*D12*	*Surr Limits: (11-120%)*				*08/10/10 20:02*	*JLG*	*10H0489*	*8270C*
p-Terphenyl-d14	*93 %*	*D12*	*Surr Limits: (58-147%)*				*08/10/10 20:02*	*JLG*	*10H0489*	*8270C*
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 16:14	JRR	10H0568	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0485-10RE1 (TP-C1-0911 - Solid)						**Sampled: 08/05/10 12:00**		**Recvd: 08/05/10 17:05**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**420000**	W1, D08	27000	10000	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
1,2-Dichlorobenzene	**690000**	W1, D08	27000	6800	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
1,4-Dichlorobenzene	**150000**	W1, D08	27000	3700	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
Chlorobenzene	**340000**	W1, D08	27000	3500	ug/kg dry	500	08/12/10 04:58	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*96 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 04:58*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 04:58*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 04:58*	*CDC*	*10H0807*	*8260B*

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800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-01 (TP-C2-0305 - Solid) — **Sampled: 08/06/10 10:00** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	58	16	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	58	9.4	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	58	12	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	58	29	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	58	18	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	58	20	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	58	29	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	58	2.2	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,2-Dichlorobenzene	**510**	W1	58	15	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	58	24	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	58	9.3	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
2-Butanone	ND	W1	290	170	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
2-Hexanone	ND	W1	290	120	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	290	18	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Acetone	ND	W1	290	240	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Benzene	**32**	W1,J	58	2.8	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	58	12	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Bromoform	ND	W1	58	29	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Bromomethane	ND	W1	58	13	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Carbon disulfide	ND	W1	58	26	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	58	15	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	58	28	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Chloroethane	ND	W1	58	12	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Chloroform	ND	W1	58	40	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Chloromethane	ND	W1	58	14	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	58	16	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	58	14	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Cyclohexane	ND	W1	58	13	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	58	25	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Ethylbenzene	ND	W1	58	17	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Isopropylbenzene	ND	W1	58	8.6	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Methyl Acetate	**160**	W1	58	27	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	58	22	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Methylcyclohexane	ND	W1	58	27	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Methylene Chloride	ND	W1	58	11	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Styrene	ND	W1	58	14	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	58	7.8	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Toluene	ND	W1	58	15	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	58	14	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	58	2.8	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Trichloroethene	ND	W1	58	16	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	58	27	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Vinyl chloride	ND	W1	58	19	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
Xylenes, total	ND	W1	120	9.7	ug/kg dry	1.00	08/11/10 00:09	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*99 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 00:09*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*100 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 00:09*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*103 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 00:09*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-01 (TP-C2-0305 - Solid) - cont.						**Sampled: 08/06/10 10:00**		**Recvd: 08/06/10 17:00**		
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 15:40	JRR	10H0573	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-01RE1 (TP-C2-0305 - Solid)						**Sampled: 08/06/10 10:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**15000**	W1, D08,B	580	220	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
1,3-Dichlorobenzene	**48000**	W1, D08	580	150	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
1,4-Dichlorobenzene	**19000**	W1, D08	580	81	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
Chlorobenzene	**7900**	W1, D08	580	76	ug/kg dry	10.0	08/11/10 13:15	PJQ	10H0745	8260B
1,2-Dichloroethane-d4	*92 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 13:15*	*PJQ*	*10H0745*	*8260B*
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 13:15*	*PJQ*	*10H0745*	*8260B*
Toluene-d8	*97 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 13:15*	*PJQ*	*10H0745*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	MNR1	220	47	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	220	14	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,4-Dichlorophenol	**33**	MNR1,J	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	220	58	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	420	76	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	220	33	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	220	53	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	220	14	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Chlorophenol	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Methylnaphthalene	**9.0**	MNR1,J	220	2.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	220	6.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	420	69	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	220	9.9	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	220	190	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	420	50	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	420	75	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	220	69	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	220	8.9	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	220	63	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	220	4.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	420	12	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	420	24	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	420	52	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	220	1.8	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Acetophenone	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Aniline	ND	MNR1	420	120	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Anthracene	**19**	MNR1,J	220	5.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Atrazine	ND	MNR1	220	9.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1	220	24	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Benzo(a)anthracene	ND	MNR1	220	3.7	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1	220	5.2	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1	220	4.2	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1	220	2.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1	220	2.4	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Biphenyl	**15**	MNR1,J	220	13	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	220	12	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	220	19	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-01RE1 (TP-C2-0305 - Solid) - cont. **Sampled: 08/06/10 10:00** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	220	23	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1	220	70	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	220	58	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Caprolactam	ND	MNR1	220	93	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Carbazole	**54**	MNR1,J	220	2.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Chrysene	**9.8**	MNR1,J	220	2.2	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	220	2.2	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	220	6.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	220	5.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	220	75	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	220	5.1	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Fluoranthene	**11**	MNR1,J	220	3.1	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Fluorene	**11**	MNR1,J	220	5.0	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	220	65	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	220	17	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1	220	6.0	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Isophorone	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Naphthalene	**30**	MNR1,J	220	3.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	220	9.6	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	220	17	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
N-Nitrosodiphenylamine	**12**	MNR1,J	220	12	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	420	74	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Phenanthrene	**33**	MNR1,J	220	4.5	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Phenol	ND	MNR1	220	23	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
Pyrene	**10**	MNR1,J	220	1.4	ug/kg dry	1.00	08/16/10 13:21	RAR	10H1025	8270C
2,4,6-Tribromophenol	*85 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 13:21*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*75 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 13:21*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*59 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 13:21*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*72 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 13:21*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*72 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 13:21*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*72 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 13:21*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-02 (TP-C2-0507 - Solid) — **Sampled: 08/06/10 10:15** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	49	14	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	49	7.9	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	49	10	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	49	15	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	49	17	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	49	1.9	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,2-Dichlorobenzene	**130**	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	49	20	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	49	7.9	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,4-Dichlorobenzene	**4000**	W1	49	6.8	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
2-Butanone	ND	W1	240	150	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
2-Hexanone	ND	W1	240	100	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	240	16	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Acetone	ND	W1	240	200	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Benzene	ND	W1	49	2.3	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	49	9.8	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Bromoform	ND	W1	49	24	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Bromomethane	ND	W1	49	11	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Carbon disulfide	ND	W1	49	22	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Chlorobenzene	**1500**	W1	49	6.5	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Chloroethane	ND	W1	49	10	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Chloroform	ND	W1	49	34	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Chloromethane	ND	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	49	13	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Cyclohexane	ND	W1	49	11	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	49	21	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Ethylbenzene	ND	W1	49	14	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Isopropylbenzene	ND	W1	49	7.3	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Methyl Acetate	ND	W1	49	23	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	49	18	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Methylcyclohexane	ND	W1	49	23	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Methylene Chloride	ND	W1	49	9.7	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Styrene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	49	6.6	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Toluene	ND	W1	49	13	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	49	2.3	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Trichloroethene	ND	W1	49	14	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	49	23	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Vinyl chloride	ND	W1	49	16	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
Xylenes, total	ND	W1	98	8.2	ug/kg dry	1.00	08/11/10 00:31	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*98 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 00:31*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-02 (TP-C2-0507 - Solid) - cont.							**Sampled: 08/06/10 10:15**		**Recvd: 08/06/10 17:00**	
Volatile Organic Compounds by EPA 8260B - cont.										
4-Bromofluorobenzene	*101 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 00:31*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*102 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 00:31*	*NMD*	*10H0719*	*8260B*
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 15:42	JRR	10H0573	Dry Weight

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Received: 08/05/10-08/06/10
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Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-02RE1 (TP-C2-0507 - Solid)						**Sampled: 08/06/10 10:15**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**260000**	W1, D08	4900	1900	ug/kg dry	100	08/11/10 23:23	CDC	10H0807	8260B
1,3-Dichlorobenzene	**52000**	W1, D08	4900	1300	ug/kg dry	100	08/11/10 23:23	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*96 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 23:23*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*94 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 23:23*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*97 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 23:23*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	**280**	MNR1	210	46	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	210	14	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4-Dichlorophenol	**200**	MNR1,J	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	210	57	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	410	74	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	210	33	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	210	52	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	210	14	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2-Chlorophenol	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1	210	2.6	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	210	6.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	410	68	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	210	9.7	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	210	190	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	410	49	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	410	73	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	210	67	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	210	8.7	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	210	62	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	210	4.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	410	12	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	410	24	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	410	51	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	210	2.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	210	1.7	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Acetophenone	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Aniline	ND	MNR1	410	120	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Anthracene	ND	MNR1	210	5.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Atrazine	ND	MNR1	210	9.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1	210	23	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Benzo(a)anthracene	ND	MNR1	210	3.6	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1	210	5.1	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1	210	4.1	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1	210	2.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1	210	2.3	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Biphenyl	ND	MNR1	210	13	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	210	18	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	210	22	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-02RE1 (TP-C2-0507 - Solid) - cont. **Sampled: 08/06/10 10:15** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Bis(2-ethylhexyl) phthalate	ND	MNR1	210	68	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	210	57	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Caprolactam	ND	MNR1	210	91	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Carbazole	ND	MNR1	210	2.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Chrysene	ND	MNR1	210	2.1	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	210	2.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	210	2.2	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	210	6.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	210	5.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	210	73	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	210	4.9	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Fluoranthene	ND	MNR1	210	3.1	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Fluorene	ND	MNR1	210	4.9	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	210	10	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	210	64	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	210	16	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1	210	5.8	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Isophorone	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Naphthalene	**9.6**	MNR1,J	210	3.5	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	210	9.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	210	17	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1	210	12	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	410	72	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Phenanthrene	ND	MNR1	210	4.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Phenol	ND	MNR1	210	22	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
Pyrene	ND	MNR1	210	1.4	ug/kg dry	1.00	08/16/10 13:45	RAR	10H1025	8270C
2,4,6-Tribromophenol	*83 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 13:45*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*65 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 13:45*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*51 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 13:45*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*63 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 13:45*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*61 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 13:45*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*68 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 13:45*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-03 (TP-C2-0709 - Solid) — **Sampled: 08/06/10 10:45** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	2200	600	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	2200	350	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,1,2-Trichloroethane	ND	W1, D08	2200	450	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	2200	1100	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,1-Dichloroethane	ND	W1, D08	2200	670	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,1-Dichloroethene	ND	W1, D08	2200	750	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	2200	1100	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,2-Dibromoethane	ND	W1, D08	2200	82	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,2-Dichlorobenzene	ND	W1, D08	2200	550	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,2-Dichloroethane	ND	W1, D08	2200	890	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,2-Dichloropropane	ND	W1, D08	2200	350	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,3-Dichlorobenzene	ND	W1, D08	2200	580	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
1,4-Dichlorobenzene	ND	W1, D08	2200	300	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
2-Butanone	ND	W1, D08	11000	6400	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
2-Hexanone	ND	W1, D08	11000	4400	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
4-Methyl-2-pentanone	ND	W1, D08	11000	690	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Acetone	ND	W1, D08	11000	8900	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Benzene	ND	W1, D08	2200	100	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Bromodichloromethane	ND	W1, D08	2200	430	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Bromoform	ND	W1, D08	2200	1100	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Bromomethane	ND	W1, D08	2200	480	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Carbon disulfide	ND	W1, D08	2200	990	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Carbon Tetrachloride	ND	W1, D08	2200	550	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Chlorobenzene	ND	W1, D08	2200	290	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Dibromochloromethane	ND	W1, D08	2200	1000	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Chloroethane	ND	W1, D08	2200	450	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Chloroform	ND	W1, D08	2200	1500	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Chloromethane	ND	W1, D08	2200	520	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
cis-1,2-Dichloroethene	ND	W1, D08	2200	600	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
cis-1,3-Dichloropropene	ND	W1, D08	2200	520	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Cyclohexane	ND	W1, D08	2200	480	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Dichlorodifluoromethane	ND	W1, D08	2200	940	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Ethylbenzene	ND	W1, D08	2200	630	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Isopropylbenzene	ND	W1, D08	2200	320	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Methyl Acetate	ND	W1, D08	2200	1000	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	2200	820	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Methylcyclohexane	ND	W1, D08	2200	1000	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Methylene Chloride	ND	W1, D08	2200	430	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Styrene	ND	W1, D08	2200	520	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Tetrachloroethene	ND	W1, D08	2200	290	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Toluene	ND	W1, D08	2200	580	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
trans-1,2-Dichloroethene	ND	W1, D08	2200	510	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
trans-1,3-Dichloropropene	ND	W1, D08	2200	100	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Trichloroethene	ND	W1, D08	2200	600	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Trichlorofluoromethane	ND	W1, D08	2200	1000	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Vinyl chloride	ND	W1, D08	2200	730	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B
Xylenes, total	ND	W1, D08	4300	360	ug/kg dry	50.0	08/11/10 14:01	PJQ	10H0745	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-03 (TP-C2-0709 - Solid) - cont.							**Sampled: 08/06/10 10:45**		**Recvd: 08/06/10 17:00**	
Volatile Organic Compounds by EPA 8260B - cont.										
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 14:01*	*PJQ*	*10H0745*	*8260B*
4-Bromofluorobenzene	*96 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 14:01*	*PJQ*	*10H0745*	*8260B*
Toluene-d8	*98 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 14:01*	*PJQ*	*10H0745*	*8260B*
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	08/09/10 15:44	JRR	10H0573	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
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Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-03RE1 (TP-C2-0709 - Solid)						**Sampled: 08/06/10 10:45**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**500000**	W1, D08	17000	6600	ug/kg dry	400	08/11/10 23:45	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 23:45*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 23:45*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 23:45*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	**290**	MNR1	200	44	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	200	13	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4-Dichlorophenol	**47**	MNR1,J	200	11	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	200	54	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	390	70	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	200	31	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	200	49	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	200	13	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Chlorophenol	**11**	MNR1,J	200	10	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1	200	2.4	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	200	6.2	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	390	64	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	200	9.2	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	200	180	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	390	46	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	390	69	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	200	64	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	200	8.3	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	200	59	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	200	4.3	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	390	11	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	390	22	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	390	49	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	200	2.4	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	200	1.6	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Acetophenone	ND	MNR1	200	10	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Aniline	ND	MNR1	390	110	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Anthracene	ND	MNR1	200	5.1	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Atrazine	ND	MNR1	200	8.9	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1	200	22	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzo(a)anthracene	**9.1**	MNR1,J	200	3.5	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1	200	4.8	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1	200	3.9	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1	200	2.4	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1	200	2.2	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Biphenyl	ND	MNR1	200	13	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	200	11	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	200	17	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	200	21	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-03RE1 (TP-C2-0709 - Solid) - cont. **Sampled: 08/06/10 10:45** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Bis(2-ethylhexyl) phthalate	ND	MNR1	200	65	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	200	54	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Caprolactam	ND	MNR1	200	87	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Carbazole	ND	MNR1	200	2.3	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Chrysene	ND	MNR1	200	2.0	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	200	2.4	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	200	2.1	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	200	6.1	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	200	5.2	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	200	69	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	200	4.7	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Fluoranthene	ND	MNR1	200	2.9	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Fluorene	ND	MNR1	200	4.6	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	200	10	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	200	10	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	200	61	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	200	16	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1	200	5.6	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Isophorone	ND	MNR1	200	10	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Naphthalene	**11**	MNR1,J	200	3.3	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	200	8.9	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	200	16	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1	200	11	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	390	69	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Phenanthrene	ND	MNR1	200	4.2	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Phenol	ND	MNR1	200	21	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
Pyrene	ND	MNR1	200	1.3	ug/kg dry	1.00	08/16/10 14:09	RAR	10H1025	8270C
2,4,6-Tribromophenol	*83 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 14:09*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*66 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 14:09*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*51 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 14:09*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*62 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 14:09*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*63 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 14:09*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*68 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 14:09*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-04 (TP-C2-0911 - Solid) — **Sampled: 08/06/10 11:00** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	D08, W1	460	75	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	D08, W1	460	97	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	D08, W1	460	230	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,1-Dichloroethane	ND	D08, W1	460	140	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,1-Dichloroethene	ND	D08, W1	460	160	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	D08, W1	460	230	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,2-Dibromoethane	ND	D08, W1	460	18	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,2-Dichlorobenzene	**630**	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,2-Dichloroethane	ND	D08, W1	460	190	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,2-Dichloropropane	ND	D08, W1	460	75	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,3-Dichlorobenzene	ND	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
1,4-Dichlorobenzene	**3100**	D08, W1	460	65	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
2-Butanone	ND	D08, W1	2300	1400	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
2-Hexanone	ND	D08, W1	2300	950	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	D08, W1	2300	150	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Acetone	ND	D08, W1	2300	1900	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Benzene	ND	D08, W1	460	22	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Bromodichloromethane	ND	D08, W1	460	93	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Bromoform	ND	D08, W1	460	230	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Bromomethane	ND	D08, W1	460	100	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Carbon disulfide	ND	D08, W1	460	210	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Carbon Tetrachloride	ND	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Chlorobenzene	**7200**	D08, W1	460	61	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Dibromochloromethane	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Chloroethane	ND	D08, W1	460	96	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Chloroform	ND	D08, W1	460	320	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Chloromethane	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Cyclohexane	ND	D08, W1	460	100	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	D08, W1	460	200	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Ethylbenzene	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Isopropylbenzene	ND	D08, W1	460	69	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Methyl Acetate	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	D08, W1	460	170	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Methylcyclohexane	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Methylene Chloride	ND	D08, W1	460	92	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Styrene	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Tetrachloroethene	ND	D08, W1	460	62	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Toluene	ND	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	D08, W1	460	22	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Trichloroethene	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Trichlorofluoromethane	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Vinyl chloride	ND	D08, W1	460	160	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B
Xylenes, total	ND	D08, W1	930	78	ug/kg dry	10.0	08/11/10 01:17	NMD	10H0719	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-04 (TP-C2-0911 - Solid) - cont.						**Sampled: 08/06/10 11:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B - cont.										
1,2-Dichloroethane-d4	*96 %*	*D08, W1*	*Surr Limits: (53-146%)*				*08/11/10 01:17*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*100 %*	*D08, W1*	*Surr Limits: (49-148%)*				*08/11/10 01:17*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*99 %*	*D08, W1*	*Surr Limits: (50-149%)*				*08/11/10 01:17*	*NMD*	*10H0719*	*8260B*
General Chemistry Parameters										
Percent Solids	**78**		0.010	NR	%	1.00	08/09/10 15:46	JRR	10H0573	Dry Weight

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Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-04RE1 (TP-C2-0911 - Solid)						**Sampled: 08/06/10 11:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**28000000**	W1, D08	370000	140000	ug/kg dry	8000	08/12/10 00:08	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 00:08*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 00:08*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 00:08*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	**100**	MNR1,J	220	47	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	220	14	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4-Dichlorophenol	**32**	MNR1,J	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	220	58	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	420	75	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	220	33	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	220	52	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	220	14	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2-Chlorophenol	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1	220	2.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	220	6.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	420	69	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	220	9.8	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	220	190	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	420	49	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	420	74	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	220	68	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	220	8.8	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	220	63	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	220	4.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	420	12	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	420	24	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	420	52	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	220	1.8	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Acetophenone	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Aniline	ND	MNR1	420	120	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Anthracene	ND	MNR1	220	5.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Atrazine	ND	MNR1	220	9.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1	220	24	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(a)anthracene	**19**	MNR1,J	220	3.7	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(a)pyrene	**20**	MNR1,J	220	5.2	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(b)fluoranthene	**19**	MNR1,J	220	4.2	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(ghi)perylene	**20**	MNR1,J	220	2.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Benzo(k)fluoranthene	**17**	MNR1,J	220	2.4	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Biphenyl	ND	MNR1	220	13	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	220	12	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	220	19	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	220	22	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C

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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-04RE1 (TP-C2-0911 - Solid) - cont. **Sampled: 08/06/10 11:00** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Bis(2-ethylhexyl) phthalate	ND	MNR1	220	69	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	220	58	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Caprolactam	ND	MNR1	220	93	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Carbazole	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Chrysene	**34**	MNR1,J	220	2.1	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	220	2.2	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	220	6.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	220	5.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	220	74	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	220	5.0	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Fluoranthene	**28**	MNR1,J	220	3.1	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Fluorene	ND	MNR1	220	4.9	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	220	65	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	220	17	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	**13**	MNR1,J	220	5.9	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Isophorone	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Naphthalene	**27**	MNR1,J	220	3.6	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	220	9.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	220	17	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1	220	12	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	420	74	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Phenanthrene	**16**	MNR1,J	220	4.5	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Phenol	ND	MNR1	220	23	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
Pyrene	**27**	MNR1,J	220	1.4	ug/kg dry	1.00	08/16/10 14:33	RAR	10H1025	8270C
2,4,6-Tribromophenol	*85 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 14:33*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*75 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 14:33*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*65 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 14:33*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*76 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 14:33*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*76 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 14:33*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*70 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 14:33*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-05 (DDC-05-0406 - Solid) — **Sampled: 08/06/10 13:20** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	D08, W1	460	75	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	D08, W1	460	97	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	D08, W1	460	230	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,1-Dichloroethane	ND	D08, W1	460	140	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,1-Dichloroethene	ND	D08, W1	460	160	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	D08, W1	460	230	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,2-Dibromoethane	ND	D08, W1	460	18	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,2-Dichloroethane	ND	D08, W1	460	190	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,2-Dichloropropane	ND	D08, W1	460	75	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,3-Dichlorobenzene	**4000**	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
2-Butanone	ND	D08, W1	2300	1400	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
2-Hexanone	ND	D08, W1	2300	950	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	D08, W1	2300	150	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Acetone	ND	D08, W1	2300	1900	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Benzene	ND	D08, W1	460	22	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Bromodichloromethane	ND	D08, W1	460	92	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Bromoform	ND	D08, W1	460	230	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Bromomethane	ND	D08, W1	460	100	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Carbon disulfide	ND	D08, W1	460	210	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Carbon Tetrachloride	ND	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Dibromochloromethane	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Chloroethane	ND	D08, W1	460	96	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Chloroform	ND	D08, W1	460	320	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Chloromethane	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Cyclohexane	ND	D08, W1	460	100	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	D08, W1	460	200	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Ethylbenzene	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Isopropylbenzene	ND	D08, W1	460	69	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Methyl Acetate	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	D08, W1	460	170	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Methylcyclohexane	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Methylene Chloride	ND	D08, W1	460	91	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Styrene	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Tetrachloroethene	ND	D08, W1	460	62	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Toluene	ND	D08, W1	460	120	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	D08, W1	460	110	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	D08, W1	460	22	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Trichloroethene	ND	D08, W1	460	130	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Trichlorofluoromethane	ND	D08, W1	460	220	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Vinyl chloride	ND	D08, W1	460	150	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
Xylenes, total	ND	D08, W1	920	78	ug/kg dry	10.0	08/11/10 01:39	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*99 %*	*D08, W1*	*Surr Limits: (53-146%)*				*08/11/10 01:39*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*102 %*	*D08, W1*	*Surr Limits: (49-148%)*				*08/11/10 01:39*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*104 %*	*D08, W1*	*Surr Limits: (50-149%)*				*08/11/10 01:39*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-05 (DDC-05-0406 - Solid) - cont.						**Sampled: 08/06/10 13:20**		**Recvd: 08/06/10 17:00**		
General Chemistry Parameters										
Percent Solids	**85**		0.010	NR	%	1.00	08/09/10 15:48	JRR	10H0573	Dry Weight

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Received: 08/05/10-08/06/10
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Analytical Report

Sample ID: RTH0556-05RE1 (DDC-05-0406 - Solid) — **Sampled: 08/06/10 13:20** — **Recvd: 08/06/10 17:00**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**400000**	W1, D08	4600	1700	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
1,2-Dichlorobenzene	**280000**	W1, D08	4600	1200	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
1,4-Dichlorobenzene	**52000**	W1, D08	4600	650	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
Chlorobenzene	**150000**	W1, D08	4600	610	ug/kg dry	100	08/12/10 00:31	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*94 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 00:31*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 00:31*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 00:31*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	MNR1, D12	970	210	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1, D12	970	64	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,4-Dichlorophenol	ND	MNR1, D12	970	50	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1, D12	970	260	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1, D12	1900	340	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1, D12	970	150	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1, D12	970	240	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1, D12	970	65	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2-Chlorophenol	**170**	MNR1, D12,J	970	49	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1, D12	970	12	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1, D12	970	30	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1, D12	1900	310	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1, D12	970	44	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1, D12	970	840	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1, D12	1900	220	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1, D12	1900	330	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1, D12	970	310	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1, D12	970	40	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1, D12	970	280	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1, D12	970	21	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1, D12	1900	54	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1, D12	1900	110	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1, D12	1900	230	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Acenaphthene	ND	MNR1, D12	970	11	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1, D12	970	7.9	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Acetophenone	ND	MNR1, D12	970	49	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Aniline	ND	MNR1, D12	1900	530	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Anthracene	ND	MNR1, D12	970	25	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Atrazine	ND	MNR1, D12	970	43	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1, D12	970	110	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Benzo(a)anthracene	ND	MNR1, D12	970	17	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1, D12	970	23	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1, D12	970	19	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1, D12	970	12	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1, D12	970	11	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Biphenyl	ND	MNR1, D12	970	60	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1, D12	970	52	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C

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Received: 08/05/10-08/06/10
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Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-05RE1 (DDC-05-0406 - Solid) - cont.							**Sampled: 08/06/10 13:20**		**Recvd: 08/06/10 17:00**	
Semivolatile Organics by GC/MS - cont.										
Bis(2-chloroethyl)ether	ND	MNR1, D12	970	83	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1, D12	970	100	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1, D12	970	310	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1, D12	970	260	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Caprolactam	ND	MNR1, D12	970	420	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Carbazole	ND	MNR1, D12	970	11	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Chrysene	ND	MNR1, D12	970	9.6	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1, D12	970	11	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1, D12	970	10	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1, D12	970	29	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1, D12	970	25	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1, D12	970	330	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1, D12	970	23	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Fluoranthene	ND	MNR1, D12	970	14	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Fluorene	ND	MNR1, D12	970	22	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1, D12	970	48	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1, D12	970	49	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1, D12	970	290	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1, D12	970	75	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1, D12	970	27	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Isophorone	ND	MNR1, D12	970	48	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Naphthalene	ND	MNR1, D12	970	16	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1, D12	970	43	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1, D12	970	76	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1, D12	970	53	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1, D12	1900	330	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Phenanthrene	ND	MNR1, D12	970	20	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Phenol	ND	MNR1, D12	970	100	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
Pyrene	ND	MNR1, D12	970	6.2	ug/kg dry	5.00	08/16/10 14:57	RAR	10H1025	8270C
2,4,6-Tribromophenol	*67 %*	*MNR1, D12*	*Surr Limits: (39-146%)*				*08/16/10 14:57*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*65 %*	*MNR1, D12*	*Surr Limits: (37-120%)*				*08/16/10 14:57*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*49 %*	*MNR1, D12*	*Surr Limits: (18-120%)*				*08/16/10 14:57*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*58 %*	*MNR1, D12*	*Surr Limits: (34-132%)*				*08/16/10 14:57*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*63 %*	*MNR1, D12*	*Surr Limits: (11-120%)*				*08/16/10 14:57*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*67 %*	*MNR1, D12*	*Surr Limits: (58-147%)*				*08/16/10 14:57*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-06 (DDE-07-0810 - Solid) — **Sampled: 08/06/10 14:00** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D08	88	24	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D08	88	14	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1, D08	88	19	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1, D08	88	44	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1, D08	88	27	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1, D08	88	30	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,2,4-Trichlorobenzene	**3700**	W1, D08	88	33	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D08	88	44	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1, D08	88	3.3	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1, D08	88	36	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1, D08	88	14	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,3-Dichlorobenzene	**3500**	W1, D08	88	24	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
2-Butanone	ND	W1, D08	440	260	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
2-Hexanone	ND	W1, D08	440	180	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1, D08	440	28	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Acetone	ND	W1, D08	440	360	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Benzene	**410**	W1, D08	88	4.2	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Bromodichloromethane	ND	W1, D08	88	18	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Bromoform	ND	W1, D08	88	44	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Bromomethane	ND	W1, D08	88	19	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Carbon disulfide	ND	W1, D08	88	40	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1, D08	88	22	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Dibromochloromethane	ND	W1, D08	88	43	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Chloroethane	ND	W1, D08	88	18	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Chloroform	ND	W1, D08	88	60	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Chloromethane	ND	W1, D08	88	21	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1, D08	88	24	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1, D08	88	21	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Cyclohexane	ND	W1, D08	88	20	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1, D08	88	38	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Ethylbenzene	ND	W1, D08	88	26	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Isopropylbenzene	ND	W1, D08	88	13	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Methyl Acetate	ND	W1, D08	88	42	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1, D08	88	33	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Methylcyclohexane	**63**	W1, D08,J	88	41	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Methylene Chloride	ND	W1, D08	88	17	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Styrene	ND	W1, D08	88	21	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Tetrachloroethene	**310**	W1, D08	88	12	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Toluene	**47**	W1, D08,J	88	24	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1, D08	88	21	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1, D08	88	4.2	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Trichloroethene	ND	W1, D08	88	25	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1, D08	88	41	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Vinyl chloride	ND	W1, D08	88	30	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
Xylenes, total	ND	W1, D08	180	15	ug/kg dry	1.00	08/11/10 02:02	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*98 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 02:02*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*198 %*	*W1, D08,ZX*	*Surr Limits: (49-148%)*				*08/11/10 02:02*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-06 (DDE-07-0810 - Solid) - cont.							**Sampled: 08/06/10 14:00**		**Recvd: 08/06/10 17:00**	
Volatile Organic Compounds by EPA 8260B - cont.										
Toluene-d8	*194 %*	*W1, D08,ZX*	*Surr Limits: (50-149%)*				*08/11/10 02:02*	*NMD*	*10H0719*	*8260B*
General Chemistry Parameters										
Percent Solids	**79**		0.010	NR	%	1.00	08/09/10 15:50	JRR	10H0573	Dry Weight

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Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-06RE1 (DDE-07-0810 - Solid)						**Sampled: 08/06/10 14:00**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**140000**	W1, D08	35000	9000	ug/kg dry	800	08/12/10 00:53	CDC	10H0807	8260B
1,4-Dichlorobenzene	**30000**	W1, D08,J	35000	4900	ug/kg dry	800	08/12/10 00:53	CDC	10H0807	8260B
Chlorobenzene	**840000**	W1, D08	35000	4700	ug/kg dry	800	08/12/10 00:53	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*97 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 00:53*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*98 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 00:53*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*101 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 00:53*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	MNR1	210	45	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	210	14	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,4-Dichlorophenol	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	210	56	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	410	73	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	210	32	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	210	51	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	210	14	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2-Chlorophenol	**30**	MNR1,J	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1	210	2.5	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	210	6.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	410	67	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	210	9.5	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	210	180	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	410	48	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	410	72	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	210	66	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	210	8.6	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	210	61	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	210	4.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	410	12	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	410	23	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	410	50	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	210	2.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	210	1.7	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Acetophenone	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Aniline	ND	MNR1	410	110	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Anthracene	ND	MNR1	210	5.3	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Atrazine	ND	MNR1	210	9.3	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1	210	23	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(a)anthracene	**29**	MNR1,J	210	3.6	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(a)pyrene	**12**	MNR1,J	210	5.0	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(b)fluoranthene	**9.4**	MNR1,J	210	4.0	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1	210	2.5	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1	210	2.3	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Biphenyl	ND	MNR1	210	13	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	210	18	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C

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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-06RE1 (DDE-07-0810 - Solid) - cont. **Sampled: 08/06/10 14:00** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	210	22	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1	210	67	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	210	56	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Caprolactam	ND	MNR1	210	90	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Carbazole	ND	MNR1	210	2.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Chrysene	ND	MNR1	210	2.1	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	210	2.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	210	2.2	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	210	6.3	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	210	5.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	210	72	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	210	4.9	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Fluoranthene	**14**	MNR1,J	210	3.0	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Fluorene	ND	MNR1	210	4.8	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	210	10	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	210	63	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	210	16	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1	210	5.8	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Isophorone	ND	MNR1	210	10	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Naphthalene	**14**	MNR1,J	210	3.5	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	210	9.2	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	210	16	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1	210	11	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	410	71	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Phenanthrene	**18**	MNR1,J	210	4.4	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Phenol	ND	MNR1	210	22	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
Pyrene	**16**	MNR1,J	210	1.3	ug/kg dry	1.00	08/16/10 15:21	RAR	10H1025	8270C
2,4,6-Tribromophenol	*88 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 15:21*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*73 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 15:21*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*64 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 15:21*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*74 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 15:21*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*75 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 15:21*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*72 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 15:21*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-07 (DDE-08-0810 - Solid)						**Sampled: 08/06/10 14:20**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND	W1	49	14	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	49	7.9	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	49	10	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	49	15	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	49	17	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	49	1.9	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	49	20	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	49	7.9	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,4-Dichlorobenzene	**2400**	W1	49	6.8	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
2-Butanone	ND	W1	240	140	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
2-Hexanone	ND	W1	240	100	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	240	16	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Acetone	ND	W1	240	200	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Benzene	ND	W1	49	2.3	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	49	9.8	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Bromoform	ND	W1	49	24	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Bromomethane	ND	W1	49	11	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Carbon disulfide	ND	W1	49	22	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	49	12	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Chloroethane	ND	W1	49	10	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Chloroform	ND	W1	49	33	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Chloromethane	ND	W1	49	12	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	49	13	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Cyclohexane	ND	W1	49	11	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	49	21	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Ethylbenzene	ND	W1	49	14	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Isopropylbenzene	ND	W1	49	7.3	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Methyl Acetate	ND	W1	49	23	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	49	18	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Methylcyclohexane	**25**	W1,J	49	23	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Methylene Chloride	ND	W1	49	9.7	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Styrene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	49	6.6	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Toluene	**4100**	W1	49	13	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	49	2.3	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Trichloroethene	ND	W1	49	14	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	49	23	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Vinyl chloride	ND	W1	49	16	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
Xylenes, total	**43**	W1,J	98	8.2	ug/kg dry	1.00	08/11/10 02:24	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*91 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 02:24*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*96 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 02:24*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*97 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 02:24*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-07 (DDE-08-0810 - Solid) - cont.						**Sampled: 08/06/10 14:20**		**Recvd: 08/06/10 17:00**		
General Chemistry Parameters										
Percent Solids	**80**		0.010	NR	%	1.00	08/09/10 15:52	JRR	10H0573	Dry Weight

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Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-07RE1 (DDE-08-0810 - Solid) — **Sampled: 08/06/10 14:20** — **Recvd: 08/06/10 17:00**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**13000**	W1, D08,B	200	74	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
1,2-Dichlorobenzene	**8700**	W1, D08	200	50	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
1,3-Dichlorobenzene	**17000**	W1, D08	200	52	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
Chlorobenzene	**12000**	W1, D08	200	26	ug/kg dry	4.00	08/11/10 15:36	PJQ	10H0745	8260B
1,2-Dichloroethane-d4	*95 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/11/10 15:36*	*PJQ*	*10H0745*	*8260B*
4-Bromofluorobenzene	*95 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/11/10 15:36*	*PJQ*	*10H0745*	*8260B*
Toluene-d8	*98 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/11/10 15:36*	*PJQ*	*10H0745*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	MNR1, D08	2100	460	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1, D08	2100	140	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,4-Dichlorophenol	ND	MNR1, D08	2100	110	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1, D08	2100	570	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1, D08	4100	740	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1, D08	2100	330	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1, D08	2100	520	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1, D08	2100	140	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2-Chlorophenol	ND	MNR1, D08	2100	110	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1, D08	2100	26	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1, D08	2100	65	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1, D08	4100	680	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1, D08	2100	96	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1, D08	2100	1800	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1, D08	4100	480	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1, D08	4100	730	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1, D08	2100	670	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1, D08	2100	87	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Chloroaniline	**770**	MNR1, D08,J	2100	620	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1, D08	2100	45	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1, D08	4100	120	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1, D08	4100	240	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1, D08	4100	510	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Acenaphthene	ND	MNR1, D08	2100	25	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1, D08	2100	17	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Acetophenone	ND	MNR1, D08	2100	110	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Aniline	ND	MNR1, D08	4100	1200	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Anthracene	ND	MNR1, D08	2100	54	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Atrazine	ND	MNR1, D08	2100	94	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1, D08	2100	230	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzo(a)anthracene	**87**	MNR1, D08,J	2100	36	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1, D08	2100	51	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1, D08	2100	41	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1, D08	2100	25	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1, D08	2100	23	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Biphenyl	**370**	MNR1, D08,J	2100	130	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-07RE1 (DDE-08-0810 - Solid) - cont. **Sampled: 08/06/10 14:20** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Bis(2-chloroethoxy)methane	ND	MNR1, D08	2100	110	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1, D08	2100	180	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1, D08	2100	220	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1, D08	2100	680	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1, D08	2100	570	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Caprolactam	ND	MNR1, D08	2100	910	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Carbazole	ND	MNR1, D08	2100	24	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Chrysene	ND	MNR1, D08	2100	21	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1, D08	2100	25	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1, D08	2100	22	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1, D08	2100	64	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1, D08	2100	55	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1, D08	2100	730	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1, D08	2100	49	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Fluoranthene	**87**	MNR1, D08,J	2100	31	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Fluorene	ND	MNR1, D08	2100	49	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Hexachlorobenzene	**2600**	MNR1, D08	2100	100	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1, D08	2100	110	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1, D08	2100	640	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1, D08	2100	160	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1, D08	2100	58	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Isophorone	ND	MNR1, D08	2100	110	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Naphthalene	ND	MNR1, D08	2100	35	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Nitrobenzene	**14000**	MNR1, D08	2100	93	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1, D08	2100	170	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1, D08	2100	120	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1, D08	4100	720	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Phenanthrene	ND	MNR1, D08	2100	44	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Phenol	ND	MNR1, D08	2100	220	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
Pyrene	ND	MNR1, D08	2100	14	ug/kg dry	10.0	08/16/10 15:45	RAR	10H1025	8270C
2,4,6-Tribromophenol	*78 %*	*MNR1, D08*	*Surr Limits: (39-146%)*				*08/16/10 15:45*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*73 %*	*MNR1, D08*	*Surr Limits: (37-120%)*				*08/16/10 15:45*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*51 %*	*MNR1, D08*	*Surr Limits: (18-120%)*				*08/16/10 15:45*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*61 %*	*MNR1, D08*	*Surr Limits: (34-132%)*				*08/16/10 15:45*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*66 %*	*MNR1, D08*	*Surr Limits: (11-120%)*				*08/16/10 15:45*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*83 %*	*MNR1, D08*	*Surr Limits: (58-147%)*				*08/16/10 15:45*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-08 (CS-48-0204 - Solid) — **Sampled: 08/06/10 14:50** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	45	7.3	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	45	9.4	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	45	22	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	45	14	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	45	15	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2,4-Trichlorobenzene	**2700**	W1	45	17	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	45	22	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	45	1.7	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dichlorobenzene	**490**	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	45	18	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	45	7.2	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,3-Dichlorobenzene	**380**	W1	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,4-Dichlorobenzene	**150**	W1	45	6.3	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
2-Butanone	ND	W1	220	130	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
2-Hexanone	ND	W1	220	92	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	220	14	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Acetone	ND	W1	220	180	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Benzene	ND	W1	45	2.1	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	45	8.9	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Bromoform	ND	W1	45	22	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Bromomethane	ND	W1	45	9.8	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Carbon disulfide	ND	W1	45	20	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Chlorobenzene	**120**	W1	45	5.9	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	45	22	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Chloroethane	ND	W1	45	9.3	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Chloroform	ND	W1	45	31	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Chloromethane	ND	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Cyclohexane	ND	W1	45	9.9	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	45	19	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Ethylbenzene	ND	W1	45	13	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Isopropylbenzene	ND	W1	45	6.7	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Methyl Acetate	ND	W1	45	21	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	45	17	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Methylcyclohexane	ND	W1	45	21	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Methylene Chloride	ND	W1	45	8.9	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Styrene	ND	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	45	6.0	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Toluene	**40**	W1,J	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	45	11	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	45	2.1	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Trichloroethene	ND	W1	45	12	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	45	21	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
Vinyl chloride	ND	W1	45	15	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-08 (CS-48-0204 - Solid) - cont.							**Sampled: 08/06/10 14:50**		**Recvd: 08/06/10 17:00**	
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1	89	7.5	ug/kg dry	1.00	08/11/10 02:47	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*99 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 02:47*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*101 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 02:47*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*105 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 02:47*	*NMD*	*10H0719*	*8260B*
General Chemistry Parameters										
Percent Solids	**94**		0.010	NR	%	1.00	08/09/10 15:54	JRR	10H0573	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-08RE1 (CS-48-0204 - Solid) — **Sampled: 08/06/10 14:50** — **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	MNR1, D12	900	190	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1, D12	900	59	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,4-Dichlorophenol	ND	MNR1, D12	900	47	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1, D12	900	240	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1, D12	1700	310	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1, D12	900	140	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1, D12	900	220	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1, D12	900	60	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2-Chlorophenol	ND	MNR1, D12	900	45	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1, D12	900	11	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1, D12	900	27	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1, D12	1700	290	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1, D12	900	41	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1, D12	900	780	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1, D12	1700	210	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1, D12	1700	310	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1, D12	900	280	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1, D12	900	37	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1, D12	900	260	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1, D12	900	19	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1, D12	1700	50	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1, D12	1700	100	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1, D12	1700	220	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Acenaphthene	ND	MNR1, D12	900	11	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1, D12	900	7.3	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Acetophenone	ND	MNR1, D12	900	46	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Aniline	ND	MNR1, D12	1700	490	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Anthracene	ND	MNR1, D12	900	23	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Atrazine	ND	MNR1, D12	900	40	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1, D12	900	98	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Benzo(a)anthracene	ND	MNR1, D12	900	15	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1, D12	900	22	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1, D12	900	17	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1, D12	900	11	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1, D12	900	9.8	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Biphenyl	ND	MNR1, D12	900	56	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1, D12	900	49	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1, D12	900	77	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1, D12	900	93	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	**1900**	MNR1, D12	900	290	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1, D12	900	240	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Caprolactam	ND	MNR1, D12	900	390	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Carbazole	ND	MNR1, D12	900	10	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Chrysene	ND	MNR1, D12	900	8.9	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1, D12	900	11	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1, D12	900	9.3	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-08RE1 (CS-48-0204 - Solid) - cont. **Sampled: 08/06/10 14:50** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Diethyl phthalate	ND	MNR1, D12	900	27	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1, D12	900	23	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1, D12	900	310	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1, D12	900	21	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Fluoranthene	ND	MNR1, D12	900	13	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Fluorene	ND	MNR1, D12	900	21	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1, D12	900	44	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1, D12	900	46	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1, D12	900	270	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1, D12	900	69	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1, D12	900	25	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Isophorone	ND	MNR1, D12	900	45	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Naphthalene	ND	MNR1, D12	900	15	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1, D12	900	40	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1, D12	900	71	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1, D12	900	49	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1, D12	1700	310	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Phenanthrene	ND	MNR1, D12	900	19	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Phenol	ND	MNR1, D12	900	94	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
Pyrene	ND	MNR1, D12	900	5.8	ug/kg dry	5.00	08/16/10 16:10	RAR	10H1025	8270C
2,4,6-Tribromophenol	*79 %*	*MNR1, D12*	*Surr Limits: (39-146%)*				*08/16/10 16:10*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*62 %*	*MNR1, D12*	*Surr Limits: (37-120%)*				*08/16/10 16:10*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*48 %*	*MNR1, D12*	*Surr Limits: (18-120%)*				*08/16/10 16:10*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*53 %*	*MNR1, D12*	*Surr Limits: (34-132%)*				*08/16/10 16:10*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*63 %*	*MNR1, D12*	*Surr Limits: (11-120%)*				*08/16/10 16:10*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*75 %*	*MNR1, D12*	*Surr Limits: (58-147%)*				*08/16/10 16:10*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-09 (CS-49-0203 - Solid) — **Sampled: 08/06/10 15:05** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	49	13	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	49	7.9	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	49	10	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	49	15	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	49	17	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2,4-Trichlorobenzene	**1300**	W1	49	18	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	49	1.8	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dichlorobenzene	**890**	W1	49	12	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	49	20	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	49	7.9	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,3-Dichlorobenzene	ND	W1	49	13	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,4-Dichlorobenzene	**120**	W1	49	6.8	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
2-Butanone	ND	W1	240	140	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
2-Hexanone	ND	W1	240	100	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	240	16	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Acetone	ND	W1	240	200	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Benzene	ND	W1	49	2.3	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	49	9.7	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Bromoform	ND	W1	49	24	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Bromomethane	ND	W1	49	11	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Carbon disulfide	ND	W1	49	22	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	49	12	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Chlorobenzene	**27**	W1,J	49	6.4	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	49	24	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Chloroethane	ND	W1	49	10	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Chloroform	ND	W1	49	33	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Chloromethane	ND	W1	49	12	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	49	13	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Cyclohexane	ND	W1	49	11	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	49	21	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Ethylbenzene	ND	W1	49	14	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Isopropylbenzene	ND	W1	49	7.3	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Methyl Acetate	ND	W1	49	23	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	49	18	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Methylcyclohexane	ND	W1	49	23	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Methylene Chloride	ND	W1	49	9.6	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Styrene	ND	W1	49	12	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	49	6.5	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Toluene	ND	W1	49	13	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	49	11	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	49	2.3	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Trichloroethene	ND	W1	49	14	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	49	23	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
Vinyl chloride	ND	W1	49	16	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-09 (CS-49-0203 - Solid) - cont.						**Sampled: 08/06/10 15:05**		**Recvd: 08/06/10 17:00**		
Volatile Organic Compounds by EPA 8260B - cont.										
Xylenes, total	ND	W1	97	8.2	ug/kg dry	1.00	08/11/10 03:09	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*96 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 03:09*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*100 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 03:09*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*101 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 03:09*	*NMD*	*10H0719*	*8260B*
General Chemistry Parameters										
Percent Solids	**97**		0.010	NR	%	1.00	08/09/10 15:56	JRR	10H0573	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-09RE2 (CS-49-0203 - Solid) — **Sampled: 08/06/10 15:05** — **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	MNR1, D12	860	190	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1, D12	860	56	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,4-Dichlorophenol	ND	MNR1, D12	860	45	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1, D12	860	230	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1, D12	1700	300	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1, D12	860	130	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1, D12	860	210	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1, D12	860	57	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2-Chlorophenol	ND	MNR1, D12	860	43	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1, D12	860	10	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1, D12	860	26	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1, D12	1700	270	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1, D12	860	39	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1, D12	860	750	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1, D12	1700	200	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1, D12	1700	290	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1, D12	860	270	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1, D12	860	35	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1, D12	860	250	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1, D12	860	18	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1, D12	1700	47	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1, D12	1700	95	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1, D12	1700	210	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Acenaphthene	ND	MNR1, D12	860	10	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1, D12	860	7.0	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Acetophenone	ND	MNR1, D12	860	44	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Aniline	ND	MNR1, D12	1700	470	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Anthracene	ND	MNR1, D12	860	22	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Atrazine	ND	MNR1, D12	860	38	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1, D12	860	93	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Benzo(a)anthracene	**42**	MNR1, D12,J	860	15	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Benzo(a)pyrene	ND	MNR1, D12	860	21	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1, D12	860	17	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1, D12	860	10	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1, D12	860	9.4	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Biphenyl	ND	MNR1, D12	860	53	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1, D12	860	46	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1, D12	860	73	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,2'-Oxybis(1-Chloropropane)	ND	MNR1, D12	860	89	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1, D12	860	270	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1, D12	860	230	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Caprolactam	ND	MNR1, D12	860	370	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Carbazole	ND	MNR1, D12	860	9.8	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Chrysene	**37**	MNR1, D12,J	860	8.5	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-09RE2 (CS-49-0203 - Solid) - cont. **Sampled: 08/06/10 15:05** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Dibenzo(a,h)anthracene	ND	MNR1, D12	860	10	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1, D12	860	8.9	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1, D12	860	26	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1, D12	860	22	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1, D12	860	290	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1, D12	860	20	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Fluoranthene	**37**	MNR1, D12,J	860	12	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Fluorene	ND	MNR1, D12	860	20	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1, D12	860	42	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1, D12	860	44	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1, D12	860	260	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1, D12	860	66	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1, D12	860	24	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Isophorone	ND	MNR1, D12	860	43	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Naphthalene	ND	MNR1, D12	860	14	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Nitrobenzene	**14000**	MNR1, D12	860	38	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1, D12	860	67	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1, D12	860	46	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1, D12	1700	290	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Phenanthrene	ND	MNR1, D12	860	18	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Phenol	ND	MNR1, D12	860	90	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
Pyrene	**34**	MNR1, D12,J	860	5.5	ug/kg dry	5.00	08/16/10 16:34	RAR	10H1025	8270C
2,4,6-Tribromophenol	*80 %*	*MNR1, D12*	*Surr Limits: (39-146%)*				*08/16/10 16:34*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*67 %*	*MNR1, D12*	*Surr Limits: (37-120%)*				*08/16/10 16:34*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*44 %*	*MNR1, D12*	*Surr Limits: (18-120%)*				*08/16/10 16:34*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*55 %*	*MNR1, D12*	*Surr Limits: (34-132%)*				*08/16/10 16:34*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*61 %*	*MNR1, D12*	*Surr Limits: (11-120%)*				*08/16/10 16:34*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*76 %*	*MNR1, D12*	*Surr Limits: (58-147%)*				*08/16/10 16:34*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-10 (CS-50-0204 - Solid) — **Sampled: 08/06/10 15:30** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	58	16	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	58	9.4	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	58	12	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	58	29	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	58	18	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	58	20	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,2,4-Trichlorobenzene	**280**	W1	58	22	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	58	29	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	58	2.2	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	58	24	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	58	9.3	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,3-Dichlorobenzene	**3000**	W1	58	15	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
2-Butanone	ND	W1	290	170	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
2-Hexanone	ND	W1	290	120	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	290	18	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Acetone	ND	W1	290	240	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Benzene	**5700**	W1	58	2.8	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	58	12	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Bromoform	ND	W1	58	29	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Bromomethane	ND	W1	58	13	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Carbon disulfide	ND	W1	58	26	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	58	15	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	58	28	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Chloroethane	ND	W1	58	12	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Chloroform	ND	W1	58	40	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Chloromethane	ND	W1	58	14	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	58	16	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	58	14	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Cyclohexane	ND	W1	58	13	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	58	25	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Isopropylbenzene	**37**	W1,J	58	8.6	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Methyl Acetate	**130**	W1	58	27	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	58	22	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Methylcyclohexane	**67**	W1	58	27	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Methylene Chloride	ND	W1	58	11	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Styrene	ND	W1	58	14	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	58	7.7	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Toluene	**44**	W1,J	58	15	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	58	14	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	58	2.8	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Trichloroethene	ND	W1	58	16	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	58	27	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Vinyl chloride	ND	W1	58	19	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
Xylenes, total	**340**	W1	120	9.7	ug/kg dry	1.00	08/11/10 03:31	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*92 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 03:31*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*146 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 03:31*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*145 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 03:31*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-10 (CS-50-0204 - Solid) - cont.						**Sampled: 08/06/10 15:30**		**Recvd: 08/06/10 17:00**		
General Chemistry Parameters										
Percent Solids	**77**		0.010	NR	%	1.00	08/09/10 15:58	JRR	10H0573	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-10RE1 (CS-50-0204 - Solid) — **Sampled: 08/06/10 15:30** — **Recvd: 08/06/10 17:00**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B										
1,2-Dichlorobenzene	**22000**	D08, W1,J	29000	7300	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
1,4-Dichlorobenzene	**68000**	D08, W1	29000	4000	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
Chlorobenzene	**670000**	D08, W1	29000	3800	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
Ethylbenzene	ND	D08, W1	29000	8400	ug/kg dry	500	08/12/10 01:16	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*97 %*	*D08, W1*	*Surr Limits: (53-146%)*				*08/12/10 01:16*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*94 %*	*D08, W1*	*Surr Limits: (49-148%)*				*08/12/10 01:16*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*99 %*	*D08, W1*	*Surr Limits: (50-149%)*				*08/12/10 01:16*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	MNR1	220	47	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	220	14	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,4-Dichlorophenol	**28**	MNR1,J	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	220	58	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	420	75	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	220	33	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	220	53	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	220	14	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Chlorophenol	**510**	MNR1	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1	220	2.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	220	6.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	420	69	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	220	9.8	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	220	190	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	420	50	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	420	74	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	220	69	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	220	8.9	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	220	63	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	220	4.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	420	12	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	420	24	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	420	52	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	220	1.8	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Acetophenone	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Aniline	**240**	MNR1,J	420	120	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Anthracene	ND	MNR1	220	5.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Atrazine	ND	MNR1	220	9.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzaldehyde	ND	MNR1	220	24	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzo(a)anthracene	ND	MNR1	220	3.7	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzo(a)pyrene	**810**	MNR1	220	5.2	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzo(b)fluoranthene	ND	MNR1	220	4.2	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzo(ghi)perylene	ND	MNR1	220	2.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Benzo(k)fluoranthene	ND	MNR1	220	2.4	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Biphenyl	ND	MNR1	220	13	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	220	12	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	220	19	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-10RE1 (CS-50-0204 - Solid) - cont. **Sampled: 08/06/10 15:30** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	220	23	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1	220	69	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	220	58	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Caprolactam	ND	MNR1	220	93	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Carbazole	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Chrysene	ND	MNR1	220	2.2	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	220	2.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	220	2.2	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	220	6.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	220	5.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	220	74	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	220	5.0	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Fluoranthene	ND	MNR1	220	3.1	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Fluorene	ND	MNR1	220	5.0	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	220	65	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	220	17	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	ND	MNR1	220	6.0	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Isophorone	ND	MNR1	220	11	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Naphthalene	**18**	MNR1,J	220	3.6	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	220	9.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	220	17	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1	220	12	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	420	74	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Phenanthrene	ND	MNR1	220	4.5	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Phenol	ND	MNR1	220	23	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
Pyrene	ND	MNR1	220	1.4	ug/kg dry	1.00	08/16/10 16:58	RAR	10H1025	8270C
2,4,6-Tribromophenol	*92 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 16:58*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*70 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 16:58*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*57 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 16:58*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*68 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 16:58*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*69 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 16:58*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*75 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 16:58*	*RAR*	*10H1025*	*8270C*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-11 (CS-51-0204 - Solid) — **Sampled: 08/06/10 16:00** — **Recvd: 08/06/10 17:00**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1	57	16	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,1,2,2-Tetrachloroethane	ND	W1	57	9.2	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,1,2-Trichloroethane	ND	W1	57	12	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	W1	57	28	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,1-Dichloroethane	ND	W1	57	18	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,1-Dichloroethene	ND	W1	57	20	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,2-Dibromo-3-chloropropane	ND	W1	57	28	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,2-Dibromoethane	ND	W1	57	2.2	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,2-Dichloroethane	ND	W1	57	23	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,2-Dichloropropane	ND	W1	57	9.2	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,3-Dichlorobenzene	**4700**	W1	57	15	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
2-Butanone	ND	W1	280	170	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
2-Hexanone	ND	W1	280	120	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
4-Methyl-2-pentanone	ND	W1	280	18	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Acetone	ND	W1	280	230	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Benzene	**5900**	W1,N1, E	57	2.7	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Bromodichloromethane	ND	W1	57	11	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Bromoform	ND	W1	57	28	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Bromomethane	ND	W1	57	12	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Carbon disulfide	ND	W1	57	26	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Carbon Tetrachloride	ND	W1	57	14	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Dibromochloromethane	ND	W1	57	27	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Chloroethane	ND	W1	57	12	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Chloroform	ND	W1	57	39	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Chloromethane	ND	W1	57	14	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
cis-1,2-Dichloroethene	ND	W1	57	16	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
cis-1,3-Dichloropropene	ND	W1	57	14	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Cyclohexane	ND	W1	57	13	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Dichlorodifluoromethane	ND	W1	57	25	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Ethylbenzene	**5200**	W1	57	17	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Isopropylbenzene	ND	W1	57	8.5	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Methyl Acetate	**120**	W1	57	27	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Methyl-t-Butyl Ether (MTBE)	ND	W1	57	21	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Methylcyclohexane	**78**	W1	57	27	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Methylene Chloride	ND	W1	57	11	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Styrene	ND	W1	57	14	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Tetrachloroethene	ND	W1	57	7.6	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Toluene	**410**	W1	57	15	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
trans-1,2-Dichloroethene	ND	W1	57	13	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
trans-1,3-Dichloropropene	ND	W1	57	2.7	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Trichloroethene	ND	W1	57	16	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Trichlorofluoromethane	ND	W1	57	27	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Vinyl chloride	ND	W1	57	19	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
Xylenes, total	**170**	W1	110	9.5	ug/kg dry	1.00	08/11/10 03:54	NMD	10H0719	8260B
1,2-Dichloroethane-d4	*96 %*	*W1*	*Surr Limits: (53-146%)*				*08/11/10 03:54*	*NMD*	*10H0719*	*8260B*
4-Bromofluorobenzene	*145 %*	*W1*	*Surr Limits: (49-148%)*				*08/11/10 03:54*	*NMD*	*10H0719*	*8260B*
Toluene-d8	*146 %*	*W1*	*Surr Limits: (50-149%)*				*08/11/10 03:54*	*NMD*	*10H0719*	*8260B*

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTH0556-11 (CS-51-0204 - Solid) - cont.						**Sampled: 08/06/10 16:00**		**Recvd: 08/06/10 17:00**		
General Chemistry Parameters										
Percent Solids	**71**		0.010	NR	%	1.00	08/09/10 16:00	JRR	10H0573	Dry Weight

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-11RE1 (CS-51-0204 - Solid) — **Sampled: 08/06/10 16:00** — **Recvd: 08/06/10 17:00**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Volatile Organic Compounds by EPA 8260B										
1,2,4-Trichlorobenzene	**6500**	W1, D08,J	11000	4300	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
1,2-Dichlorobenzene	**19000**	W1, D08	11000	2900	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
1,4-Dichlorobenzene	**64000**	W1, D08	11000	1600	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
Chlorobenzene	**600000**	W1, D08	11000	1500	ug/kg dry	200	08/12/10 01:38	CDC	10H0807	8260B
1,2-Dichloroethane-d4	*97 %*	*W1, D08*	*Surr Limits: (53-146%)*				*08/12/10 01:38*	*CDC*	*10H0807*	*8260B*
4-Bromofluorobenzene	*97 %*	*W1, D08*	*Surr Limits: (49-148%)*				*08/12/10 01:38*	*CDC*	*10H0807*	*8260B*
Toluene-d8	*101 %*	*W1, D08*	*Surr Limits: (50-149%)*				*08/12/10 01:38*	*CDC*	*10H0807*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	MNR1	240	52	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,4,6-Trichlorophenol	ND	MNR1	240	16	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,4-Dichlorophenol	ND	MNR1	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,4-Dimethylphenol	ND	MNR1	240	64	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,4-Dinitrophenol	ND	MNR1	470	83	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,4-Dinitrotoluene	ND	MNR1	240	37	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,6-Dinitrotoluene	ND	MNR1	240	58	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2-Chloronaphthalene	ND	MNR1	240	16	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2-Chlorophenol	**150**	MNR1,J	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2-Methylnaphthalene	ND	MNR1	240	2.9	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2-Methylphenol	ND	MNR1	240	7.3	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2-Nitroaniline	ND	MNR1	470	76	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2-Nitrophenol	ND	MNR1	240	11	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
3,3'-Dichlorobenzidine	ND	MNR1	240	210	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
3-Nitroaniline	ND	MNR1	470	55	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4,6-Dinitro-2-methylphenol	ND	MNR1	470	82	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Bromophenyl phenyl ether	ND	MNR1	240	76	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Chloro-3-methylphenol	ND	MNR1	240	9.8	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Chloroaniline	ND	MNR1	240	70	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Chlorophenyl phenyl ether	ND	MNR1	240	5.1	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Methylphenol	ND	MNR1	470	13	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Nitroaniline	ND	MNR1	470	27	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
4-Nitrophenol	ND	MNR1	470	58	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Acenaphthene	ND	MNR1	240	2.8	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Acenaphthylene	ND	MNR1	240	1.9	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Acetophenone	ND	MNR1	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Aniline	ND	MNR1	470	130	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Anthracene	**14**	MNR1,J	240	6.1	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Atrazine	ND	MNR1	240	11	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzaldehyde	**110**	MNR1,J	240	26	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(a)anthracene	**52**	MNR1,J	240	4.1	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(a)pyrene	**39**	MNR1,J	240	5.7	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(b)fluoranthene	**54**	MNR1,J	240	4.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(ghi)perylene	**26**	MNR1,J	240	2.9	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Benzo(k)fluoranthene	**28**	MNR1,J	240	2.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Biphenyl	ND	MNR1	240	15	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Bis(2-chloroethoxy)methane	ND	MNR1	240	13	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Bis(2-chloroethyl)ether	ND	MNR1	240	21	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C

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Project: Honeywell-Former Buffalo Color Area ABCE
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Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

Analytical Report

Sample ID: RTH0556-11RE1 (CS-51-0204 - Solid) - cont. **Sampled: 08/06/10 16:00** **Recvd: 08/06/10 17:00**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,2'-Oxybis(1-Chloropropane)	ND	MNR1	240	25	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Bis(2-ethylhexyl) phthalate	ND	MNR1	240	77	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Butyl benzyl phthalate	ND	MNR1	240	64	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Caprolactam	ND	MNR1	240	100	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Carbazole	**9.4**	MNR1,J	240	2.8	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Chrysene	**53**	MNR1,J	240	2.4	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Dibenzo(a,h)anthracene	ND	MNR1	240	2.8	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Dibenzofuran	ND	MNR1	240	2.5	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Diethyl phthalate	ND	MNR1	240	7.2	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Dimethyl phthalate	ND	MNR1	240	6.2	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Di-n-butyl phthalate	ND	MNR1	240	82	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Di-n-octyl phthalate	ND	MNR1	240	5.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Fluoranthene	**96**	MNR1,J	240	3.4	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Fluorene	ND	MNR1	240	5.5	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Hexachlorobenzene	ND	MNR1	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Hexachlorobutadiene	ND	MNR1	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Hexachlorocyclopentadiene	ND	MNR1	240	72	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Hexachloroethane	ND	MNR1	240	18	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Indeno(1,2,3-cd)pyrene	**19**	MNR1,J	240	6.6	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Isophorone	ND	MNR1	240	12	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Naphthalene	**15**	MNR1,J	240	4.0	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Nitrobenzene	ND	MNR1	240	11	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
N-Nitrosodi-n-propylamine	ND	MNR1	240	19	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
N-Nitrosodiphenylamine	ND	MNR1	240	13	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Pentachlorophenol	ND	MNR1	470	82	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Phenanthrene	**70**	MNR1,J	240	5.0	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Phenol	ND	MNR1	240	25	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
Pyrene	**86**	MNR1,J	240	1.5	ug/kg dry	1.00	08/16/10 17:22	RAR	10H1025	8270C
2,4,6-Tribromophenol	*85 %*	*MNR1*	*Surr Limits: (39-146%)*				*08/16/10 17:22*	*RAR*	*10H1025*	*8270C*
2-Fluorobiphenyl	*64 %*	*MNR1*	*Surr Limits: (37-120%)*				*08/16/10 17:22*	*RAR*	*10H1025*	*8270C*
2-Fluorophenol	*50 %*	*MNR1*	*Surr Limits: (18-120%)*				*08/16/10 17:22*	*RAR*	*10H1025*	*8270C*
Nitrobenzene-d5	*60 %*	*MNR1*	*Surr Limits: (34-132%)*				*08/16/10 17:22*	*RAR*	*10H1025*	*8270C*
Phenol-d5	*61 %*	*MNR1*	*Surr Limits: (11-120%)*				*08/16/10 17:22*	*RAR*	*10H1025*	*8270C*
p-Terphenyl-d14	*71 %*	*MNR1*	*Surr Limits: (58-147%)*				*08/16/10 17:22*	*RAR*	*10H1025*	*8270C*

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Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Dry Weight	10H0568	RTH0485-01	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-02	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-03	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-04	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-05	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-06	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-07	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-08	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-09	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Dry Weight	10H0568	RTH0485-10	10.00	g	10.00	g	08/09/10 10:43	JRR	Dry Weight
Semivolatile Organics by GC/MS									
8270C	10H0489	RTH0485-06	30.12	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-07	30.26	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-08	30.27	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-02	30.31	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-03	30.54	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-01	30.59	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-04	30.65	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-05	30.66	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-10	30.80	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
8270C	10H0489	RTH0485-09	30.90	g	1.00	mL	08/09/10 09:30	CXM	3550B MB
Volatile Organic Compounds by EPA 8260B									
8260B	10H0807	RTH0485-01	5.81	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-07	5.93	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-10RE	5.99	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-09RE	6.38	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-06	6.49	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-03	6.55	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-08	7.02	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0485-04	7.13	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0745	RTH0485-02	4.95	g	250.00	mL	08/11/10 09:53	PJQ	Methanol Prep
8260B	10H0745	RTH0485-10	5.99	g	250.00	mL	08/11/10 09:53	PJQ	Methanol Prep
8260B	10H0745	RTH0485-09	6.38	g	250.00	mL	08/11/10 09:53	PJQ	Methanol Prep
8260B	10H0858	RTH0485-07RE	5.93	g	250.00	mL	08/12/10 12:57	PJQ	Methanol Prep
8260B	10H0885	RTH0485-05	6.61	g	5.00	mL	08/12/10 15:39	PJQ	5030B MS

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Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Dry Weight	10H0573	RTH0556-01	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-02	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-03	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-04	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-05	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-06	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-07	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-08	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-09	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-10	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Dry Weight	10H0573	RTH0556-11	10.00	g	10.00	g	08/09/10 12:25	JRR	Dry Weight
Semivolatile Organics by GC/MS									
8270C	10H1025	RTH0556-07RE1	30.03	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-11RE1	30.03	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-01RE1	30.07	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-08RE1	30.25	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-04RE1	30.30	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-02RE1	30.57	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-10RE1	30.57	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-09RE2	30.60	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-06RE1	30.68	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-03RE1	30.80	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
8270C	10H1025	RTH0556-05RE1	30.96	g	1.00	mL	08/14/10 10:25	BWM	3550B MB
Volatile Organic Compounds by EPA 8260B									
8260B	10H0745	RTH0556-07RE1	6.40	g	250.00	mL	08/11/10 09:53	CDC	Methanol Prep
8260B	10H0807	RTH0556-10RE1	5.64	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0556-11RE1	6.21	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0556-05RE1	6.38	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0556-02RE1	6.52	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0556-04RE1	6.93	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0556-03RE1	7.05	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0807	RTH0556-06RE1	7.15	g	250.00	mL	08/11/10 20:17	CDC	Methanol Prep
8260B	10H0719	RTH0556-09	5.28	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-01	5.56	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-10	5.64	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-08	5.97	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep

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Reported: 08/17/10 17:34

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
8260B	10H0719	RTH0556-11	6.21	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-05	6.38	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-07	6.40	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-02	6.52	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-04	6.93	g	250.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0719	RTH0556-06	7.15	g	500.00	mL	08/10/10 20:51	NMD	Methanol Prep
8260B	10H0745	RTH0556-01RE	5.56	g	250.00	mL	08/11/10 09:53	PJQ	Methanol Prep
8260B	10H0745	RTH0556-03	7.05	g	250.00	mL	08/11/10 09:53	PJQ	Methanol Prep

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Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/10/10 (Lab Number:10H0719-BLK1, Batch: 10H0719)											
1,1,1-Trichloroethane			50	14	ug/kg wet	ND					
1,1,2,2-Tetrachloroethane			50	8.1	ug/kg wet	ND					
1,1,2-Trichloroethane			50	10	ug/kg wet	ND					
1,1,2-Trichloro-1,2,2-trifluoroethane			50	25	ug/kg wet	ND					
1,1-Dichloroethane			50	15	ug/kg wet	ND					
1,1-Dichloroethene			50	17	ug/kg wet	ND					
1,2,4-Trichlorobenzene			50	19	ug/kg wet	ND					
1,2-Dibromo-3-chloropropane			50	25	ug/kg wet	ND					
1,2-Dibromoethane			50	1.9	ug/kg wet	ND					
1,2-Dichlorobenzene			50	13	ug/kg wet	ND					
1,2-Dichloroethane			50	20	ug/kg wet	ND					
1,2-Dichloropropane			50	8.1	ug/kg wet	ND					
1,3-Dichlorobenzene			50	13	ug/kg wet	ND					
1,4-Dichlorobenzene			50	7.0	ug/kg wet	ND					
2-Butanone			250	150	ug/kg wet	ND					
2-Hexanone			250	100	ug/kg wet	ND					
4-Methyl-2-pentanone			250	16	ug/kg wet	ND					
Acetone			250	210	ug/kg wet	ND					
Benzene			50	2.4	ug/kg wet	ND					
Bromodichloromethane			50	10	ug/kg wet	ND					
Bromoform			50	25	ug/kg wet	ND					
Bromomethane			50	11	ug/kg wet	ND					
Carbon disulfide			50	23	ug/kg wet	ND					
Carbon Tetrachloride			50	13	ug/kg wet	ND					
Chlorobenzene			50	6.6	ug/kg wet	ND					
Dibromochloromethane			50	24	ug/kg wet	ND					
Chloroethane			50	10	ug/kg wet	ND					
Chloroform			50	34	ug/kg wet	ND					
Chloromethane			50	12	ug/kg wet	ND					
cis-1,2-Dichloroethene			50	14	ug/kg wet	ND					
cis-1,3-Dichloropropene			50	12	ug/kg wet	ND					
Cyclohexane			50	11	ug/kg wet	ND					
Dichlorodifluoromethane			50	22	ug/kg wet	ND					
Ethylbenzene			50	15	ug/kg wet	ND					
Isopropylbenzene			50	7.5	ug/kg wet	ND					
Methyl Acetate			50	24	ug/kg wet	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/10/10 (Lab Number:10H0719-BLK1, Batch: 10H0719)											
Methyl-t-Butyl Ether (MTBE)			50	19	ug/kg wet	ND					
Methylcyclohexane			50	23	ug/kg wet	ND					
Methylene Chloride			50	9.9	ug/kg wet	ND					
Styrene			50	12	ug/kg wet	ND					
Tetrachloroethene			50	6.7	ug/kg wet	ND					
Toluene			50	13	ug/kg wet	ND					
trans-1,2-Dichloroethene			50	12	ug/kg wet	ND					
trans-1,3-Dichloropropene			50	2.4	ug/kg wet	ND					
Trichloroethene			50	14	ug/kg wet	ND					
Trichlorofluoromethane			50	23	ug/kg wet	ND					
Vinyl chloride			50	17	ug/kg wet	ND					
Xylenes, total			100	8.4	ug/kg wet	ND					
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*95*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*96*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*100*	*50-149*			
LCS Analyzed: 08/10/10 (Lab Number:10H0719-BS1, Batch: 10H0719)											
1,1,1-Trichloroethane		1250	50	14	ug/kg wet	1310	105				
1,1,2,2-Tetrachloroethane		1250	50	8.1	ug/kg wet	1140	91				
1,1,2-Trichloroethane		1250	50	10	ug/kg wet	1200	96				
1,1,2-Trichloro-1,2,2-trifluoroethane		1250	50	25	ug/kg wet	1220	97				
1,1-Dichloroethane		1250	50	15	ug/kg wet	1240	100				
1,1-Dichloroethene		1250	50	17	ug/kg wet	1150	92	54-144			
1,2,4-Trichlorobenzene		1250	50	19	ug/kg wet	1250	100				
1,2-Dibromo-3-chloropropane		1250	50	25	ug/kg wet	1160	93				
1,2-Dibromoethane		1250	50	1.9	ug/kg wet	1220	98				
1,2-Dichlorobenzene		1250	50	13	ug/kg wet	1290	103				
1,2-Dichloroethane		1250	50	20	ug/kg wet	1240	99				
1,2-Dichloropropane		1250	50	8.1	ug/kg wet	1240	99				
1,3-Dichlorobenzene		1250	50	13	ug/kg wet	1280	102				
1,4-Dichlorobenzene		1250	50	7.0	ug/kg wet	1260	101				
2-Butanone		6250	250	150	ug/kg wet	5310	85				
2-Hexanone		6250	250	100	ug/kg wet	5500	88				
4-Methyl-2-pentanone		6250	250	16	ug/kg wet	5550	89				
Acetone		6250	250	210	ug/kg wet	5170	83				

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
LCS Analyzed: 08/10/10 (Lab Number:10H0719-BS1, Batch: 10H0719)											
Benzene		1250	50	2.4	ug/kg wet	1270	101	75-131			
Bromodichloromethane		1250	50	10	ug/kg wet	1360	109				
Bromoform		1250	50	25	ug/kg wet	1080	86				
Bromomethane		1250	50	11	ug/kg wet	1220	98				
Carbon disulfide		1250	50	23	ug/kg wet	1200	96				
Carbon Tetrachloride		1250	50	13	ug/kg wet	1370	110				
Chlorobenzene		1250	50	6.6	ug/kg wet	1310	105	80-127			
Dibromochloromethane		1250	50	24	ug/kg wet	1380	111				
Chloroethane		1250	50	10	ug/kg wet	1240	99				
Chloroform		1250	50	34	ug/kg wet	1280	103				
Chloromethane		1250	50	12	ug/kg wet	1180	95				
cis-1,2-Dichloroethene		1250	50	14	ug/kg wet	1320	106				
cis-1,3-Dichloropropene		1250	50	12	ug/kg wet	1230	98				
Cyclohexane		1250	50	11	ug/kg wet	1180	94				
Dichlorodifluoromethane		1250	50	22	ug/kg wet	1220	98				
Ethylbenzene		1250	50	15	ug/kg wet	1290	103				
Isopropylbenzene		1250	50	7.5	ug/kg wet	1180	95				
Methyl Acetate		1250	50	24	ug/kg wet	1390	111				
Methyl-t-Butyl Ether (MTBE)		1250	50	19	ug/kg wet	1090	87				
Methylcyclohexane		1250	50	23	ug/kg wet	1260	101				
Methylene Chloride		1250	50	9.9	ug/kg wet	1410	113				
Styrene		1250	50	12	ug/kg wet	1240	99				
Tetrachloroethene		1250	50	6.7	ug/kg wet	1260	101				
Toluene		1250	50	13	ug/kg wet	1250	100	76-133			
trans-1,2-Dichloroethene		1250	50	12	ug/kg wet	1300	104				
trans-1,3-Dichloropropene		1250	50	2.4	ug/kg wet	1200	96				
Trichloroethene		1250	50	14	ug/kg wet	1250	100	77-130			
Trichlorofluoromethane		1250	50	23	ug/kg wet	1360	109				
Vinyl chloride		1250	50	17	ug/kg wet	1170	93				
Xylenes, total		3750	100	8.4	ug/kg wet	3890	104				
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*94*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*100*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*101*	*50-149*			

Volatile Organic Compounds by EPA 8260B

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/11/10 (Lab Number:10H0745-BLK1, Batch: 10H0745)											
1,1,1-Trichloroethane			50	14	ug/kg wet	ND					
1,1,2,2-Tetrachloroethane			50	8.1	ug/kg wet	ND					
1,1,2-Trichloroethane			50	10	ug/kg wet	ND					
1,1,2-Trichloro-1,2,2-trifluoroethane			50	25	ug/kg wet	ND					
1,1-Dichloroethane			50	15	ug/kg wet	ND					
1,1-Dichloroethene			50	17	ug/kg wet	ND					
1,2,4-Trichlorobenzene			50	19	ug/kg wet	28					J
1,2-Dibromo-3-chloropropane			50	25	ug/kg wet	ND					
1,2-Dibromoethane			50	1.9	ug/kg wet	ND					
1,2-Dichlorobenzene			50	13	ug/kg wet	ND					
1,2-Dichloroethane			50	20	ug/kg wet	ND					
1,2-Dichloropropane			50	8.1	ug/kg wet	ND					
1,3-Dichlorobenzene			50	13	ug/kg wet	ND					
1,4-Dichlorobenzene			50	7.0	ug/kg wet	ND					
2-Butanone			250	150	ug/kg wet	ND					
2-Hexanone			250	100	ug/kg wet	ND					
4-Methyl-2-pentanone			250	16	ug/kg wet	ND					
Acetone			250	210	ug/kg wet	ND					
Benzene			50	2.4	ug/kg wet	ND					
Bromodichloromethane			50	10	ug/kg wet	ND					
Bromoform			50	25	ug/kg wet	ND					
Bromomethane			50	11	ug/kg wet	ND					
Carbon disulfide			50	23	ug/kg wet	ND					
Carbon Tetrachloride			50	13	ug/kg wet	ND					
Chlorobenzene			50	6.6	ug/kg wet	ND					
Dibromochloromethane			50	24	ug/kg wet	ND					
Chloroethane			50	10	ug/kg wet	ND					
Chloroform			50	34	ug/kg wet	ND					
Chloromethane			50	12	ug/kg wet	ND					
cis-1,2-Dichloroethene			50	14	ug/kg wet	ND					
cis-1,3-Dichloropropene			50	12	ug/kg wet	ND					
Cyclohexane			50	11	ug/kg wet	ND					
Dichlorodifluoromethane			50	22	ug/kg wet	ND					
Ethylbenzene			50	15	ug/kg wet	ND					
Isopropylbenzene			50	7.5	ug/kg wet	ND					
Methyl Acetate			50	24	ug/kg wet	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/11/10 (Lab Number:10H0745-BLK1, Batch: 10H0745)											
Methyl-t-Butyl Ether (MTBE)			50	19	ug/kg wet	ND					
Methylcyclohexane			50	23	ug/kg wet	ND					
Methylene Chloride			50	9.9	ug/kg wet	ND					
Styrene			50	12	ug/kg wet	ND					
Tetrachloroethene			50	6.7	ug/kg wet	ND					
Toluene			50	13	ug/kg wet	ND					
trans-1,2-Dichloroethene			50	12	ug/kg wet	ND					
trans-1,3-Dichloropropene			50	2.4	ug/kg wet	ND					
Trichloroethene			50	14	ug/kg wet	ND					
Trichlorofluoromethane			50	23	ug/kg wet	ND					
Vinyl chloride			50	17	ug/kg wet	ND					
Xylenes, total			100	8.4	ug/kg wet	ND					
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*101*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*102*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*105*	*50-149*			
LCS Analyzed: 08/11/10 (Lab Number:10H0745-BS1, Batch: 10H0745)											
1,1,1-Trichloroethane		1250	50	14	ug/kg wet	1380	110				
1,1,2,2-Tetrachloroethane		1250	50	8.1	ug/kg wet	1220	98				
1,1,2-Trichloroethane		1250	50	10	ug/kg wet	1230	99				
1,1,2-Trichloro-1,2,2-trifluoroethane		1250	50	25	ug/kg wet	1270	102				
1,1-Dichloroethane		1250	50	15	ug/kg wet	1310	105				
1,1-Dichloroethene		1250	50	17	ug/kg wet	1210	97	54-144			
1,2,4-Trichlorobenzene		1250	50	19	ug/kg wet	1350	108				B
1,2-Dibromo-3-chloropropane		1250	50	25	ug/kg wet	1230	98				
1,2-Dibromoethane		1250	50	1.9	ug/kg wet	1250	100				
1,2-Dichlorobenzene		1250	50	13	ug/kg wet	1330	106				
1,2-Dichloroethane		1250	50	20	ug/kg wet	1310	105				
1,2-Dichloropropane		1250	50	8.1	ug/kg wet	1280	102				
1,3-Dichlorobenzene		1250	50	13	ug/kg wet	1350	108				
1,4-Dichlorobenzene		1250	50	7.0	ug/kg wet	1340	107				
2-Butanone		6250	250	150	ug/kg wet	5540	89				
2-Hexanone		6250	250	100	ug/kg wet	5670	91				
4-Methyl-2-pentanone		6250	250	16	ug/kg wet	5680	91				
Acetone		6250	250	210	ug/kg wet	5330	85				

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
LCS Analyzed: 08/11/10 (Lab Number:10H0745-BS1, Batch: 10H0745)											
Benzene		1250	50	2.4	ug/kg wet	1310	105	75-131			
Bromodichloromethane		1250	50	10	ug/kg wet	1370	109				
Bromoform		1250	50	25	ug/kg wet	1050	84				
Bromomethane		1250	50	11	ug/kg wet	1320	105				
Carbon disulfide		1250	50	23	ug/kg wet	1190	96				
Carbon Tetrachloride		1250	50	13	ug/kg wet	1430	114				
Chlorobenzene		1250	50	6.6	ug/kg wet	1320	106	80-127			
Dibromochloromethane		1250	50	24	ug/kg wet	1340	107				
Chloroethane		1250	50	10	ug/kg wet	1300	104				
Chloroform		1250	50	34	ug/kg wet	1320	106				
Chloromethane		1250	50	12	ug/kg wet	1210	97				
cis-1,2-Dichloroethene		1250	50	14	ug/kg wet	1350	108				
cis-1,3-Dichloropropene		1250	50	12	ug/kg wet	1310	104				
Cyclohexane		1250	50	11	ug/kg wet	1280	102				
Dichlorodifluoromethane		1250	50	22	ug/kg wet	1250	100				
Ethylbenzene		1250	50	15	ug/kg wet	1340	107				
Isopropylbenzene		1250	50	7.5	ug/kg wet	1290	103				
Methyl Acetate		1250	50	24	ug/kg wet	1470	118				
Methyl-t-Butyl Ether (MTBE)		1250	50	19	ug/kg wet	1170	93				
Methylcyclohexane		1250	50	23	ug/kg wet	1360	109				
Methylene Chloride		1250	50	9.9	ug/kg wet	1400	112				
Styrene		1250	50	12	ug/kg wet	1290	103				
Tetrachloroethene		1250	50	6.7	ug/kg wet	1300	104				
Toluene		1250	50	13	ug/kg wet	1290	103	76-133			
trans-1,2-Dichloroethene		1250	50	12	ug/kg wet	1330	106				
trans-1,3-Dichloropropene		1250	50	2.4	ug/kg wet	1280	102				
Trichloroethene		1250	50	14	ug/kg wet	1320	105	77-130			
Trichlorofluoromethane		1250	50	23	ug/kg wet	1400	112				
Vinyl chloride		1250	50	17	ug/kg wet	1240	99				
Xylenes, total		3750	100	8.4	ug/kg wet	4030	107				
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*99*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*101*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*102*	*50-149*			

Volatile Organic Compounds by EPA 8260B

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/11/10 (Lab Number:10H0807-BLK1, Batch: 10H0807)											
1,1,1-Trichloroethane			50	14	ug/kg wet	ND					
1,1,2,2-Tetrachloroethane			50	8.1	ug/kg wet	ND					
1,1,2-Trichloroethane			50	10	ug/kg wet	ND					
1,1,2-Trichloro-1,2,2-trifluoroethane			50	25	ug/kg wet	ND					
1,1-Dichloroethane			50	15	ug/kg wet	ND					
1,1-Dichloroethene			50	17	ug/kg wet	ND					
1,2,4-Trichlorobenzene			50	19	ug/kg wet	ND					
1,2-Dibromo-3-chloropropane			50	25	ug/kg wet	ND					
1,2-Dibromoethane			50	1.9	ug/kg wet	ND					
1,2-Dichlorobenzene			50	13	ug/kg wet	ND					
1,2-Dichloroethane			50	20	ug/kg wet	ND					
1,2-Dichloropropane			50	8.1	ug/kg wet	ND					
1,3-Dichlorobenzene			50	13	ug/kg wet	ND					
1,4-Dichlorobenzene			50	7.0	ug/kg wet	ND					
2-Butanone			250	150	ug/kg wet	ND					
2-Hexanone			250	100	ug/kg wet	ND					
4-Methyl-2-pentanone			250	16	ug/kg wet	ND					
Acetone			250	210	ug/kg wet	ND					
Benzene			50	2.4	ug/kg wet	ND					
Bromodichloromethane			50	10	ug/kg wet	ND					
Bromoform			50	25	ug/kg wet	ND					
Bromomethane			50	11	ug/kg wet	ND					
Carbon disulfide			50	23	ug/kg wet	ND					
Carbon Tetrachloride			50	13	ug/kg wet	ND					
Chlorobenzene			50	6.6	ug/kg wet	ND					
Dibromochloromethane			50	24	ug/kg wet	ND					
Chloroethane			50	10	ug/kg wet	ND					
Chloroform			50	34	ug/kg wet	ND					
Chloromethane			50	12	ug/kg wet	ND					
cis-1,2-Dichloroethene			50	14	ug/kg wet	ND					
cis-1,3-Dichloropropene			50	12	ug/kg wet	ND					
Cyclohexane			50	11	ug/kg wet	ND					
Dichlorodifluoromethane			50	22	ug/kg wet	ND					
Ethylbenzene			50	15	ug/kg wet	ND					
Isopropylbenzene			50	7.5	ug/kg wet	ND					
Methyl Acetate			50	24	ug/kg wet	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/11/10 (Lab Number:10H0807-BLK1, Batch: 10H0807)											
Methyl-t-Butyl Ether (MTBE)			50	19	ug/kg wet	ND					
Methylcyclohexane			50	23	ug/kg wet	ND					
Methylene Chloride			50	9.9	ug/kg wet	ND					
Styrene			50	12	ug/kg wet	ND					
Tetrachloroethene			50	6.7	ug/kg wet	ND					
Toluene			50	13	ug/kg wet	ND					
trans-1,2-Dichloroethene			50	12	ug/kg wet	ND					
trans-1,3-Dichloropropene			50	2.4	ug/kg wet	ND					
Trichloroethene			50	14	ug/kg wet	ND					
Trichlorofluoromethane			50	23	ug/kg wet	ND					
Vinyl chloride			50	17	ug/kg wet	ND					
Xylenes, total			100	8.4	ug/kg wet	ND					
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*93*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*93*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*97*	*50-149*			
LCS Analyzed: 08/11/10 (Lab Number:10H0807-BS1, Batch: 10H0807)											
1,1,1-Trichloroethane		1250	50	14	ug/kg wet	1370	110				
1,1,2,2-Tetrachloroethane		1250	50	8.1	ug/kg wet	1150	92				
1,1,2-Trichloroethane		1250	50	10	ug/kg wet	1180	95				
1,1,2-Trichloro-1,2,2-trifluoroethane		1250	50	25	ug/kg wet	1230	98				
1,1-Dichloroethane		1250	50	15	ug/kg wet	1280	103				
1,1-Dichloroethene		1250	50	17	ug/kg wet	1190	96	54-144			
1,2,4-Trichlorobenzene		1250	50	19	ug/kg wet	1280	102				
1,2-Dibromo-3-chloropropane		1250	50	25	ug/kg wet	1150	92				
1,2-Dibromoethane		1250	50	1.9	ug/kg wet	1210	97				
1,2-Dichlorobenzene		1250	50	13	ug/kg wet	1300	104				
1,2-Dichloroethane		1250	50	20	ug/kg wet	1250	100				
1,2-Dichloropropane		1250	50	8.1	ug/kg wet	1250	100				
1,3-Dichlorobenzene		1250	50	13	ug/kg wet	1330	106				
1,4-Dichlorobenzene		1250	50	7.0	ug/kg wet	1290	103				
2-Butanone		6250	250	150	ug/kg wet	5200	83				
2-Hexanone		6250	250	100	ug/kg wet	5300	85				
4-Methyl-2-pentanone		6250	250	16	ug/kg wet	5320	85				
Acetone		6250	250	210	ug/kg wet	4910	79				

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
LCS Analyzed: 08/11/10 (Lab Number:10H0807-BS1, Batch: 10H0807)											
Benzene		1250	50	2.4	ug/kg wet	1300	104	75-131			
Bromodichloromethane		1250	50	10	ug/kg wet	1360	109				
Bromoform		1250	50	25	ug/kg wet	1020	82				
Bromomethane		1250	50	11	ug/kg wet	1290	103				
Carbon disulfide		1250	50	23	ug/kg wet	1190	95				
Carbon Tetrachloride		1250	50	13	ug/kg wet	1420	114				
Chlorobenzene		1250	50	6.6	ug/kg wet	1300	104	80-127			
Dibromochloromethane		1250	50	24	ug/kg wet	1310	105				
Chloroethane		1250	50	10	ug/kg wet	1250	100				
Chloroform		1250	50	34	ug/kg wet	1310	105				
Chloromethane		1250	50	12	ug/kg wet	1190	95				
cis-1,2-Dichloroethene		1250	50	14	ug/kg wet	1350	108				
cis-1,3-Dichloropropene		1250	50	12	ug/kg wet	1260	101				
Cyclohexane		1250	50	11	ug/kg wet	1240	99				
Dichlorodifluoromethane		1250	50	22	ug/kg wet	1220	98				
Ethylbenzene		1250	50	15	ug/kg wet	1330	106				
Isopropylbenzene		1250	50	7.5	ug/kg wet	1240	100				
Methyl Acetate		1250	50	24	ug/kg wet	1420	113				
Methyl-t-Butyl Ether (MTBE)		1250	50	19	ug/kg wet	1070	86				
Methylcyclohexane		1250	50	23	ug/kg wet	1320	106				
Methylene Chloride		1250	50	9.9	ug/kg wet	1390	111				
Styrene		1250	50	12	ug/kg wet	1240	100				
Tetrachloroethene		1250	50	6.7	ug/kg wet	1300	104				
Toluene		1250	50	13	ug/kg wet	1280	102	76-133			
trans-1,2-Dichloroethene		1250	50	12	ug/kg wet	1330	106				
trans-1,3-Dichloropropene		1250	50	2.4	ug/kg wet	1210	96				
Trichloroethene		1250	50	14	ug/kg wet	1310	105	77-130			
Trichlorofluoromethane		1250	50	23	ug/kg wet	1370	110				
Vinyl chloride		1250	50	17	ug/kg wet	1190	95				
Xylenes, total		3750	100	8.4	ug/kg wet	3980	106				
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*94*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*97*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*98*	*50-149*			

Volatile Organic Compounds by EPA 8260B

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/12/10 (Lab Number:10H0858-BLK1, Batch: 10H0858)											
1,1,1-Trichloroethane			50	14	ug/kg wet	ND					
1,1,2,2-Tetrachloroethane			50	8.1	ug/kg wet	ND					
1,1,2-Trichloroethane			50	10	ug/kg wet	ND					
1,1,2-Trichloro-1,2,2-trifluoroethane			50	25	ug/kg wet	ND					
1,1-Dichloroethane			50	15	ug/kg wet	ND					
1,1-Dichloroethene			50	17	ug/kg wet	ND					
1,2,4-Trichlorobenzene			50	19	ug/kg wet	ND					
1,2-Dibromo-3-chloropropane			50	25	ug/kg wet	ND					
1,2-Dibromoethane			50	1.9	ug/kg wet	ND					
1,2-Dichlorobenzene			50	13	ug/kg wet	ND					
1,2-Dichloroethane			50	20	ug/kg wet	ND					
1,2-Dichloropropane			50	8.1	ug/kg wet	ND					
1,3-Dichlorobenzene			50	13	ug/kg wet	ND					
1,4-Dichlorobenzene			50	7.0	ug/kg wet	ND					
2-Butanone			250	150	ug/kg wet	ND					
2-Hexanone			250	100	ug/kg wet	ND					
4-Methyl-2-pentanone			250	16	ug/kg wet	ND					
Acetone			250	210	ug/kg wet	ND					
Benzene			50	2.4	ug/kg wet	ND					
Bromodichloromethane			50	10	ug/kg wet	ND					
Bromoform			50	25	ug/kg wet	ND					
Bromomethane			50	11	ug/kg wet	ND					
Carbon disulfide			50	23	ug/kg wet	ND					
Carbon Tetrachloride			50	13	ug/kg wet	ND					
Chlorobenzene			50	6.6	ug/kg wet	ND					
Dibromochloromethane			50	24	ug/kg wet	ND					
Chloroethane			50	10	ug/kg wet	ND					
Chloroform			50	34	ug/kg wet	ND					
Chloromethane			50	12	ug/kg wet	ND					
cis-1,2-Dichloroethene			50	14	ug/kg wet	ND					
cis-1,3-Dichloropropene			50	12	ug/kg wet	ND					
Cyclohexane			50	11	ug/kg wet	ND					
Dichlorodifluoromethane			50	22	ug/kg wet	ND					
Ethylbenzene			50	15	ug/kg wet	ND					
Isopropylbenzene			50	7.5	ug/kg wet	ND					
Methyl Acetate			50	24	ug/kg wet	ND					

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/12/10 (Lab Number:10H0858-BLK1, Batch: 10H0858)											
Methyl-t-Butyl Ether (MTBE)			50	19	ug/kg wet	ND					
Methylcyclohexane			50	23	ug/kg wet	ND					
Methylene Chloride			50	9.9	ug/kg wet	ND					
Styrene			50	12	ug/kg wet	ND					
Tetrachloroethene			50	6.7	ug/kg wet	ND					
Toluene			50	13	ug/kg wet	ND					
trans-1,2-Dichloroethene			50	12	ug/kg wet	ND					
trans-1,3-Dichloropropene			50	2.4	ug/kg wet	ND					
Trichloroethene			50	14	ug/kg wet	ND					
Trichlorofluoromethane			50	23	ug/kg wet	ND					
Vinyl chloride			50	17	ug/kg wet	ND					
Xylenes, total			100	8.4	ug/kg wet	ND					
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*97*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*94*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*98*	*50-149*			
LCS Analyzed: 08/12/10 (Lab Number:10H0858-BS1, Batch: 10H0858)											
1,1-Dichloroethene		1250	50	17	ug/kg wet	1120	90	54-144			
Benzene		1250	50	2.4	ug/kg wet	1250	100	75-131			
Chlorobenzene		1250	50	6.6	ug/kg wet	1250	100	80-127			
Toluene		1250	50	13	ug/kg wet	1220	97	76-133			
Trichloroethene		1250	50	14	ug/kg wet	1230	99	77-130			
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*96*	*53-146*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*98*	*49-148*			
Surrogate: Toluene-d8					*ug/kg wet*		*100*	*50-149*			
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/12/10 (Lab Number:10H0885-BLK1, Batch: 10H0885)											
1,1,1-Trichloroethane			5.0	0.36	ug/kg wet	ND					
1,1,2,2-Tetrachloroethane			5.0	0.81	ug/kg wet	ND					
1,1,2-Trichloroethane			5.0	0.65	ug/kg wet	ND					
1,1,2-Trichloro-1,2,2-trifluoroethane			5.0	1.1	ug/kg wet	ND					
1,1-Dichloroethane			5.0	0.61	ug/kg wet	ND					
1,1-Dichloroethene			5.0	0.61	ug/kg wet	ND					

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/12/10 (Lab Number:10H0885-BLK1, Batch: 10H0885)											
1,2,4-Trichlorobenzene			5.0	0.30	ug/kg wet	ND					
1,2-Dibromo-3-chloropropane			5.0	2.5	ug/kg wet	ND					
1,2-Dibromoethane			5.0	0.64	ug/kg wet	ND					
1,2-Dichlorobenzene			5.0	0.39	ug/kg wet	ND					
1,2-Dichloroethane			5.0	0.25	ug/kg wet	ND					
1,2-Dichloropropane			5.0	2.5	ug/kg wet	ND					
1,3-Dichlorobenzene			5.0	0.26	ug/kg wet	ND					
1,4-Dichlorobenzene			5.0	0.70	ug/kg wet	ND					
2-Butanone			25	1.8	ug/kg wet	ND					
2-Hexanone			25	2.5	ug/kg wet	ND					
4-Methyl-2-pentanone			25	1.6	ug/kg wet	ND					
Acetone			25	4.2	ug/kg wet	ND					
Benzene			5.0	0.24	ug/kg wet	ND					
Bromodichloromethane			5.0	0.67	ug/kg wet	ND					
Bromoform			5.0	2.5	ug/kg wet	ND					
Bromomethane			5.0	0.45	ug/kg wet	ND					
Carbon disulfide			5.0	2.5	ug/kg wet	ND					
Carbon Tetrachloride			5.0	0.48	ug/kg wet	ND					
Chlorobenzene			5.0	0.66	ug/kg wet	ND					
Dibromochloromethane			5.0	0.64	ug/kg wet	ND					
Chloroethane			5.0	1.1	ug/kg wet	ND					
Chloroform			5.0	0.31	ug/kg wet	ND					
Chloromethane			5.0	0.30	ug/kg wet	ND					
cis-1,2-Dichloroethene			5.0	0.64	ug/kg wet	ND					
cis-1,3-Dichloropropene			5.0	0.72	ug/kg wet	ND					
Cyclohexane			5.0	0.70	ug/kg wet	ND					
Dichlorodifluoromethane			5.0	0.41	ug/kg wet	ND					
Ethylbenzene			5.0	0.34	ug/kg wet	ND					
Isopropylbenzene			5.0	0.75	ug/kg wet	ND					
Methyl Acetate			5.0	0.93	ug/kg wet	ND					
Methyl-t-Butyl Ether (MTBE)			5.0	0.49	ug/kg wet	ND					
Methylcyclohexane			5.0	0.76	ug/kg wet	ND					
Methylene Chloride			5.0	2.3	ug/kg wet	ND					
Styrene			5.0	0.25	ug/kg wet	ND					
Tetrachloroethene			5.0	0.67	ug/kg wet	ND					
Toluene			5.0	0.38	ug/kg wet	ND					
trans-1,2-Dichloroethene			5.0	0.52	ug/kg wet	ND					

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 08/12/10 (Lab Number:10H0885-BLK1, Batch: 10H0885)											
trans-1,3-Dichloropropene			5.0	2.2	ug/kg wet	ND					
Trichloroethene			5.0	1.1	ug/kg wet	ND					
Trichlorofluoromethane			5.0	0.47	ug/kg wet	ND					
Vinyl chloride			5.0	0.61	ug/kg wet	ND					
Xylenes, total			10	0.84	ug/kg wet	ND					
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*104*	*64-126*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*111*	*72-126*			
Surrogate: Toluene-d8					*ug/kg wet*		*115*	*71-125*			
LCS Analyzed: 08/12/10 (Lab Number:10H0885-BS1, Batch: 10H0885)											
1,1,1-Trichloroethane		50.0	5.0	0.36	ug/kg wet	48.9	98	82-116			
1,1,2,2-Tetrachloroethane		50.0	5.0	0.81	ug/kg wet	44.7	89	80-120			
1,1,2-Trichloroethane		50.0	5.0	0.65	ug/kg wet	47.7	95	78-122			
1,1,2-Trichloro-1,2,2-trifluoroethane		50.0	5.0	1.1	ug/kg wet	50.8	102	60-140			
1,1-Dichloroethane		50.0	5.0	0.61	ug/kg wet	50.2	100	79-126			
1,1-Dichloroethene		50.0	5.0	0.61	ug/kg wet	45.2	90	70-142			
1,2,4-Trichlorobenzene		50.0	5.0	0.30	ug/kg wet	49.2	98	74-120			
1,2-Dibromo-3-chloropropane		50.0	5.0	2.5	ug/kg wet	41.7	83	66-122			
1,2-Dibromoethane		50.0	5.0	0.64	ug/kg wet	47.9	96	78-120			
1,2-Dichlorobenzene		50.0	5.0	0.39	ug/kg wet	48.0	96	82-114			
1,2-Dichloroethane		50.0	5.0	0.25	ug/kg wet	49.2	98	77-122			
1,2-Dichloropropane		50.0	5.0	2.5	ug/kg wet	49.7	99	81-119			
1,3-Dichlorobenzene		50.0	5.0	0.26	ug/kg wet	48.2	96	82-114			
1,4-Dichlorobenzene		50.0	5.0	0.70	ug/kg wet	47.7	95	82-113			
2-Butanone		250	25	1.8	ug/kg wet	234	94	70-134			
2-Hexanone		250	25	2.5	ug/kg wet	235	94	72-130			
4-Methyl-2-pentanone		250	25	1.6	ug/kg wet	237	95	74-128			
Acetone		250	25	4.2	ug/kg wet	230	92	61-137			
Benzene		50.0	5.0	0.24	ug/kg wet	49.6	99	79-127			
Bromodichloromethane		50.0	5.0	0.67	ug/kg wet	48.5	97	80-122			
Bromoform		50.0	5.0	2.5	ug/kg wet	44.1	88	68-126			
Bromomethane		50.0	5.0	0.45	ug/kg wet	46.5	93	45-151			
Carbon disulfide		50.0	5.0	2.5	ug/kg wet	49.8	100	64-131			
Carbon Tetrachloride		50.0	5.0	0.48	ug/kg wet	48.6	97	75-128			
Chlorobenzene		50.0	5.0	0.66	ug/kg wet	48.4	97	78-123			

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
LCS Analyzed: 08/12/10 (Lab Number:10H0885-BS1, Batch: 10H0885)											
Dibromochloromethane		50.0	5.0	0.64	ug/kg wet	46.4	93	76-125			
Chloroethane		50.0	5.0	1.1	ug/kg wet	45.7	91	69-136			
Chloroform		50.0	5.0	0.31	ug/kg wet	49.5	99	80-118			
Chloromethane		50.0	5.0	0.30	ug/kg wet	50.4	101	63-127			
cis-1,2-Dichloroethene		50.0	5.0	0.64	ug/kg wet	49.0	98	81-117			
cis-1,3-Dichloropropene		50.0	5.0	0.72	ug/kg wet	47.5	95	82-120			
Cyclohexane		50.0	5.0	0.70	ug/kg wet	51.1	102	70-130			
Dichlorodifluoromethane		50.0	5.0	0.41	ug/kg wet	43.8	88	57-142			
Ethylbenzene		50.0	5.0	0.34	ug/kg wet	48.2	96	83-120			
Isopropylbenzene		50.0	5.0	0.75	ug/kg wet	44.5	89	72-120			
Methyl Acetate		50.0	5.0	0.93	ug/kg wet	62.0	124	60-140			
Methyl-t-Butyl Ether (MTBE)		50.0	5.0	0.49	ug/kg wet	46.2	92	74-129			
Methylcyclohexane		50.0	5.0	0.76	ug/kg wet	52.5	105	74-125			
Methylene Chloride		50.0	5.0	2.3	ug/kg wet	53.4	107	61-127			
Styrene		50.0	5.0	0.25	ug/kg wet	44.4	89	80-120			
Tetrachloroethene		50.0	5.0	0.67	ug/kg wet	49.4	99	77-120			
Toluene		50.0	5.0	0.38	ug/kg wet	48.4	97	74-128			
trans-1,2-Dichloroethene		50.0	5.0	0.52	ug/kg wet	45.2	90	78-126			
trans-1,3-Dichloropropene		50.0	5.0	2.2	ug/kg wet	46.2	92	80-119			
Trichloroethene		50.0	5.0	1.1	ug/kg wet	49.1	98	79-121			
Trichlorofluoromethane		50.0	5.0	0.47	ug/kg wet	54.3	109	65-146			
Vinyl chloride		50.0	5.0	0.61	ug/kg wet	48.9	98	67-127			
Xylenes, total		150	10	0.84	ug/kg wet	145	97	82-120			
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*108*	*64-126*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*112*	*72-126*			
Surrogate: Toluene-d8					*ug/kg wet*		*113*	*71-125*			

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 08/10/10 (Lab Number:10H0489-BLK1, Batch: 10H0489)											
2,4,5-Trichlorophenol			170	37	ug/kg wet	ND					
2,4,6-Trichlorophenol			170	11	ug/kg wet	ND					
2,4-Dichlorophenol			170	8.8	ug/kg wet	ND					
2,4-Dimethylphenol			170	45	ug/kg wet	ND					
2,4-Dinitrophenol			330	59	ug/kg wet	ND					
2,4-Dinitrotoluene			170	26	ug/kg wet	ND					
2,6-Dinitrotoluene			170	41	ug/kg wet	ND					
2-Chloronaphthalene			170	11	ug/kg wet	ND					
2-Chlorophenol			170	8.6	ug/kg wet	ND					
2-Methylnaphthalene			170	2.0	ug/kg wet	ND					
2-Methylphenol			170	5.2	ug/kg wet	ND					
2-Nitroaniline			330	54	ug/kg wet	ND					
2-Nitrophenol			170	7.7	ug/kg wet	ND					
3,3'-Dichlorobenzidine			170	150	ug/kg wet	ND					
3-Nitroaniline			330	39	ug/kg wet	ND					
4,6-Dinitro-2-methylphenol			330	58	ug/kg wet	ND					
4-Bromophenyl phenyl ether			170	54	ug/kg wet	ND					
4-Chloro-3-methylphenol			170	6.9	ug/kg wet	ND					
4-Chloroaniline			170	49	ug/kg wet	ND					
4-Chlorophenyl phenyl ether			170	3.6	ug/kg wet	ND					
4-Methylphenol			330	9.4	ug/kg wet	ND					
4-Nitroaniline			330	19	ug/kg wet	ND					
4-Nitrophenol			330	41	ug/kg wet	ND					
Acenaphthene			170	2.0	ug/kg wet	ND					
Acenaphthylene			170	1.4	ug/kg wet	ND					
Acetophenone			170	8.6	ug/kg wet	ND					
Aniline			330	92	ug/kg wet	ND					
Anthracene			170	4.3	ug/kg wet	ND					
Atrazine			170	7.5	ug/kg wet	ND					
Benzaldehyde			170	18	ug/kg wet	ND					
Benzo(a)anthracene			170	2.9	ug/kg wet	ND					
Benzo(a)pyrene			170	4.1	ug/kg wet	ND					
Benzo(b)fluoranthene			170	3.3	ug/kg wet	ND					
Benzo(ghi)perylene			170	2.0	ug/kg wet	ND					
Benzo(k)fluoranthene			170	1.9	ug/kg wet	ND					
Biphenyl			170	10	ug/kg wet	ND					

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Received: 08/05/10-08/06/10
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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 08/10/10 (Lab Number:10H0489-BLK1, Batch: 10H0489)											
Bis(2-chloroethoxy)methane			170	9.1	ug/kg wet	ND					
Bis(2-chloroethyl)ether			170	15	ug/kg wet	ND					
2,2'-Oxybis(1-Chloropropane)			170	18	ug/kg wet	ND					
Bis(2-ethylhexyl) phthalate			170	54	ug/kg wet	ND					
Butyl benzyl phthalate			170	45	ug/kg wet	ND					
Caprolactam			170	73	ug/kg wet	ND					
Carbazole			170	1.9	ug/kg wet	ND					
Chrysene			170	1.7	ug/kg wet	ND					
Dibenzo(a,h)anthracene			170	2.0	ug/kg wet	ND					
Dibenzofuran			170	1.8	ug/kg wet	ND					
Diethyl phthalate			170	5.1	ug/kg wet	ND					
Dimethyl phthalate			170	4.4	ug/kg wet	ND					
Di-n-butyl phthalate			170	58	ug/kg wet	ND					
Di-n-octyl phthalate			170	3.9	ug/kg wet	ND					
Fluoranthene			170	2.4	ug/kg wet	ND					
Fluorene			170	3.9	ug/kg wet	ND					
Hexachlorobenzene			170	8.4	ug/kg wet	ND					
Hexachlorobutadiene			170	8.6	ug/kg wet	ND					
Hexachlorocyclopentadiene			170	51	ug/kg wet	ND					
Hexachloroethane			170	13	ug/kg wet	ND					
Indeno(1,2,3-cd)pyrene			170	4.7	ug/kg wet	ND					
Isophorone			170	8.4	ug/kg wet	ND					
Naphthalene			170	2.8	ug/kg wet	ND					
Nitrobenzene			170	7.5	ug/kg wet	ND					
N-Nitrosodi-n-propylamine			170	13	ug/kg wet	ND					
N-Nitrosodiphenylamine			170	9.2	ug/kg wet	ND					
Pentachlorophenol			330	58	ug/kg wet	ND					
Phenanthrene			170	3.5	ug/kg wet	ND					
Phenol			170	18	ug/kg wet	ND					
Pyrene			170	1.1	ug/kg wet	ND					
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*80*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*63*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*54*	*18-120*			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 08/10/10 (Lab Number:10H0489-BLK1, Batch: 10H0489)											
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*62*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*61*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*76*	*58-147*			
LCS Analyzed: 08/10/10 (Lab Number:10H0489-BS1, Batch: 10H0489)											
2,4,5-Trichlorophenol		3240	170	36	ug/kg wet	3170	98	59-126			
2,4,6-Trichlorophenol		3240	170	11	ug/kg wet	3100	96	59-123			
2,4-Dichlorophenol		3240	170	8.6	ug/kg wet	2730	84	52-120			
2,4-Dimethylphenol		3240	170	44	ug/kg wet	2760	85	36-120			
2,4-Dinitrophenol		3240	320	57	ug/kg wet	3470	107	35-146			
2,4-Dinitrotoluene		3240	170	25	ug/kg wet	3570	110	55-125			
2,6-Dinitrotoluene		3240	170	40	ug/kg wet	3690	114	66-128			
2-Chloronaphthalene		3240	170	11	ug/kg wet	2710	84	57-120			
2-Chlorophenol		3240	170	8.4	ug/kg wet	2280	70	38-120			
2-Methylnaphthalene		3240	170	2.0	ug/kg wet	2720	84	47-120			
2-Methylphenol		3240	170	5.0	ug/kg wet	2690	83	48-120			
2-Nitroaniline		3240	320	53	ug/kg wet	3750	116	61-130			
2-Nitrophenol		3240	170	7.5	ug/kg wet	2640	81	50-120			
3,3'-Dichlorobenzidine		3240	170	140	ug/kg wet	3240	100	48-126			
3-Nitroaniline		3240	320	38	ug/kg wet	3300	102	61-127			
4,6-Dinitro-2-methylphenol		3240	320	57	ug/kg wet	3980	123	49-155			
4-Bromophenyl phenyl ether		3240	170	52	ug/kg wet	3130	97	58-131			
4-Chloro-3-methylphenol		3240	170	6.8	ug/kg wet	3270	101	49-125			
4-Chloroaniline		3240	170	48	ug/kg wet	2820	87	49-120			
4-Chlorophenyl phenyl ether		3240	170	3.5	ug/kg wet	3340	103	63-124			
4-Methylphenol		3240	320	9.1	ug/kg wet	2890	89	50-119			
4-Nitroaniline		3240	320	18	ug/kg wet	3600	111	63-128			
4-Nitrophenol		3240	320	40	ug/kg wet	3830	118	43-137			
Acenaphthene		3240	170	1.9	ug/kg wet	2890	89	53-120			
Acenaphthylene		3240	170	1.3	ug/kg wet	2920	90	58-121			
Acetophenone		3240	170	8.4	ug/kg wet	2730	84	66-120			
Aniline		3240	320	90	ug/kg wet	2560	79	45-120			
Anthracene		3240	170	4.2	ug/kg wet	3120	96	62-129			
Atrazine		3240	170	7.3	ug/kg wet	2910	90	73-133			
Benzaldehyde		3240	170	18	ug/kg wet	2440	75	21-120			
Benzo(a)anthracene		3240	170	2.8	ug/kg wet	3420	106	65-133			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 08/10/10 (Lab Number:10H0489-BS1, Batch: 10H0489)											
Benzo(a)pyrene		3240	170	4.0	ug/kg wet	3750	116	64-127			
Benzo(b)fluoranthene		3240	170	3.2	ug/kg wet	3430	106	64-135			
Benzo(ghi)perylene		3240	170	2.0	ug/kg wet	3230	100	50-152			
Benzo(k)fluoranthene		3240	170	1.8	ug/kg wet	3160	98	58-138			
Biphenyl		3240	170	10	ug/kg wet	2630	81	71-120			
Bis(2-chloroethoxy)methane		3240	170	8.9	ug/kg wet	2440	75	61-133			
Bis(2-chloroethyl)ether		3240	170	14	ug/kg wet	2110	65	45-120			
2,2'-Oxybis(1-Chloropropane)		3240	170	17	ug/kg wet	2320	72	44-120			
Bis(2-ethylhexyl) phthalate		3240	170	53	ug/kg wet	3870	119	61-133			
Butyl benzyl phthalate		3240	170	44	ug/kg wet	3920	121	61-129			
Caprolactam		3240	170	71	ug/kg wet	3940	121	54-133			
Carbazole		3240	170	1.9	ug/kg wet	3170	98	59-129			
Chrysene		3240	170	1.6	ug/kg wet	3390	105	64-131			
Dibenzo(a,h)anthracene		3240	170	1.9	ug/kg wet	3210	99	54-148			
Dibenzofuran		3240	170	1.7	ug/kg wet	3280	101	56-120			
Diethyl phthalate		3240	170	5.0	ug/kg wet	3240	100	66-126			
Dimethyl phthalate		3240	170	4.3	ug/kg wet	3080	95	65-124			
Di-n-butyl phthalate		3240	170	57	ug/kg wet	3450	106	58-130			
Di-n-octyl phthalate		3240	170	3.8	ug/kg wet	3680	114	62-133			
Fluoranthene		3240	170	2.4	ug/kg wet	3180	98	62-131			
Fluorene		3240	170	3.8	ug/kg wet	3270	101	63-126			
Hexachlorobenzene		3240	170	8.2	ug/kg wet	2960	91	60-132			
Hexachlorobutadiene		3240	170	8.4	ug/kg wet	2120	65	45-120			
Hexachlorocyclopentadiene		3240	170	50	ug/kg wet	2250	69	31-120			
Hexachloroethane		3240	170	13	ug/kg wet	2060	63	41-120			
Indeno(1,2,3-cd)pyrene		3240	170	4.5	ug/kg wet	3200	99	56-149			
Isophorone		3240	170	8.2	ug/kg wet	2750	85	56-120			
Naphthalene		3240	170	2.7	ug/kg wet	2400	74	46-120			
Nitrobenzene		3240	170	7.3	ug/kg wet	2500	77	49-120			
N-Nitrosodi-n-propylamine		3240	170	13	ug/kg wet	2790	86	46-120			
N-Nitrosodiphenylamine		3240	170	9.0	ug/kg wet	3840	119	20-119			
Pentachlorophenol		3240	320	56	ug/kg wet	3420	105	33-136			
Phenanthrene		3240	170	3.4	ug/kg wet	3090	95	60-130			
Phenol		3240	170	17	ug/kg wet	2490	77	36-120			
Pyrene		3240	170	1.1	ug/kg wet	3400	105	51-133			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 08/10/10 (Lab Number:10H0489-BS1, Batch: 10H0489)											
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*99*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*79*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*60*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*75*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*72*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*90*	*58-147*			
Matrix Spike Analyzed: 08/10/10 (Lab Number:10H0489-MS1, Batch: 10H0489)											
QC Source Sample: RTH0485-01											
2,4,5-Trichlorophenol	ND	3950	200	44	ug/kg dry	3620	91	59-126			
2,4,6-Trichlorophenol	ND	3950	200	13	ug/kg dry	3470	88	59-123			
2,4-Dichlorophenol	ND	3950	200	10	ug/kg dry	2980	76	52-120			
2,4-Dimethylphenol	ND	3950	200	54	ug/kg dry	3030	77	36-120			
2,4-Dinitrophenol	ND	3950	390	70	ug/kg dry	3610	91	35-146			
2,4-Dinitrotoluene	ND	3950	200	31	ug/kg dry	4220	107	55-125			
2,6-Dinitrotoluene	ND	3950	200	49	ug/kg dry	4290	109	66-128			
2-Chloronaphthalene	ND	3950	200	13	ug/kg dry	2930	74	57-120			
2-Chlorophenol	274	3950	200	10	ug/kg dry	2680	61	38-120			
2-Methylnaphthalene	ND	3950	200	2.4	ug/kg dry	2960	75	47-120			
2-Methylphenol	ND	3950	200	6.2	ug/kg dry	2800	71	48-120			
2-Nitroaniline	ND	3950	390	64	ug/kg dry	4350	110	61-130			
2-Nitrophenol	ND	3950	200	9.1	ug/kg dry	2880	73	50-120			
3,3'-Dichlorobenzidine	ND	3950	200	180	ug/kg dry	3960	100	48-126			
3-Nitroaniline	ND	3950	390	46	ug/kg dry	4150	105	61-127			
4,6-Dinitro-2-methylphenol	ND	3950	390	69	ug/kg dry	4540	115	49-155			
4-Bromophenyl phenyl ether	ND	3950	200	64	ug/kg dry	3550	90	58-131			
4-Chloro-3-methylphenol	ND	3950	200	8.2	ug/kg dry	3850	97	49-125			
4-Chloroaniline	ND	3950	200	59	ug/kg dry	3190	81	49-120			
4-Chlorophenyl phenyl ether	ND	3950	200	4.3	ug/kg dry	3850	97	63-124			
4-Methylphenol	ND	3950	390	11	ug/kg dry	3040	77	50-119			
4-Nitroaniline	ND	3950	390	22	ug/kg dry	4270	108	63-128			
4-Nitrophenol	ND	3950	390	49	ug/kg dry	4620	117	43-137			
Acenaphthene	ND	3950	200	2.4	ug/kg dry	3270	83	53-120			
Acenaphthylene	ND	3950	200	1.6	ug/kg dry	3290	83	58-121			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Matrix Spike Analyzed: 08/10/10 (Lab Number:10H0489-MS1, Batch: 10H0489)											
QC Source Sample: RTH0485-01											
Acetophenone	ND	3950	200	10	ug/kg dry	2860	72	66-120			
Aniline	ND	3950	390	110	ug/kg dry	2710	69	45-120			
Anthracene	ND	3950	200	5.1	ug/kg dry	3620	92	62-129			
Atrazine	ND	3950	200	8.9	ug/kg dry	3440	87	73-133			
Benzaldehyde	ND	3950	200	22	ug/kg dry	2300	58	21-120			
Benzo(a)anthracene	ND	3950	200	3.5	ug/kg dry	4000	101	65-133			
Benzo(a)pyrene	ND	3950	200	4.8	ug/kg dry	4450	113	64-127			
Benzo(b)fluoranthene	ND	3950	200	3.9	ug/kg dry	4160	105	64-135			
Benzo(ghi)perylene	ND	3950	200	2.4	ug/kg dry	3920	99	50-152			
Benzo(k)fluoranthene	ND	3950	200	2.2	ug/kg dry	3590	91	58-138			
Biphenyl	ND	3950	200	12	ug/kg dry	2890	73	71-120			
Bis(2-chloroethoxy)methane	ND	3950	200	11	ug/kg dry	2630	67	61-133			
Bis(2-chloroethyl)ether	ND	3950	200	17	ug/kg dry	2150	54	45-120			
2,2'-Oxybis(1-Chloropropane)	ND	3950	200	21	ug/kg dry	2370	60	44-120			
Bis(2-ethylhexyl) phthalate	ND	3950	200	64	ug/kg dry	4590	116	61-133			
Butyl benzyl phthalate	ND	3950	200	54	ug/kg dry	4570	116	61-129			
Caprolactam	ND	3950	200	87	ug/kg dry	4690	119	54-133			
Carbazole	ND	3950	200	2.3	ug/kg dry	3750	95	59-129			
Chrysene	ND	3950	200	2.0	ug/kg dry	3950	100	64-131			
Dibenzo(a,h)anthracene	ND	3950	200	2.4	ug/kg dry	3820	97	54-148			
Dibenzofuran	ND	3950	200	2.1	ug/kg dry	3760	95	56-120			
Diethyl phthalate	ND	3950	200	6.0	ug/kg dry	3830	97	66-126			
Dimethyl phthalate	ND	3950	200	5.2	ug/kg dry	3560	90	65-124			
Di-n-butyl phthalate	ND	3950	200	69	ug/kg dry	4030	102	58-130			
Di-n-octyl phthalate	ND	3950	200	4.7	ug/kg dry	4410	112	62-133			
Fluoranthene	ND	3950	200	2.9	ug/kg dry	3730	94	62-131			
Fluorene	ND	3950	200	4.6	ug/kg dry	3730	94	63-126			
Hexachlorobenzene	ND	3950	200	9.9	ug/kg dry	3440	87	60-132			
Hexachlorobutadiene	ND	3950	200	10	ug/kg dry	2140	54	45-120			
Hexachlorocyclopentadiene	ND	3950	200	61	ug/kg dry	2280	58	31-120			
Hexachloroethane	ND	3950	200	15	ug/kg dry	1950	49	41-120			
Indeno(1,2,3-cd)pyrene	ND	3950	200	5.5	ug/kg dry	3790	96	56-149			
Isophorone	ND	3950	200	10	ug/kg dry	3070	78	56-120			
Naphthalene	ND	3950	200	3.3	ug/kg dry	2870	73	46-120			
Nitrobenzene	ND	3950	200	8.9	ug/kg dry	2690	68	49-120			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Matrix Spike Analyzed: 08/10/10 (Lab Number:10H0489-MS1, Batch: 10H0489)											
QC Source Sample: RTH0485-01											
N-Nitrosodi-n-propylamine	ND	3950	200	16	ug/kg dry	2950	75	46-120			
N-Nitrosodiphenylamine	ND	3950	200	11	ug/kg dry	4420	112	20-119			
Pentachlorophenol	ND	3950	390	69	ug/kg dry	3890	98	33-136			
Phenanthrene	ND	3950	200	4.2	ug/kg dry	3590	91	60-130			
Phenol	ND	3950	200	21	ug/kg dry	2630	67	36-120			
Pyrene	ND	3950	200	1.3	ug/kg dry	3930	99	51-133			
Surrogate: 2,4,6-Tribromophenol					*ug/kg dry*		*95*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg dry*		*73*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg dry*		*51*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg dry*		*68*	*34-132*			
Surrogate: Phenol-d5					*ug/kg dry*		*63*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg dry*		*88*	*58-147*			
Matrix Spike Dup Analyzed: 08/10/10 (Lab Number:10H0489-MSD1, Batch: 10H0489)											
QC Source Sample: RTH0485-01											
2,4,5-Trichlorophenol	ND	4030	210	44	ug/kg dry	3730	92	59-126	3	18	
2,4,6-Trichlorophenol	ND	4030	210	13	ug/kg dry	3630	90	59-123	4	19	
2,4-Dichlorophenol	ND	4030	210	11	ug/kg dry	3180	79	52-120	6	19	
2,4-Dimethylphenol	ND	4030	210	55	ug/kg dry	3280	81	36-120	8	42	
2,4-Dinitrophenol	ND	4030	400	71	ug/kg dry	3740	93	35-146	4	22	
2,4-Dinitrotoluene	ND	4030	210	32	ug/kg dry	4360	108	55-125	3	20	
2,6-Dinitrotoluene	ND	4030	210	50	ug/kg dry	4470	111	66-128	4	15	
2-Chloronaphthalene	ND	4030	210	14	ug/kg dry	3110	77	57-120	6	21	
2-Chlorophenol	274	4030	210	10	ug/kg dry	3130	71	38-120	15	25	
2-Methylnaphthalene	ND	4030	210	2.5	ug/kg dry	3170	79	47-120	7	21	
2-Methylphenol	ND	4030	210	6.3	ug/kg dry	3280	81	48-120	16	27	
2-Nitroaniline	ND	4030	400	65	ug/kg dry	4550	113	61-130	5	15	
2-Nitrophenol	ND	4030	210	9.3	ug/kg dry	3260	81	50-120	12	18	
3,3'-Dichlorobenzidine	ND	4030	210	180	ug/kg dry	4020	100	48-126	1	25	
3-Nitroaniline	ND	4030	400	47	ug/kg dry	4320	107	61-127	4	19	
4,6-Dinitro-2-methylphenol	ND	4030	400	70	ug/kg dry	4650	116	49-155	3	15	
4-Bromophenyl phenyl ether	ND	4030	210	65	ug/kg dry	3620	90	58-131	2	15	
4-Chloro-3-methylphenol	ND	4030	210	8.4	ug/kg dry	3950	98	49-125	2	27	

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Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Matrix Spike Dup Analyzed: 08/10/10 (Lab Number:10H0489-MSD1, Batch: 10H0489)											
QC Source Sample: RTH0485-01											
4-Chloroaniline	ND	4030	210	60	ug/kg dry	3430	85	49-120	7	22	
4-Chlorophenyl phenyl ether	ND	4030	210	4.3	ug/kg dry	3940	98	63-124	2	16	
4-Methylphenol	ND	4030	400	11	ug/kg dry	3520	87	50-119	15	24	
4-Nitroaniline	ND	4030	400	23	ug/kg dry	4460	111	63-128	4	24	
4-Nitrophenol	ND	4030	400	49	ug/kg dry	4770	118	43-137	3	25	
Acenaphthene	ND	4030	210	2.4	ug/kg dry	3380	84	53-120	3	35	
Acenaphthylene	ND	4030	210	1.7	ug/kg dry	3390	84	58-121	3	18	
Acetophenone	ND	4030	210	10	ug/kg dry	3370	84	66-120	17	20	
Aniline	ND	4030	400	110	ug/kg dry	3170	79	45-120	16	30	
Anthracene	ND	4030	210	5.2	ug/kg dry	3650	91	62-129	0.9	15	
Atrazine	ND	4030	210	9.1	ug/kg dry	3530	88	73-133	3	20	
Benzaldehyde	ND	4030	210	22	ug/kg dry	2770	69	21-120	19	20	
Benzo(a)anthracene	ND	4030	210	3.5	ug/kg dry	4050	101	65-133	1	15	
Benzo(a)pyrene	ND	4030	210	4.9	ug/kg dry	4430	110	64-127	0.5	15	
Benzo(b)fluoranthene	ND	4030	210	4.0	ug/kg dry	4130	103	64-135	0.7	15	
Benzo(ghi)perylene	ND	4030	210	2.4	ug/kg dry	3910	97	50-152	0.3	15	
Benzo(k)fluoranthene	ND	4030	210	2.2	ug/kg dry	3630	90	58-138	1	22	
Biphenyl	ND	4030	210	13	ug/kg dry	3050	76	71-120	5	20	
Bis(2-chloroethoxy)methane	ND	4030	210	11	ug/kg dry	2900	72	61-133	10	17	
Bis(2-chloroethyl)ether	ND	4030	210	18	ug/kg dry	2580	64	45-120	18	21	
2,2'-Oxybis(1-Chloropropane)	ND	4030	210	21	ug/kg dry	2800	70	44-120	17	24	
Bis(2-ethylhexyl) phthalate	ND	4030	210	66	ug/kg dry	4650	115	61-133	1	15	
Butyl benzyl phthalate	ND	4030	210	55	ug/kg dry	4770	118	61-129	4	16	
Caprolactam	ND	4030	210	88	ug/kg dry	4870	121	54-133	4	20	
Carbazole	ND	4030	210	2.4	ug/kg dry	3740	93	59-129	0.2	20	
Chrysene	ND	4030	210	2.0	ug/kg dry	4040	100	64-131	2	15	
Dibenzo(a,h)anthracene	ND	4030	210	2.4	ug/kg dry	3800	94	54-148	0.4	15	
Dibenzofuran	ND	4030	210	2.1	ug/kg dry	3790	94	56-120	0.9	15	
Diethyl phthalate	ND	4030	210	6.2	ug/kg dry	3880	96	66-126	1	15	
Dimethyl phthalate	ND	4030	210	5.3	ug/kg dry	3640	90	65-124	2	15	
Di-n-butyl phthalate	ND	4030	210	71	ug/kg dry	4030	100	58-130	0.04	15	
Di-n-octyl phthalate	ND	4030	210	4.8	ug/kg dry	4480	111	62-133	2	16	
Fluoranthene	ND	4030	210	3.0	ug/kg dry	3690	92	62-131	1	15	
Fluorene	ND	4030	210	4.7	ug/kg dry	3770	94	63-126	1	15	
Hexachlorobenzene	ND	4030	210	10	ug/kg dry	3520	87	60-132	2	15	

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Received: 08/05/10-08/06/10
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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Matrix Spike Dup Analyzed: 08/10/10 (Lab Number:10H0489-MSD1, Batch: 10H0489)											
QC Source Sample: RTH0485-01											
Hexachlorobutadiene	ND	4030	210	10	ug/kg dry	2420	60	45-120	12	44	
Hexachlorocyclopentadiene	ND	4030	210	62	ug/kg dry	2580	64	31-120	12	49	
Hexachloroethane	ND	4030	210	16	ug/kg dry	2270	56	41-120	15	46	
Indeno(1,2,3-cd)pyrene	ND	4030	210	5.6	ug/kg dry	3780	94	56-149	0.2	15	
Isophorone	ND	4030	210	10	ug/kg dry	3300	82	56-120	7	17	
Naphthalene	ND	4030	210	3.4	ug/kg dry	3060	76	46-120	7	29	
Nitrobenzene	ND	4030	210	9.0	ug/kg dry	3000	75	49-120	11	24	
N-Nitrosodi-n-propylamine	ND	4030	210	16	ug/kg dry	3420	85	46-120	15	31	
N-Nitrosodiphenylamine	ND	4030	210	11	ug/kg dry	4470	111	20-119	1	15	
Pentachlorophenol	ND	4030	400	70	ug/kg dry	3930	98	33-136	1	35	
Phenanthrene	ND	4030	210	4.3	ug/kg dry	3610	90	60-130	0.6	15	
Phenol	ND	4030	210	21	ug/kg dry	3040	76	36-120	14	35	
Pyrene	ND	4030	210	1.3	ug/kg dry	4110	102	51-133	4	35	
Surrogate: 2,4,6-Tribromophenol					*ug/kg dry*		*97*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg dry*		*76*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg dry*		*60*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg dry*		*76*	*34-132*			
Surrogate: Phenol-d5					*ug/kg dry*		*73*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg dry*		*90*	*58-147*			
Semivolatile Organics by GC/MS											
Blank Analyzed: 08/16/10 (Lab Number:10H1025-BLK1, Batch: 10H1025)											
2,4,5-Trichlorophenol			170	36	ug/kg wet	ND					
2,4,6-Trichlorophenol			170	11	ug/kg wet	ND					
2,4-Dichlorophenol			170	8.8	ug/kg wet	ND					
2,4-Dimethylphenol			170	45	ug/kg wet	ND					
2,4-Dinitrophenol			330	58	ug/kg wet	ND					
2,4-Dinitrotoluene			170	26	ug/kg wet	ND					
2,6-Dinitrotoluene			170	41	ug/kg wet	ND					
2-Chloronaphthalene			170	11	ug/kg wet	ND					
2-Chlorophenol			170	8.5	ug/kg wet	ND					
2-Methylnaphthalene			170	2.0	ug/kg wet	ND					
2-Methylphenol			170	5.1	ug/kg wet	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 08/16/10 (Lab Number:10H1025-BLK1, Batch: 10H1025)											
2-Nitroaniline			330	54	ug/kg wet	ND					
2-Nitrophenol			170	7.6	ug/kg wet	ND					
3,3'-Dichlorobenzidine			170	150	ug/kg wet	ND					
3-Nitroaniline			330	38	ug/kg wet	ND					
4,6-Dinitro-2-methylphenol			330	58	ug/kg wet	ND					
4-Bromophenyl phenyl ether			170	53	ug/kg wet	ND					
4-Chloro-3-methylphenol			170	6.9	ug/kg wet	ND					
4-Chloroaniline			170	49	ug/kg wet	ND					
4-Chlorophenyl phenyl ether			170	3.6	ug/kg wet	ND					
4-Methylphenol			330	9.3	ug/kg wet	ND					
4-Nitroaniline			330	19	ug/kg wet	ND					
4-Nitrophenol			330	40	ug/kg wet	ND					
Acenaphthene			170	2.0	ug/kg wet	ND					
Acenaphthylene			170	1.4	ug/kg wet	ND					
Acetophenone			170	8.6	ug/kg wet	ND					
Aniline			330	91	ug/kg wet	ND					
Anthracene			170	4.3	ug/kg wet	ND					
Atrazine			170	7.4	ug/kg wet	ND					
Benzaldehyde			170	18	ug/kg wet	ND					
Benzo(a)anthracene			170	2.9	ug/kg wet	ND					
Benzo(a)pyrene			170	4.0	ug/kg wet	ND					
Benzo(b)fluoranthene			170	3.2	ug/kg wet	ND					
Benzo(ghi)perylene			170	2.0	ug/kg wet	ND					
Benzo(k)fluoranthene			170	1.8	ug/kg wet	ND					
Biphenyl			170	10	ug/kg wet	ND					
Bis(2-chloroethoxy)methane			170	9.1	ug/kg wet	ND					
Bis(2-chloroethyl)ether			170	14	ug/kg wet	ND					
2,2'-Oxybis(1-Chloropropane)			170	17	ug/kg wet	ND					
Bis(2-ethylhexyl) phthalate			170	54	ug/kg wet	ND					
Butyl benzyl phthalate			170	45	ug/kg wet	ND					
Caprolactam			170	72	ug/kg wet	ND					
Carbazole			170	1.9	ug/kg wet	ND					
Chrysene			170	1.7	ug/kg wet	ND					
Dibenzo(a,h)anthracene			170	2.0	ug/kg wet	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 08/16/10 (Lab Number:10H1025-BLK1, Batch: 10H1025)											
Dibenzofuran			170	1.7	ug/kg wet	ND					
Diethyl phthalate			170	5.0	ug/kg wet	ND					
Dimethyl phthalate			170	4.4	ug/kg wet	ND					
Di-n-butyl phthalate			170	58	ug/kg wet	ND					
Di-n-octyl phthalate			170	3.9	ug/kg wet	ND					
Fluoranthene			170	2.4	ug/kg wet	ND					
Fluorene			170	3.8	ug/kg wet	ND					
Hexachlorobenzene			170	8.3	ug/kg wet	ND					
Hexachlorobutadiene			170	8.5	ug/kg wet	ND					
Hexachlorocyclopentadiene			170	50	ug/kg wet	ND					
Hexachloroethane			170	13	ug/kg wet	ND					
Indeno(1,2,3-cd)pyrene			170	4.6	ug/kg wet	ND					
Isophorone			170	8.3	ug/kg wet	ND					
Naphthalene			170	2.8	ug/kg wet	ND					
Nitrobenzene			170	7.4	ug/kg wet	ND					
N-Nitrosodi-n-propylamine			170	13	ug/kg wet	ND					
N-Nitrosodiphenylamine			170	9.1	ug/kg wet	ND					
Pentachlorophenol			330	57	ug/kg wet	ND					
Phenanthrene			170	3.5	ug/kg wet	ND					
Phenol			170	18	ug/kg wet	ND					
Pyrene			170	1.1	ug/kg wet	ND					
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*83*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*74*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*66*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*77*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*76*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*75*	*58-147*			
LCS Analyzed: 08/16/10 (Lab Number:10H1025-BS1, Batch: 10H1025)											
2,4,5-Trichlorophenol		3300	170	36	ug/kg wet	2770	84	59-126			
2,4,6-Trichlorophenol		3300	170	11	ug/kg wet	2730	83	59-123			
2,4-Dichlorophenol		3300	170	8.8	ug/kg wet	2530	77	52-120			
2,4-Dimethylphenol		3300	170	45	ug/kg wet	2490	76	36-120			
2,4-Dinitrophenol		3300	330	58	ug/kg wet	2620	80	35-146			
2,4-Dinitrotoluene		3300	170	26	ug/kg wet	3120	95	55-125			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 08/16/10 (Lab Number:10H1025-BS1, Batch: 10H1025)											
2,6-Dinitrotoluene		3300	170	41	ug/kg wet	3130	95	66-128			
2-Chloronaphthalene		3300	170	11	ug/kg wet	2590	79	57-120			
2-Chlorophenol		3300	170	8.5	ug/kg wet	2410	73	38-120			
2-Methylnaphthalene		3300	170	2.0	ug/kg wet	2460	75	47-120			
2-Methylphenol		3300	170	5.1	ug/kg wet	2430	74	48-120			
2-Nitroaniline		3300	330	54	ug/kg wet	3110	94	61-130			
2-Nitrophenol		3300	170	7.6	ug/kg wet	2620	80	50-120			
3,3'-Dichlorobenzidine		3300	170	150	ug/kg wet	2300	70	48-126			
3-Nitroaniline		3300	330	38	ug/kg wet	2900	88	61-127			
4,6-Dinitro-2-methylphenol		3300	330	58	ug/kg wet	3220	97	49-155			
4-Bromophenyl phenyl ether		3300	170	53	ug/kg wet	2880	87	58-131			
4-Chloro-3-methylphenol		3300	170	6.9	ug/kg wet	2790	85	49-125			
4-Chloroaniline			170	49	ug/kg wet	2440		49-120			
4-Chlorophenyl phenyl ether		3300	170	3.6	ug/kg wet	2750	83	63-124			
4-Methylphenol		6600	330	9.3	ug/kg wet	4870	74	50-119			
4-Nitroaniline		3300	330	19	ug/kg wet	2530	77	63-128			
4-Nitrophenol		3300	330	41	ug/kg wet	3180	96	43-137			
Acenaphthene		3300	170	2.0	ug/kg wet	2660	81	53-120			
Acenaphthylene		3300	170	1.4	ug/kg wet	2800	85	58-121			
Acetophenone			170	8.6	ug/kg wet	ND		66-120			
Aniline		3300	330	92	ug/kg wet	2390	72	45-120			
Anthracene		3300	170	4.3	ug/kg wet	2960	90	62-129			
Atrazine			170	7.4	ug/kg wet	ND		73-133			
Benzaldehyde		3300	170	18	ug/kg wet	2300	70	21-120			
Benzo(a)anthracene		3300	170	2.9	ug/kg wet	2800	85	65-133			
Benzo(a)pyrene		3300	170	4.0	ug/kg wet	2970	90	64-127			
Benzo(b)fluoranthene		3300	170	3.2	ug/kg wet	2750	83	64-135			
Benzo(ghi)perylene		3300	170	2.0	ug/kg wet	2940	89	50-152			
Benzo(k)fluoranthene		3300	170	1.8	ug/kg wet	2900	88	58-138			
Biphenyl			170	10	ug/kg wet	ND		71-120			
Bis(2-chloroethoxy)methane		3300	170	9.1	ug/kg wet	2590	79	61-133			
Bis(2-chloroethyl)ether		3300	170	14	ug/kg wet	2500	76	45-120			
2,2'-Oxybis(1-Chloropropane)		3300	170	17	ug/kg wet	2300	70	44-120			
Bis(2-ethylhexyl) phthalate		3300	170	54	ug/kg wet	3350	101	61-133			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 08/16/10 (Lab Number:10H1025-BS1, Batch: 10H1025)											
Butyl benzyl phthalate			170	45	ug/kg wet	3170		61-129			
Caprolactam			170	72	ug/kg wet	ND		54-133			
Carbazole		3300	170	1.9	ug/kg wet	2900	88	59-129			
Chrysene		3300	170	1.7	ug/kg wet	3100	94	64-131			
Dibenzo(a,h)anthracene		3300	170	2.0	ug/kg wet	2710	82	54-148			
Dibenzofuran		3300	170	1.7	ug/kg wet	2600	79	56-120			
Diethyl phthalate		3300	170	5.0	ug/kg wet	2960	90	66-126			
Dimethyl phthalate		3300	170	4.4	ug/kg wet	2800	85	65-124			
Di-n-butyl phthalate		3300	170	58	ug/kg wet	3160	96	58-130			
Di-n-octyl phthalate		3300	170	3.9	ug/kg wet	3370	102	62-133			
Fluoranthene		3300	170	2.4	ug/kg wet	2970	90	62-131			
Fluorene		3300	170	3.9	ug/kg wet	2800	85	63-126			
Hexachlorobenzene		3300	170	8.3	ug/kg wet	2950	89	60-132			
Hexachlorobutadiene			170	8.6	ug/kg wet	2300		45-120			
Hexachlorocyclopentadiene		3300	170	51	ug/kg wet	2600	79	31-120			
Hexachloroethane		3300	170	13	ug/kg wet	2200	67	41-120			
Indeno(1,2,3-cd)pyrene		3300	170	4.6	ug/kg wet	2800	85	56-149			
Isophorone		3300	170	8.4	ug/kg wet	2850	86	56-120			
Naphthalene		3300	170	2.8	ug/kg wet	2410	73	46-120			
Nitrobenzene		3300	170	7.4	ug/kg wet	2590	78	49-120			
N-Nitrosodi-n-propylamine		3300	170	13	ug/kg wet	2860	87	46-120			
N-Nitrosodiphenylamine		3300	170	9.1	ug/kg wet	3050	92	20-119			
Pentachlorophenol		3300	330	57	ug/kg wet	2970	90	33-136			
Phenanthrene		3300	170	3.5	ug/kg wet	2900	88	60-130			
Phenol		3300	170	18	ug/kg wet	2410	73	36-120			
Pyrene		3300	170	1.1	ug/kg wet	3070	93	51-133			
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*93*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*76*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*64*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*77*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*75*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*79*	*58-147*			
LCS Dup Analyzed: 08/16/10 (Lab Number:10H1025-BSD1, Batch: 10H1025)											
2,4,5-Trichlorophenol		3300	170	36	ug/kg wet	2710	82	59-126	2	18	

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Dup Analyzed: 08/16/10 (Lab Number:10H1025-BSD1, Batch: 10H1025)											
2,4,6-Trichlorophenol		3300	170	11	ug/kg wet	2720	82	59-123	0.4	19	
2,4-Dichlorophenol		3300	170	8.8	ug/kg wet	2400	73	52-120	5	19	
2,4-Dimethylphenol		3300	170	45	ug/kg wet	2310	70	36-120	7	42	
2,4-Dinitrophenol		3300	330	58	ug/kg wet	2820	85	35-146	7	22	
2,4-Dinitrotoluene		3300	170	26	ug/kg wet	3180	96	55-125	2	20	
2,6-Dinitrotoluene		3300	170	41	ug/kg wet	3250	99	66-128	4	15	
2-Chloronaphthalene		3300	170	11	ug/kg wet	2530	77	57-120	3	21	
2-Chlorophenol		3300	170	8.5	ug/kg wet	2300	70	38-120	5	25	
2-Methylnaphthalene		3300	170	2.0	ug/kg wet	2380	72	47-120	3	21	
2-Methylphenol		3300	170	5.1	ug/kg wet	2360	72	48-120	3	27	
2-Nitroaniline		3300	330	54	ug/kg wet	3170	96	61-130	2	15	
2-Nitrophenol		3300	170	7.6	ug/kg wet	2510	76	50-120	5	18	
3,3'-Dichlorobenzidine		3300	170	150	ug/kg wet	2260	68	48-126	2	25	
3-Nitroaniline		3300	330	38	ug/kg wet	2940	89	61-127	1	19	
4,6-Dinitro-2-methylphenol		3300	330	58	ug/kg wet	3250	99	49-155	1	15	
4-Bromophenyl phenyl ether		3300	170	53	ug/kg wet	2910	88	58-131	1	15	
4-Chloro-3-methylphenol		3300	170	6.9	ug/kg wet	2710	82	49-125	3	27	
4-Chloroaniline			170	49	ug/kg wet	2360		49-120	4	22	
4-Chlorophenyl phenyl ether		3300	170	3.6	ug/kg wet	2760	84	63-124	0.5	16	
4-Methylphenol		6590	330	9.3	ug/kg wet	4680	71	50-119	4	24	
4-Nitroaniline		3300	330	19	ug/kg wet	2530	77	63-128	0.06	24	
4-Nitrophenol		3300	330	40	ug/kg wet	3330	101	43-137	4	25	
Acenaphthene		3300	170	2.0	ug/kg wet	2660	81	53-120	0.2	35	
Acenaphthylene		3300	170	1.4	ug/kg wet	2770	84	58-121	1	18	
Acetophenone			170	8.6	ug/kg wet	ND		66-120		20	
Aniline		3300	330	91	ug/kg wet	2220	67	45-120	7	30	
Anthracene		3300	170	4.3	ug/kg wet	2980	90	62-129	0.6	15	
Atrazine			170	7.4	ug/kg wet	ND		73-133		20	
Benzaldehyde		3300	170	18	ug/kg wet	2220	67	21-120	4	20	
Benzo(a)anthracene		3300	170	2.9	ug/kg wet	2850	86	65-133	2	15	
Benzo(a)pyrene		3300	170	4.0	ug/kg wet	3020	92	64-127	2	15	
Benzo(b)fluoranthene		3300	170	3.2	ug/kg wet	2480	75	64-135	10	15	
Benzo(ghi)perylene		3300	170	2.0	ug/kg wet	3080	93	50-152	5	15	
Benzo(k)fluoranthene		3300	170	1.8	ug/kg wet	3330	101	58-138	14	22	
Biphenyl			170	10	ug/kg wet	ND		71-120		20	

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Dup Analyzed: 08/16/10 (Lab Number:10H1025-BSD1, Batch: 10H1025)											
Bis(2-chloroethoxy)methane		3300	170	9.1	ug/kg wet	2490	75	61-133	4	17	
Bis(2-chloroethyl)ether		3300	170	14	ug/kg wet	2360	72	45-120	6	21	
2,2'-Oxybis(1-Chloropropane)		3300	170	17	ug/kg wet	2190	66	44-120	5	24	
Bis(2-ethylhexyl) phthalate		3300	170	54	ug/kg wet	3370	102	61-133	0.7	15	
Butyl benzyl phthalate			170	45	ug/kg wet	3600		61-129	12	16	
Caprolactam			170	72	ug/kg wet	ND		54-133		20	
Carbazole		3300	170	1.9	ug/kg wet	2940	89	59-129	1	20	
Chrysene		3300	170	1.7	ug/kg wet	3130	95	64-131	0.9	15	
Dibenzo(a,h)anthracene		3300	170	2.0	ug/kg wet	2840	86	54-148	5	15	
Dibenzofuran		3300	170	1.7	ug/kg wet	2610	79	56-120	0.7	15	
Diethyl phthalate		3300	170	5.0	ug/kg wet	2970	90	66-126	0.3	15	
Dimethyl phthalate		3300	170	4.4	ug/kg wet	2820	86	65-124	1	15	
Di-n-butyl phthalate		3300	170	58	ug/kg wet	3220	98	58-130	2	15	
Di-n-octyl phthalate		3300	170	3.9	ug/kg wet	3290	100	62-133	2	16	
Fluoranthene		3300	170	2.4	ug/kg wet	3030	92	62-131	2	15	
Fluorene		3300	170	3.8	ug/kg wet	2820	85	63-126	0.4	15	
Hexachlorobenzene		3300	170	8.3	ug/kg wet	2960	90	60-132	0.5	15	
Hexachlorobutadiene			170	8.5	ug/kg wet	2170		45-120	6	44	
Hexachlorocyclopentadiene		3300	170	50	ug/kg wet	2510	76	31-120	4	49	
Hexachloroethane		3300	170	13	ug/kg wet	2130	65	41-120	3	46	
Indeno(1,2,3-cd)pyrene		3300	170	4.6	ug/kg wet	2940	89	56-149	5	15	
Isophorone		3300	170	8.3	ug/kg wet	2730	83	56-120	4	17	
Naphthalene		3300	170	2.8	ug/kg wet	2330	71	46-120	4	29	
Nitrobenzene		3300	170	7.4	ug/kg wet	2530	77	49-120	2	24	
N-Nitrosodi-n-propylamine		3300	170	13	ug/kg wet	2750	83	46-120	4	31	
N-Nitrosodiphenylamine		3300	170	9.1	ug/kg wet	3050	93	20-119	0.2	15	
Pentachlorophenol		3300	330	57	ug/kg wet	3050	92	33-136	2	35	
Phenanthrene		3300	170	3.5	ug/kg wet	2900	88	60-130	0.3	15	
Phenol		3300	170	18	ug/kg wet	2280	69	36-120	5	35	
Pyrene		3300	170	1.1	ug/kg wet	3030	92	51-133	1	35	
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*94*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*73*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*59*	*18-120*			

MACTEC Engineering & Consultants - Alpharetta, GA
800 N. Bell Ave., Suite 200
Carnegie, PA 15106

Work Order: RTH0485

Project: Honeywell-Former Buffalo Color Area ABCE
Project Number: MACTEC004

Received: 08/05/10-08/06/10
Reported: 08/17/10 17:34

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Dup Analyzed: 08/16/10 (Lab Number:10H1025-BSD1, Batch: 10H1025)											
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*74*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*72*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*79*	*58-147*			

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
MACTEC	John Scrabis	8/5/10	166175
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page**
800 N. Bell Ave. Suite 200	412-279-6661		Page 1 of 1
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Carnegie / PA / 15106	Eric Weller	Brian Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
Buffalo Color - Area C/E Test Pits			
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	Unpres.	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: VOCs - TerraCore	SVOCs	Special Instructions/ Conditions of Receipt
TP-E1-0507	8/4/10	1000				X	X						1	1	
TP-E1-0709		1025				X	X						1	1	
TP-E2-0507		1150				X	X						1	1	
TP-E2-0709		1200				X	X						1	1	
TP-E2-0911		1340				X	X						1	1	
TP-E1-0910		1520				X	X						1	1	
TP-C1-0305	8/5/10	1100				X	X						1	1	
TP-C1-0507		1110				X	X						1	1	
TP-C1-0709		1140				X	X						1	1	
TP-C1-0911		1200				X	X						1	1	
Trip Blank															

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

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ 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 _____

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.		8/5/10	1705		8/5/10	1705
2.		Date	Time		Date	Time
3.		Date	Time		Date	Time

Comments

6.0

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

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: MACTEC	Project Manager: John Serabis	Date: 8/6/10	Chain of Custody Number: 180106
Address: 800 N. Bell Ave. Suite 200	Telephone Number (Area Code)/Fax Number: 412-279-6661	Lab Number	Page: 1 of 1
City: Carnegie / State: PA / Zip Code: 15106	Site Contact: Eric Weiler	Lab Contact: Brian Fischer	
Project Name and Location (State): Buffalo Color - Areas Cand E	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

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	VOC-TerraCore	5 VOC
TP-C2-0305	8/6/10	1000				X	X						1	1
TP-C2-0507		1015				X	X						1	1
TP-C2-0709		1045				X	X						1	1
TP-C2-0911		1100				X	X						1	1
DDL-05-0406		1320				X	X						1	1
DDE-07-0810		1400				X	X						1	1
DDE-08-0810		1420				X	X						1	1
ES-48-0204		1450				X	X						1	1
ES-49-0203		1505				X	X						1	1
ES-50-0204		1530				X	X						1	1
ES-51-0204		1600				X	X						1	1
Trip Blank														

Possible Hazard Identification

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

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ___ 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

QC Requirements (Specify)

1. Relinquished By	Date: 8/6/10	Time: 1700	1. Received By	Date: 8/6/10	Time: 1700
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

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

4.2°

APPENDIX J

COMPOSITE TEST PIT ANALYTICAL REPORT
PARADIGM LABORATORY

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report Cover Page

South Buffalo Development

For Lab Project # 10-3208
Issued August 13, 2010
This report contains a total of 18 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

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The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

pH Analysis Report

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Sample Type: Soil
Location: Laboratory

Lab Project Number: 10-3208
Date Sampled: 08/04-05/2010
Time Sampled: 10:00 AM - 12:00 PM
Date Received: 08/06/2010
Time Received: 1:30 PM
Date Analyzed: 08/09/2010
Time Analyzed: 2:48 PM

Lab Sample Number	Field Number	Field Location	Result (pH)
10590	N/A	TP-E1 4-10'	8.46
10591	N/A	TP-E2 4-11'	8.01
10592	N/A	TP-CO1 3-12'	7.78

ELAP Number 10958

Method: EPA 9045C

Comments:

Signature: RHoogesteger (for)
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Ignitability of Solids Analysis Report

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Date Sampled: 08/04-05/2010
Date Received: 08/06/2010
Date Analyzed: 08/06/2010

Lab Sample Number	Field Number	Field Location	Result (mm/sec)
10590	N/A	TP-E1 4-10'	No Burn
10591	N/A	TP-E2 4-11'	No Burn
10592	N/A	TP-CO1 3-12'	No Burn

ELAP Number 10958
Method: SW846 1030

Comments: A Burn Rate of more than 0.17 mm/sec for metallic samples, or 2.2 mm/sec for non-metallic samples, are considered to have a positive results for ignitability.

Signature: (for)
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Percent Solids Analysis Report

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Date Sampled: 08/04-05/2010
Date Received: 08/06/2010
Date Analyzed: 08/06/2010

Lab Sample Number	Field Number	Field Location	Result (% Solid)
10590	N/A	TP-E1 4-10'	80.5
10591	N/A	TP-E2 4-11'	81.6
10592	N/A	TP-CO1 3-12'	80.4

ELAP Number 10958

Method: SW17 2540B

Comments:

Signature: (for)
Bruce Hoogesteger: Technical Director

Chain of Custody provides additional sample information

File ID: 103208PS.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office: (585) 647-2530 Fax: (585) 647-3311

LABORATORY REPORT FOR TCLP RCRA METALS ANALYSIS

Client: South Buffalo Development

Client Job Site: Buffalo Color

Client Job No.: N/A

Lab Project No.: 10-3208

Sample Type: TCLP Extract
Method: 6010 & 7470

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/11/2010

Lab Sample ID	Field ID	Field Location	Ag (mg/L)	As (mg/L)	Ba (mg/L)	Cd (mg/L)	Cr (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)
10590	N/A	TP-E1 4-10'	<0.050	<0.100	2.85	<0.025	<0.050	<0.100	<0.100	<0.0020
10591	N/A	TP-E2 4-11'	<0.050	<0.100	2.08	<0.025	<0.050	<0.100	<0.100	<0.0020
10592	N/A	TP-C01 3-12'	<0.050	<0.100	1.73	<0.025	<0.050	<0.100	<0.100	<0.0020

ELAP ID No.: 10958

	Ag (mg/L)	As (mg/L)	Ba (mg/L)	Cd (mg/L)	Cr (mg/L)	Pb (mg/L)	Se (mg/L)	Hg (mg/L)
Regulatory Limit (mg/L):	5.0	5.0	100	1.0	5.0	5.0	1.0	0.2

Comments:

Approved By: (for)

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition upon receipt.

Bruce Hoogesteger, Technical Director

File ID:103208.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site:	Buffalo Color	**Lab Project Number:**	10-3208
		Lab Sample Number:	10590
Client Job Number:	N/A		
Field Location:	TP-E1 4-10'	**Date Sampled:**	08/04/2010
Field ID Number:	N/A	**Date Received:**	08/06/2010
Sample Type:	Soil	**Date Analyzed:**	08/09/2010

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.374
Aroclor 1221	ND< 0.374
Aroclor 1232	ND< 0.374
Aroclor 1242	ND< 0.374
Aroclor 1248	ND< 0.374
Aroclor 1254	ND< 0.374
Aroclor 1260	ND< 0.374

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-E2 4-11'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10591

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/09/2010

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.368
Aroclor 1221	ND< 0.368
Aroclor 1232	ND< 0.368
Aroclor 1242	ND< 0.368
Aroclor 1248	ND< 0.368
Aroclor 1254	ND< 0.368
Aroclor 1260	ND< 0.368

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-C01 3-12'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10592

Date Sampled: 08/05/2010
Date Received: 08/06/2010
Date Analyzed: 08/09/2010

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.372
Aroclor 1221	ND< 0.372
Aroclor 1232	ND< 0.372
Aroclor 1242	ND< 0.372
Aroclor 1248	ND< 0.372
Aroclor 1254	ND< 0.372
Aroclor 1260	ND< 0.372

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: RDB (for)
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-E1 4-10'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10590

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/09/2010

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 355	Dibenz (a,h) anthracene	ND< 355
Anthracene	ND< 355	Fluoranthene	ND< 355
Benzo (a) anthracene	ND< 355	Fluorene	ND< 355
Benzo (a) pyrene	ND< 355	Indeno (1,2,3-cd) pyrene	ND< 355
Benzo (b) fluoranthene	ND< 355	Naphthalene	ND< 355
Benzo (g,h,i) perylene	ND< 355	Phenanthrene	ND< 355
Benzo (k) fluoranthene	ND< 355	Pyrene	ND< 355
Chrysene	ND< 355	Acenaphthylene	ND< 355
Diethyl phthalate	ND< 355	1,2-Dichlorobenzene	ND< 355
Dimethyl phthalate	ND< 887	1,3-Dichlorobenzene	ND< 355
Butylbenzylphthalate	ND< 355	1,4-Dichlorobenzene	ND< 355
Di-n-butyl phthalate	ND< 355	1,2,4-Trichlorobenzene	ND< 355
Di-n-octylphthalate	ND< 355	Nitrobenzene	ND< 355
Bis (2-ethylhexyl) phthalate	ND< 355	2,4-Dinitrotoluene	ND< 355
2-Chloronaphthalene	ND< 355	2,6-Dinitrotoluene	ND< 355
Hexachlorobenzene	ND< 355	Bis (2-chloroethyl) ether	ND< 355
Hexachloroethane	ND< 355	Bis (2-chloroisopropyl) ether	ND< 355
Hexachlorocyclopentadiene	ND< 355	Bis (2-chloroethoxy) methan	ND< 355
Hexachlorobutadiene	ND< 355	4-Bromophenyl phenyl ether	ND< 355
N-Nitroso-di-n-propylamine	ND< 355	4-Chlorophenyl phenyl ether	ND< 355
N-Nitrosodiphenylamine	ND< 355	Benzidine	ND< 887
N-Nitrosodimethylamine	ND< 355	3,3'-Dichlorobenzidine	ND< 355
Isophorone	ND< 355	4-Chloroaniline	ND< 355
Benzyl alcohol	ND< 887	2-Nitroaniline	ND< 887
Dibenzofuran	ND< 355	3-Nitroaniline	ND< 887
2-Methylnapthalene	ND< 355	4-Nitroaniline	ND< 887
Aniline	ND< 355		

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 355	2-Methylphenol	ND< 355
2-Chlorophenol	ND< 355	3&4-Methylphenol	ND< 355
2,4-Dichlorophenol	ND< 355	2,4-Dimethylphenol	ND< 355
2,6-Dichlorophenol	ND< 355	2-Nitrophenol	ND< 355
2,4,5-Trichlorophenol	ND< 887	4-Nitrophenol	ND< 887
2,4,6-Trichlorophenol	ND< 355	2,4-Dinitrophenol	ND< 887
Pentachlorophenol	ND< 887	4,6-Dinitro-2-methylphenol	ND< 887
4-Chloro-3-methylphenol	ND< 355	Benzoic acid	ND< 887

ELAP Number 10958 Method: EPA 8270C Data File: S52374.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-E2 4-11'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10591

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/09/2010

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 352	Dibenz (a,h) anthracene	ND< 352
Anthracene	ND< 352	Fluoranthene	ND< 352
Benzo (a) anthracene	ND< 352	Fluorene	ND< 352
Benzo (a) pyrene	ND< 352	Indeno (1,2,3-cd) pyrene	ND< 352
Benzo (b) fluoranthene	ND< 352	Naphthalene	ND< 352
Benzo (g,h,i) perylene	ND< 352	Phenanthrene	ND< 352
Benzo (k) fluoranthene	ND< 352	Pyrene	ND< 352
Chrysene	ND< 352	Acenaphthylene	ND< 352
Diethyl phthalate	ND< 352	1,2-Dichlorobenzene	ND< 352
Dimethyl phthalate	ND< 880	1,3-Dichlorobenzene	ND< 352
Butylbenzylphthalate	ND< 352	1,4-Dichlorobenzene	ND< 352
Di-n-butyl phthalate	ND< 352	1,2,4-Trichlorobenzene	ND< 352
Di-n-octylphthalate	ND< 352	Nitrobenzene	ND< 352
Bis (2-ethylhexyl) phthalate	ND< 352	2,4-Dinitrotoluene	ND< 352
2-Chloronaphthalene	ND< 352	2,6-Dinitrotoluene	ND< 352
Hexachlorobenzene	ND< 352	Bis (2-chloroethyl) ether	ND< 352
Hexachloroethane	ND< 352	Bis (2-chloroisopropyl) ether	ND< 352
Hexachlorocyclopentadiene	ND< 352	Bis (2-chloroethoxy) methan	ND< 352
Hexachlorobutadiene	ND< 352	4-Bromophenyl phenyl ether	ND< 352
N-Nitroso-di-n-propylamine	ND< 352	4-Chlorophenyl phenyl ether	ND< 352
N-Nitrosodiphenylamine	ND< 352	Benzidine	ND< 880
N-Nitrosodimethylamine	ND< 352	3,3'-Dichlorobenzidine	ND< 352
Isophorone	ND< 352	4-Chloroaniline	ND< 352
Benzyl alcohol	ND< 880	2-Nitroaniline	ND< 880
Dibenzofuran	ND< 352	3-Nitroaniline	ND< 880
2-Methylnapthalene	ND< 352	4-Nitroaniline	ND< 880
Aniline	ND< 352		

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 352	2-Methylphenol	ND< 352
2-Chlorophenol	ND< 352	3&4-Methylphenol	ND< 352
2,4-Dichlorophenol	ND< 352	2,4-Dimethylphenol	ND< 352
2,6-Dichlorophenol	ND< 352	2-Nitrophenol	ND< 352
2,4,5-Trichlorophenol	ND< 880	4-Nitrophenol	ND< 880
2,4,6-Trichlorophenol	ND< 352	2,4-Dinitrophenol	ND< 880
Pentachlorophenol	ND< 880	4,6-Dinitro-2-methylphenol	ND< 880
4-Chloro-3-methylphenol	ND< 352	Benzoic acid	ND< 880

ELAP Number 10958 Method: EPA 8270C Data File: S52375.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger, Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-C01 3-12'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10592

Date Sampled: 08/05/2010
Date Received: 08/06/2010
Date Analyzed: 08/10/2010

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 7,110	Dibenz (a,h) anthracene	ND< 7,110
Anthracene	ND< 7,110	Fluoranthene	ND< 7,110
Benzo (a) anthracene	ND< 7,110	Fluorene	ND< 7,110
Benzo (a) pyrene	ND< 7,110	Indeno (1,2,3-cd) pyrene	ND< 7,110
Benzo (b) fluoranthene	ND< 7,110	Naphthalene	ND< 7,110
Benzo (g,h,i) perylene	ND< 7,110	Phenanthrene	ND< 7,110
Benzo (k) fluoranthene	ND< 7,110	Pyrene	ND< 7,110
Chrysene	ND< 7,110	Acenaphthylene	ND< 7,110
Diethyl phthalate	ND< 7,110	1,2-Dichlorobenzene	70,100
Dimethyl phthalate	ND< 17,800	1,3-Dichlorobenzene	ND< 7,110
Butylbenzylphthalate	ND< 7,110	1,4-Dichlorobenzene	13,300
Di-n-butyl phthalate	ND< 7,110	1,2,4-Trichlorobenzene	92,700
Di-n-octylphthalate	ND< 7,110	Nitrobenzene	ND< 7,110
Bis (2-ethylhexyl) phthalate	ND< 7,110	2,4-Dinitrotoluene	ND< 7,110
2-Chloronaphthalene	ND< 7,110	2,6-Dinitrotoluene	ND< 7,110
Hexachlorobenzene	ND< 7,110	Bis (2-chloroethyl) ether	ND< 7,110
Hexachloroethane	ND< 7,110	Bis (2-chloroisopropyl) ether	ND< 7,110
Hexachlorocyclopentadiene	ND< 7,110	Bis (2-chloroethoxy) methan	ND< 7,110
Hexachlorobutadiene	ND< 7,110	4-Bromophenyl phenyl ether	ND< 7,110
N-Nitroso-di-n-propylamine	ND< 7,110	4-Chlorophenyl phenyl ether	ND< 7,110
N-Nitrosodiphenylamine	ND< 7,110	Benzidine	ND< 17,800
N-Nitrosodimethylamine	ND< 7,110	3,3'-Dichlorobenzidine	ND< 7,110
Isophorone	ND< 7,110	4-Chloroaniline	ND< 7,110
Benzyl alcohol	ND< 17,800	2-Nitroaniline	ND< 17,800
Dibenzofuran	ND< 7,110	3-Nitroaniline	ND< 17,800
2-Methylnapthalene	ND< 7,110	4-Nitroaniline	ND< 17,800
Aniline	ND< 7,110		

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 7,110	2-Methylphenol	ND< 7,110
2-Chlorophenol	ND< 7,110	3&4-Methylphenol	ND< 7,110
2,4-Dichlorophenol	ND< 7,110	2,4-Dimethylphenol	ND< 7,110
2,6-Dichlorophenol	ND< 7,110	2-Nitrophenol	ND< 7,110
2,4,5-Trichlorophenol	ND< 17,800	4-Nitrophenol	ND< 17,800
2,4,6-Trichlorophenol	ND< 7,110	2,4-Dinitrophenol	ND< 17,800
Pentachlorophenol	ND< 17,800	4,6-Dinitro-2-methylphenol	ND< 17,800
4-Chloro-3-methylphenol	ND< 7,110	Benzoic acid	ND< 17,800

ELAP Number 10958 Method: EPA 8270C Data File: S52387.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: RDG Pol (for)
Bruce Hoogesteger, Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for TCLP Extract

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-E1 4-10'
Field ID Number: N/A
Sample Type: TCLP Extract

Lab Project Number: 10-3208
Lab Sample Number: 10590

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/11/2010

Base / Neutrals	Results in ug / L	Regulatory Limits in ug / L
1,4-Dichlorobenzene	ND< 40.0	7,500
2,4-Dinitrotoluene	ND< 40.0	130
Hexachlorobenzene	ND< 40.0	130
Hexachlorobutadiene	ND< 40.0	500
Hexachloroethane	ND< 40.0	3000
Nitrobenzene	ND< 40.0	2000
Pyridine	ND< 40.0	5000

Acids	Results in ug / L	Regulatory Limits in ug / L
Cresols (as m,p,o-Cresol)	ND< 80.0	200,000
Pentachlorophenol	ND< 100	100,000
2,4,5-Trichlorophenol	ND< 100	400,000
2,4,6-Trichlorophenol	ND< 40.0	2000

ELAP Number 10958 Method: EPA 8270C Data File: S52409.D

Comments: ND denotes Non Detect
ug / L = microgram per Liter

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for TCLP Extract

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-E2 4-11'
Field ID Number: N/A
Sample Type: TCLP Extract

Lab Project Number: 10-3208
Lab Sample Number: 10591

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/11/2010

Base / Neutrals	Results in ug / L	Regulatory Limits in ug / L
1,4-Dichlorobenzene	ND< 40.0	7,500
2,4-Dinitrotoluene	ND< 40.0	130
Hexachlorobenzene	ND< 40.0	130
Hexachlorobutadiene	ND< 40.0	500
Hexachloroethane	ND< 40.0	3000
Nitrobenzene	ND< 40.0	2000
Pyridine	ND< 40.0	5000

Acids	Results in ug / L	Regulatory Limits in ug / L
Cresols (as m,p,o-Cresol)	ND< 80.0	200,000
Pentachlorophenol	ND< 100	100,000
2,4,5-Trichlorophenol	ND< 100	400,000
2,4,6-Trichlorophenol	ND< 40.0	2000

ELAP Number 10958 Method: EPA 8270C Data File: S52410.D

Comments: ND denotes Non Detect
ug / L = microgram per Liter

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for TCLP Extract

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-C01 3-12'
Field ID Number: N/A
Sample Type: TCLP Extract

Lab Project Number: 10-3208
Lab Sample Number: 10592

Date Sampled: 08/05/2010
Date Received: 08/06/2010
Date Analyzed: 08/11/2010

Base / Neutrals	Results in ug / L	Regulatory Limits in ug / L
1,4-Dichlorobenzene	835	7,500
2,4-Dinitrotoluene	ND< 40.0	130
Hexachlorobenzene	ND< 40.0	130
Hexachlorobutadiene	ND< 40.0	500
Hexachloroethane	ND< 40.0	3000
Nitrobenzene	329	2000
Pyridine	ND< 40.0	5000

Acids	Results in ug / L	Regulatory Limits in ug / L
Cresols (as m,p,o-Cresol)	ND< 80.0	200,000
Pentachlorophenol	ND< 100	100,000
2,4,5-Trichlorophenol	ND< 100	400,000
2,4,6-Trichlorophenol	67.8	2000

ELAP Number 10958 Method: EPA 8270C Data File: S52411.D

Comments: ND denotes Non Detect
ug / L = microgram per Liter

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color

Client Job Number: N/A
Field Location: TP-E1 4-10'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10590

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/09/2010

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 160
Bromomethane	ND< 160
Bromoform	ND< 399
Carbon Tetrachloride	ND< 399
Chloroethane	ND< 160
Chloromethane	ND< 160
2-Chloroethyl vinyl Ether	ND< 798
Chloroform	ND< 160
Dibromochloromethane	ND< 160
1,1-Dichloroethane	ND< 160
1,2-Dichloroethane	ND< 160
1,1-Dichloroethene	ND< 160
cis-1,2-Dichloroethene	ND< 160
trans-1,2-Dichloroethene	ND< 160
1,2-Dichloropropane	ND< 160
cis-1,3-Dichloropropene	ND< 160
trans-1,3-Dichloropropene	ND< 160
Methylene chloride	ND< 399
1,1,2,2-Tetrachloroethane	ND< 160
Tetrachloroethene	ND< 160
1,1,1-Trichloroethane	ND< 160
1,1,2-Trichloroethane	ND< 160
Trichloroethene	ND< 160
Trichlorofluoromethane	ND< 160
Vinyl chloride	ND< 160

Aromatics	Results in ug / Kg
Benzene	ND< 160
Chlorobenzene	2,990
Ethylbenzene	ND< 160
Toluene	ND< 160
m,p-Xylene	ND< 160
o-Xylene	ND< 160
Styrene	ND< 399
1,2-Dichlorobenzene	ND< 399
1,3-Dichlorobenzene	ND< 399
1,4-Dichlorobenzene	ND< 160

Ketones	Results in ug / Kg
Acetone	ND< 798
2-Butanone	ND< 798
2-Hexanone	ND< 399
4-Methyl-2-pentanone	ND< 399

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 160
Vinyl acetate	ND< 399

ELAP Number 10958 Method: EPA 8260B Data File: V77358.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-E2 4-11'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10591

Date Sampled: 08/04/2010
Date Received: 08/06/2010
Date Analyzed: 08/10/2010

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 135
Bromomethane	ND< 135
Bromoform	ND< 338
Carbon Tetrachloride	ND< 338
Chloroethane	ND< 135
Chloromethane	ND< 135
2-Chloroethyl vinyl Ether	ND< 676
Chloroform	ND< 135
Dibromochloromethane	ND< 135
1,1-Dichloroethane	ND< 135
1,2-Dichloroethane	ND< 135
1,1-Dichloroethene	ND< 135
cis-1,2-Dichloroethene	ND< 135
trans-1,2-Dichloroethene	ND< 135
1,2-Dichloropropane	ND< 135
cis-1,3-Dichloropropene	ND< 135
trans-1,3-Dichloropropene	ND< 135
Methylene chloride	ND< 338
1,1,2,2-Tetrachloroethane	ND< 135
Tetrachloroethene	ND< 135
1,1,1-Trichloroethane	ND< 135
1,1,2-Trichloroethane	ND< 135
Trichloroethene	ND< 135
Trichlorofluoromethane	ND< 135
Vinyl chloride	ND< 135

Aromatics	Results in ug / Kg
Benzene	ND< 135
Chlorobenzene	5,830
Ethylbenzene	ND< 135
Toluene	ND< 135
m,p-Xylene	ND< 135
o-Xylene	ND< 135
Styrene	ND< 338
1,2-Dichlorobenzene	ND< 338
1,3-Dichlorobenzene	ND< 338
1,4-Dichlorobenzene	ND< 135

Ketones	Results in ug / Kg
Acetone	ND< 676
2-Butanone	ND< 676
2-Hexanone	ND< 338
4-Methyl-2-pentanone	ND< 338

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 135
Vinyl acetate	ND< 338

ELAP Number 10958 Method: EPA 8260B Data File: V77395.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TP-C01 3-12'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3208
Lab Sample Number: 10592

Date Sampled: 08/05/2010
Date Received: 08/06/2010
Date Analyzed: 08/10/2010

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 3,030
Bromomethane	ND< 3,030
Bromoform	ND< 7,580
Carbon Tetrachloride	ND< 7,580
Chloroethane	ND< 3,030
Chloromethane	ND< 3,030
2-Chloroethyl vinyl Ether	ND< 15,200
Chloroform	ND< 3,030
Dibromochloromethane	ND< 3,030
1,1-Dichloroethane	ND< 3,030
1,2-Dichloroethane	ND< 3,030
1,1-Dichloroethene	ND< 3,030
cis-1,2-Dichloroethene	ND< 3,030
trans-1,2-Dichloroethene	ND< 3,030
1,2-Dichloropropane	ND< 3,030
cis-1,3-Dichloropropene	ND< 3,030
trans-1,3-Dichloropropene	ND< 3,030
Methylene chloride	ND< 7,580
1,1,2,2-Tetrachloroethane	ND< 3,030
Tetrachloroethene	ND< 3,030
1,1,1-Trichloroethane	ND< 3,030
1,1,2-Trichloroethane	ND< 3,030
Trichloroethene	ND< 3,030
Trichlorofluoromethane	ND< 3,030
Vinyl chloride	ND< 3,030

Aromatics	Results in ug / Kg
Benzene	ND< 3,030
Chlorobenzene	23,500
Ethylbenzene	ND< 3,030
Toluene	ND< 3,030
m,p-Xylene	ND< 3,030
o-Xylene	ND< 3,030
Styrene	ND< 7,580
1,2-Dichlorobenzene	62,600
1,3-Dichlorobenzene	ND< 7,580
1,4-Dichlorobenzene	12,100

Ketones	Results in ug / Kg
Acetone	ND< 15,200
2-Butanone	ND< 15,200
2-Hexanone	ND< 7,580
4-Methyl-2-pentanone	ND< 7,580

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 3,030
Vinyl acetate	ND< 7,580

ELAP Number 10958 Method: EPA 8260B Data File: V77403.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

42214

REPORT TO:
COMPANY: South Buffalo Development
ADDRESS: 333 ganson street
CITY: Buffalo STATE: New York ZIP: 14203
PHONE: 716-856-3333 FAX: 716 200 9555
ATTN: John Yensen
COMMENTS:

INVOICE TO:
COMPANY: Same
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 10-3208
CLIENT PROJECT #:

TURNAROUND TIME: (WORKING DAYS)
STD ☒ 5 | ☐ 1 ☐ 2 ☐ 3 | OTHER ☐
Quotation #

PROJECT NAME/SITE NAME: Buffalo Color

per J. Hoffmann 8/6

8260 TCL (total) (See remarks) EAH 8/6

ignit. 1030 (See remarks) EAH 8/6

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCLP metals	TCL VOC's	TCLP SVOC's	total SVOC's	PCB's	pH	Corrosivity	Percent Solids	Flash Point	REMARKS	PARADIGM LAB SAMPLE NUMBER
				EAH 8/6													pH = corrosivity EAH 8/6	
																	Per J. Hoffmann 8/6:	
1	8-5-10	10:00 am	X		TP-E1 4-10'	Soil	3	X	X	X	X	X	X	X	X	X	total SVOC's =	10590
2	8-5-10	1:00 pm	X		TP-E2 4-11'	Soil	3	↓	↓	↓	↓	↓	↓	↓	↓	↓	8270 ABN + aniline.	10591
3	8-5-10	12:00 pm	X		TP-C01 3-12'	Soil	3	↓	↓	↓	↓	↓	↓	↓	↓	↓	Results to Modern Landfill so do total VOC's by 8260 and ignitability 1030. EAH 8/6	10592
4																		
5																		
6																		
7																		
8																		
9																		
10																		

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter		NELAC Compliance	
Container Type:		Y ☒	N ☐
Comments:			
Preservation:	N/A	Y ☐	N ☐
Comments:			
Holding Time:		Y ☒	N ☐
Comments:			
Temperature:	14°C iced	Y ☐	N ☒
Comments:			

Sampled By — 8/5/10 1430 Date/Time

Relinquished By — 8/5/10 Date/Time

Received By — 8/5/10 Date/Time

Elizabeth A. Honch 8/6/10 1330
Received @ Lab By — Date/Time

Total Cost:

P.I.F. ☐

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report Cover Page

South Buffalo Development

For Lab Project # 10-3228
Issued August 16, 2010
This report contains a total of 9 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

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The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

pH Analysis Report

Client: South Buffalo Development

Client Job Site:	Buffalo Color	**Lab Project Number:**	10-3228
Client Job Number:	N/A	**Date Sampled:**	08/06/2010
		Time Sampled:	3:00 PM
		Date Received:	08/09/2010
Sample Type:	Soil	**Time Received:**	2:15 PM
Location:	Laboratory	**Date Analyzed:**	08/09/2010
		Time Analyzed:	3:35 PM

Lab Sample Number	Field Number	Field Location	Result (pH)
10650	N/A	TPC2 TCLP Comp 4-12'	8.02

ELAP Number 10958 Method: EPA 9045C

Comments:

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
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179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Ignitability of Solids Analysis Report

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Sample Type: Soil

Lab Project Number: 10-3228
Date Sampled: 08/07/2010
Date Received: 08/10/2010
Date Analyzed: 08/13/2010

Lab Sample Number	Field Number	Field Location	Result (mm/sec)
10650	N/A	TPC2 TCLP Comp. 4-12'	No Burn

ELAP Number 10958 Method: SW846 1030

Comments: A Burn Rate of more than 0.17 mm/sec for metallic samples, or 2.2 mm/sec for non-metallic samples, are considered to have a positive results for ignitability.

Signature:
Bruce Hoogesteger, Technical Director

Chain of Custody provides additional sample information

File ID: 103228ig

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Percent Solids Analysis Report

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Sample Type: Soil

Lab Project Number: 10-3228
Date Sampled: 08/06/2010
Date Received: 08/09/2010
Date Analyzed: 08/09/2010

Lab Sample Number	Field Number	Field Location	Result (% Solid)
10650	N/A	TPC2 TCLP Comp 4-12'	78.8

ELAP Number 10958

Method: SW17 2540B

Comments:

Signature:

Bruce Hoogesteger, Technical Director

Chain of Custody provides additional sample information

File ID: 103228PS.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office: (585) 647-2530 Fax: (585) 647-3311

LAB REPORT FOR TCLP RCRA METALS ANALYSIS

Client: South Buffalo Development
Client Job Site: Buffalo Color
Client Job No.: N/A
Field Location: TPC2 TCLP Comp 4-12'
Field ID No.: N/A

Lab Project No.: 10-3228
Lab Sample No.: 10650
Sample Type: TCLP Extract
Date Sampled: 08/06/2010
Date Received: 08/09/2010

Parameter	Date Analyzed	Analytical Method	Result (mg/L)	Regulatory Limit (mg/L)
Arsenic	08/11/2010	SW846 6010	<0.100	5.0
Barium	08/11/2010	SW846 6010	2.01	100
Cadmium	08/11/2010	SW846 6010	<0.025	1.0
Chromium	08/11/2010	SW846 6010	<0.050	5.0
Lead	08/11/2010	SW846 6010	<0.100	5.0
Mercury	08/11/2010	SW846 7470	<0.0020	0.2
Selenium	08/11/2010	SW846 6010	<0.100	1.0
Silver	08/11/2010	SW846 6010	<0.050	5.0

ELAP ID No.:10958

Comments:

Approved By: _____
Bruce Hoogesteger, Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site:	Buffalo Color	**Lab Project Number:**	10-3228
		Lab Sample Number:	10650
Client Job Number:	N/A		
Field Location:	TPC2 TCLP Comp 4-12'	**Date Sampled:**	08/06/2010
Field ID Number:	N/A	**Date Received:**	08/09/2010
Sample Type:	Soil	**Date Analyzed:**	08/12/2010

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.380
Aroclor 1221	ND< 0.380
Aroclor 1232	ND< 0.380
Aroclor 1242	ND< 0.380
Aroclor 1248	ND< 0.380
Aroclor 1254	ND< 0.380
Aroclor 1260	ND< 0.380

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for TCLP Extract

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TPC2 TCLP Comp 4-12'
Field ID Number: N/A
Sample Type: TCLP Extract

Lab Project Number: 10-3228
Lab Sample Number: 10650

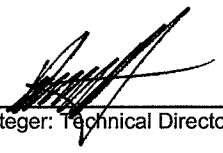
Date Sampled: 08/06/2010
Date Received: 08/09/2010
Date Analyzed: 08/11/2010

Base / Neutrals	Results in ug / L	Regulatory Limits in ug / L
1,4-Dichlorobenzene	ND< 40.0	7,500
2,4-Dinitrotoluene	ND< 40.0	130
Hexachlorobenzene	ND< 40.0	130
Hexachlorobutadiene	ND< 40.0	500
Hexachloroethane	ND< 40.0	3000
Nitrobenzene	ND< 40.0	2000
Pyridine	ND< 40.0	5000

Acids	Results in ug / L	Regulatory Limits in ug / L
Cresols (as m,p,o-Cresol)	ND< 80.0	200,000
Pentachlorophenol	ND< 100	100,000
2,4,5-Trichlorophenol	ND< 100	400,000
2,4,6-Trichlorophenol	ND< 40.0	2000

ELAP Number 10958 Method: EPA 8270C Data File: S52412.D

Comments: ND denotes Non Detect
ug / L = microgram per Liter

Signature: 
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: South Buffalo Development

Client Job Site: Buffalo Color
Client Job Number: N/A
Field Location: TPC2 TCLP Comp 4-12'
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 10-3228
Lab Sample Number: 10650
Date Sampled: 08/06/2010
Date Received: 08/09/2010
Date Analyzed: 08/10/2010

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 12.8
Bromomethane	ND< 12.8
Bromoform	ND< 32.0
Carbon Tetrachloride	ND< 32.0
Chloroethane	ND< 12.8
Chloromethane	ND< 12.8
2-Chloroethyl vinyl Ether	ND< 64.1
Chloroform	ND< 12.8
Dibromochloromethane	ND< 12.8
1,1-Dichloroethane	ND< 12.8
1,2-Dichloroethane	ND< 12.8
1,1-Dichloroethene	ND< 12.8
cis-1,2-Dichloroethene	ND< 12.8
trans-1,2-Dichloroethene	ND< 12.8
1,2-Dichloropropane	ND< 12.8
cis-1,3-Dichloropropene	ND< 12.8
trans-1,3-Dichloropropene	ND< 12.8
Methylene chloride	ND< 32.0
1,1,2,2-Tetrachloroethane	ND< 12.8
Tetrachloroethene	ND< 12.8
1,1,1-Trichloroethane	ND< 12.8
1,1,2-Trichloroethane	ND< 12.8
Trichloroethene	ND< 12.8
Trichlorofluoromethane	ND< 12.8
Vinyl chloride	ND< 12.8

Aromatics	Results in ug / Kg
Benzene	ND< 12.8
Chlorobenzene	40.1
Ethylbenzene	ND< 12.8
Toluene	ND< 12.8
m,p-Xylene	ND< 12.8
o-Xylene	ND< 12.8
Styrene	ND< 32.0
1,2-Dichlorobenzene	ND< 32.0
1,3-Dichlorobenzene	177
1,4-Dichlorobenzene	21.7

Ketones	Results in ug / Kg
Acetone	123
2-Butanone	ND< 64.1
2-Hexanone	ND< 32.0
4-Methyl-2-pentanone	ND< 32.0

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 12.8
Vinyl acetate	ND< 32.0

ELAP Number 10958 Method: EPA 8260B Data File: V77396.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

4/865

REPORT TO:

COMPANY: So. Buffalo Development
ADDRESS: 333 Ganson street
CITY: Buffalo STATE: New York ZIP: 14204
PHONE: 716-856-3333 FAX: 716-200-9555
ATTN: John Yensen
COMMENTS:

INVOICE TO:

COMPANY: Same
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 10.3228
CLIENT PROJECT #:

TURNAROUND TIME: (WORKING DAYS)
STD OTHER
1 2 3 5
Quotation #

PROJECT NAME/SITE NAME: Buffalo Color

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCLP metals → 8260 TCL (see remarks EAH 8/9)	TCLP VOC's	TCLP SVOC's	PCB's	PH	Corrosivity	Percent Solids	Flash Points → ignit 1030 (see remarks EAH 8/9)		REMARKS	PARADIGM LAB SAMPLE NUMBER
	per John Hoffmann 8/6/10	3:00pm	8/10 EAH 8/10															
1	~~8-9-10~~ ~~8/6/10~~		X		TP C 2 TCLP comp 4-12'		3	X	X	X	X	X	X	X	X		Per J. Hoffmann 8/9, Results to Modern Landfill so per client history for Modern, do total VOC's by 8260 and ~~ignitability~~ 1030. pH = corrosivity EAH 8/9	1 0 6 5 0
2	~~8-9-10~~				~~TP 02 TCLP comp 4-12'~~													
3	~~8-9-10~~				~~TP 2 TCLP comp 4-12'~~													
4																		
5																		
6																		
7																		
8																		
9																		
10																		

****LAB USE ONLY BELOW THIS LINE****

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y ☒	N ☐
Comments:		
Preservation: N/A	Y ☐	N ☐
Comments:		
Holding Time:	Y ☒	N ☐
Comments:		
Temperature: 4°Iced	Y ☒	N ☐
Comments:		

Sampled By	8/6/10 3:00 pm	Date/Time
Relinquished By	8/9/10 9:00 am	Date/Time
Received By	8/9/10 9:10AM	Date/Time
Elizabeth A. Honch	8/9/10 1415	Date/Time
Received @ Lab By		

Total Cost:

P.I.F.

APPENDIX K

EXCAVATION GEOTECHNICAL EVALUATION

MACTEC

MEMORANDUM

DATE: October 22, 2010

TO: John Scrabis

FROM: Travis Carpenter, P.E. (ME)

REVIEWED: Lyle Tracy, P.E. (ME)

COPY: Stu Pearson, P.E.

SUBJECT: Open-Cut Excavation Stability (Deep Excavations)
Remedial Excavations – Areas C & E
Former Buffalo Color Corporation Site
Buffalo, New York

PROJ. NO.: 3410-09-0701

1.0 INTRODUCTION

This memorandum summarizes a slope stability evaluation performed for the proposed open-cut remedial excavations in Areas C and E at the former Buffalo Color Corporation Site located in Buffalo, New York. The purpose of this evaluation is to estimate the factor of safety (FOS) of the excavations during construction relative to global (i.e., deep-seated) slope stability, based on a review of available geotechnical data, the proposed excavation depths, and the planned excavation equipment. The results of the majority of this evaluation were previously communicated to the remediation contractor, Ontario Specialty Contractors, Inc. (OSC), via phone on September 21, 2010. The results pertaining to the stability of the north side of excavation C2 in Area C (along Elk Street) have not been previously communicated to OSC.

The following sections briefly summarize project information and present the methodology, assumptions, results, and conclusions of this stability evaluation.

2.0 PROJECT INFORMATION

Relevant project information is summarized in the following subsections.

2.1 Subsurface Conditions

Geotechnical soil borings (GB-C01 through GB-C04 and GB-E01 through GB-E04) and test pits (TP-C1, TP-C2, TP-E1, and TP-E2) completed at the locations shown on Figures C-1 and E-1 in Areas C and E indicate the following primary soil strata (in order, extending down from the existing ground surface):

- Fill;
- Stiff clay;

- Medium stiff clay; and
- Glacial till.

Typical strata depths below the ground surface (bgs) and thicknesses are presented in the tables below.

Area C – Typical Subsurface Profile

Stratum	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Thickness (ft)
Fill	0.0	5.0	5.0
Stiff Clay	5.0	12.0	7.0
Medium Stiff Clay	12.0	38.0	26.0
Glacial Till	38.0	41.0	3.0
Bedrock	41.0	-	-

Area E – Typical Subsurface Profile

Stratum	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Thickness (ft)
Fill	0.0	3.5	3.5
Stiff Clay	3.5	11.0	7.5
Medium Stiff Clay	11.0	41.0	30.0
Glacial Till	41.0	43.5	2.5
Bedrock	43.5	-	-

Detailed descriptions of the conditions observed at each geotechnical borehole location are provided on the Borehole Records in Attachment 1. Test Pit Records are included in Attachment 2. Table 1 summarizes shear strength testing performed on the medium stiff clay. Table 2 summarizes the results of geotechnical laboratory testing.

Historic investigation reports indicate the presence of shallow groundwater in Areas C and E at depths on the order of 2 to 4 feet bgs (Golder, 1997). However, the recent test pit operations suggest that groundwater may be several feet deeper in these areas (at the time of the test pit investigation).

2.2 Proposed Remedial Excavations

In Area C, two remedial excavations (Areas C1 and C2) are planned, as shown on Figure C-1. The Area C1 excavation is located adjacent to Building 208 and encompasses approximately 2,500 square feet. The Area C2 excavation is located proximate to an existing bridge abutment and retaining wall. Area C2 encompasses nearly 18,500 square feet. Remedial excavations in Areas C1 and C2 will extend through the existing fill materials and stiff clay down to a depth of about 13 feet bgs. MACTEC has characterized the fill materials and stiff clay as OSHA Type C and Type B soils, respectively, based on available geotechnical data.

In Area E, two “deep” remedial excavations (Areas E-1 and E-2) are planned, as shown on Figure E-1. The Area E1 and E2 excavations encompass approximately 15,200 and 1,200 square feet, respectively. These excavations will extend through the existing fill materials and stiff clay down

to a depth of about 11 feet bgs. MACTEC has characterized the fill materials and stiff clay as OSHA Type C and Type B soils, respectively, based on available geotechnical data.

3.0 SLOPE STABILITY EVALUATION

The slope stability evaluation was performed utilizing SLOPE/W (GeoStudio 2004, Version 6.22), an industry-standard slope stability software program developed and distributed by Geo-Slope International, Ltd. Analyses were performed using the Spencer method, a limit equilibrium analysis method that evaluates stability with respect to both moment equilibrium and horizontal force equilibrium.

3.1 Area C

A "base" subsurface profile was developed for Area C, as described herein. This base profile is considered to be representative of typical subsurface conditions at Areas C1 and C2, based on the available data. The base SLOPE/W model includes the following inputs/assumptions:

- Ground Surface Topography
  - The existing ground surface is relatively flat and level.
- Soil Design Parameters (Soil Strength and Unit Weight)
  - Soil strength (Ø = internal friction angle and c = cohesion) and total unit weight (γ_t) were assigned based on available geotechnical data and empirical correlations with published literature values.
  - Fill materials.
    - Fill (0.0 – 5.0 ft bgs) Ø = 30°, c = 0 psf, and γ_t = 125 pcf.
  - Stiff clay soils were subdivided into three layers to account for observed variances in shear strength, based on SPT N-values.
    - Stiff 1 (5.0 – 7.5 ft bgs) Ø = 0°, c = 1,000 psf, and γ_t = 120 pcf.
    - Stiff 2 (7.5 – 10.0 ft bgs) Ø = 0°, c = 1,600 psf, and γ_t = 125 pcf.
    - Stiff 3 (10.0 – 12.0 ft bgs) Ø = 0°, c = 1,150 psf, and γ_t = 120 pcf.

    Typically, cohesion values will decrease with increasing depth bgs within a given stratum of stiff clay. In this case, the N-values (and corresponding shear strength) at the top of the stiff clay (i.e., the Stiff 1 layer) were lower, which suggests disturbance and/or softening due to past fill placement and/or "perched" groundwater at the fill/stiff clay interface.
  - Medium stiff clay soils were also subdivided into three layers to account for observations of decreasing shear strength with increasing depth bgs, based on field vane shear testing and geotechnical laboratory testing.
    - M. Stiff 1 (12.0 – 20.5 ft bgs) Ø = 0°, c = 750 psf, and γ_t = 115 pcf.
    - M. Stiff 2 (20.5 – 29.5 ft bgs) Ø = 0°, c = 650 psf, and γ_t = 115 pcf.
    - M. Stiff 3 (29.5 – 38.0 ft bgs) Ø = 0°, c = 550 psf, and γ_t = 115 pcf.
  - Glacial till.
    - Glacial Till (38.0 – 41.0 ft bgs) Ø = 34°, c = 500 psf, and γ_t = 125 pcf.

- Groundwater Conditions
    - Groundwater was assumed at a depth of 2 feet bgs at/near the crest of the excavation.
    - It was assumed that the excavation would be maintained in a dry/dewatered state (by the Contractor).
- Excavation Side Slopes
    - MACTEC characterized the fill materials as OSHA Type C soils. Accordingly, maximum side slopes of 1.5H:1.0V (horizontal to vertical) were applied to the fill materials.
    - MACTEC characterized the stiff clay as OSHA Type B soil. Accordingly, maximum side slopes of 1.0H:1.0V were applied to the stiff clay.

Following the development of the base Slope/W model, as described in the previous paragraphs, two distinct surcharge loading scenarios were evaluated. The first scenario considered excavation equipment located near the crest of the excavation, as follows:

- Scenario 1 – Excavation Equipment (Location and Contact Pressure)
    - A John Deere 450D-LC hydraulic excavator was assumed, based on prior discussions with OSC. See Attachment 3 for equipment information.
    - Excavator tracks are assumed to be offset a minimum of 3 feet from the crest of the excavation.
    - A range of excavator contact pressures (i.e., surcharge pressure applied at the crest of the excavation) were evaluated. See Attachment 3 for estimates of contact pressure, based on equipment weight, track width, and track spacing.
        - Contact pressure of 600 psf [106,000 lbs/(12 feet wide x 15 feet long)] applied for the full contact width (12 feet) of the excavator.
        - Contact pressure of 1,200 psf [106,000 lbs/(2 tracks x 3 feet wide x 15 feet long)] applied to track contact area.
        - Contact pressure of 2,400 psf [106,000 lbs/(1 track x 3 feet wide x 15 feet long)] applied only to the near crest track, assuming an unbalanced load during maximum reach.

The second scenario considered the presence of the Elk Street approach ramp located along the northern end of Area C2, as follows:

- Scenario 2 – Elk Street Ramp (Location and Surcharge Load)
    - A 15-foot tall and 65-foot wide retaining wall and approach ramp/embankment located approximately 11.5 feet north of the northwestern corner of the Area C2 excavation. Foundation details of the retaining wall were not known. See Attachment 4 for a sketch with applicable dimensions.
    - A 1,875 psf (15 feet x 125 pcf) surcharge was applied to represent the 65-foot wide ramp loading. Multiple Slope/W cases were then conducted to evaluate the following variables:

- Case 1: Assessment of the location (i.e., horizontal offset) of the excavation relative to the base of the wall/ramp. This case evaluated the necessary offset distance and/or the practicality of a mass excavation along the wall/ramp (i.e., planned excavation is approximately 120 feet wide in the east-west direction).
- Case 2: Assessment of the width, in an east-west direction, of the excavation relative to the width of the Elk Street wall/ramp in a north-south direction. Limiting the width of the open excavation along (parallel to) the wall/ramp is anticipated to limit the extent of the failure zone behind the wall/ramp. These modeling runs target an acceptable excavation width.
- Case 3: Assessment of a phased excavation and backfilling approach consisting of several limited width excavations. These modeling runs estimate the FOS following the partial backfilling of a limited width excavation, prior to beginning the excavation of the next segment.

SLOPE/W output files (showing the geometry, resulting FOS, and the critical slip surface) for Scenario 1 (excavator loading) are provided in Attachment 5. The estimated static FOS for typical Area C subsurface conditions and the assumed excavation equipment, as described herein, is on the order of 1.7 to 2.0, based on the available data. The evaluation indicates an acceptable FOS relative to global stability in areas where surcharge loading is limited to the excavation equipment.

SLOPE/W output files (showing the geometry, resulting FOS, and the critical slip surface) for Scenario 2 are provided in Attachment 6. The results of the evaluation indicate that performance of the excavation using one mass excavation would result in unstable conditions (FOS less than 1), and failure of the embankment approach ramp and retaining wall into the excavation would likely occur. The results indicate that the work should be completed in distinct segments to limit the surcharge load that is imposed on the excavation. Based on the results, the following minimum guidelines are offered for OSC's consideration and implementation:

- Excavation work within 75 feet (north-south direction) of the bridge abutment and/or retaining wall should be completed in distinct segments (see Attachment 7).
    - The segment(s) immediately adjacent to the bridge abutment should be limited to no more than 10 feet in base width (east-west direction) given the possible high and concentrated contact pressure induced by the abutment.
    - The remaining segments in areas to the west of the existing north-south process sewer line should be limited to no more than 20 feet in width at the base.
    - Segments in areas to the east of the process sewer line should be limited to no more than 30 feet in width at the base.
    - Each distinct excavation segment should be backfilled to a depth of not more than 6 feet below existing grade prior to excavation of the next/adjacent segment.
    - These excavation width guidelines would require that the excavation to be conducted in at least six distinct limited-width segments.
- The excavation should not encroach north (i.e., closer to the retaining wall) than the limits established as follows (see Attachment 7):

- The crest of the excavation (i.e., existing grade) should be located at least 5 feet from the southern face of the retaining wall.
- Excavation side slopes should be no steeper than those required by OSHA.
  - Existing fill materials are characterized as OSHA Type C soil, based on available data. Accordingly, excavation side slopes in fill materials (i.e., from approximately 0 to 5 feet bgs) should be no steeper than 1.5H:1.0V.
  - Stiff clay soils are characterized as OSHA Type B soil, based on available data. As such, excavation side slopes in stiff clay should be no steeper than 1.0H:1.0V.
- Localized conditions and/or site observations (e.g., loose fill, groundwater seepage, sloughing, etc.) may require side slopes to be flattened further.
- The above limits would require that a slight adjustment to the planned limits of the 13-foot deep excavation occur (adjustment to the south), as depicted in Attachment 7.

- No equipment or soil stockpiles shall be located between the excavation and the retaining wall.
- As state above, each segment must be backfilled to within 6 feet of existing grade (i.e., at least 7 feet of fill to be placed and compacted) prior to beginning excavation of the next segment. Backfill materials, placement, and compaction shall be in accordance with project specifications.

3.2 Area E

A single cross-section was developed and modeled for Area E, as described herein. This cross-section is considered to be representative of typical conditions at Areas E1 and E2, based on the available data.

The SLOPE/W model was developed based on the following inputs/assumptions:

- Ground Surface Topography
  - The existing ground surface is relatively flat and level.
- Soil Design Parameters (Soil Strength and Unit Weight)
  - Soil strength and unit weights were assigned based on available geotechnical data and empirical correlations with published literature values.
  - Fill materials.
    - Fill (0.0 – 3.5 ft bgs) Ø = 30°, c = 0 psf, and γ_t = 125 pcf.
  - Stiff clay soils were subdivided into three layers to account for observed variances in shear strength, based on SPT N-values.
    - Stiff 1 (3.5 – 7.0 ft bgs) Ø = 0°, c = 1,250 psf, and γ_t = 120 pcf.
    - Stiff 2 (7.0 – 9.0 ft bgs) Ø = 0°, c = 1,600 psf, and γ_t = 125 pcf.
    - Stiff 3 (9.0 – 11.0 ft bgs) Ø = 0°, c = 1,000 psf, and γ_t = 120 pcf.

Again, cohesion values typically decrease with increasing depth bgs within a given stratum of stiff clay. In this case, the N-values (and corresponding shear strength) at the top of the stiff clay (i.e., the Stiff 1 layer) were lower, which suggests disturbance and/or softening due to past fill placement and/or "perched" groundwater at the fill/stiff clay interface.

- Medium stiff clay soils were also subdivided into three layers to account for observations of decreasing shear strength with increasing depth bgs, based on field vane shear testing and geotechnical laboratory testing.
  - M. Stiff 1 (11.0 – 21.0 ft bgs) Ø = 0°, c = 650 psf, and γ_t = 115 pcf.
  - M. Stiff 2 (21.0 – 31.0 ft bgs) Ø = 0°, c = 550 psf, and γ_t = 115 pcf.
  - M. Stiff 3 (31.0 – 41.0 ft bgs) Ø = 0°, c = 500 psf, and γ_t = 115 pcf.
- Glacial till.
  - Glacial Till (41.0 – 43.5 ft bgs) Ø = 34°, c = 500 psf, and γ_t = 125 pcf.

- Groundwater Conditions
  - The same groundwater conditions described for Area C (see Paragraph 3.1) were applied in Area E.
- Excavation Side Slopes
  - MACTEC characterized the fill materials as OSHA Type C soils. Accordingly, maximum side slopes of 1.5H:1.0V were applied to the fill materials.
  - MACTEC characterized the stiff clay as OSHA Type B soil. Accordingly, maximum side slopes of 1.0H:1.0V were applied to the stiff clay.
- Excavation Equipment (Location and Contact Pressure)
  - The same excavation equipment and contract pressures described for Area C (see Paragraph 3.1) were applied in Area E.

SLOPE/W output files (showing the geometry, resulting FOS, and the critical slip surface) are provided in Attachment 8. The estimated static FOS for the Area E subsurface conditions and assumed excavation equipment, as described herein, is on the order of 1.9 to 2.0, based on the available data. The evaluation indicates an acceptable FOS relative to global stability.

4.0 DISCUSSION AND RECOMMENDATIONS

The results of this stability evaluation are summarized as follows:

- The existing fill materials in Areas C and E are characterized as OSHA Type C soil, based on available data. In accordance with OSHA, excavation side slopes in fill materials should be no steeper than 1.5H:1.0V. Localized conditions (e.g., loose fills, groundwater seepage, etc.) may require side slopes to be flattened further.
- The stiff clay soils in Areas C and E are characterized as OSHA Type B soil, based on available data. In accordance with OSHA, excavation side slopes in stiff clay should be no steeper than 1.0H:1.0V. Localized conditions (e.g., loose fills, groundwater seepage, etc.) may require side slopes to be flattened further.

- Stability of the excavations is the responsibility of the Contractor. The Contractor shall conduct excavations in accordance with all local, state, and federal regulations.
- The FOS estimates, presented herein, are based on typical/average subsurface conditions compiled from widely-spaced geotechnical boreholes. However, subsurface conditions should be expected to vary, especially in localized areas proximate to existing utilities or other structures.
- The estimated factors of safety relative to global stability indicate that open-cut excavation methods are feasible for the proposed Area C and E remedial excavations. However, special considerations are applicable to the southern end of Area C1 and the northern end of Area C2, as summarized below.
    - The southern end of the Area C1 excavation is located adjacent to Building 208. The building has a below-grade basement. The foundation type and depth (shallow foundations or deep piles) is not known. The Contractor should assume shallow foundations and shall not undermine the existing footings. This should be accomplished by offsetting 2 to 3 feet from the exposed footing and accommodating a 1.0H:1.0V load distribution below the foundation. The excavation should not encroach upon the load distribution between the bottom of the foundation and bottom of the excavation..
    - The northern end of the Area C2 excavation is located adjacent to the Elk Street retaining wall/approach ramp, as described herein. MACTEC recommends that excavations conducted within 75 feet of the wall/ramp be conducted in segments.
        - Segments located immediately adjacent to (i.e., south of) the Elk Street bridge abutment should be limited to no more than 10 feet in base width (east-west direction).
        - The remaining segments in areas to the west of the existing north-south process sewer line should be limited to no more than 20 feet in width.
        - Segments in areas to the east of the process sewer line should be limited to no more than 30 feet in width.
        - Each segment must be backfilled to within 6 feet of existing grade prior to beginning excavation of the next segment.
        - Refer to Paragraph 3.1 for additional details.

5.0 REFERENCES

1. Golder Associates Inc. (Golder), 1997. “Final Report on RCRA Facility Investigation, Buffalo Color Corporation, Buffalo, New York”, November 1997.

FIGURES

DRAWN BY: NEL 4-26-2010 APPROVED BY: ESW 5-17-2010

LEGEND

- PS-14 Existing Monitoring Well
- PZ-109 Monitoring Well (PZ)
- MW-C03 Well Installed as Part of PDI
- DDC-05 Depth Discrete Boring
- GB-C02 Location of Geotechnical Borings
- Proposed Excavation Limits
- Groundwater Plume Contours 1 and 10 mg/l (Nov 2009)
- TP-C1 Test Pit Locations

Area-C

Area C1 = 2,562 sf

Area C2 = 18,392 sf

C1

C2

PS-05 PS-06 PS-04

RFI-21D RFI-20 RFI-30 RFI-PZ-26 RFI-31 RFI-18 RFI-19D RFI-PZ-25 RFI-29

MW-C01 MW-C02 MW-C03

TP-C1 TP-C2

GB-C01 GB-C02 GB-C03 GB-C04

PDI-C01 PDI-C02 PDI-C03 PDI-C04 PDI-C05 PDI-C06 PDI-C07 PDI-C08 PDI-C09 PDI-C10 PDI-C11 PDI-C12 PDI-C13 PDI-C14 PDI-C15 PDI-C16 PDI-C17 PDI-C18 PDI-C19 PDI-C20 PDI-C21 PDI-C22 PDI-C23 PDI-C24 PDI-C25 PDI-C26 PDI-C27 PDI-C28 PDI-C29 PDI-C30

DDC-C01 DDC-C02 DDC-C03 DDC-C04 DDC-C05 DDC-C06 DDC-C07

1 mg/l 10 mg/l

VT3 234 203 207 204 208 205 220 223 222 221 123 314

60 0 60
SCALE: 1"=60'

SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	AREA C PROPOSED EXCAVATION PLAN FIGURE: C-1

C-1

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area C Design Document Figures\Area C Deep Excavation Areas.dwg Wed, 18 Aug 2010 - 4:26pm esweiler

DRAWN BY: NEL 4-2-2010 APPROVED BY: –

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Area E Desgn Document Figures\Area E Deep Excavation Limits.dwg Wed, 18 Aug 2010 - 4:29pm esweiler

Area E1 Shallow = 25,110 sf

Area E1 Deep = 15,195 sf

Area E3 = 9,065 sf

Area E2 = 1,189 sf

Invert Depth - 6'11"

Invert Depth - 4'3"

Invert Depth - 8'2"

1 mg/l

10 mg/l

DDE-E01 10 mg/l

GB-E01 10 mg/l

MW-E01

MW-E02

MW-E03

IW-E01

E1

E2

E3

TP-E1

TP-E2

PDI-E01 PDI-E02 PDI-E03 PDI-E04 PDI-E05 PDI-E06 PDI-E07 PDI-E08 PDI-E09 PDI-E10 PDI-E11 PDI-E12 PDI-E13 PDI-E14 PDI-E15 PDI-E16 PDI-E17 PDI-E18 PDI-E19 PDI-E20 PDI-E21 PDI-E22 PDI-E23 PDI-E24

CS-01 CS-02 CS-03 CS-04 CS-05 CS-06 CS-07 CS-08 CS-09 CS-10 CS-11 CS-12 CS-13 CS-14 CS-15 CS-16 CS-17 CS-18 CS-19 CS-20 CS-21 CS-22 CS-23 CS-24 CS-25 CS-26 CS-27 CS-28 CS-29 CS-30 CS-31 CS-32 CS-33 CS-34 CS-35 CS-36 CS-37 CS-38 CS-39 CS-40 CS-41 CS-42 CS-43 CS-44 CS-45 CS-46 CS-47 CS-48 CS-49 CS-50 CS-51

DDE-E01 DDE-E02 DDE-E03 DDE-E04 DDE-E05 DDE-E06 DDE-E07 DDE-E08

GB-E01 GB-E02 GB-E03 GB-E04

RFI-PZ-24 RFI-36 RFI-37 RFI-PZ-23 PZ-119 PS-11 PS-12

310 310A 316 315 319 317 361 300 320 324

50 0 50

SCALE: 1"=50'

LEGEND:

- MONITORING WELL
- MONITORING WELL (PZ)
- PDI-E07 PDI Boring Locations that are Below Excavation Criteria
- PDI-E10 PDI Boring Locations that Exceed Excavation Criteria
- MW-E01 PDI Additional Well Locations
- GB-C02 Geotechnical Boring Locations
- Storm Sewer
- Process Sewer
- CS-15 In-Situ Confirmatory Sample Locations Below Excavation Criteria
- CS-16 In-Situ Confirmatory Sample Locations that Exceed Excavation Criteria
- DDE-01 Depth Discrete Boring Locations
- TP-E1 Test Pit Locations
- Shallow Excavation Limits
- Deep Excavation Limits

SOUTH BUFFALO DEVELOPMENT, LLC
BUFFALO COLOR AREAS ABCE
PROJECT NO.: 3410090701

MACTEC
Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

AREA E PROPOSED EXCAVATION PLAN

FIGURE: E-1

E-1

TABLES

Table 1
Summary of Undrained Shear Strength Testing Data

Site Area	Boring No.	Test No.	Test Depth (ft bgs)	Method	Vane		Applied Torque		Undrained Shear Strength[1]	
					Size	Constant	Peak (ft-lbs)	Remold (ft-lbs)	Peak (psf)	Remold (psf)
Area C	GB-C01	VS-05	13.0	Manual/Torque Wrench	Large	0.96	75.0	25.0	867	289
		ST-06	16.3	Lab Vane	-	-	-	-	660	-
		ST-06	16.3	Lab UU Test	-	-	-	-	640	-
		ST-06	17.0	Torvane	-	-	-	-	550	-
		VS-08	19.0	Manual/Torque Wrench	Large	0.96	70.0	25.0	810	289
		VS-11	24.0	Manual/Torque Wrench	Large	0.96	60.0	15.0	694	173
		VS-14	33.0	Manual/Torque Wrench	Large	0.96	50.0	15.0	578	173
	GB-C02	VS-07	18.0	Manual/Torque Wrench	Large	0.96	55.0	30.0	636	347
		ST-09	22.0	Torvane	-	-	-	-	540	-
		VS-10	23.0	Manual/Torque Wrench	Large	0.96	50.0	20.0	578	231
		VS-13	33.0	Manual/Torque Wrench	Large	0.96	45.0	15.0	520	173
	GB-C03	VS-07	16.0	Manual/Torque Wrench	Large	0.96	75.0	25.0	867	289
		VS-11	24.0	Manual/Torque Wrench	Large	0.96	60.0	15.0	694	173
		ST-13	31.3	Lab Vane	-	-	-	-	580	-
		ST-13	31.3	Lab UU Test	-	-	-	-	610	-
		ST-13	32.0	Torvane	-	-	-	-	430	-
		VS-15	34.0	Manual/Torque Wrench	Large	0.96	60.0	15.0	694	173
	GB-C04	ST-05	13.5	Lab Vane	-	-	-	-	660	-
		ST-05	13.5	Lab UU Test	-	-	-	-	720	-
		ST-05	14.0	Torvane	-	-	-	-	640	-
		VS-07	16.0	Manual/Torque Wrench	Large	0.96	80.0	25.0	925	289
		VS-10	23.0	Manual/Torque Wrench	Large	0.96	65.0	20.0	752	231
		VS-15	34.0	Manual/Torque Wrench	Large	0.96	55.0	15.0	636	173
Area E	GB-E01	ST-09	26.3	Lab Vane	-	-	-	-	500	-
		ST-09	26.3	Lab UU Test	-	-	-	-	600	-
		ST-09	27.0	Torvane	-	-	-	-	540	-
		ST-09	27.0	Pocket Penetrometer	-	-	-	-	563	-
	GB-E02	ST-06	16.3	Lab Vane	-	-	-	-	600	-
		ST-06	16.3	Lab UU Test	-	-	-	-	700	-
		ST-06	17.0	Torvane	-	-	-	-	650	-
	GB-E03	ST-04	12.0	Torvane	-	-	-	-	580	-
		VS-12	33.0	Manual/Torque Wrench	Large	0.96	65.0	15.0	752	173
	GB-E04	ST-04	11.5	Lab Vane	-	-	-	-	600	-
		ST-04	11.5	Lab UU Test	-	-	-	-	700	-

Notes:

1. Bjerrum correction factor was not applied. The est. correction factor (0.98) is negligible, based on an average clay plasticity index (PI) of about 22.

Prepared/Date: TCC 07-16-10
Checked/Date:

Table 2
Summary of Geotechnical Laboratory Testing Data

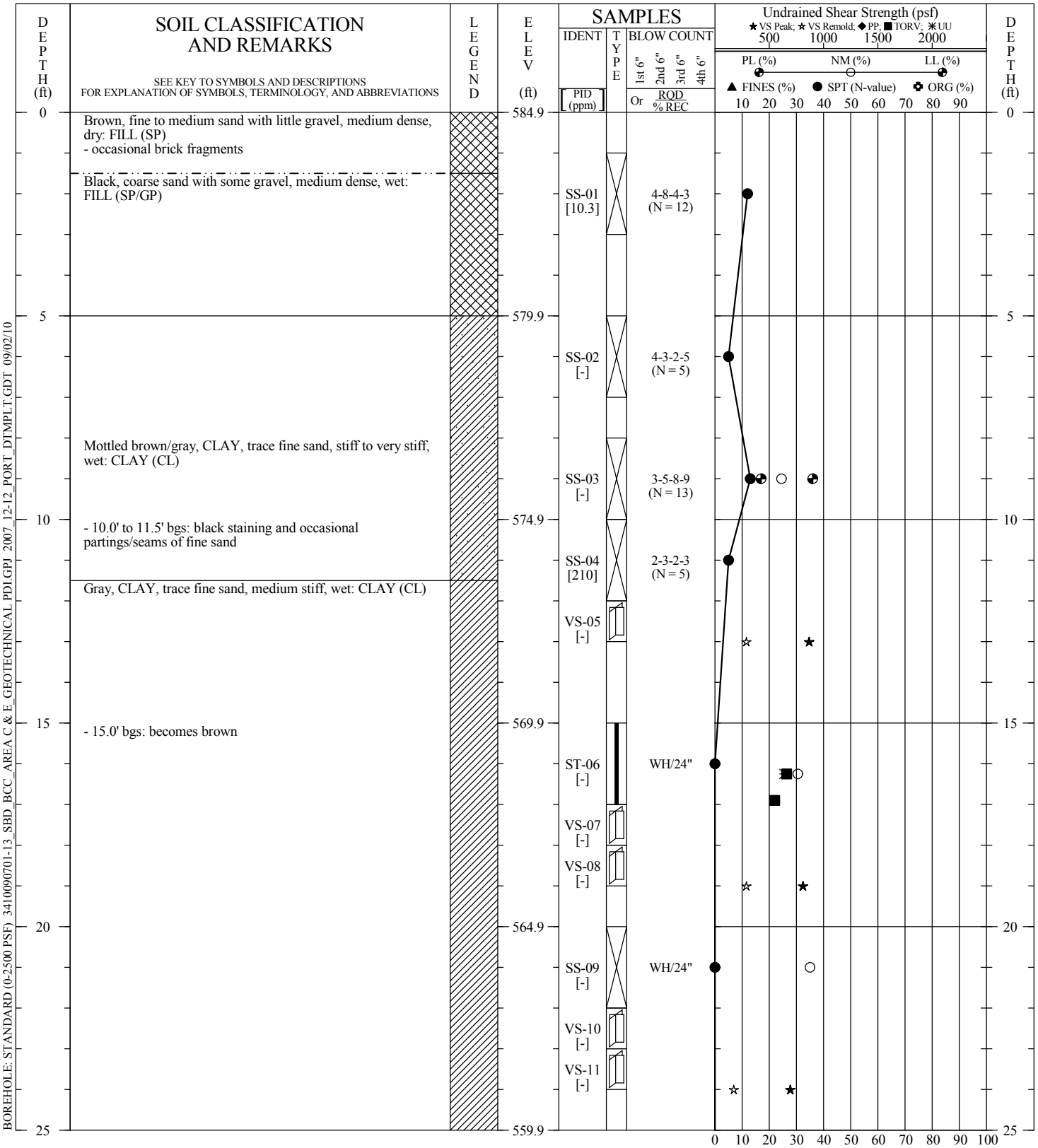
Boring No.	Sample Information								Laboratory Testing Data																
	No.	Type	Depth Interval (ft bgs)	Depth (ft bgs)	Approx. In-Situ Effective Stress σ'_v (psf)	Primary Stratum	USCS D 2487 / D 2488 Description	USCS Symbol	Moisture Content D 2216 (%)	Approx. Total Unit Weight γ_t (pcf)	Approx. Dry Unit Weight γ_d (pcf)	Void Ratio e	Satur. S (%)	Particle-Size Analysis D 422 Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Atterberg Limits D 4318 LL Wet Prep.	LL Oven Dried	LL ODLL WPLL Ratio	PL	PI	LI	Undrained Shear Strength Vane D 4648 S_u (psf)	UU D 2850 S_u (psf)	CU D 4767 S_u (psf)
GB-C01	SS-03 -	Jar	08 - 10	9.0	-	Upper CLAY	CLAY	CL	24.5	-	-	-	-	-	-	-	-	36	-	-	17	19	0.4	-	-	-
	ST-06 -	Tube	16 - 16.5	16.3	1175	CLAY	CLAY	CL	30.5	122.8	94.1	0.86 [1]	100 [1]	-	-	-	-	-	-	-	-	-	-	660	640	-
	SS-09 -	Jar	20 - 22	21.0	-	CLAY	CLAY	CL	35.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-13 -	Jar	30 - 32	31.0	-	CLAY	CLAY	CL	38.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-15 -	Jar	35.5 - 37.0	36.3	-	GLACIAL TILL	clayey SAND with gravel	SC	11.3	-	-	-	-	19.8	35.9	44.3		-	-	-	-	-	-	-	-	-
GB-C02	SS-04 -	Jar	08 - 10	9.0	-	Upper CLAY	CLAY	CL	27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-07 [2]	Jar	17 - 19	18.0	-	CLAY	CLAY	CL	30.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-11 -	Jar	25 - 27	26.0	-	CLAY	CLAY	CL	38.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-12 -	Jar	30 - 32	31.0	-	CLAY	CLAY	CL	37.1	-	-	-	-	-	-	-	-	38	-	-	16	22	1.0	-	-	-
GB-C03	SS-02 -	Jar	05 - 07	6.0	-	Upper CLAY	sandy CLAY	CL	18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-03 -	Jar	08 - 10	9.0	-	Upper CLAY	CLAY	CL	26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	VS-07 -	Jar	15 - 16	15.5	-	CLAY	CLAY	CL	35.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-09 -	Jar	20 - 22	21.0	-	CLAY	CLAY	CL	35.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ST-13 -	Tube	31 - 31.5	31.3	2050	CLAY	CLAY	CL	37.8	117.0	84.9	1.06 [1]	100 [1]	-	-	-	-	-	-	-	-	-	-	580	620	-
	SS-16 -	Jar	35 - 37	36.0	-	CLAY	CLAY	CL	39.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB-C04	SS-03 -	Jar	08 - 10	9.0	-	Upper CLAY	CLAY	CL	26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-04 -	Jar	10 - 12	11.0	-	Upper CLAY	CLAY	CL	29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ST-05 -	Tube	13.25 - 13.75	13.5	1125	CLAY	CLAY	CL	32.7	110.0	82.9	1.11 [1]	83 [1]	-	-	-	-	-	-	-	-	-	-	660	720	-
	SS-08 -	Jar	16 - 18	17.0	-	CLAY	CLAY	CL	29.7	-	-	-	-	-	-	-	-	37	-	-	14	23	0.7	-	-	-
	VS-11 -	Jar	23 - 24	23.5	-	CLAY	CLAY	CL	33.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-16 -	Jar	35 - 37	36.0	-	CLAY	CLAY	CL	40.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB-E01	SS-03 -	Jar	07 - 09	8.0	-	Upper CLAY	CLAY	CL	23.7	-	-	-	-	-	-	-	-	37	-	-	16	21	0.4	-	-	-
	SS-06 -	Jar	15 - 17	16.0	-	CLAY	CLAY	CL	32.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ST-09 -	Tube	26 - 26.5	26.3	1750	CLAY	CLAY	CL	32.0	118.8	90.0	0.94 [1]	95 [1]	-	-	-	-	-	-	-	-	-	-	500	600	-
	SS-12 -	Jar	35 - 37	36.0	-	CLAY	CLAY	CL	37.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-14 -	Jar	40.5 - 42.0	41.3	-	GLACIAL TILL	clayey SAND with gravel	SC	11.6	-	-	-	-	13.7	39.8	46.5		-	-	-	-	-	-	-	-	-
GB-E02	SS-03 -	Jar	07 - 09	8.0	-	Upper CLAY	CLAY	CL	26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-04 -	Jar	10 - 12	11.0	-	CLAY	CLAY	CL	34.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ST-06 -	Tube	16 - 16.5	16.3	1150	CLAY	CLAY	CL	30.0	118.3	91.0	0.92 [1]	91 [1]	-	-	-	-	-	-	-	-	-	-	600	700	-
	SS-09 -	Jar	25 - 27	26.0	-	CLAY	CLAY	CL	34.8	-	-	-	-	-	-	-	-	38	-	-	16	22	0.9	-	-	-
	SS-12 -	Jar	35 - 37	36.0	-	CLAY	CLAY	CL	38.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB-E03	SS-03 -	Jar	08 - 10	9.0	-	Upper CLAY	CLAY	CL	26.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-06 -	Jar	15 - 17	16.0	-	CLAY	CLAY	CL	30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-08 -	Jar	20 - 22	21.0	-	CLAY	CLAY	CL	36.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-11 -	Jar	30 - 32	31.0	-	CLAY	CLAY	CL	37.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB-E04	SS-03 -	Jar	08 - 10	9.0	-	Upper CLAY	CLAY	CL	26.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ST-04 -	Tube	11.25 - 11.75	11.5	875	Upper CLAY	CLAY	CL	27.8	128.8	100.8	0.73 [1]	106 [1]	-	-	-	-	-	-	-	-	-	-	600	700	-
	SS-07 -	Jar	20 - 22	21.0	-	CLAY	CLAY	CL	35.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-10 -	Jar	30 - 32	31.0	-	CLAY	CLAY	CL	38.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS-12 -	Jar	35 - 37	36.0	-	CLAY	CLAY	CL	40.4	-	-	-	-	-	-	-	-	38		-	15	23	1.1	-	-	-

Notes:
1. Calculations based on an assumed specific gravity of 2.80.
2. Sample recovery from VS-07 and VS-08.

Prepared/Date: TCC 07-16-10
Checked/Date:

ATTACHMENT 1

GEOTECHNICAL BOREHOLE RECORDS



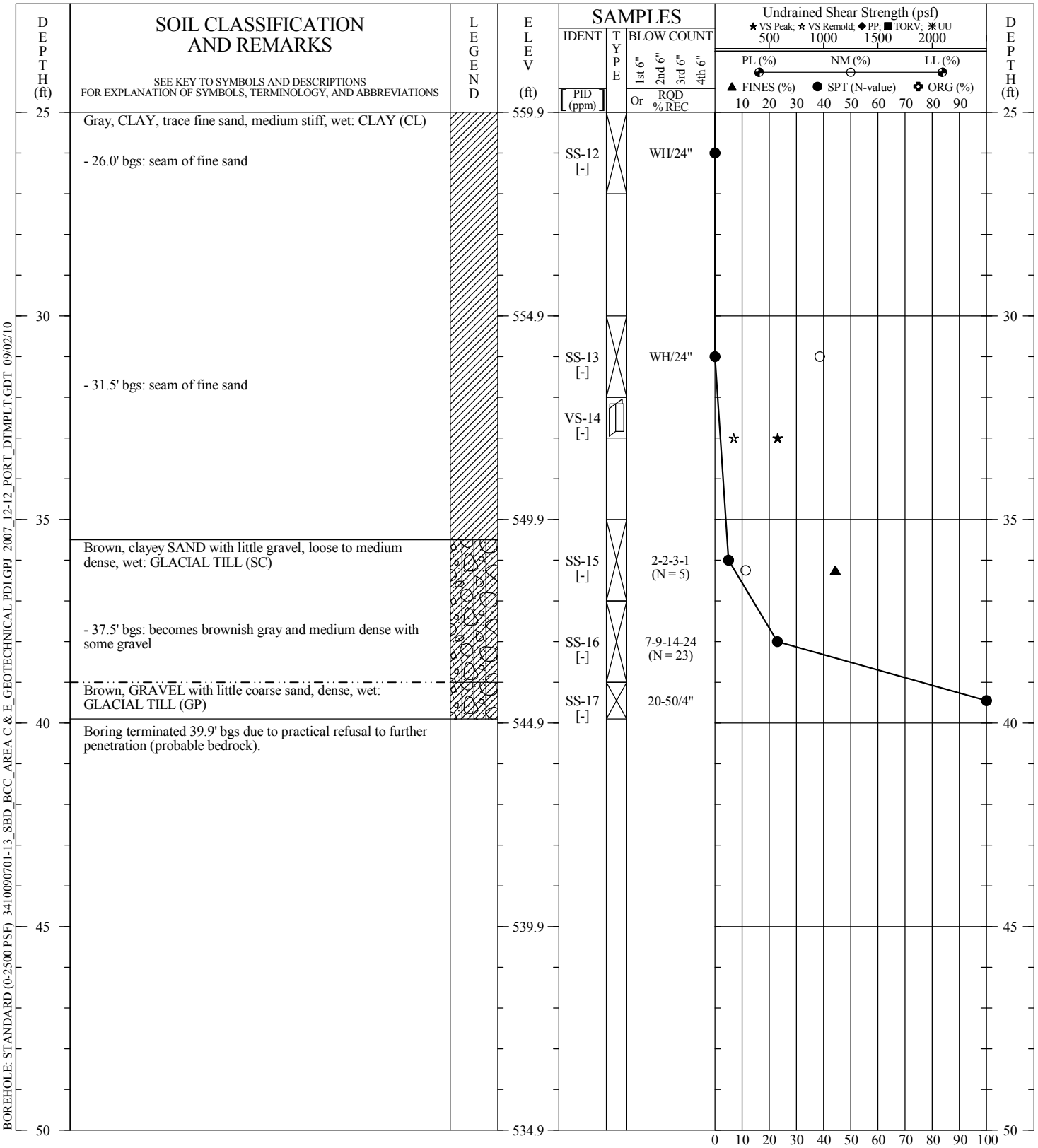
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 15' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C01
DRILLED: 05/27/10 - 05/28/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



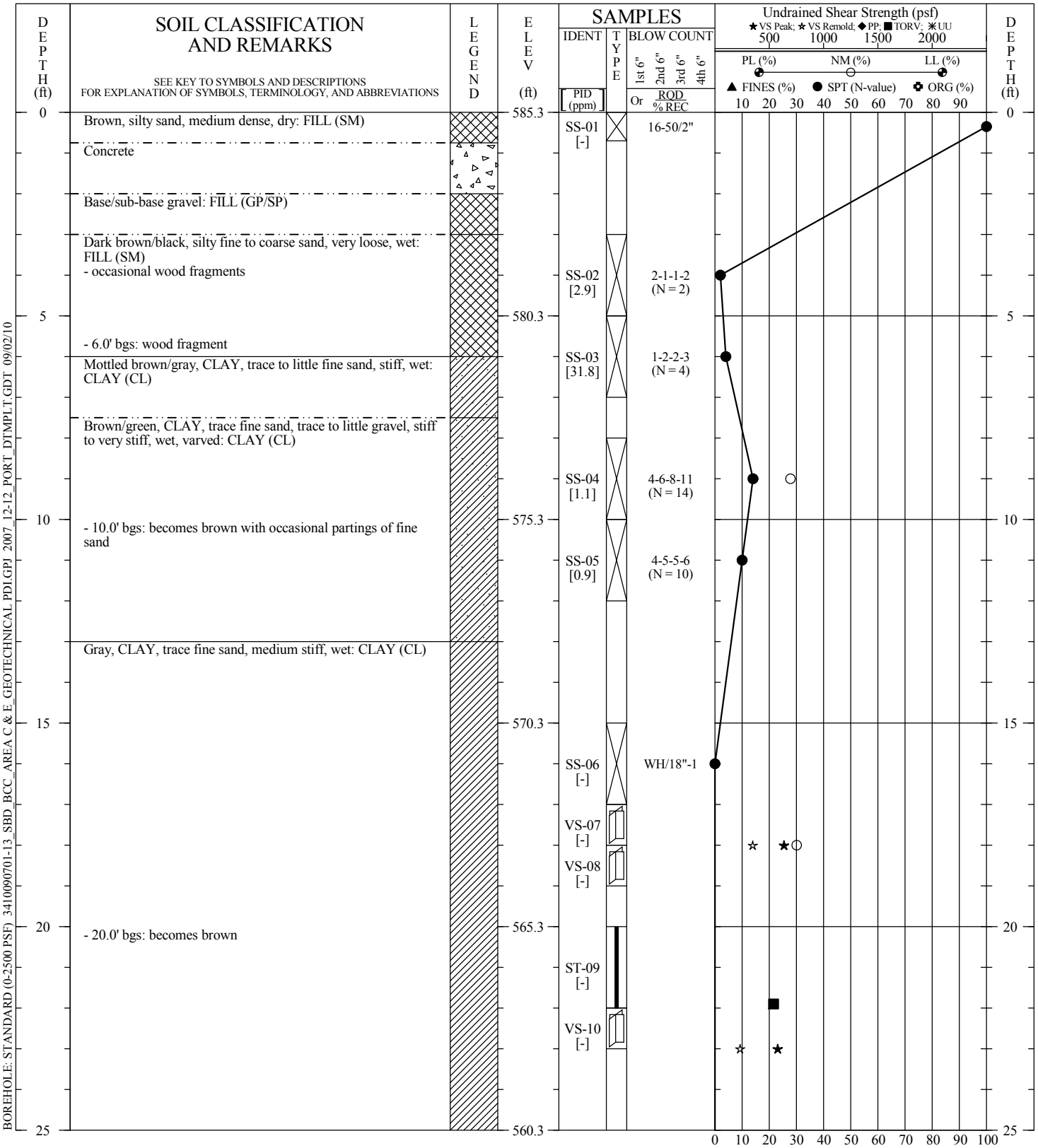
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 15' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C01
DRILLED: 05/27/10 - 05/28/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



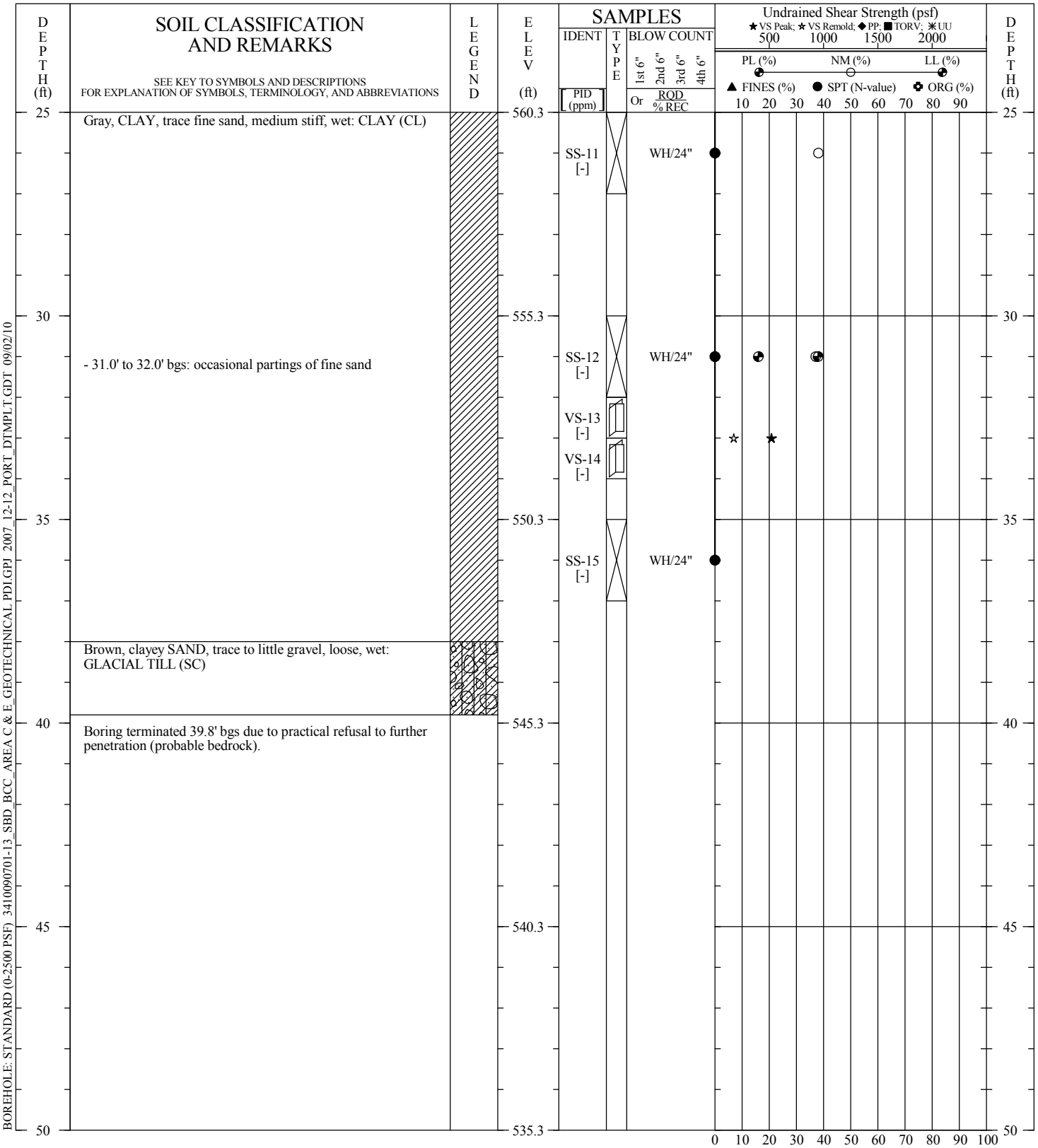
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 20' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C02
DRILLED: 05/26/10 - 05/27/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

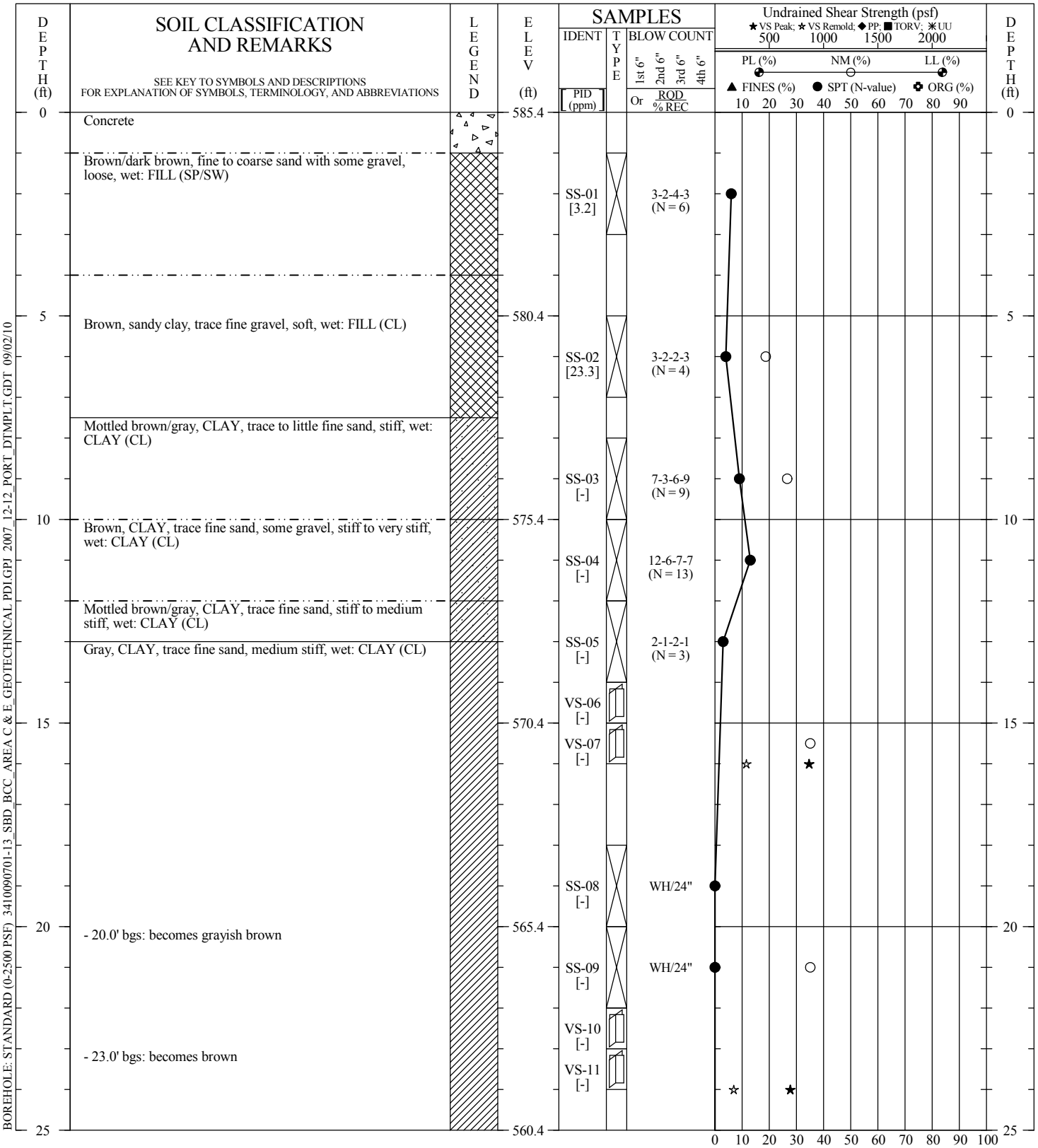
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 20' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C02
DRILLED: 05/26/10 - 05/27/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



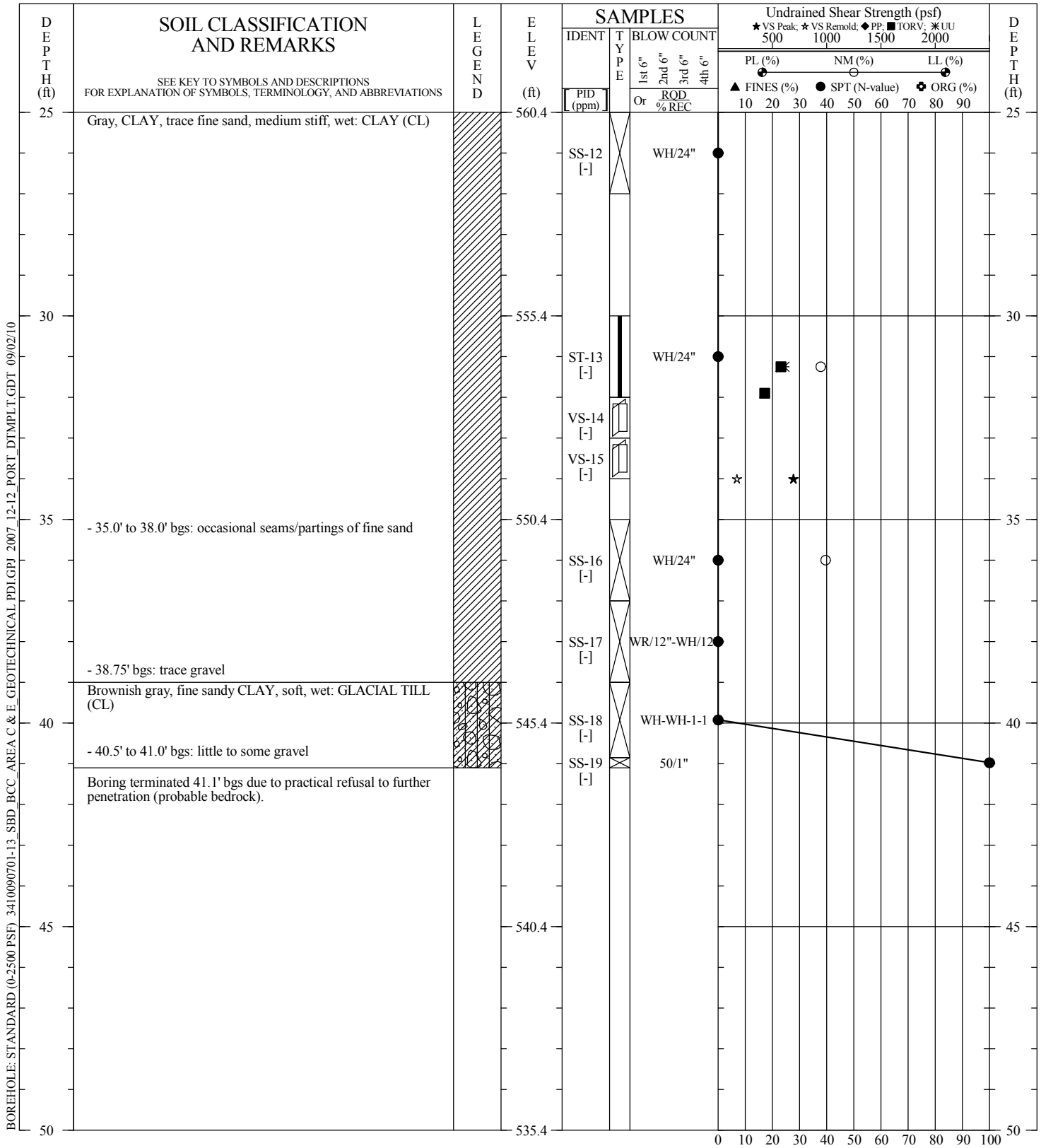
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RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 30' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C03
DRILLED: 06/01/10 - 06/02/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

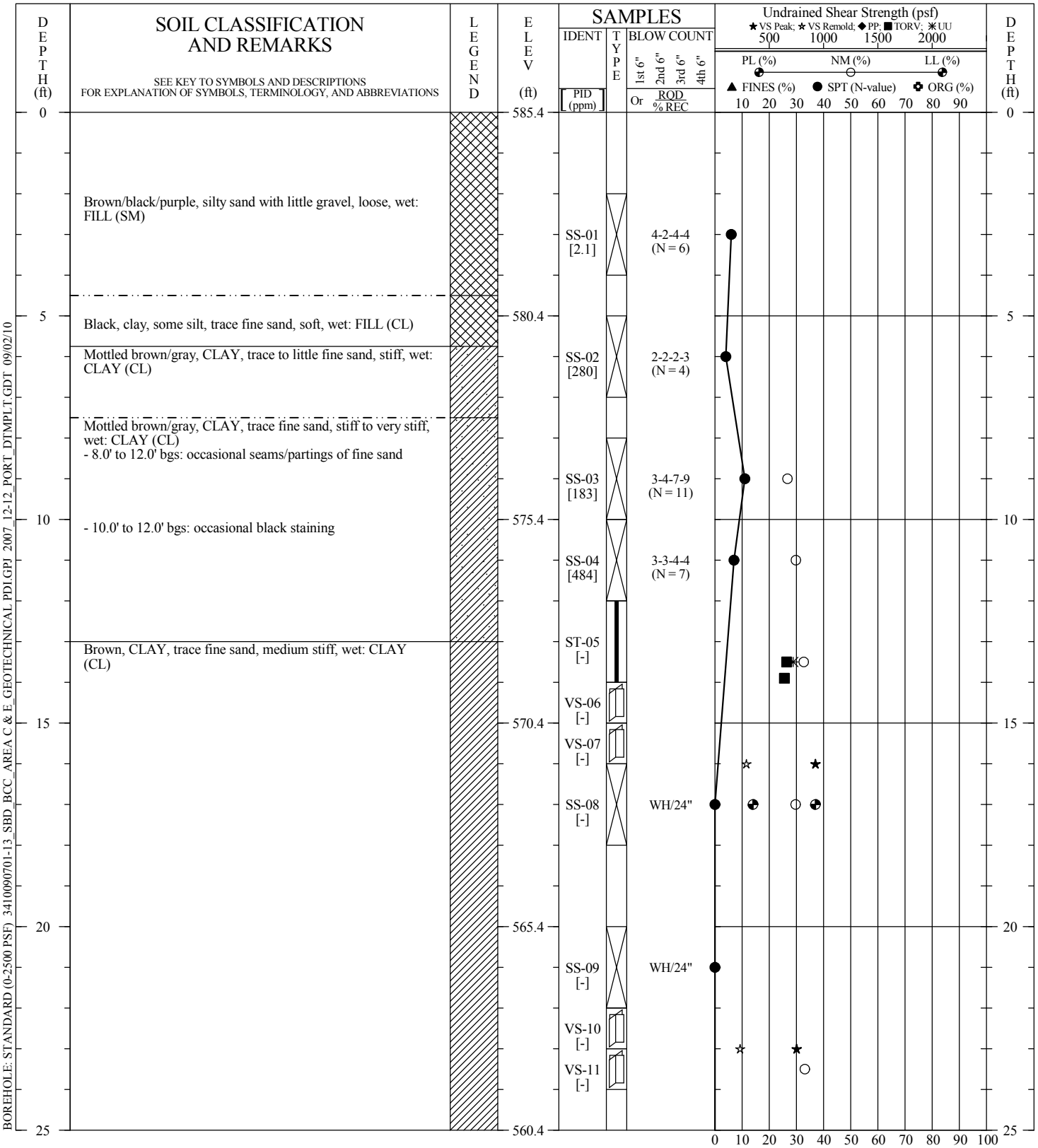
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 30' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C03
DRILLED: 06/01/10 - 06/02/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



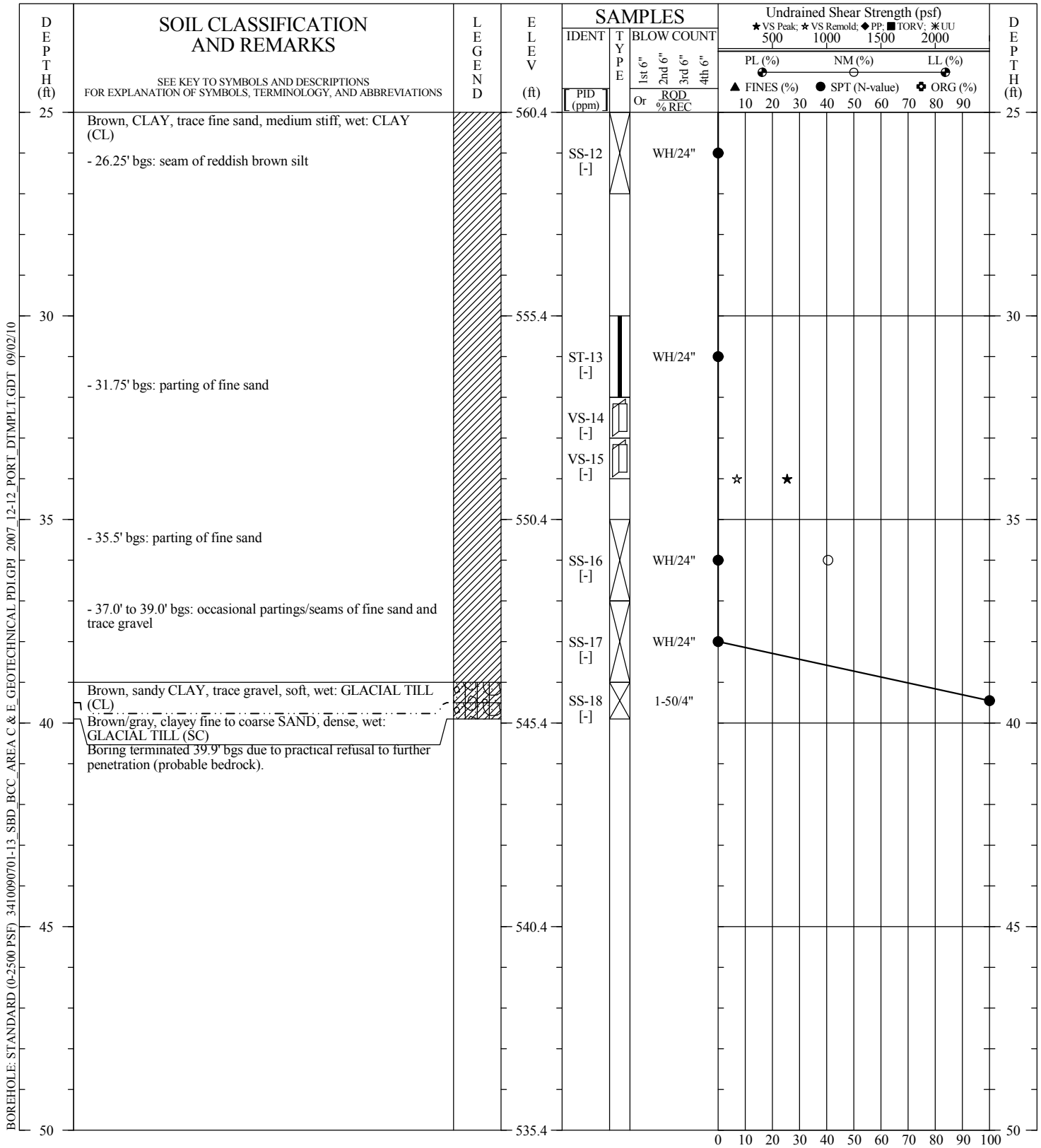
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RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 12' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C04
DRILLED: 05/28/10 - 06/01/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

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BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

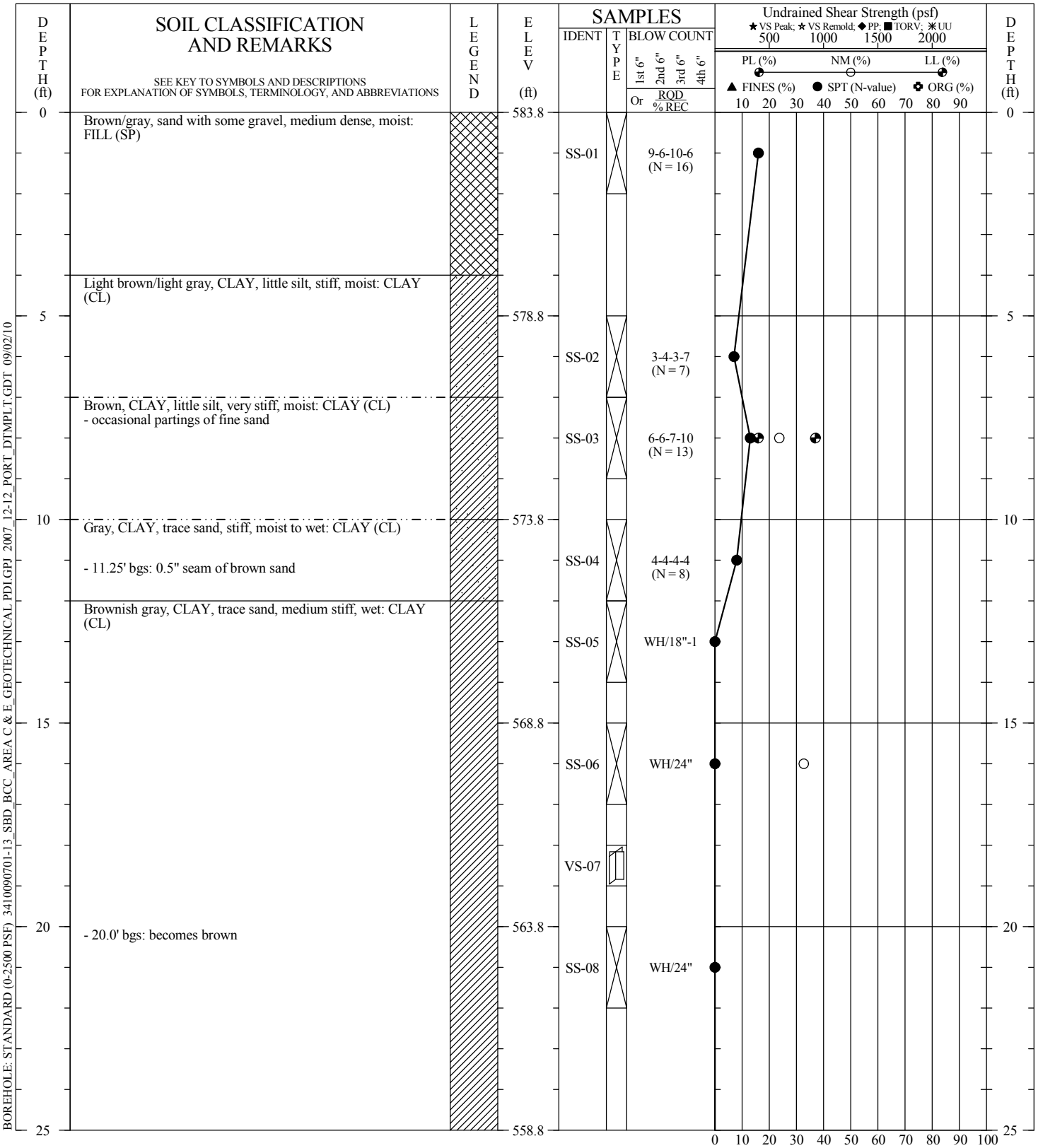
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 12' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-C04
DRILLED: 05/28/10 - 06/01/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

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BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	Drive-and-wash methods using 4-inch casing and water to 34' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

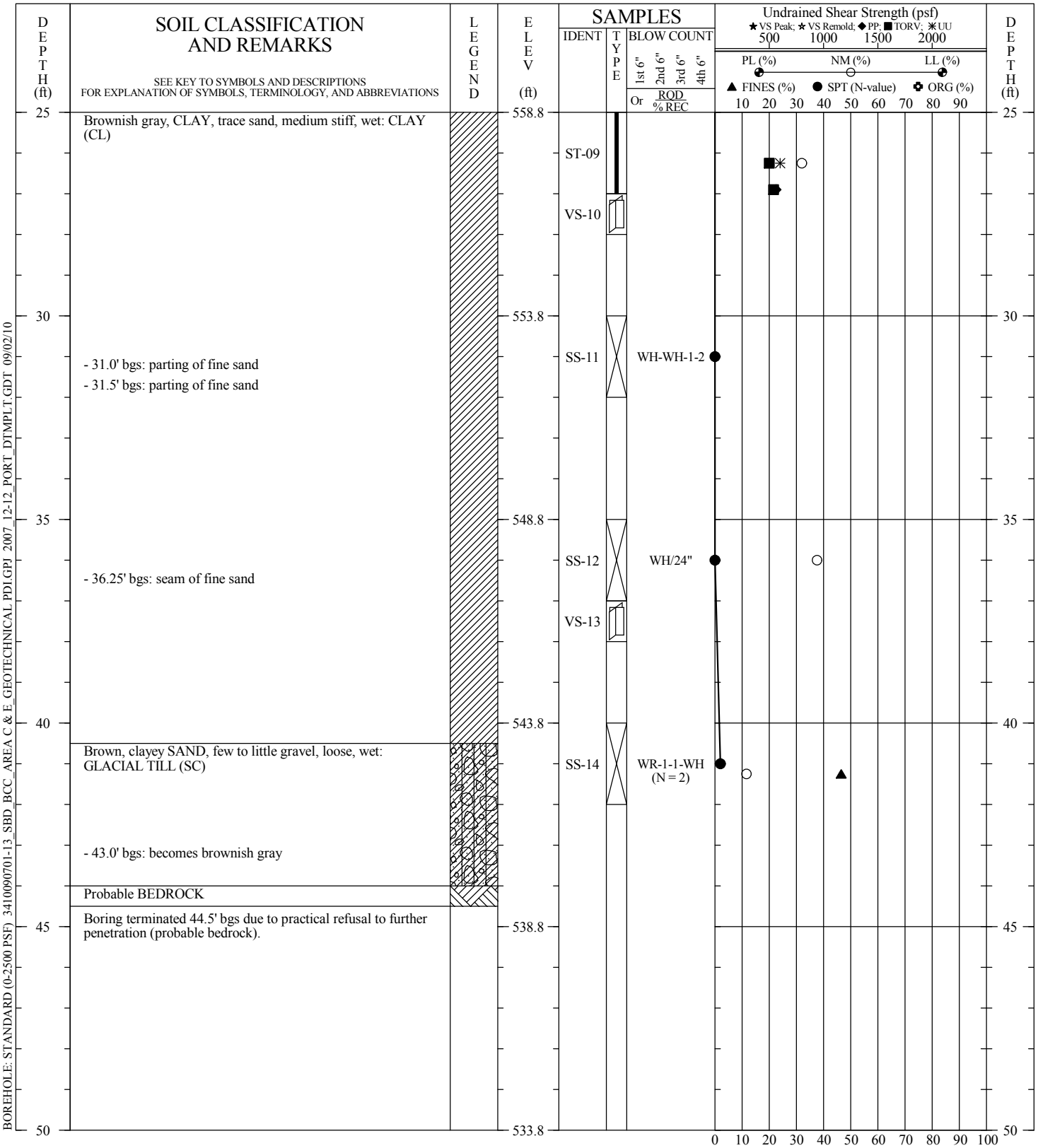
LOGGED BY: ESW CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E01
DRILLED: 05/20/10 - 05/21/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

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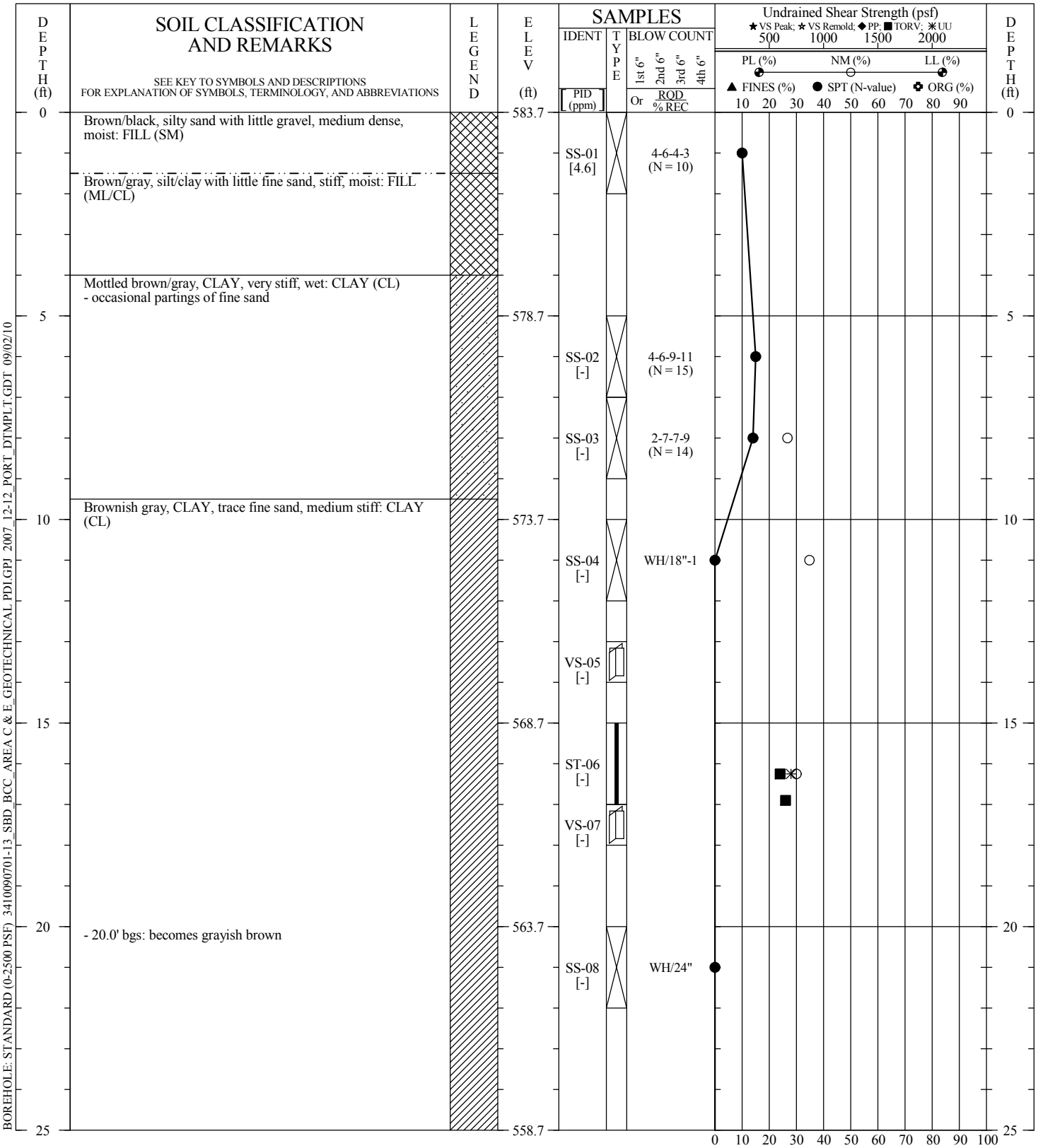
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RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	Drive-and-wash methods using 4-inch casing and water to 34' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E01
DRILLED: 05/20/10 - 05/21/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	Drive-and-wash methods using 4-inch casing and water to 15' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

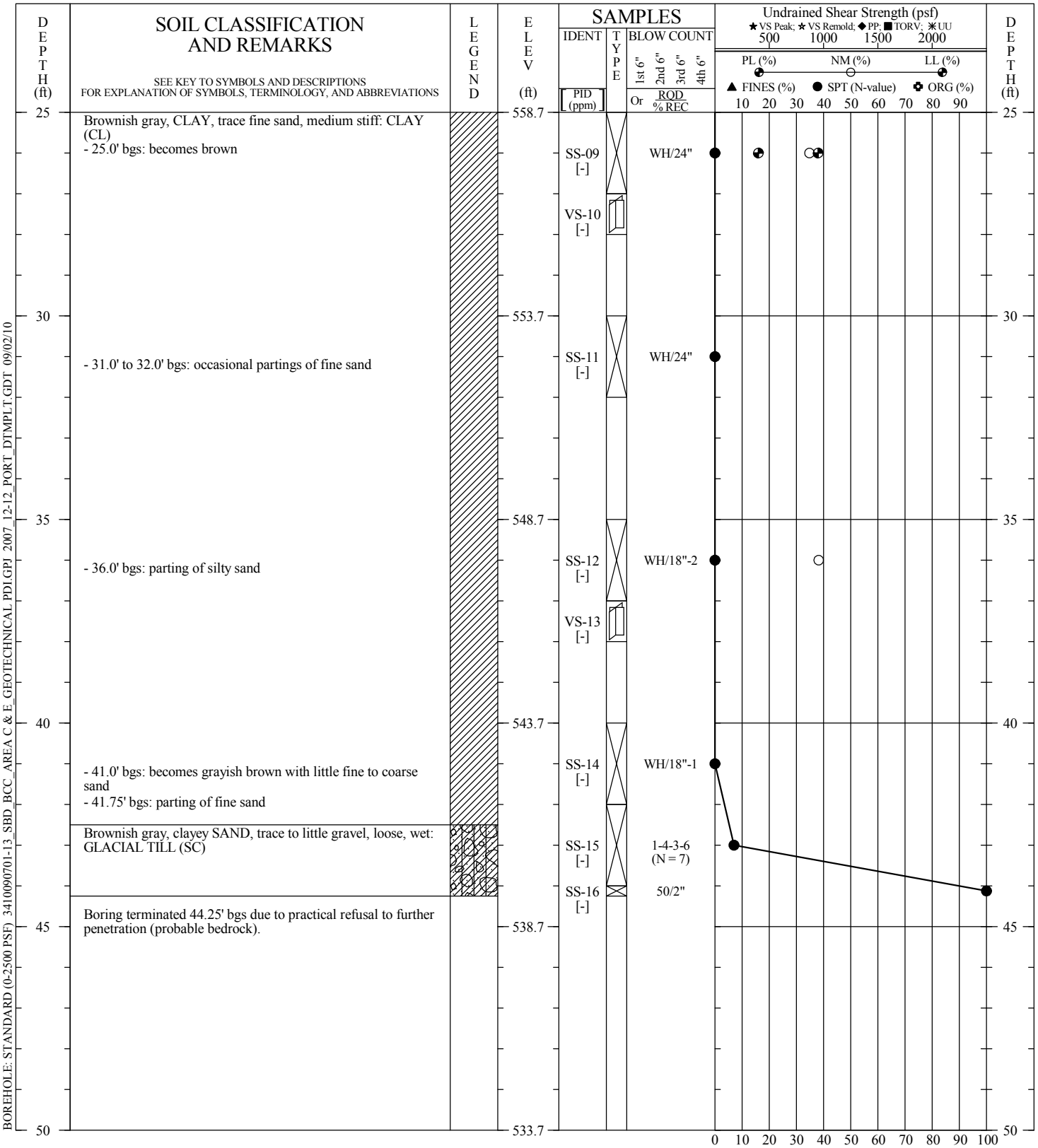
LOGGED BY: ESW CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E02
DRILLED: 05/21/10 - 05/24/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

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BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

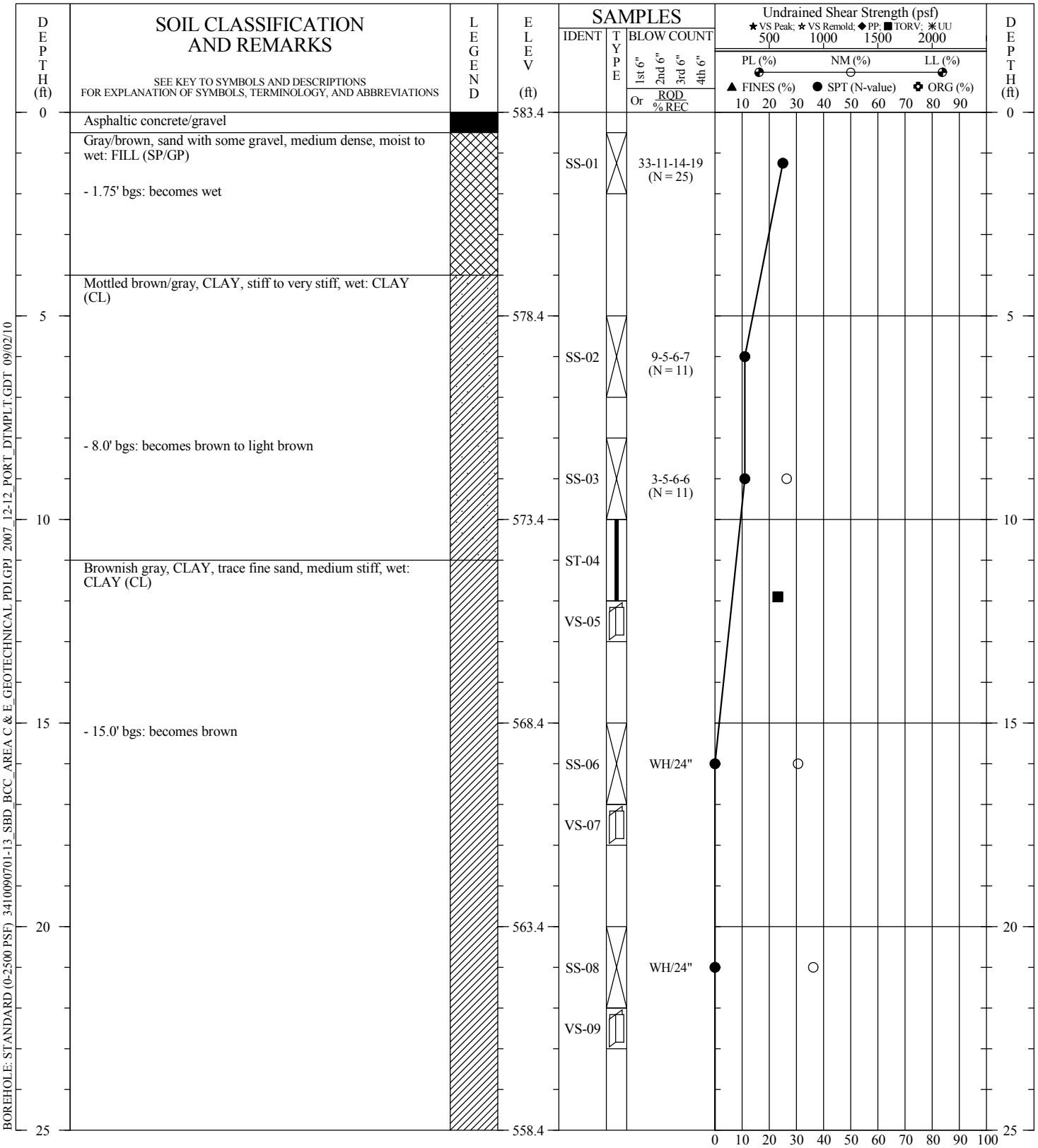
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	Drive-and-wash methods using 4-inch casing and water to 15' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E02
DRILLED: 05/21/10 - 05/24/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



BOREHOLE: STANDARD (0-2500 PSF) 3410090701-13_SBD_BCC_AREA C & E_GEOTECHNICAL PDI.GPJ 2007_12-12_PORT_DTMPLT.GDT 09/02/10

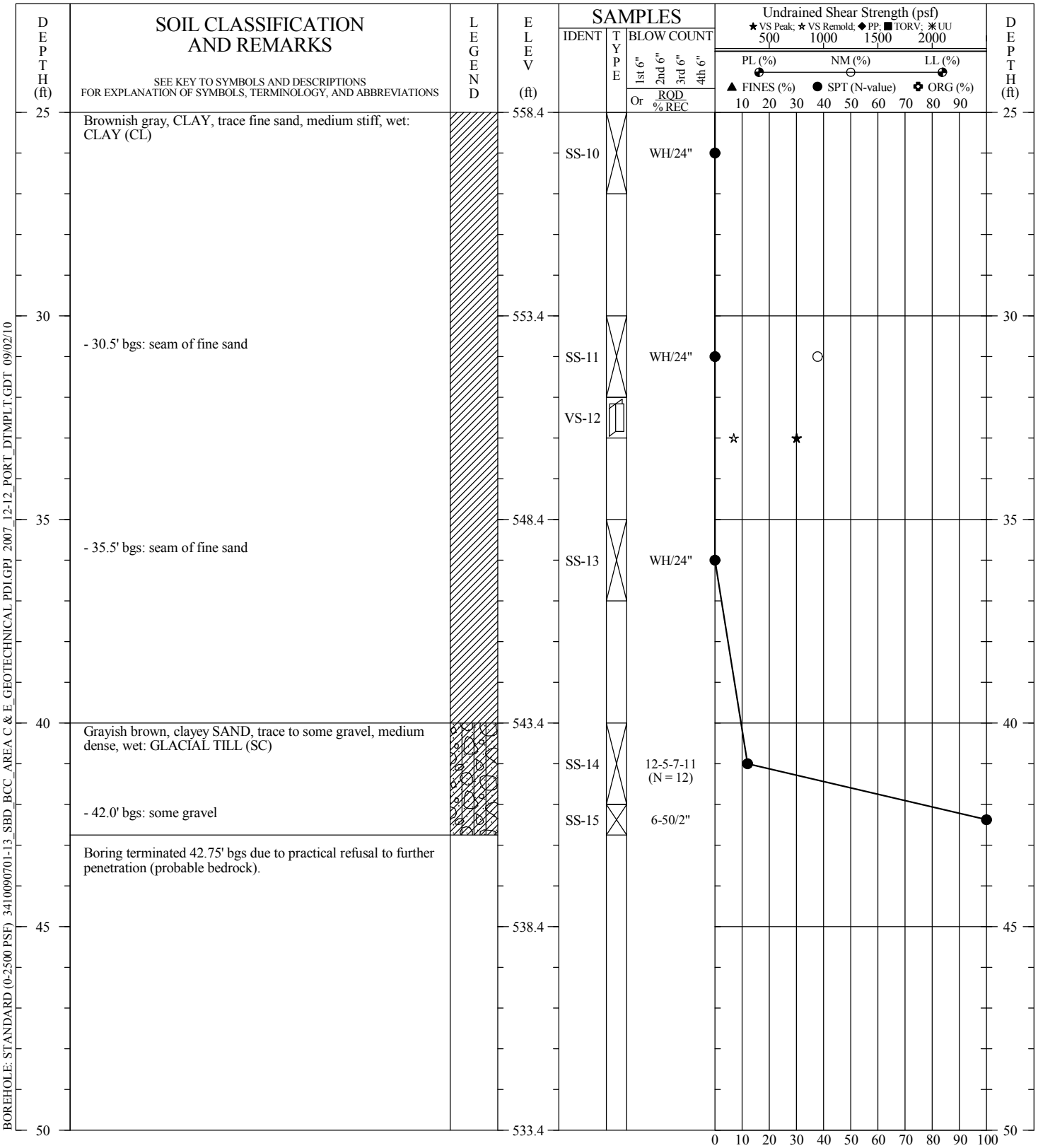
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 10' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E03
DRILLED: 05/25/10 - 05/26/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



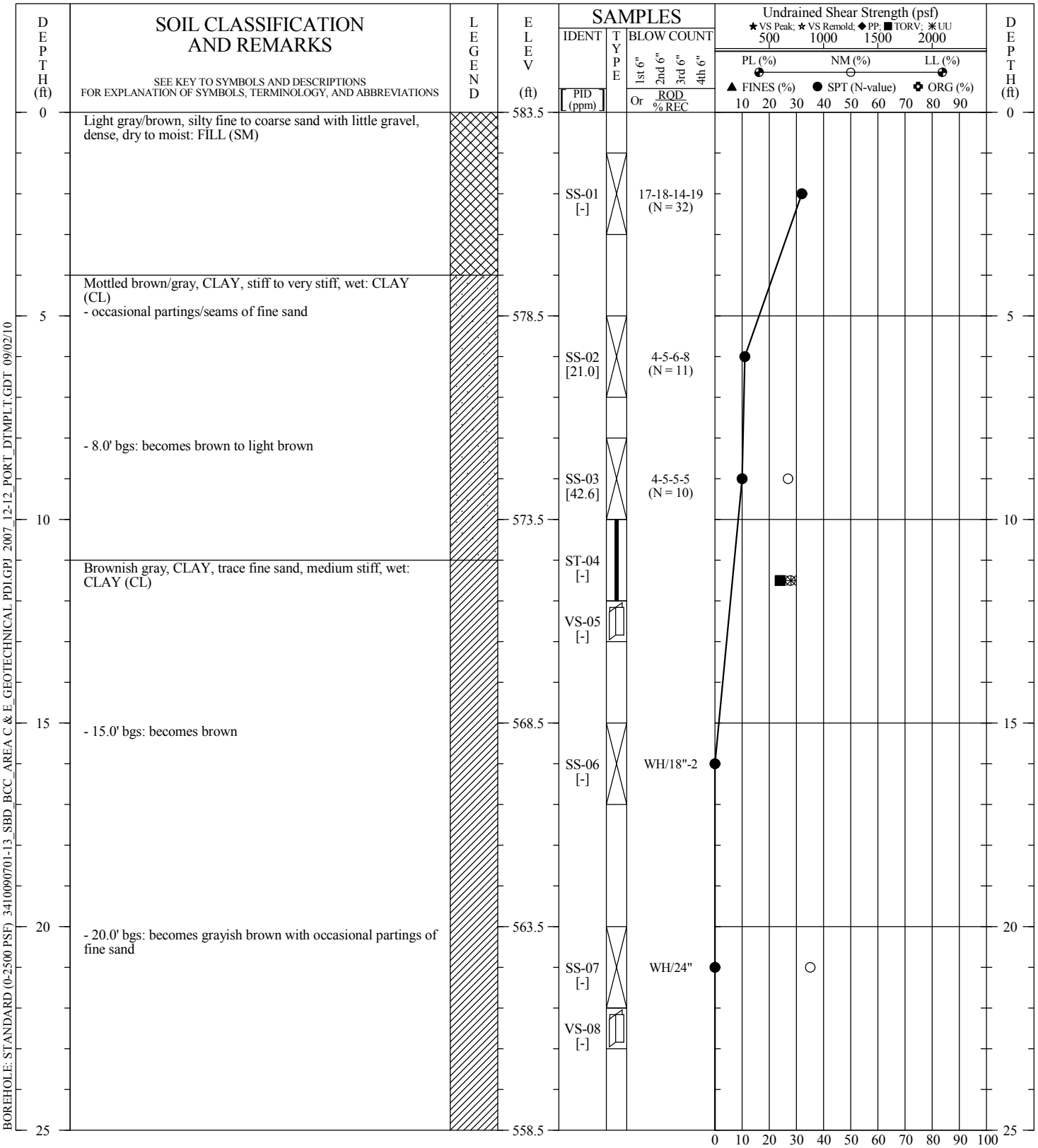
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 10' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E03
DRILLED: 05/25/10 - 05/26/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC



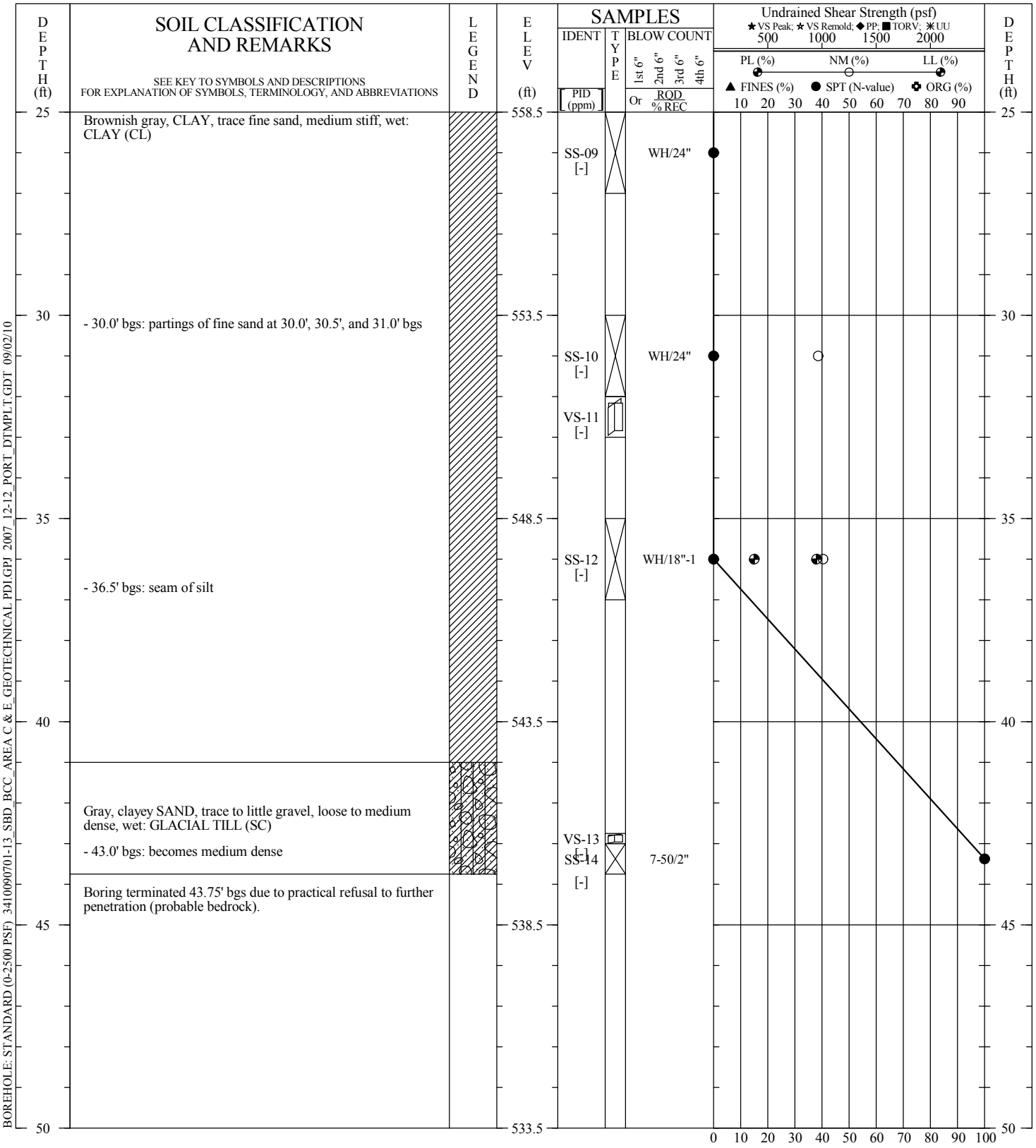
DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 10' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.
LOGGED BY: ESW	CHECKED BY/DATE: TCC/09-02-10

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E04
DRILLED: 05/24/10 - 05/25/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 1 **OF** 2

MACTEC



DRILLER:	SJB Services, Inc.
RIG TYPE:	Truck-Mounted CME-550
METHOD:	Rotary Wash (Variable)
HOLE DIAM.:	4"
SPTs:	Auto-Hammer; A-rods for SPTs; N-rods for Drilling
REMARKS:	HSA to 5' bgs. Then drive-and-wash methods using 4-inch casing and water to 10' bgs; Open-hole w/"mud" thereafter. Backfilled with Portland cement grout upon completion.

THIS SOIL BORING RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BOREHOLE RECORD

BOREHOLE NO.: GB-E04
DRILLED: 05/24/10 - 05/25/10
PROJECT: Buffalo Color - Area C & E - Geotechnical PDI
LOCATION: Buffalo, New York
PROJECT NO.: 3410-09-0701-13 **PAGE** 2 **OF** 2

MACTEC

ATTACHMENT 2

TEST PIT RECORDS

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS	LEGEND	ELEV (ft)	SAMPLES: IDENT	TYPE	RECOV. (%)	MOIST. (%)	OTHER/ REMARKS	DEPTH (ft)
0	Brown, sand with brick and gravel up to 3-inches in diameter, some grass and roots, FILL								0
	Concrete slab, old concrete easily broken with bucket of excavator								
	Brown to black, coarse sand with gravel and brick, some slag material, moist, FILL								
	Brownish gray, CLAY with sand and rust colored fine sand partings, stiff, moist, slightly plastic, CL Black staining on clay to 5.0 feet bgs								
	Concrete footing encountered at northeast corner of test pit at 3 feet bgs and extended to bottom of excavation. 8-inch, brown clay pipe running east to west was encountered at 4 feet bgs and 5.5 feet north of south wall of test pit. Liquid from pipe entered the test pit at an estimated rate of 10-15 gpm. Flow was periodically slowed by using the excavator bucket to plug pipe with clay.								
5	Wood timbers encountered between 4-5 feet bgs								5
	12-inch iron pipe running north to south was encountered at 6.75 feet bgs. Continued test pit to the east of pipe leaving pipe in place.								
	Brownish gray, CLAY, soft, moist, plastic, CH								
	Bottom of excavation at 13 feet bgs								
10									10
15									15

TEST PIT: PID; OTHER/REMARKS 3410090701-04TP.GPJ 2007_12-12_PORT_DTMPLT.GDT 08/23/10

CONTRACTOR: OSC
EQUIPMENT: KOM 200
METHOD:
DIMENSIONS: 17.25' x 14'
REMARKS:

LOGGED BY: BE CHECKED BY/DATE:

THIS TEST PIT RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

TEST PIT RECORD

TEST PIT NO.: TP-C1
EXCAVATED: 8/5/10
PROJECT: South Buffalo Development
LOCATION: Buffalo, New York
PROJECT NO.: 3410090701-04 **PAGE 1 OF 1**

MACTEC

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS	LEGEND	ELEV (ft)	SAMPLES: IDENT	TYPE	RECOV. (%)	MOIST. (%)	OTHER/ REMARKS	DEPTH (ft)
0	Brown, sand and gravel, dry, FILL								0
	Concrete slab								
	Brown, fine to medium sand and gravel, moist, FILL								
	Black, sand and clay, some gravel, trace coal and ash, FILL Concrete footing on west side of excavation extends to 4 feet bgs								
	Brown to gray, CLAY with sand seams and partings, stiff, moist, CL								
5	Partings contain staining with odor								5
10	Gray, CLAY with fine sand partings, soft, moist, staining is present in some partings, CH								10
	Bottom of excavation at 13 feet bgs								
15									15

TEST PIT: PID; OTHER/REMARKS 3410090701-04TP.GPJ 2007_12-12_PORT_DTMPLT.GDT 08/23/10

CONTRACTOR: OSC
EQUIPMENT: KOM 200
METHOD:
DIMENSIONS: 15' x 6'
REMARKS:

LOGGED BY: CHECKED BY/DATE: RSE 8/23/10

THIS TEST PIT RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

TEST PIT RECORD

TEST PIT NO.: TP-C2
EXCAVATED: 8/6/10
PROJECT: South Buffalo Development
LOCATION: Buffalo, New York
PROJECT NO.: 3410090701-04 **PAGE** 1 **OF** 1

MACTEC

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS	LEGEND	ELEV (ft)	SAMPLES: IDENT	TYPE	RECOV. (%)	MOIST. (%)	OTHER/ REMARKS	DEPTH (ft)
0	Asphalt pavement								0
	Asphalt subbase, 2-inch minus stone								
	4-inch minus angular stone with sand, purple tint, FILL								
	Perched water at 2.5 feet bgs flowed into pit from fill above stiff clay, estimate flow of 1-3 gpm								
	Brownish gray CLAY with rust colored very fine sand partings, moist, stiff, low plasticity, CL								
5									5
	Gray CLAY, moist, medium stiff, plastic, CH								
10									10
	Bottom of excavation at 11 feet bgs								
15									15

TEST PIT: PID; OTHER/REMARKS 3410090701-04TP.GPJ 2007_12-12_PORT_DTMPLT.GDT 08/23/10

CONTRACTOR: OSC
EQUIPMENT: KOM 200
METHOD:
DIMENSIONS: 13' x 12'
REMARKS:

LOGGED BY: RE CHECKED BY/DATE:

THIS TEST PIT RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

TEST PIT RECORD

TEST PIT NO.: TP-E1
EXCAVATED: 8/4/10
PROJECT: South Buffalo Development
LOCATION: Buffalo, New York
PROJECT NO.: 3410090701-04 **PAGE** 1 **OF** 1

MACTEC

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS	LEGEND	ELEV (ft)	SAMPLES: IDENT	TYPE	RECOV. (%)	MOIST. (%)	OTHER/ REMARKS	DEPTH (ft)
0	Dark brown, sand with gravel, FILL								0
	Gray, crushed stone, 2-inch diameter, dry, FILL								
	Brownish gray, CLAY with coarse sand, stiff, moist, rust colored very fine sand partings, CL								
	Black staining on clay to 3.5 feet bgs								
	3-inch brown clay pipe running northeast to southwest was encountered (3 feet bgs) in the southeastern quadrant of the test pit. Liquid from the pipe entered the excavation causing sloughing of the upper portion of the eastern wall.								
5									5
	Gray, CLAY, moist, medium stiff, plastic, CH								
10	Bottom of excavation at 10 feet bgs								10
15									15

TEST PIT: PID; OTHER/REMARKS 3410090701-04TP.GPJ 2007_12-12_PORT_DTMPLT.GDT 08/23/10

CONTRACTOR: OSC
EQUIPMENT: KOM 200
METHOD:
DIMENSIONS: 18' x 11.5'
REMARKS:

LOGGED BY: RE CHECKED BY/DATE:

THIS TEST PIT RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

TEST PIT RECORD

TEST PIT NO.: TP-E2
EXCAVATED: 8/4/10
PROJECT: South Buffalo Development
LOCATION: Buffalo, New York
PROJECT NO.: 3410090701-04 **PAGE** 1 **OF** 1

MACTEC

ATTACHMENT 3

EXCAVATION EQUIPMENT
ESTIMATED CONTACT PRESSURE

MACTEC
MACTEC Engineering and Consulting, Inc.
511 Congress Street, P.O. Box 7050
Portland, ME 04112-7050

JOB NO. _____ SHEET _____ OF _____
PHASE C+E over-ex. TASK _____
JOB NAME SBO-Buffalo Color
BY R. Egan DATE 5/5/2010
CHECKED BY TCC DATE 09/2010

Excavation Equipment Contact Pressure

John Deere 450D LC

SAE operating weight = 106,180 lb (53 Tons)
On ground track length = 14' 8" Track width = 36"
Contact area = 14.67'(3')(2) = 88 sft
Contact pressure = 106,180/88 = 1207 psf (8.4 psi)
- published average contact pressure 1073 psf (7.45 psi)

John Deere 350D LC (Long Stick)

SAE operating weight = 74,957 lb (37.5 Tons)
On ground track length = 13' 3.4" Track width = 32"
Contact area = 13.28'(2.67')(2) = 70.8 sft
Contact pressure = 74,957/70.8 = 1058 psf (7.35 psi)
- published average contact pressure = 1031 psf (7.16 psi)

John Deere 850J Dozzer

SAE operating weight = 40,165 (20 Tons)
on ground track length = 9.08' Track width = 24"
Contact area = 9.08'(2')(2) = 36.33 sft
Contact pressure = 40,165/36.33 = 1105 psf (7.67 psi)

Dimensions — 450D LC

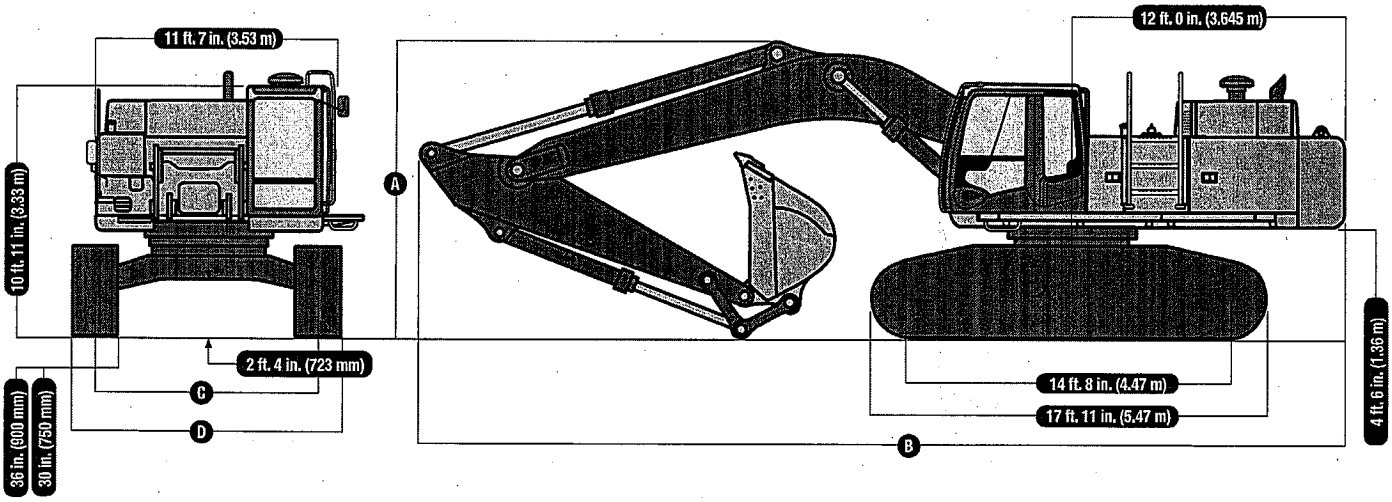
A 9-ft. 6-in. (2.9 m) Arm..... 11 ft. 10 in. (3.60 m)
11-ft. 2-in. (3.4 m) Arm..... 11 ft. 5 in. (3.48 m)
12-ft. 10-in. (3.9 m) Arm..... 11 ft. 6 in. (3.50 m)
16-ft. 1-in. (4.9 m) Arm..... 14 ft. 11 in. (4.55 m)
20-ft. 7-in. (6.3 m) ME Boom with 9-ft. 6-in. (2.9 m) Arm ..... 12 ft. 3 in. (3.74 m)

B 9-ft. 6-in. (2.9 m) Arm..... 39 ft. 4 in. (12.0 m)
11-ft. 2-in. (3.4 m) Arm..... 39 ft. 1 in. (11.91 m)
12-ft. 10-in. (3.9 m) Arm..... 39 ft. 1 in. (11.91 m)
16-ft. 1-in. (4.9 m) Arm..... 39 ft. 0 in. (11.9 m)
20-ft. 7-in. (6.3 m) ME Boom with 9-ft. 6-in. (2.9 m) Arm ..... 36 ft. 10 in. (11.22 m)

C Operating Position..... 9 ft. 6 in. (2.89 m)
Transport Position..... 7 ft. 10 in. (2.39 m)

D 30-in. (750 mm) Triple Semi-Grouser Shoes
Operating Position..... 11 ft. 11 in. (3.64 m)*
Transport Position..... 10 ft. 4 in. (3.14 m)
*36-in. (900 mm) Triple Semi-Grouser Shoes
Operating Position..... 12 ft. 5 in. (3.79 m)*
Transport Position..... 10 ft. 10 in. (3.29 m)

≈ 12'



Lift Capacities

Boldface italic type indicates hydraulic-limited capacities; lightface type indicates stability-limited capacities, in lb. (kg). Ratings at bucket lift hook; machine equipped with 20,172-lb. (9150 kg) counterweight; standard gauge; and situated on firm, uniform supporting surface. Total load includes weight of cables, hook, etc. Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine. All lift capacities are based on SAE J1097.

Load Point	10 ft. (3.05 m)		15 ft. (4.57 m)		20 ft. (6.10 m)		25 ft. (7.62 m)		30 ft. (9.15 m)	
Height	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side
With 23-ft. 0-in. (7.0 m) boom; 9-ft. 6-in. (2.9 m) arm; 3.0-cu.-yd. (2.3 m³), 3,924-lb. (1780 kg) bucket; and 30-in. (750 mm) triple semi-grouser shoes										
25 ft. (7.62 m)							***21,500 (9752)***	***21,500 (9752)***		
20 ft. (6.10 m)							***22,600 (10 251)***	21,700 (9843)		
15 ft. (4.57 m)			***39,900 (18 099)***	***39,900 (18 099)***	***29,600 (13 426)***	***29,600 (13 426)***	***24,700 (11 204)***	20,800 (9435)	***22,000 (9979)***	15,000 (6804)
10 ft. (3.05 m)					***34,800 (15 785)***	28,000 (12 701)	***27,300 (12 383)***	19,800 (8981)	***22,100 (10 024)***	14,500 (6577)
5 ft. (1.52 m)					***38,700 (17 554)***	26,300 (11 930)	***29,500 (13 381)***	18,800 (8528)	23,800 (10 796)	14,000 (6350)
Ground Line					***40,000 (18 144)***	25,500 (11 567)	***30,800 (13 971)***	18,200 (8255)	23,300 (10 569)	13,600 (6169)
–5 ft. (–1.52 m)			***49,400 (22 408)***	40,500 (18 371)	***39,000 (17 690)***	25,200 (11 431)	***30,500 (13 835)***	17,900 (8119)	23,100 (10 478)	13,400 (6078)
–10 ft. (–3.05 m)	***47,900 (21 727)***	***47,900 (21 727)***	***44,300 (20 094)***	41,000 (18 597)	***35,900 (16 284)***	25,400 (11 521)	***28,300 (12 837)***	17,900 (8119)		
–15 ft. (–4.57 m)			***36,500 (16 556)***	***36,500 (16 556)***	***29,900 (13 563)***	26,000 (11 794)	***22,600 (10 251)***	18,400 (8346)		

Construction Equipment

Excavators

40-80 Metric Tons

450D LC

- 360° Walk-Around
- Features
- **Specifications**
- Compare
- Build Your Own
- Brochure
- Brochure - Français
- Brochure- Español
- Image Gallery

Product Guide

Attachment Guide

Non-Current Models

Used Equipment

Forestry Equipment

Equipment Quickfind

Federal & Military

450D LC

Specs

PRINTER-FRIENDLY VERSION | EXPORT TO EXCEL

MANUFACTURER	**John Deere**
MODEL	**450D LC**
DATE OF SPECIFICATION	Aug-09
ENGINE	
Manufacturer/Model	Isuzu / AH-6WG1XYSA 01
Net Power hp (kW) @ Rated rpm	348 (260) @ 1800
# Cylinders and Desplacement cu in. (L)	6 - 957 (15.7)
HYDRAULIC SYSTEM	
Main Pump Type	Variable axial-piston
Total Main Pump Flow gpm (L/m)	200 (757)
Normal Relief Pressure psi (kPa)	4625 (31870)
Boost Relief Pressure psi (kPa)	4980 (34310)
Max. Propel Pressure psi (kPa)	4980 (34310)
UNDERCARRIAGE	
Gauge ft (m)	9' 6" (2900)
Overall Track Length ft (mm)	17' 11" (5460)
Track Length on ground ft (mm)	14' 8" (4470)
Width over Std Track ft (mm)	12' 5"(3780)
No. of Lower Rollers / Side	9
No. Carrier Rollers / Side	3
Ground Clearance in. (mm)	28.5" (724)
Standard Track Pad in. (mm)	35.4" (900)
Grd. Press - Std. Pad psi (kPa)	7.45 (51.3)
Optional Track Pad in. (mm)	29.5" (750)
Max. Travel Speed mph (km/h)	3.4 (5.5)
Off-level capacity % - (deg)	70% (35°)
Drawbar Pull lb (kg)	79,590 (36102)
ARM LENGTH	
Standard Arm ft (mm)	12' 10"
Optional Arm ft (mm)	9' 6",11' 2",16' 1" (2900,3400,4900)
Bucket Range SAE cu yd (cu m)	1.85 - 4.18 (1.42 - 3.20)
Reference Bucket SAE cu yd (cu m)	3.06 (2.34)
PERFORMANCE	
Reach @ G.L. std. Arm ft (mm)	40' 3" (12270)
Max Dig Depth - Std. Arm ft (mm)	27' 2" (8280)
Dig Depth-8' Flat Bottom-Std Arm ft (mm)	26' 8" (8130)
Dig Depth-Vertical Wall-Std Arm ft (mm)	22' 11" (6990)

Dump Height - Std. Arm ft (mm)	25' 6" (7770)
Lift Capacity Over Front @ G.L. lb (kg)	29,900 (13563) @25'
Lift Capacity 360 deg. @ G.L. lb (kg)	18,700 (8482) @25'
Arm Force-Normal- Std. Arm lb (kg)	Not published
Arm Force-Boost-Std. Arm lb (kg)	43,028 (191.4)
Bucket Digging Force - Normal lb (kg)	Not published
Bucket Diggine Force - Boost lb (kg)	57,111 (254.0)
Tail Swing Radiue ft (mm)	11' 11.5" (3640)
Swing Speed rpm	9
TRANSPORT SPECIFICATIONS	
Standard Transport Length ft (mm)	39' 1" (11910)
Standard Transport Height ft (mm)	11' 6" (3510)
Standard Transport Width ft (mm)	11' 7" (3530)
CAPACITIES	
Fuel Tank gal (L)	192 (727)
Hydraulic Reservoir gal (L)	85 (321.7)
SAE OPERATING WEIGHT lb (kg)	106,180 (48163) *
Metric Ton Weight	48.163

Specifications are based on published information at the time of publication. Specifications are subject to change without notice.

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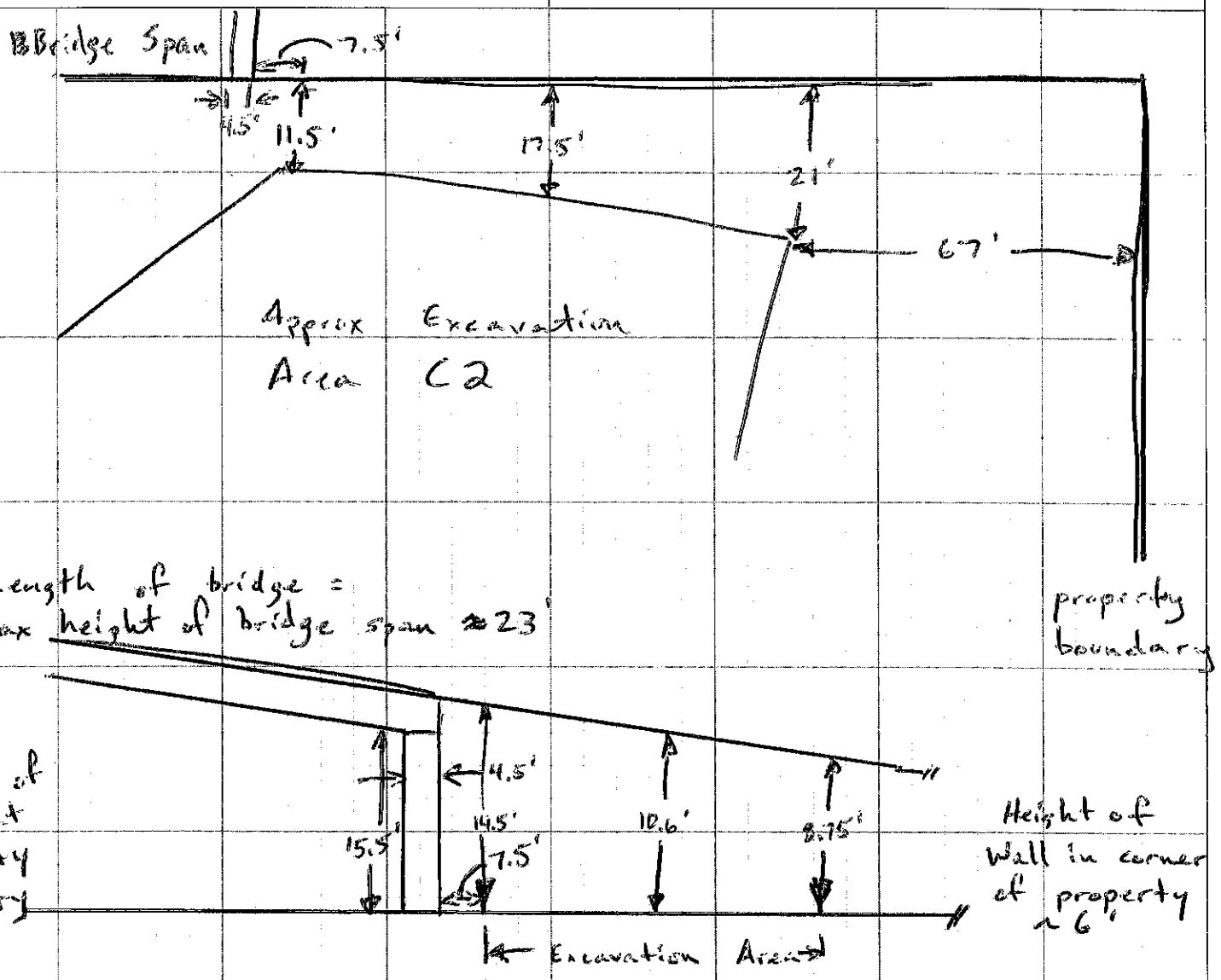
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ATTACHMENT 4

AREA C-2
ELK STREET RETAINING WALL/APPROACH RAMP
SKETCH/DIMENSIONS

MACTEC
MACTEC Engineering and Consulting, Inc.
800 N. Bell Ave, Suite 200
Pittsburgh, PA 15106

JOB NO. 34100907.01 SHEET 1 OF 1
PHASE _____ TASK _____
JOB NAME Area C - Roadway Retaining Wall
BY Erik Weiler DATE 11/6/10
CHECKED BY _____ DATE _____



170' from edge of property to west to beginning of span

Width of Roadway ~ 65'

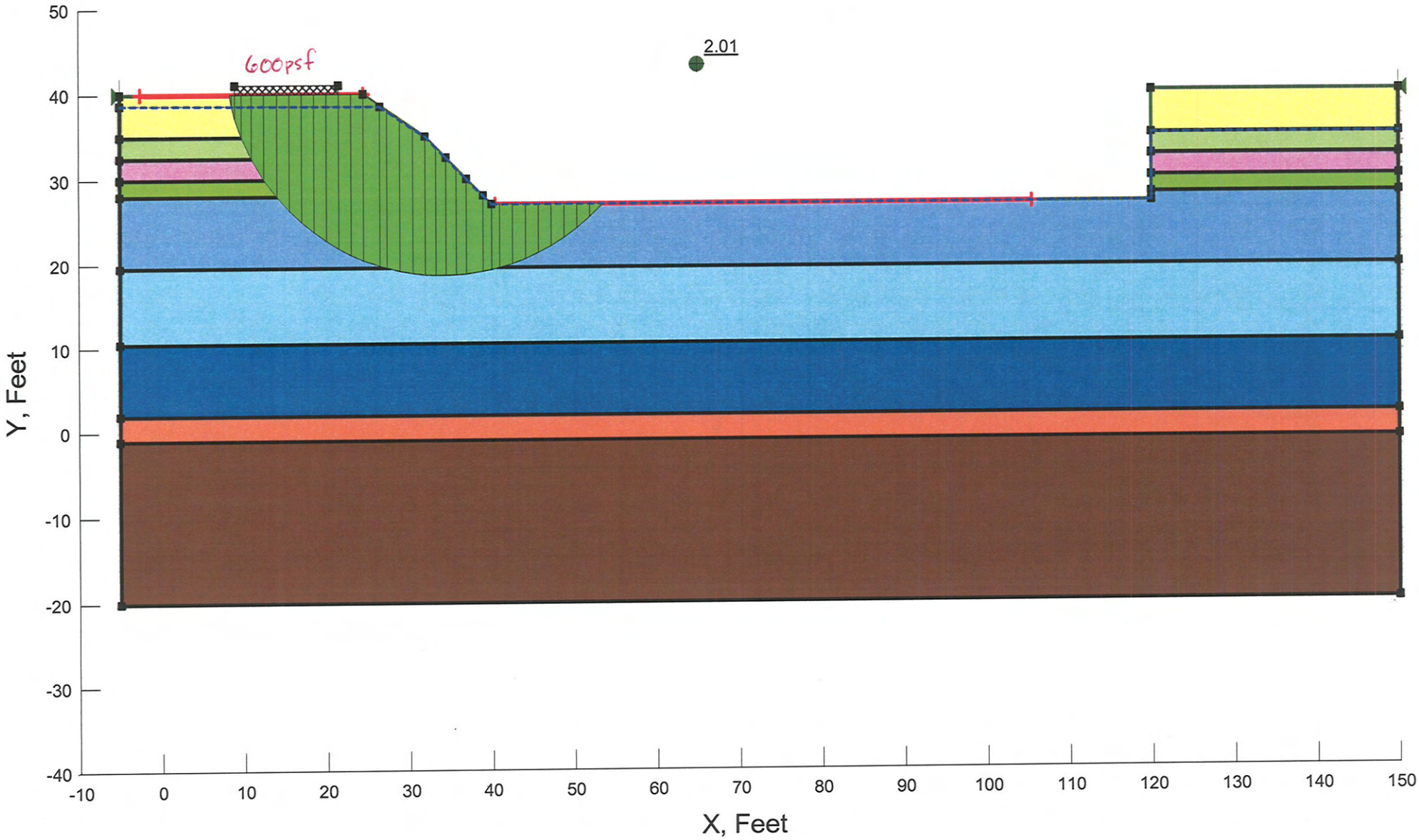
Vertical Wall face of retaining wall

ATTACHMENT 5

SLOPE/W OUTPUT
AREA C – SCENARIO 1 (EXCAVATOR)
ESTIMATED FACTORS OF SAFETY

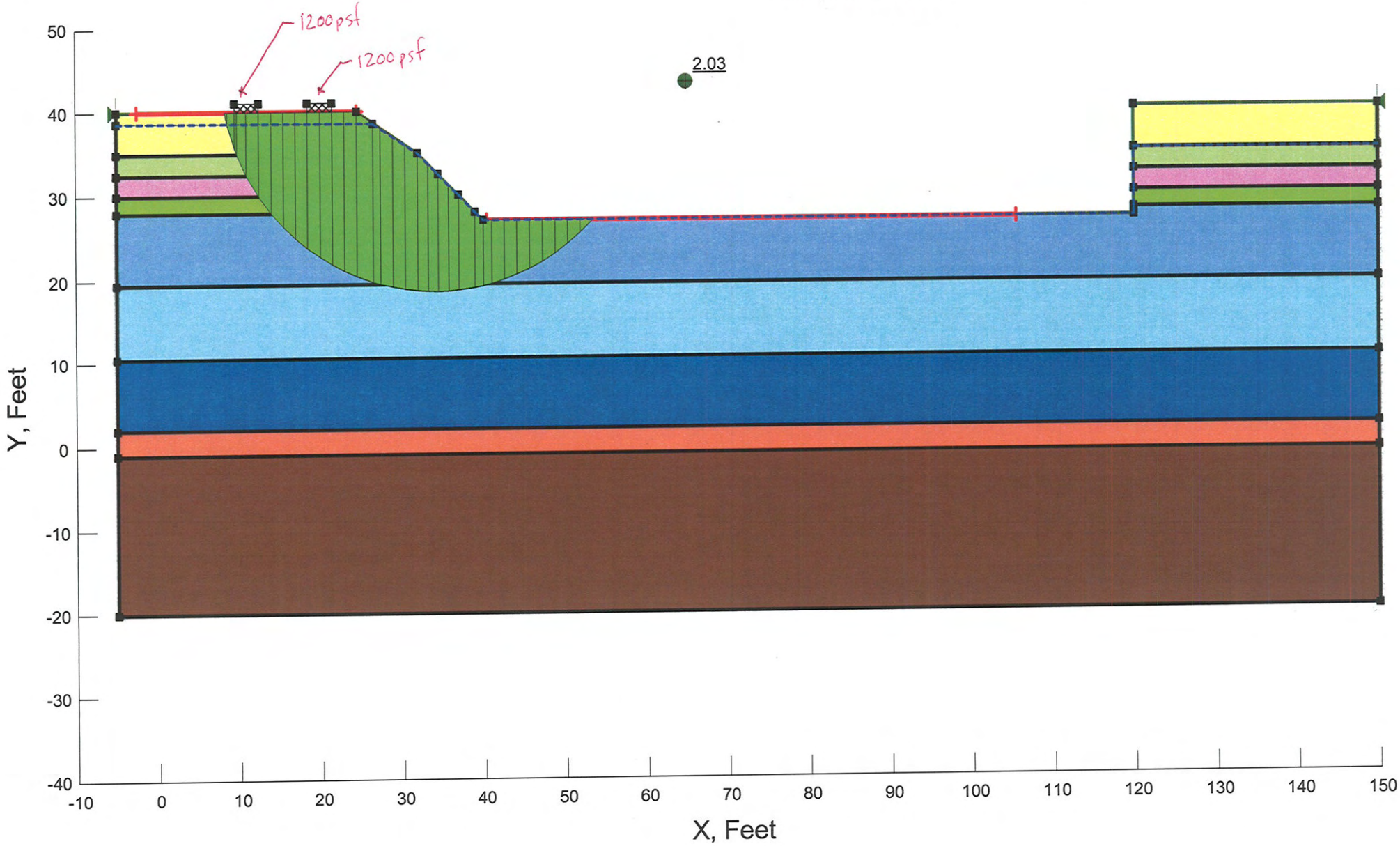
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C - Remedial Excavations
Date: 9/24/2010
Name: Area C_C over B Sidewalls_600 psf_3' offset.gsz
Method: Spencer
Factor of Safety: 2.01

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



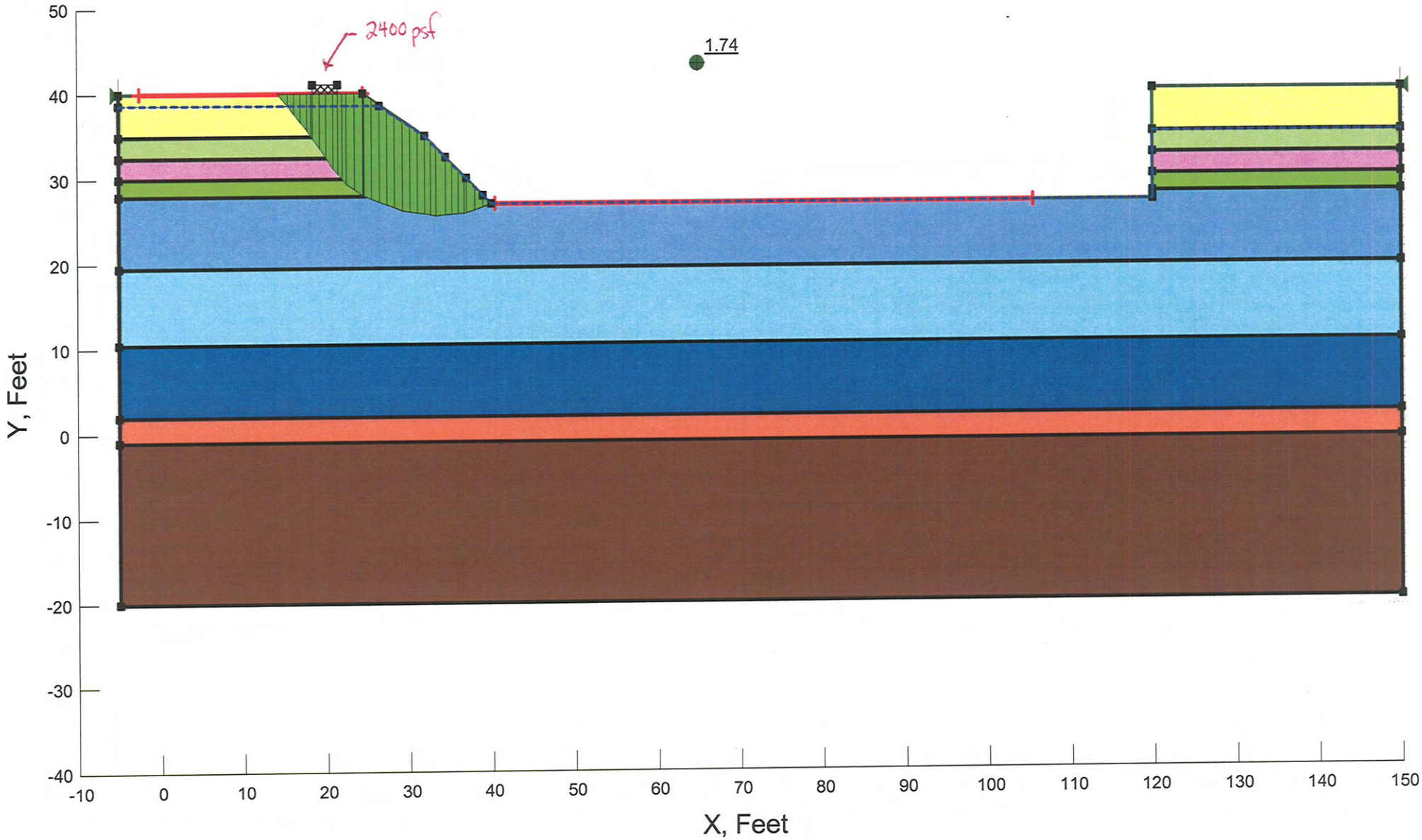
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Comments: Area C - Remedial Excavations
Date: 9/24/2010
Name: Area C_C over B Sidewalls_1200-2 psf_3' offset.gsz
Method: Spencer
Factor of Safety: 2.03

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C - Remedial Excavations
Date: 9/24/2010
Name: Area C_C over B Sidewalls_2400 psf_3' offset.gsz
Method: Spencer
Factor of Safety: 1.74

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock

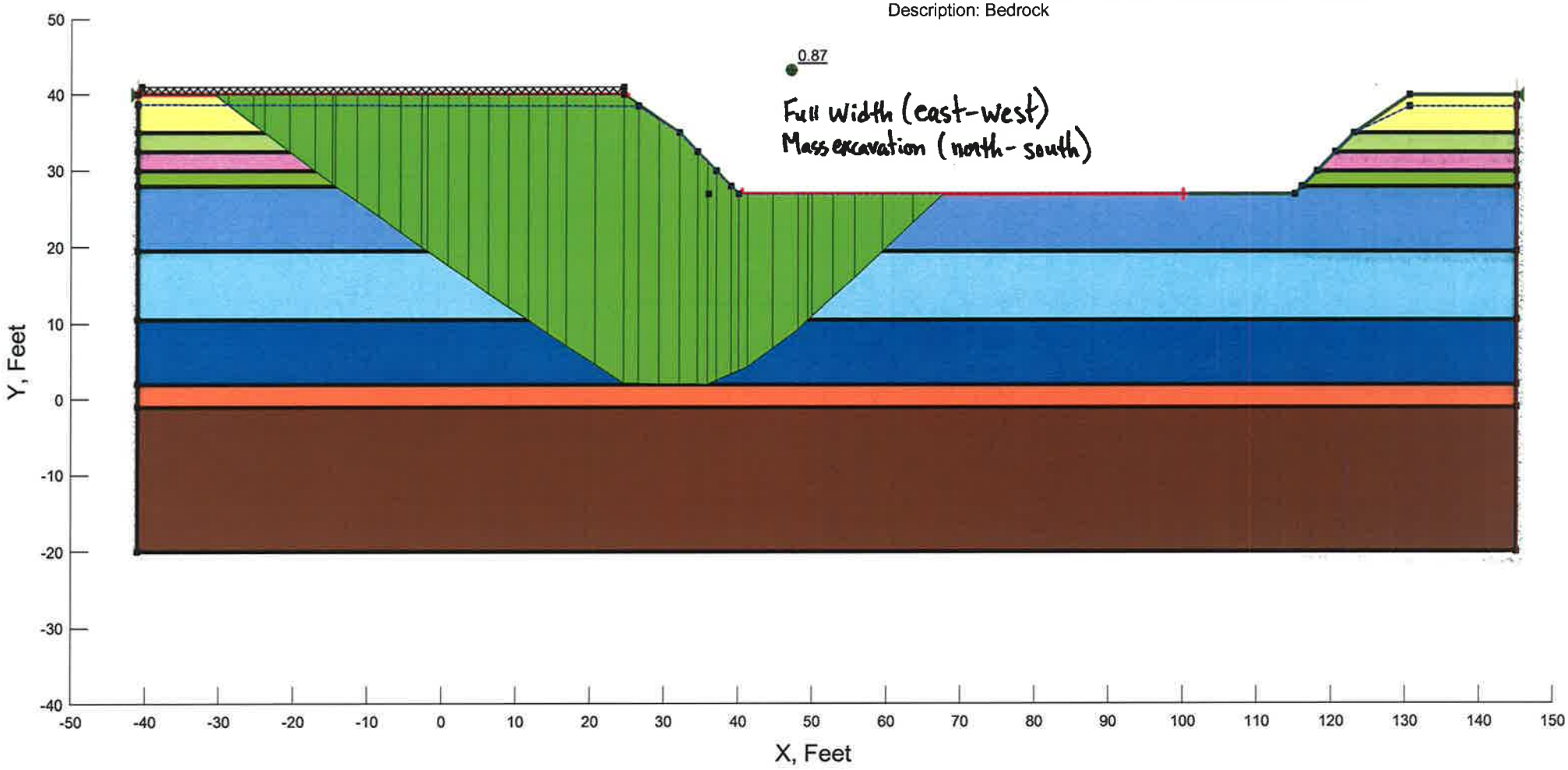


ATTACHMENT 6

SLOPE/W OUTPUT
AREA C2 – SCENARIO 2 (ELK STREET WALL/RAMP)
ESTIMATED FACTORS OF SAFETY

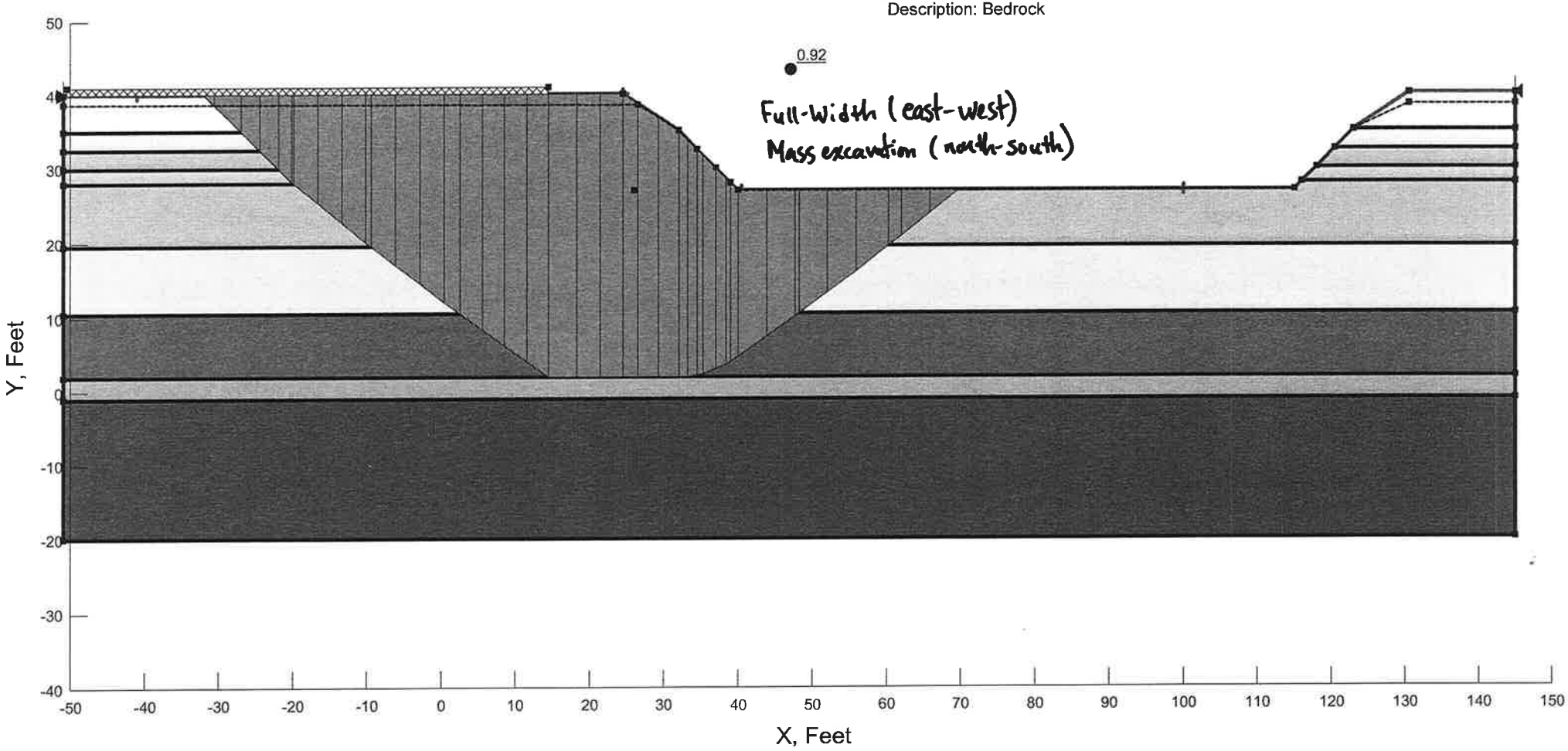
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 01a_Area C2_NW_1875 psf_0' offset_Long_OSHA_Full Load.gsz
Method: Spencer
Factor of Safety: 0.87

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



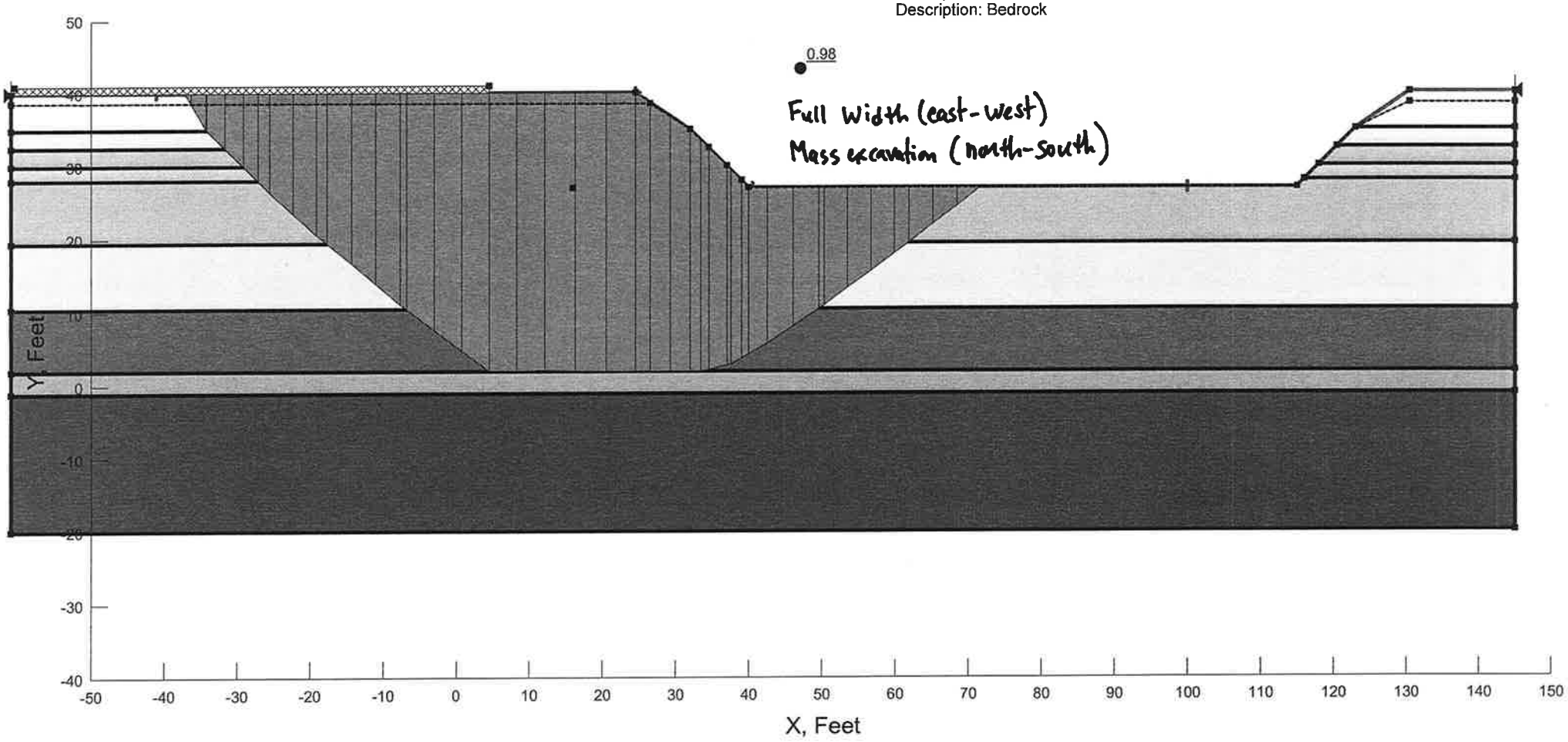
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Date: 10/21/2010
Name: 01b_Area C2_NW_1875 psf_10' offset_Long_OSHA_Full Load.gsz
Method: Spencer
Factor of Safety: 0.92

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 01c_Area C2_NW_1875 psf_20' offset_Long_OSHA_Full Load.gsz
Method: Spencer
Factor of Safety: 0.98

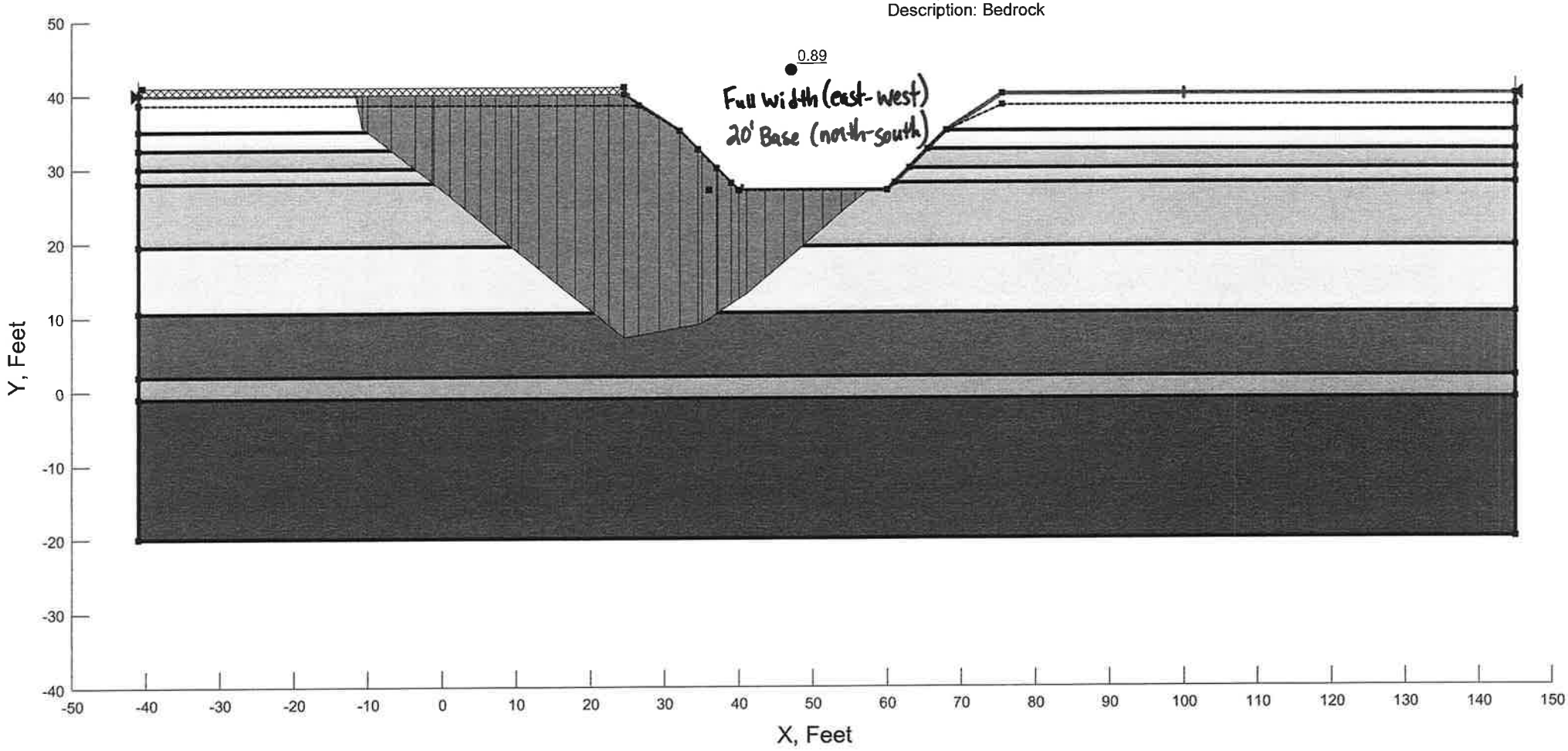
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Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



1.D

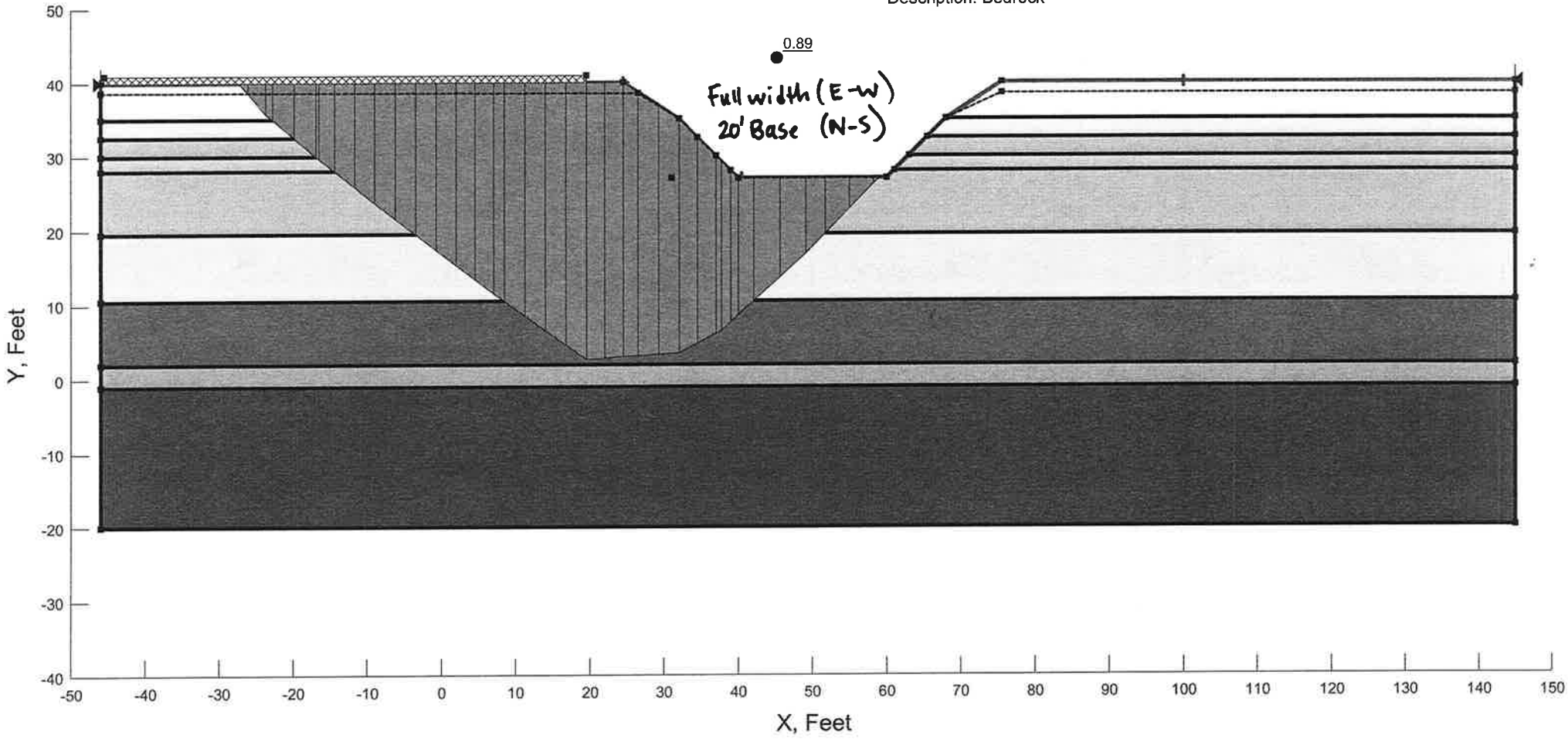
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Date: 10/14/2010
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Method: Spencer
Factor of Safety: 0.89

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
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Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



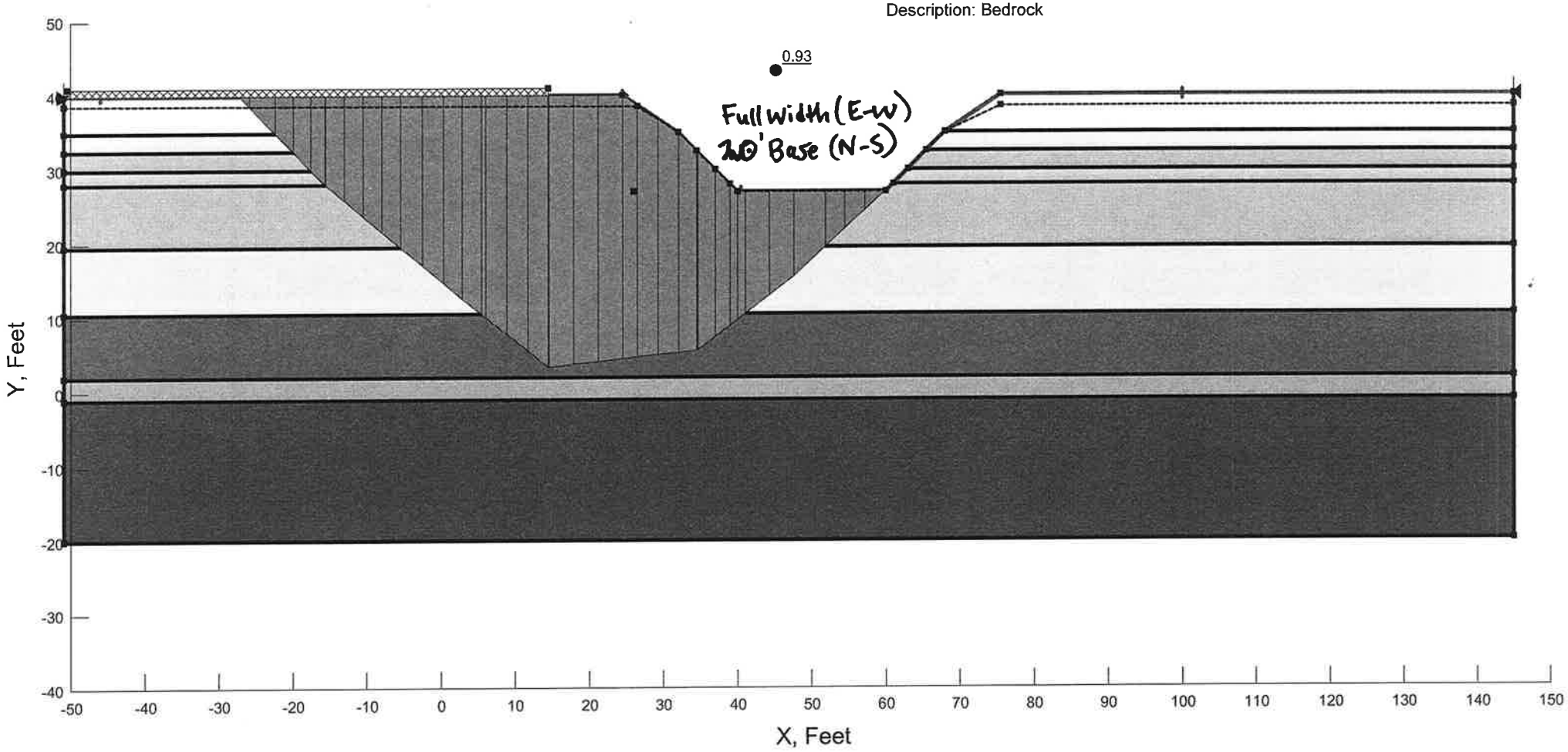
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Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/14/2010
Name: 01e_Area C2_NW_1875 psf_5' offset_20'Base_OSHA_Full Load.gsz
Method: Spencer
Factor of Safety: 0.89

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



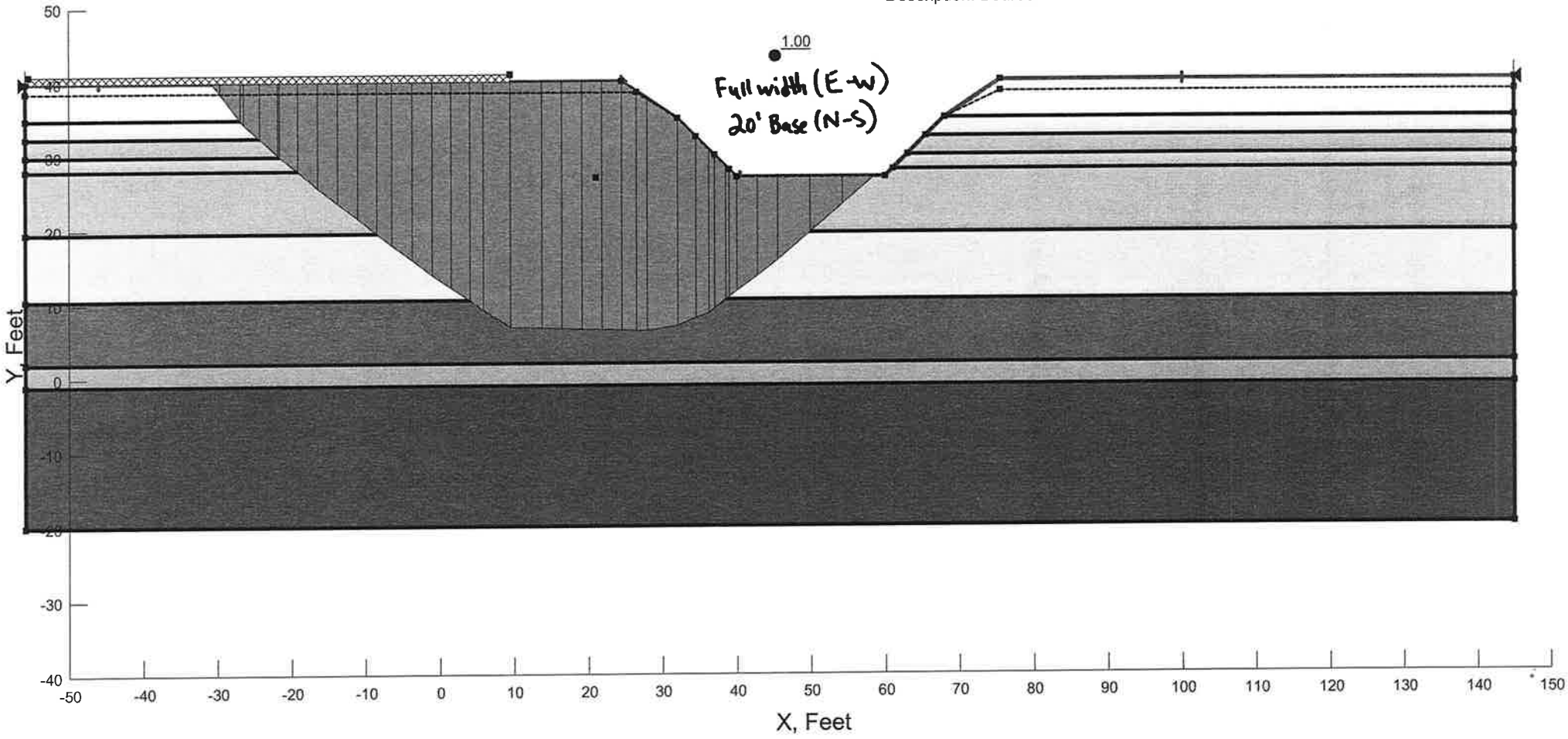
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/14/2010
Name: 01f_Area C2_NW_1875 psf_10' offset_20'Base_OSHA_Full Load.gsz
Method: Spencer
Factor of Safety: 0.93

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



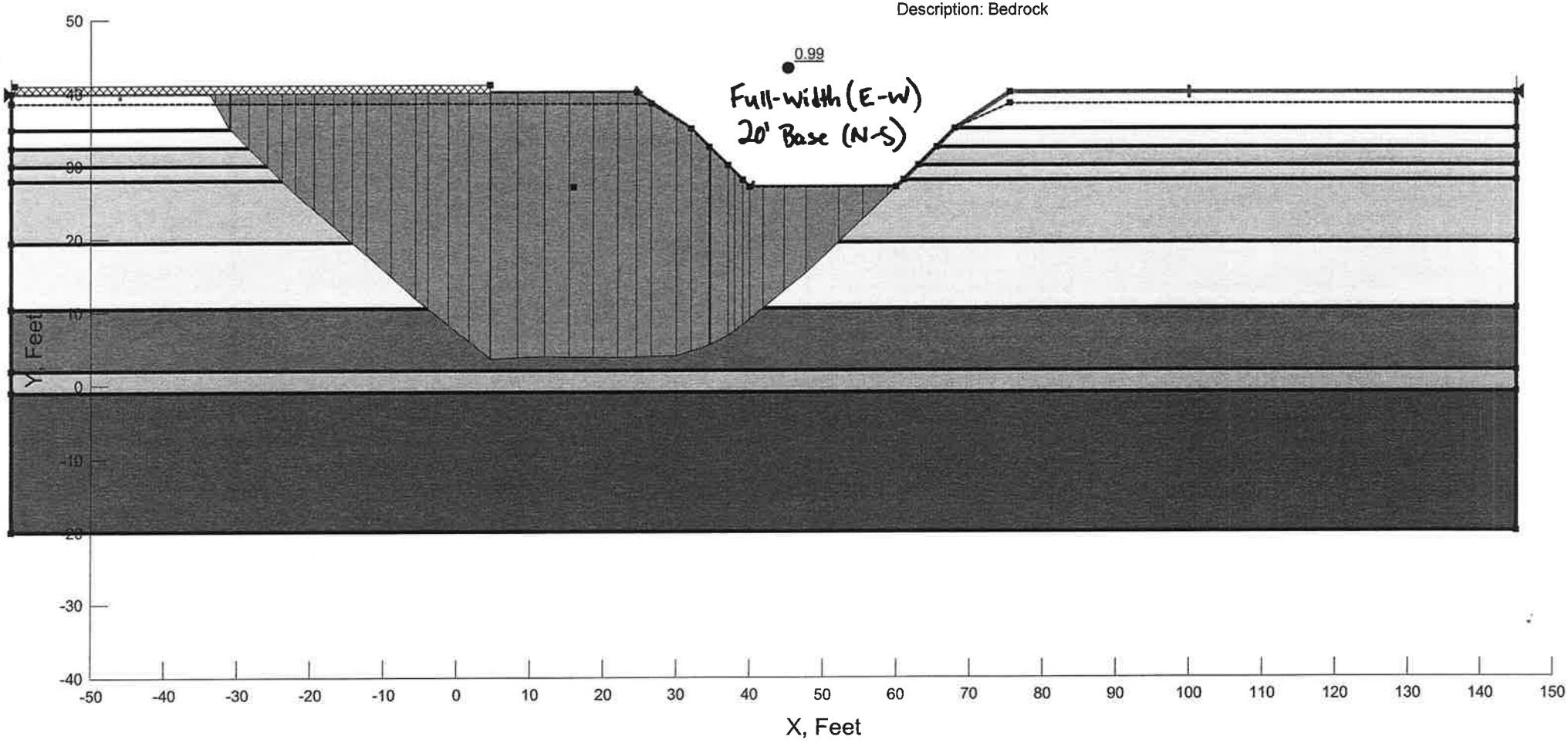
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Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/14/2010
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Method: Spencer
Factor of Safety: 1.00

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



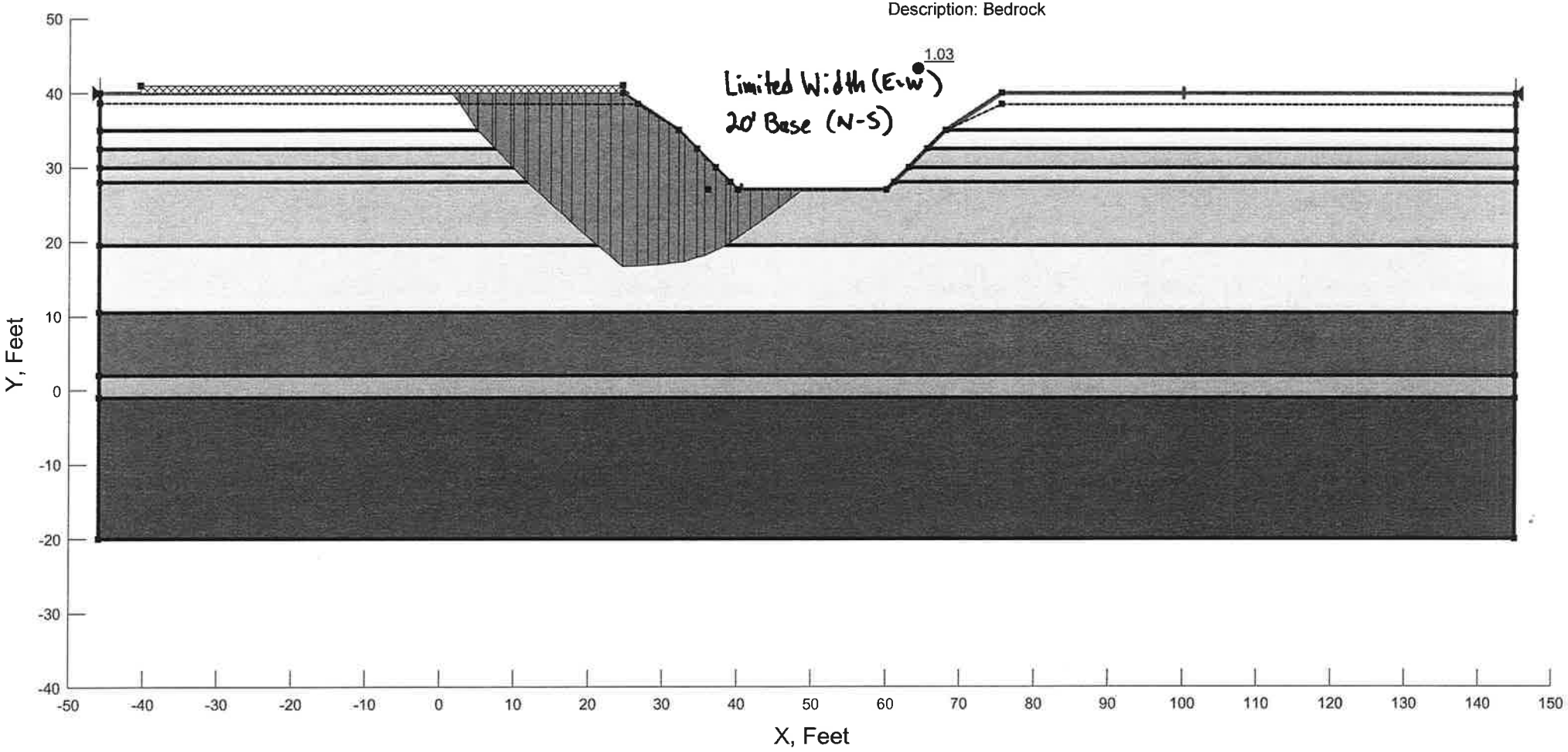
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/14/2010
Name: 01h_Area C2_NW_1875 psf_20' offset_20'Base_OSHA_Full Load.gsz
Method: Spencer
Factor of Safety: 0.99

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 02a_Area C2_NW_1875 psf_0' offset_20'Base_OSHA_20' Load.gsz
Method: Spencer
Factor of Safety: 1.03

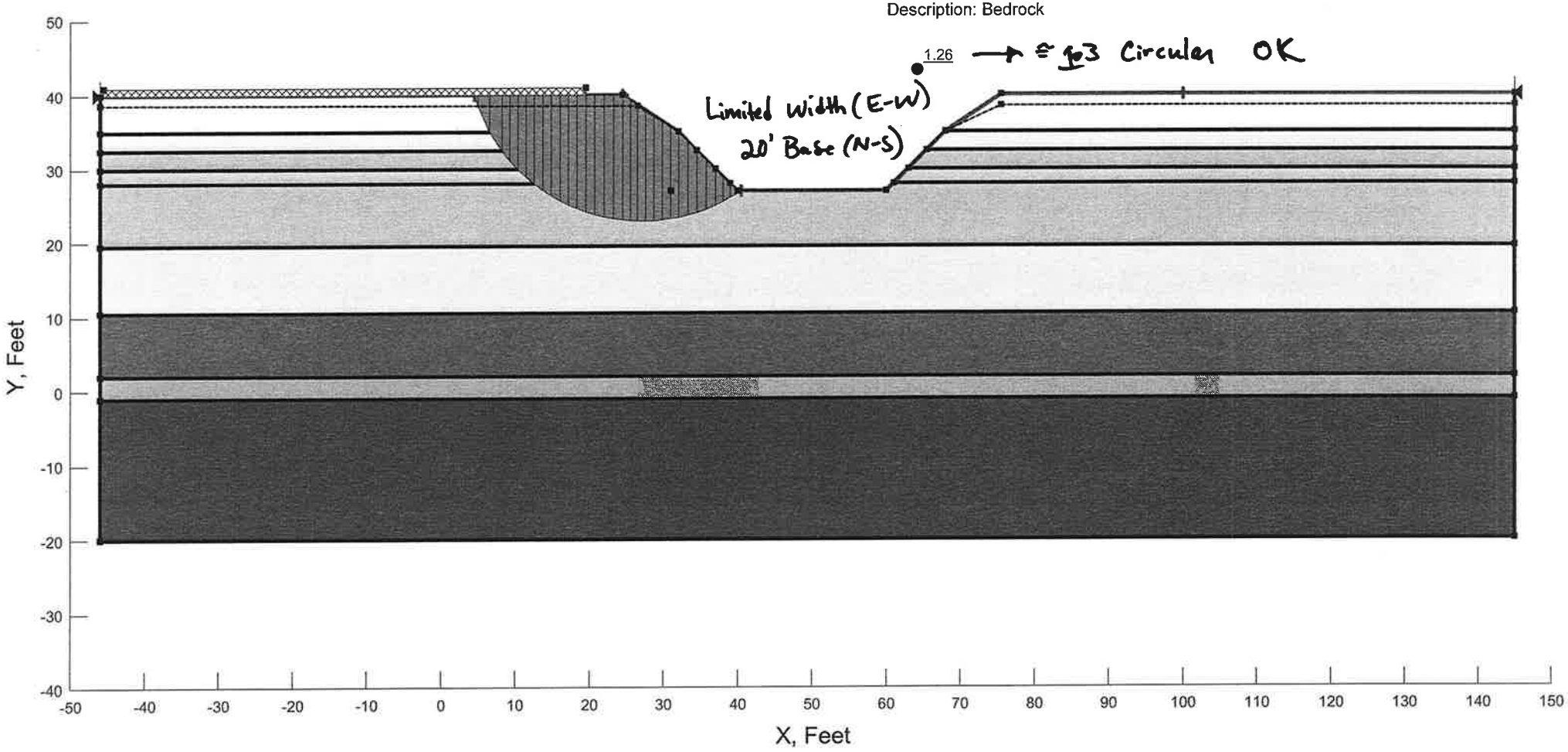
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Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



2b

Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 02b_Area C2_NW_1875 psf_5' offset_20'Base_OSHA_20' Load.gsz
Method: Spencer
Factor of Safety: 1.26

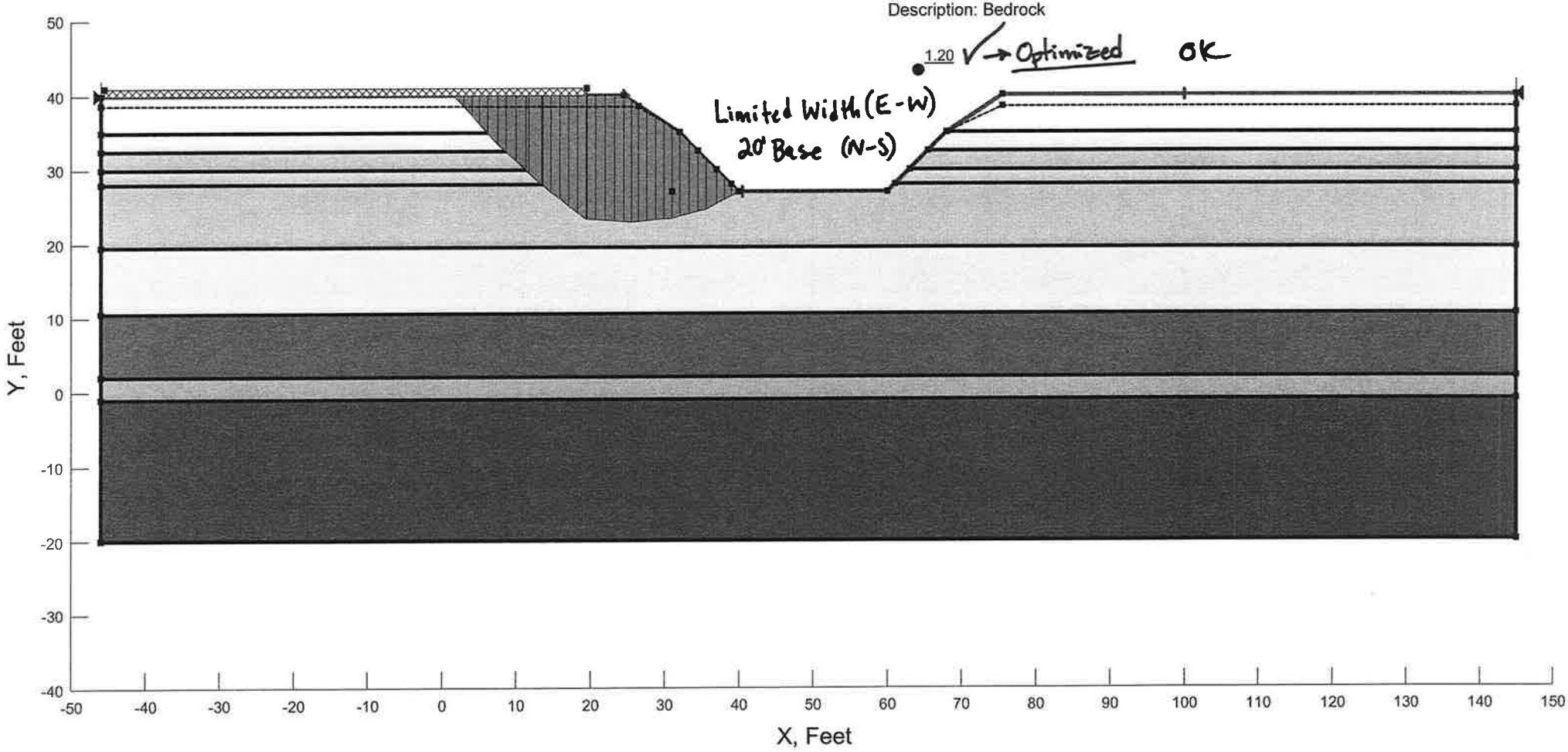
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Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 02b_Area C2_NW_1875 psf_5' offset_20'Base_OSHA_20' Load.gsz
Method: Spencer
Factor of Safety: 1.20

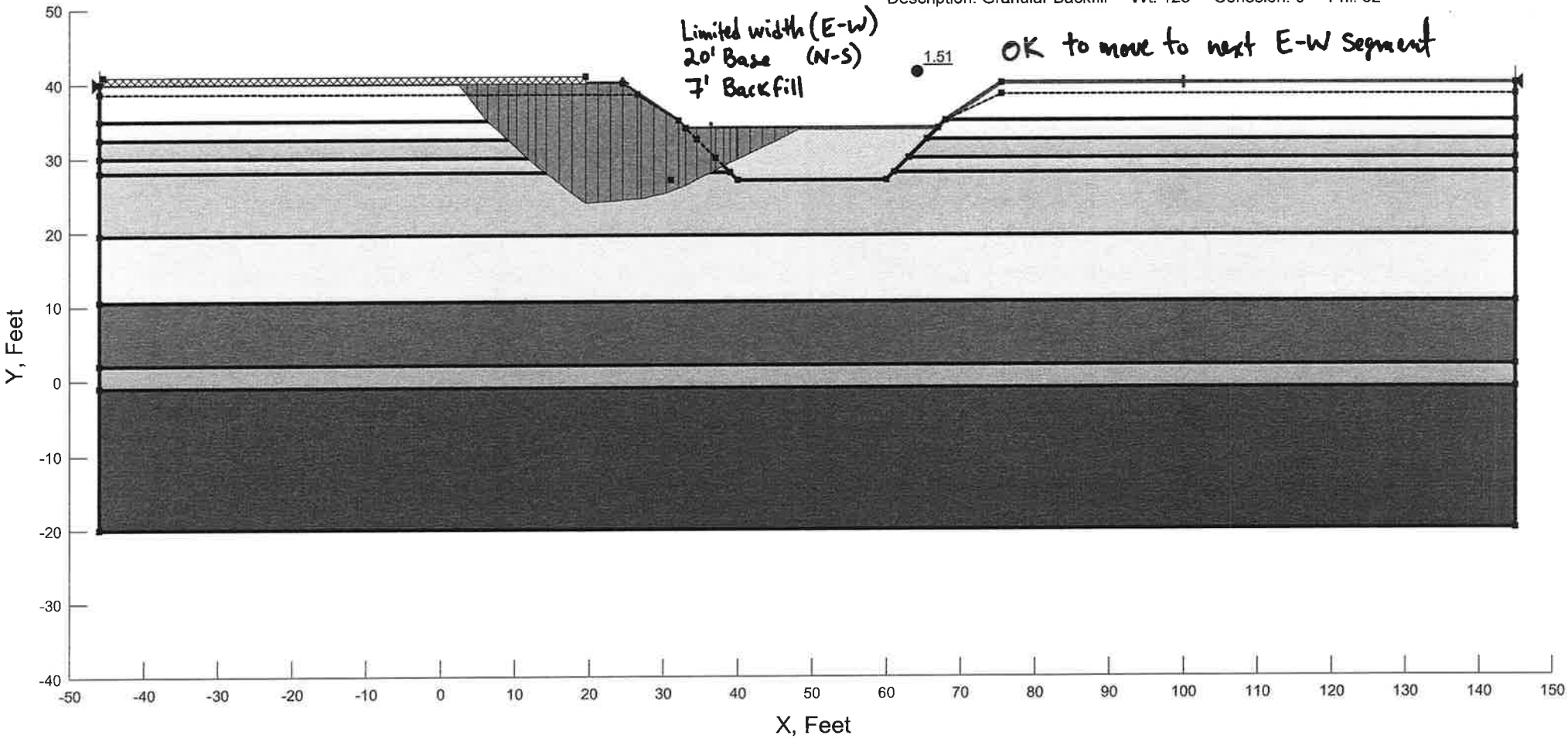
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Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock

1.20 ✓ → Optimized OK



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03a_Area C2_NW_1875 psf_5' off_20'Base_OSHA_20' Load_7'Fill.gsz
Method: Spencer
Factor of Safety: 1.51

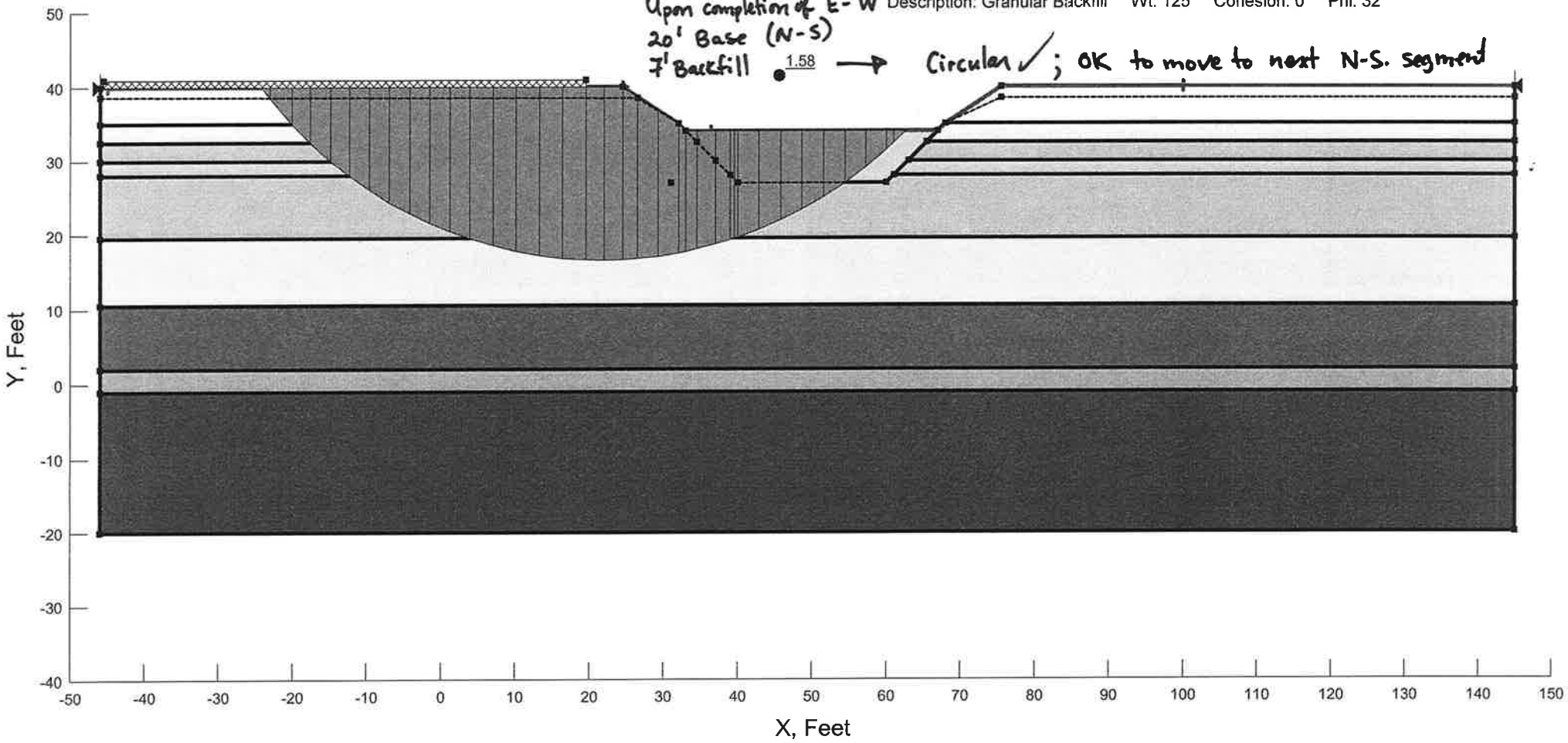
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Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/15/2010
Name: 03b_Area C2_NW_1875 psf_5' off_20'Base_OSHA_Full_7'Fill.gsz
Method: Spencer
Factor of Safety: 1.58

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32

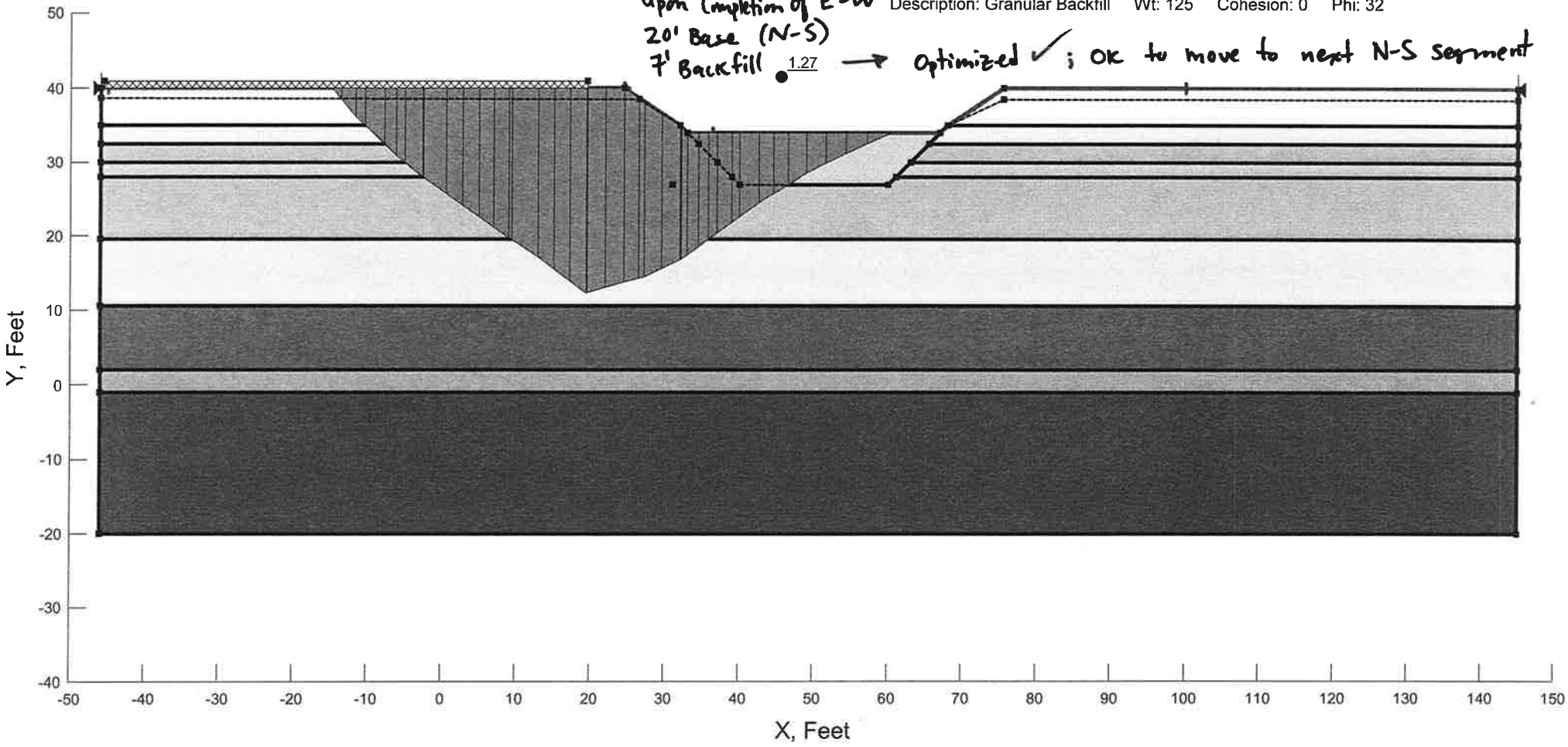
Upon completion of E-W 20' Base (N-S) 7' Backfill 1.58 → Circular ✓; OK to move to next N-S. segment



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/15/2010
Name: 03b_Area C2_NW_1875 psf_5' off_20'Base_OSHA_Full_7'Fill.gsz
Method: Spencer
Factor of Safety: 1.27

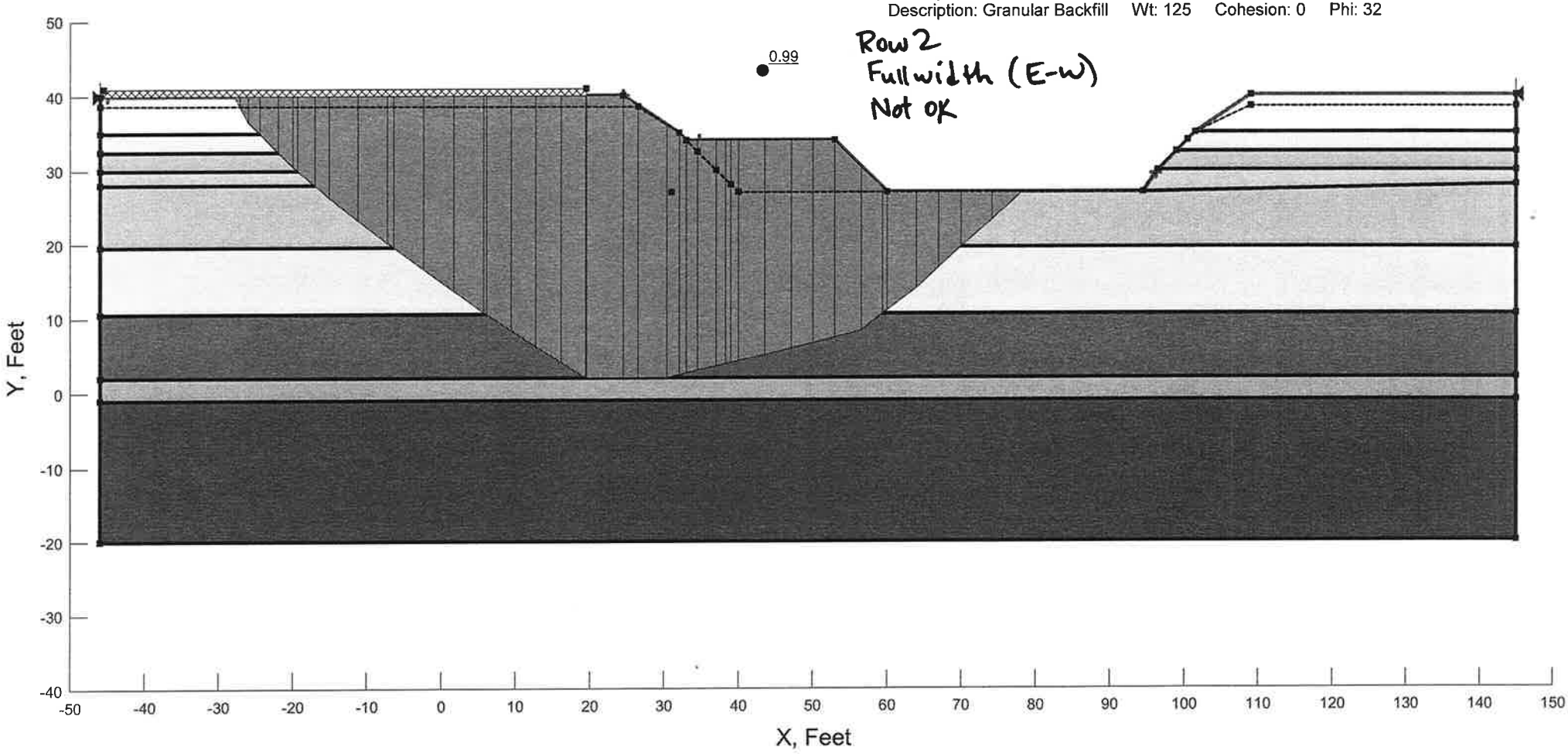
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Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32

Upon Completion of E-W 20' Base (N-S) 7' Backfill 1.27 → Optimized ✓ ; OK to move to next N-S segment



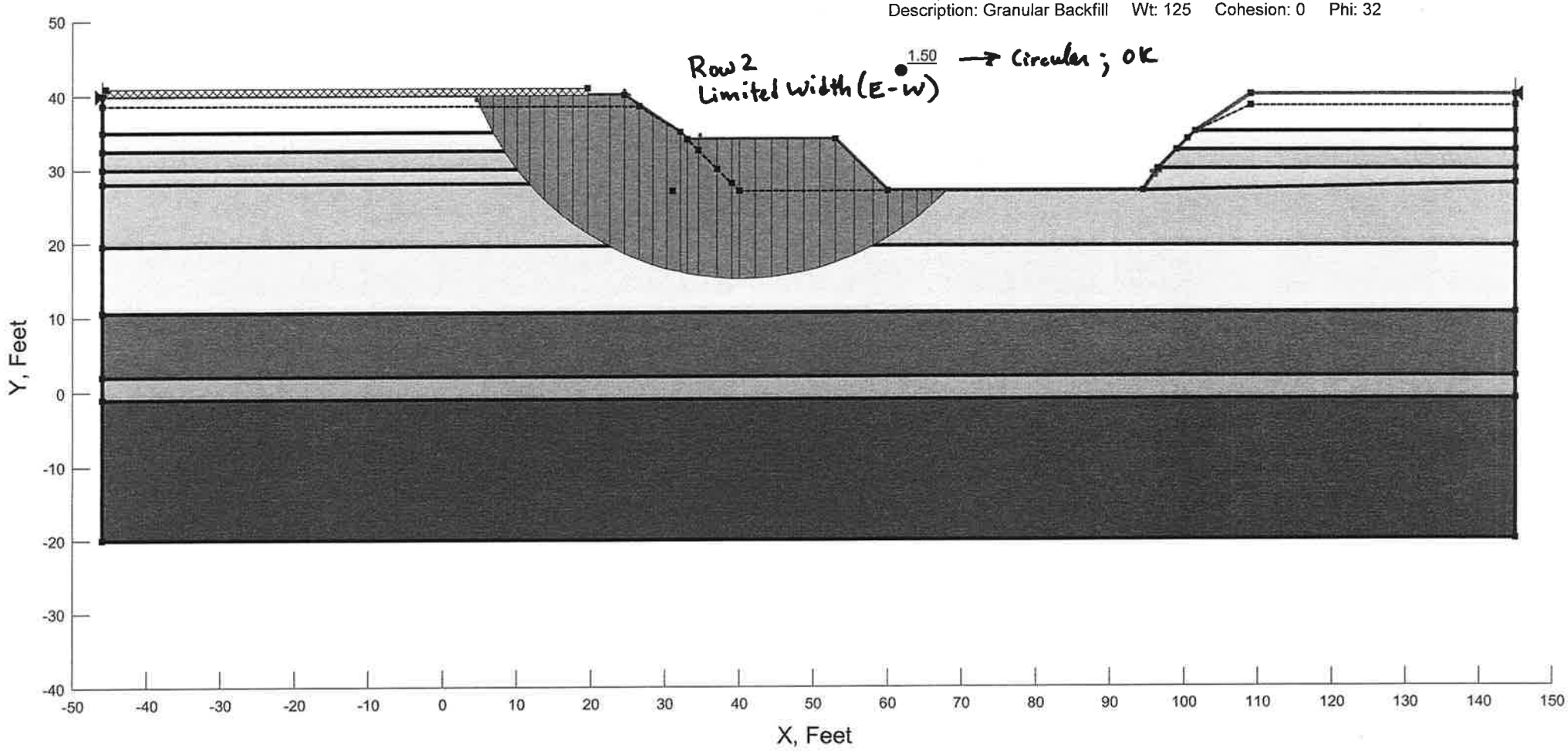
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Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03c_Area C2_NW_1875 psf_5' off_20'Base_OSHA_Full_Row 2.gsz
Method: Spencer
Factor of Safety: 0.99

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03d_Area C2_NW_1875 psf_5' off_20'Base_OSHA_20' Load_Row 2.gsz
Method: Spencer
Factor of Safety: 1.50

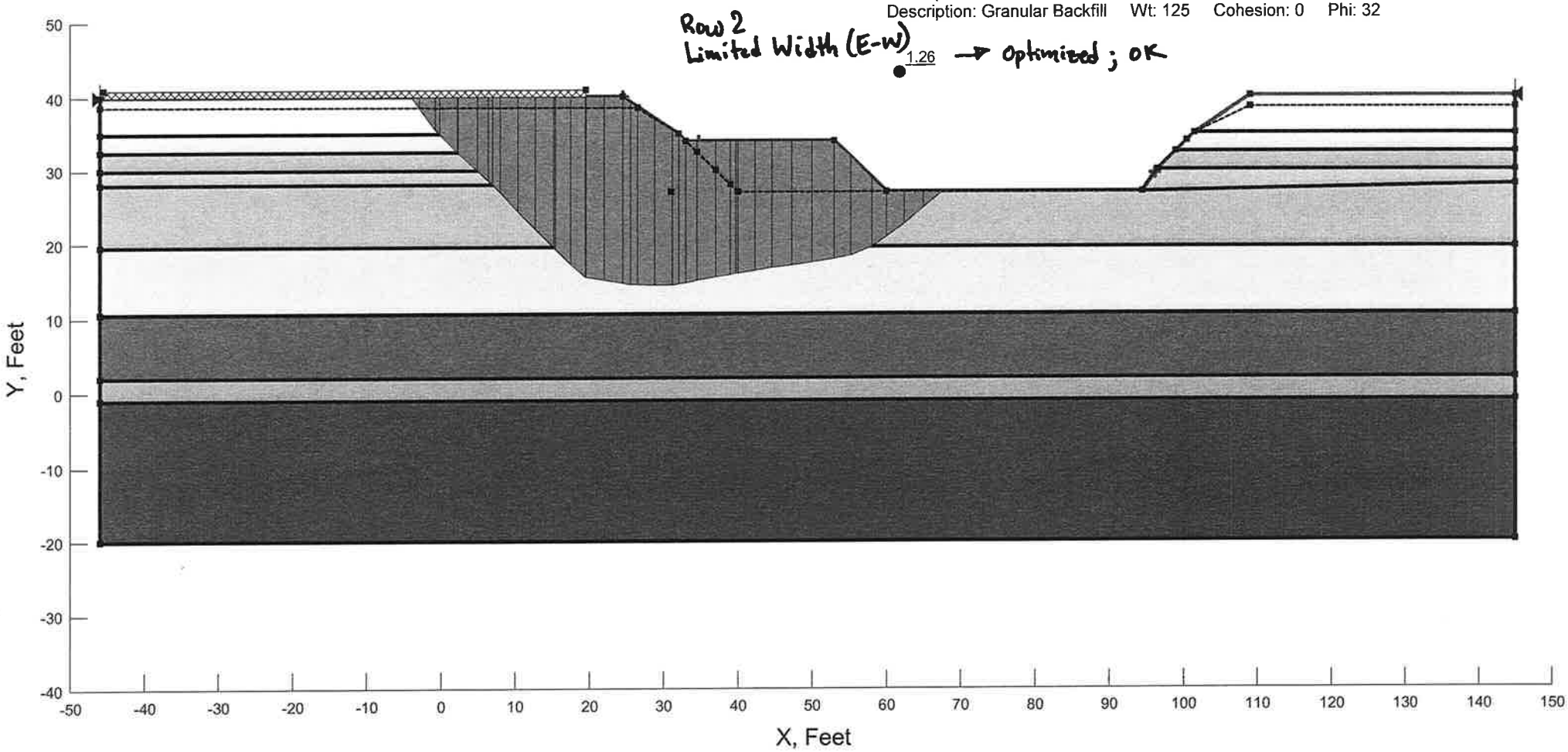
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Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03d_Area C2_NW_1875 psf_5' off_20'Base_OSHA_20' Load_Row 2.gsz
Method: Spencer
Factor of Safety: 1.26

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32

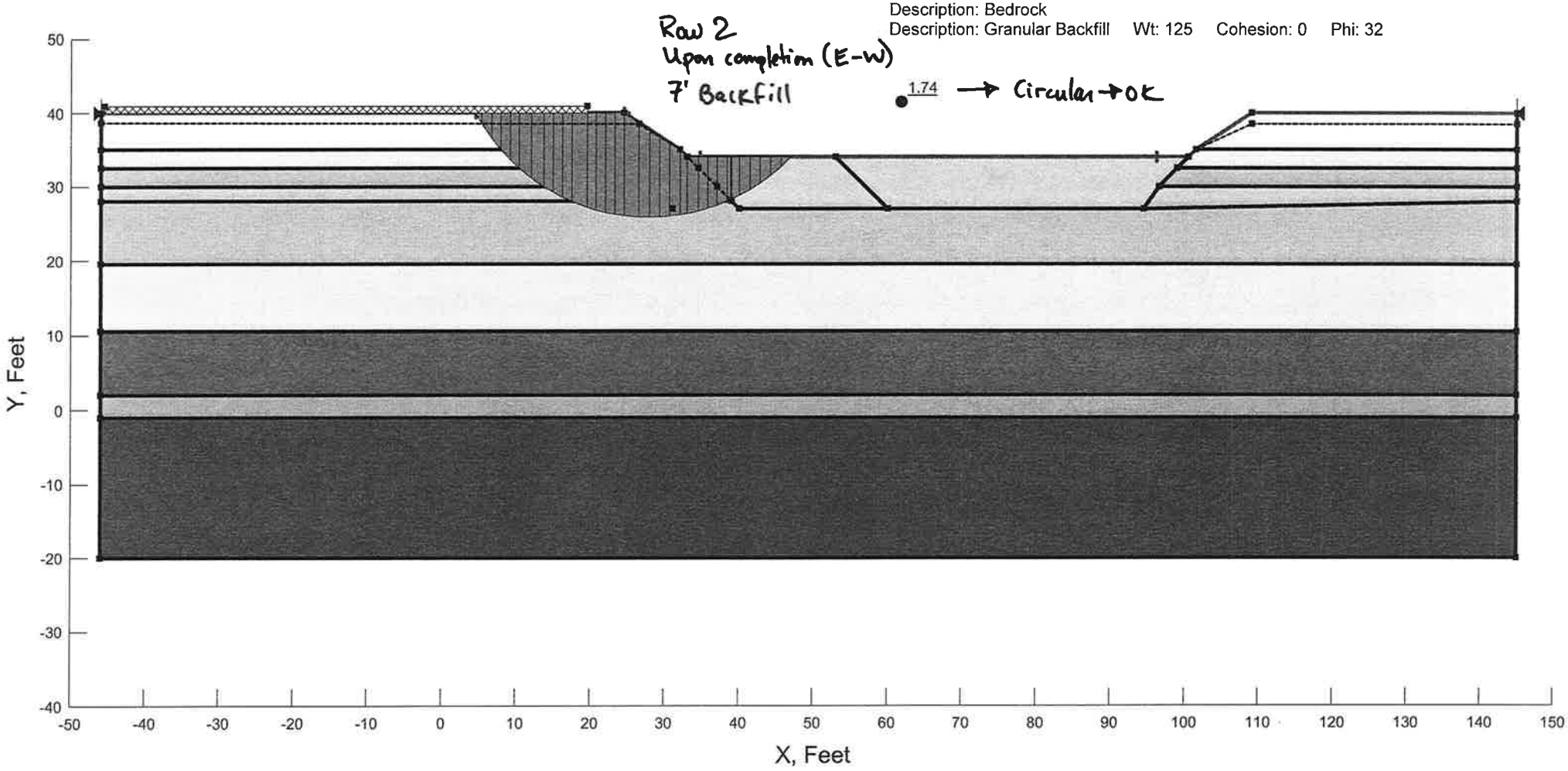
Row 2
Limited Width (E-W)



→ Optimized ; OK

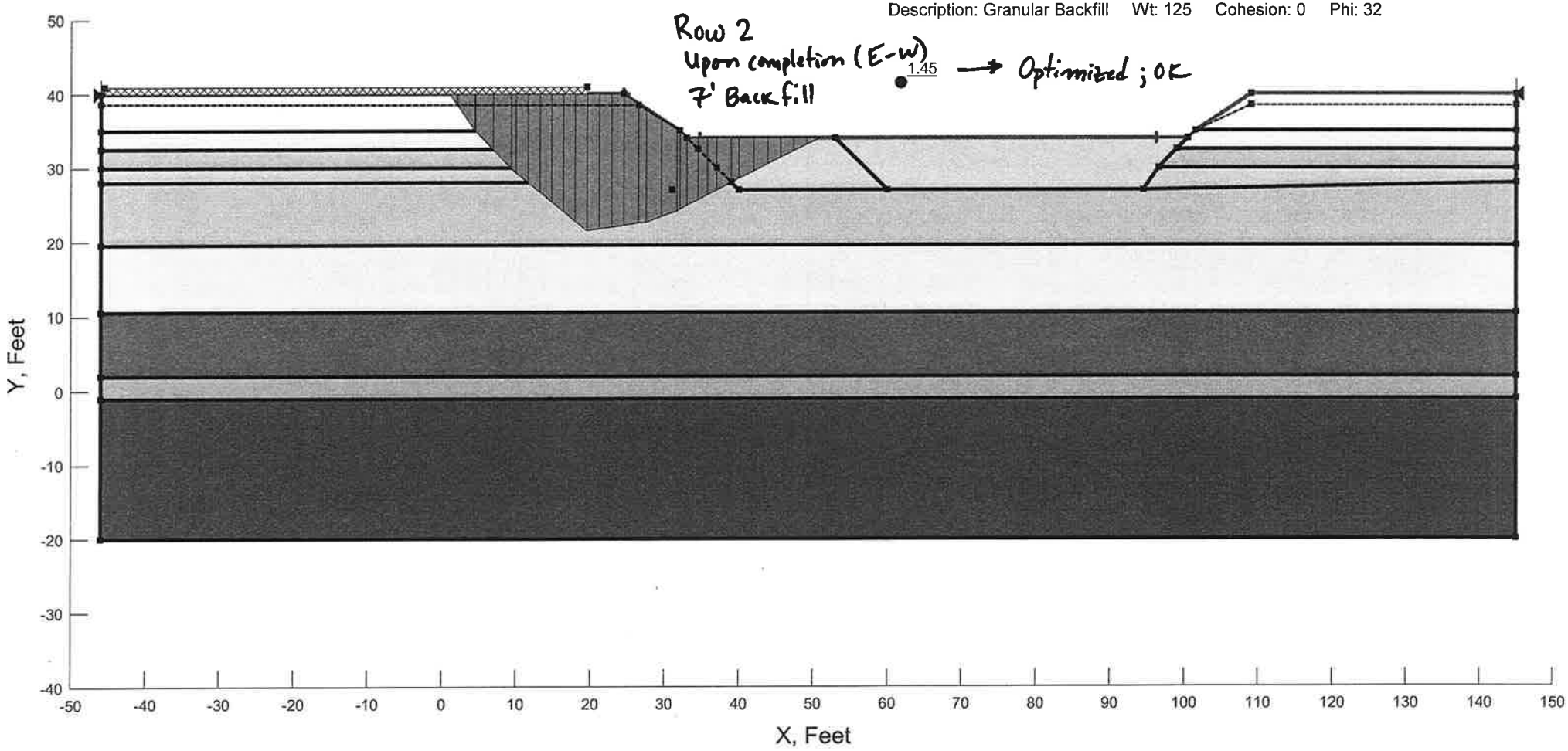
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03e_Area C2_NW_1875 psf_5' off_20'B_OSHA_20'Load_Row2_7'Fill.gsz
Method: Spencer
Factor of Safety: 1.74

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03e_Area C2_NW_1875 psf_5' off_20'B_OSHA_20'Load_Row2_7'Fill.gsz
Method: Spencer
Factor of Safety: 1.45

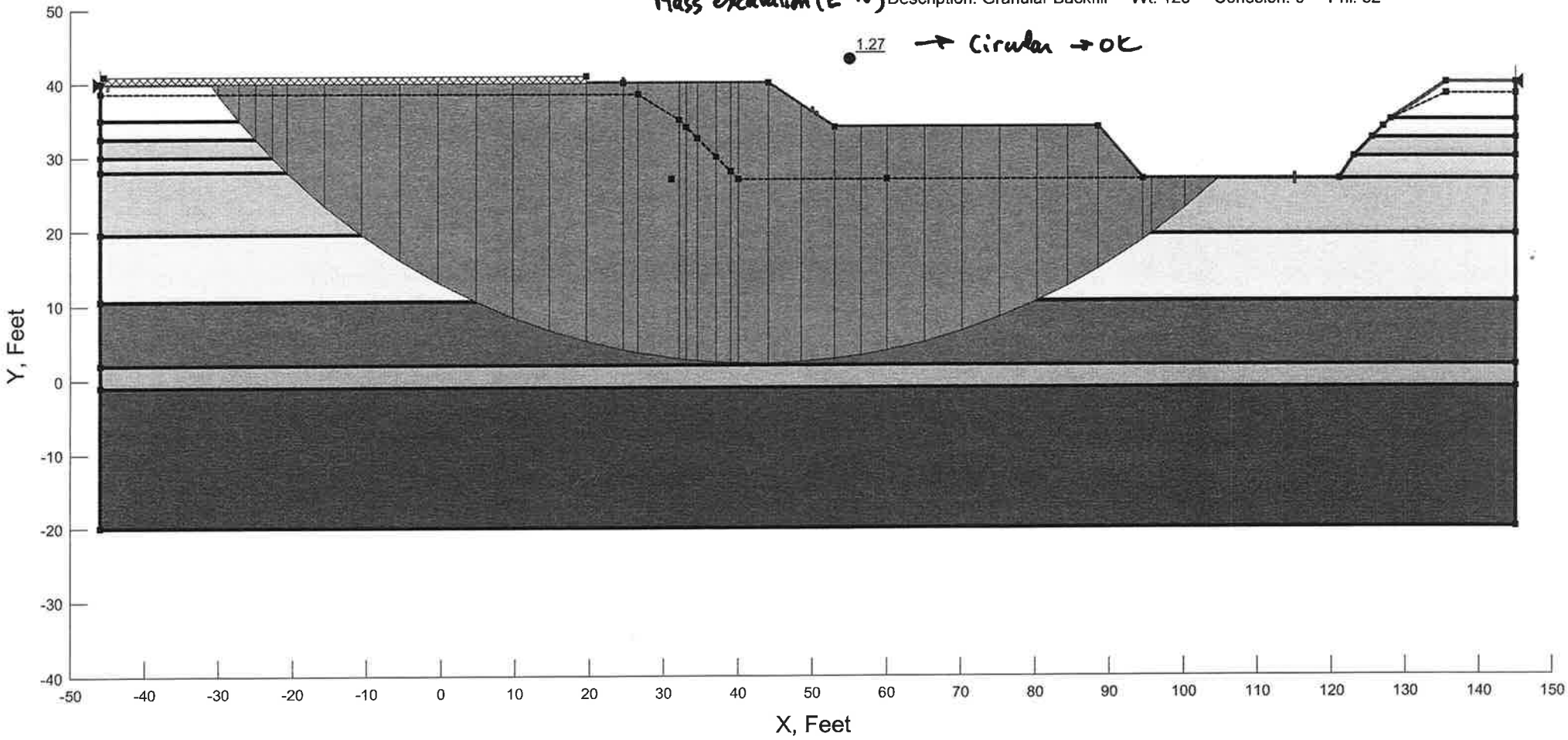
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Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03f_Area C2_NW_1875 psf_5' off_20'Base_OSHA_Full_Row3.gsz
Method: Spencer
Factor of Safety: 1.27

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32

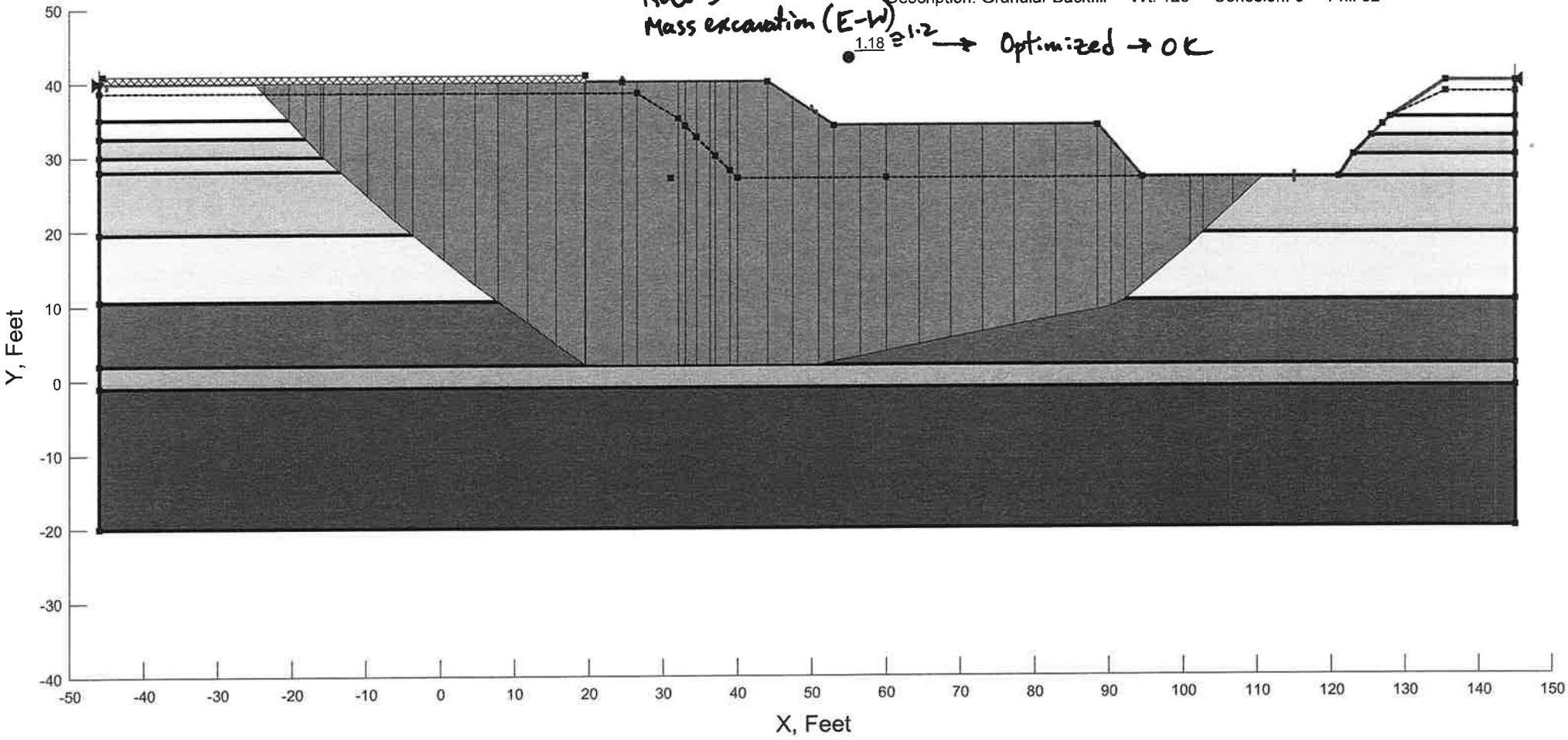
Row 3
Mass excavation (E-W)



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
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Method: Spencer
Factor of Safety: 1.18

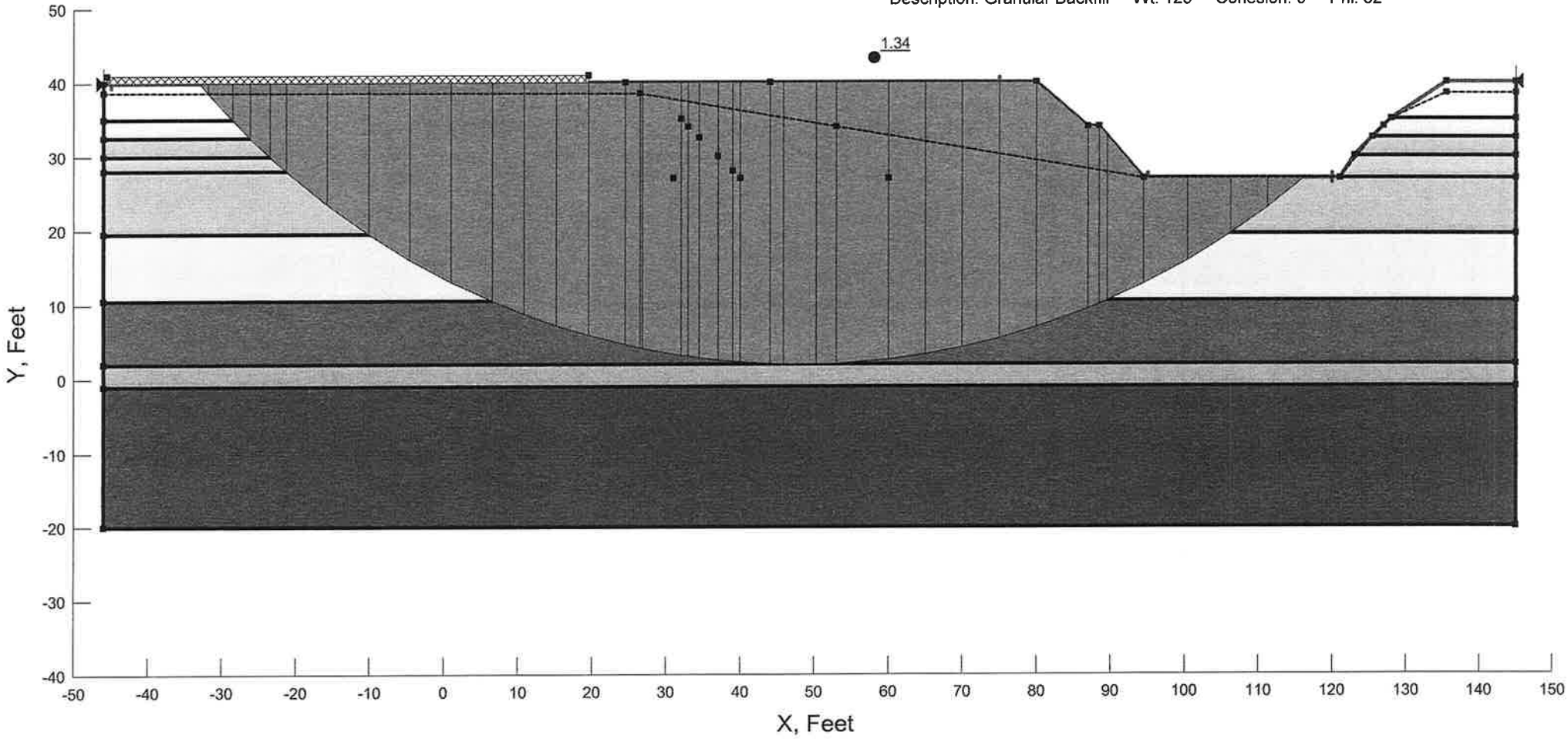
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Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32

Row 3
Mass excavation (E-W)
1.18 ≥ 1.2 → Optimized → OK



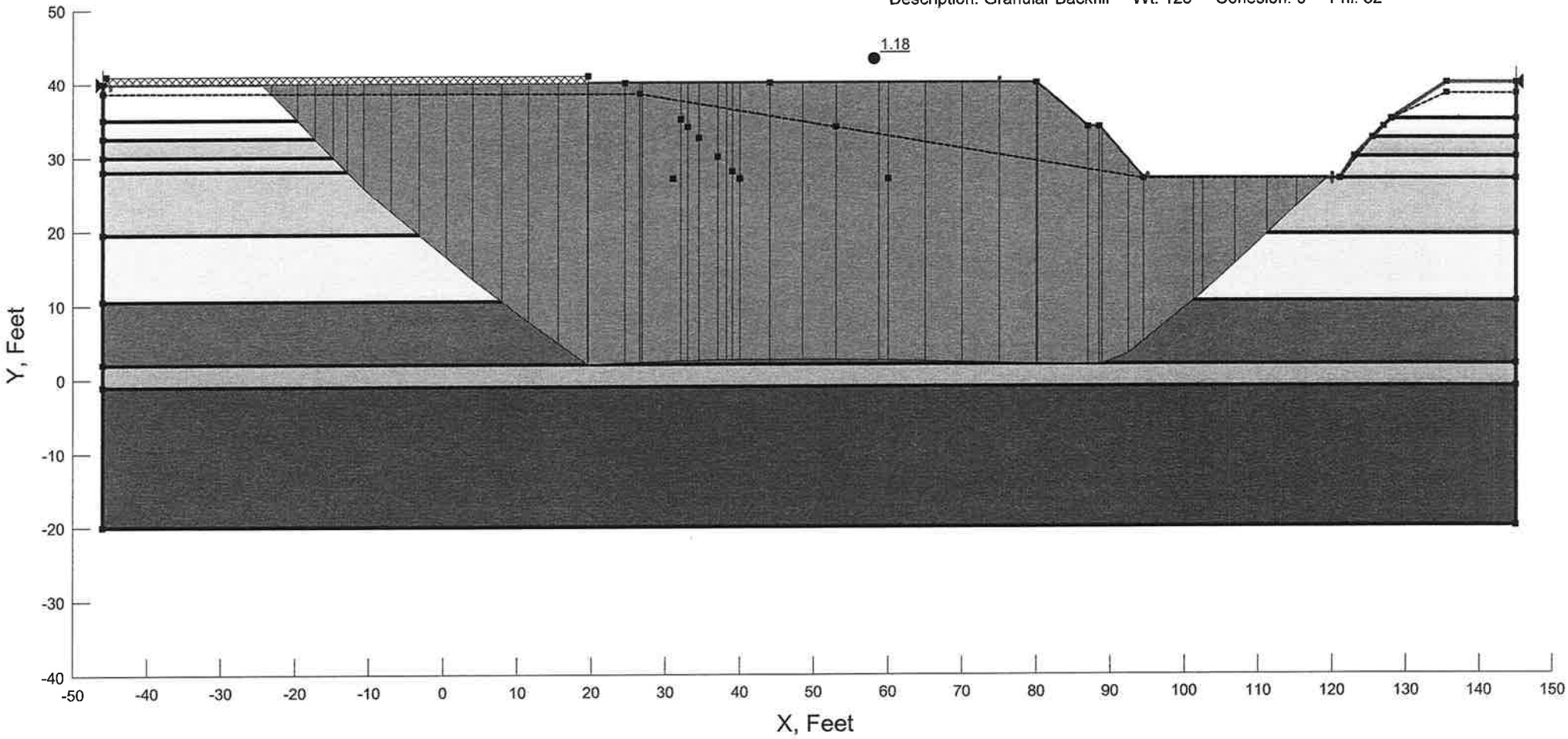
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Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
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Method: Spencer
Factor of Safety: 1.34

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Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area C2 - NW Corner (Adj. to Retaining Wall)
Date: 10/21/2010
Name: 03ggw_Area C2_NW_1875 psf_5' off_20'Base_OSHA_Full_Row3.gsz
Method: Spencer
Factor of Safety: 1.18

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1000 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1150 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 750 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 550 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock
Description: Granular Backfill Wt: 125 Cohesion: 0 Phi: 32



ATTACHMENT 7

EXCAVATION SKETCHES/GUIDELINES
AREA C2 – SCENARIO 2 (ELK STREET WALL/RAMP)

Existing Abutment

Existing Retaining Wall

5' (Min) Offset from Wall to Crest of excavation

New Limits of 13' deep excavation (based on OSHA C over B from crest)

Existing N-S Process Sewer Line

Southern Limit of Segmented Excavation Work (~ 75'S of Wall)

10' Max Segments

20' Max Width Segments

30' Max Width Segments

N: 1044962.5
E: 1078852.4

N: 1044925.4
E: 1078962.4

N: 1044878.0
E: 1078763.2

N: 1044810.4
E: 1078912.8

N: 1044846.6
E: 1078766.2

N: 1044678.6
E: 1078774.8

N: 1044675.5
E: 1078822.8

N: 1044617.6
E: 1078813.3

N: 1044625.3
E: 1078766.7

EXCAVATION AREA C2
AREA=18,839. SF
DEPTH=TOP OF SOFT GRAY CLAY (APPROX 13 FT)

EXCAVATION AREA C1
AREA=2,674. SF
DEPTH=TOP OF SOFT GRAY CLAY (APPROX 13 FT)

EXISTING SILT FENCE (NITC)

EXISTING STORM DRAIN INLET PROTECTION (TYP) (NITC)

EXISTING STABILIZED CONSTRUCTION ENTRANCE (NITC)

ABANDON MONITORING WELL (TYP)

REMOVE PROCESS SEWER AND CAP AT EXCAVATION LIMITS

PROTECT EXISTING WELLS (TYP)

MW-C03

MW-C02

0 10 20 40
SCALE IN FEET

NO.	DATE	DSGN	DR	CHK	APVD	BY
0	09/16/10	R.T. BELCHER	M.R.STACEY	SCP	APVD	JMS
B	09/07/10	ISSUED FOR CONTRUCTION				
A	05/13/10	100% DESIGN FOR CLIENT REVIEW			RJR	RTB
		ISSUED 50% DESIGN FOR CLIENT REVIEW				
		REVISION				

THIS DRAWING IS THE PROPERTY OF MACTEC, INCLUDING ALL PATENTED AND PATENTABLE FEATURES, AND/OR CONFIDENTIAL INFORMATION AND ITS USE IS CONDITIONED UPON THE USERS AGREEMENT NOT TO REPRODUCE THE DRAWING, IN WHOLE OR PART, NOR THE MATERIAL DESCRIBED THEREON, NOR THE USE OF THE DRAWING FOR ANY PURPOSE OTHER THAN SPECIFICALLY PERMITTED IN WRITING BY MACTEC.

REMEDIAL DESIGN
FOR AREA C AND E EXCAVATIONS
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

MACTEC Engineering and Consulting, Inc.
P.O. Box 7050, 511 Congress Street
Portland, Maine 04112-7050
(207) 775-5401

MACTEC

CIVIL
AREA C
EXCAVATION PLAN

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	09/07/10
PROJ	3410090701
DWG	C-101
SHEET	3 OF 4

FILE NAME: M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA C & E RD EXCAVATION\SBD-RMD C-101.dwg PLOT DATE: Wed, 15 Sep 2010 PLOT TIME: 5:14 PM

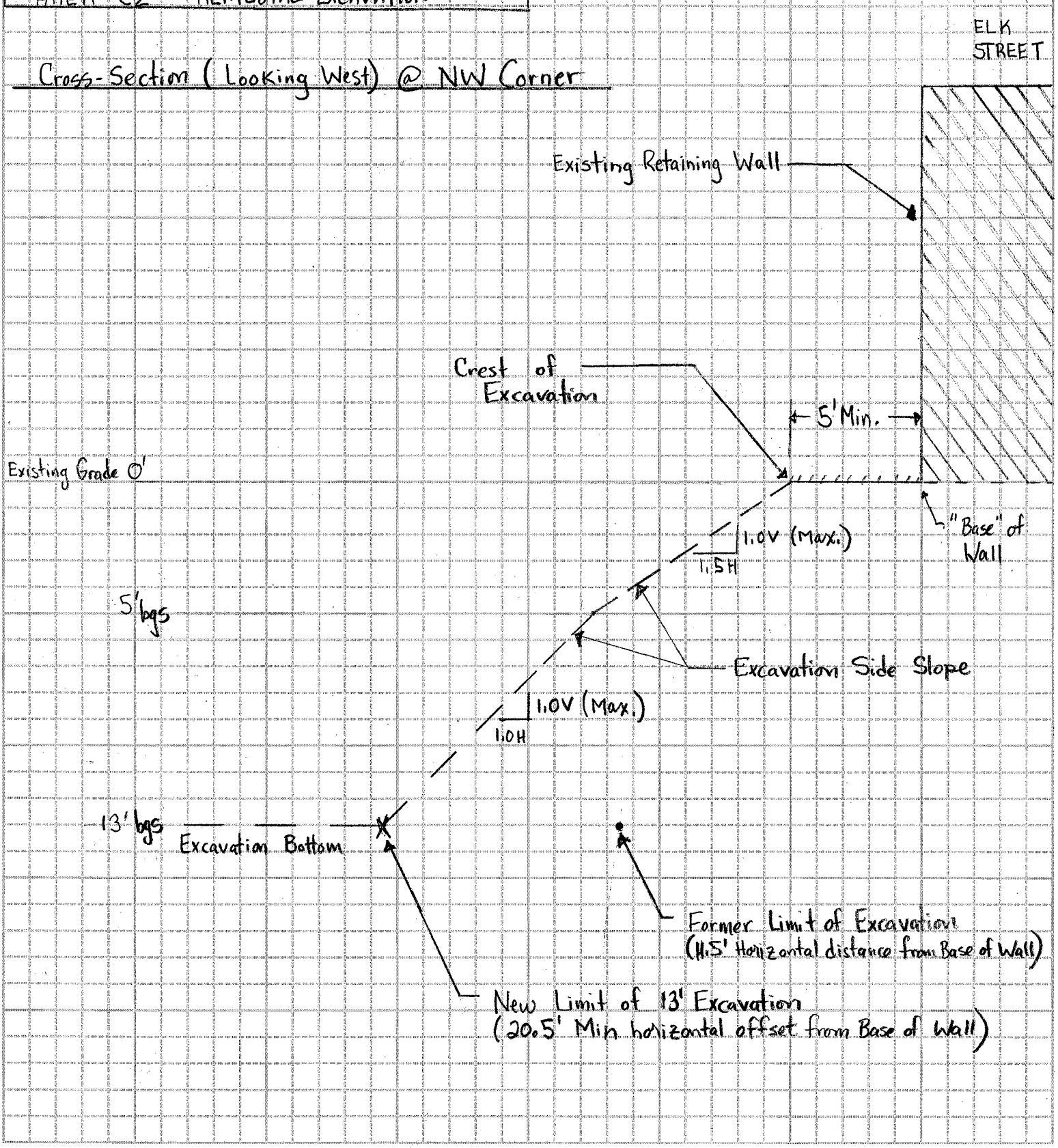
MACTEC

MACTEC, Inc.
511 Congress Street
Portland, ME. 04101

JOB NO. 3410-09-0701 SHEET 1 OF 1
PHASE — TASK 08
JOB NAME SBD - BCC - Area C2
BY TCC DATE 10/15/10
CHECKED BY ____ DATE ____

AREA C2 - REMEDIAL EXCAVATION

Cross-Section (Looking West) @ NW Corner

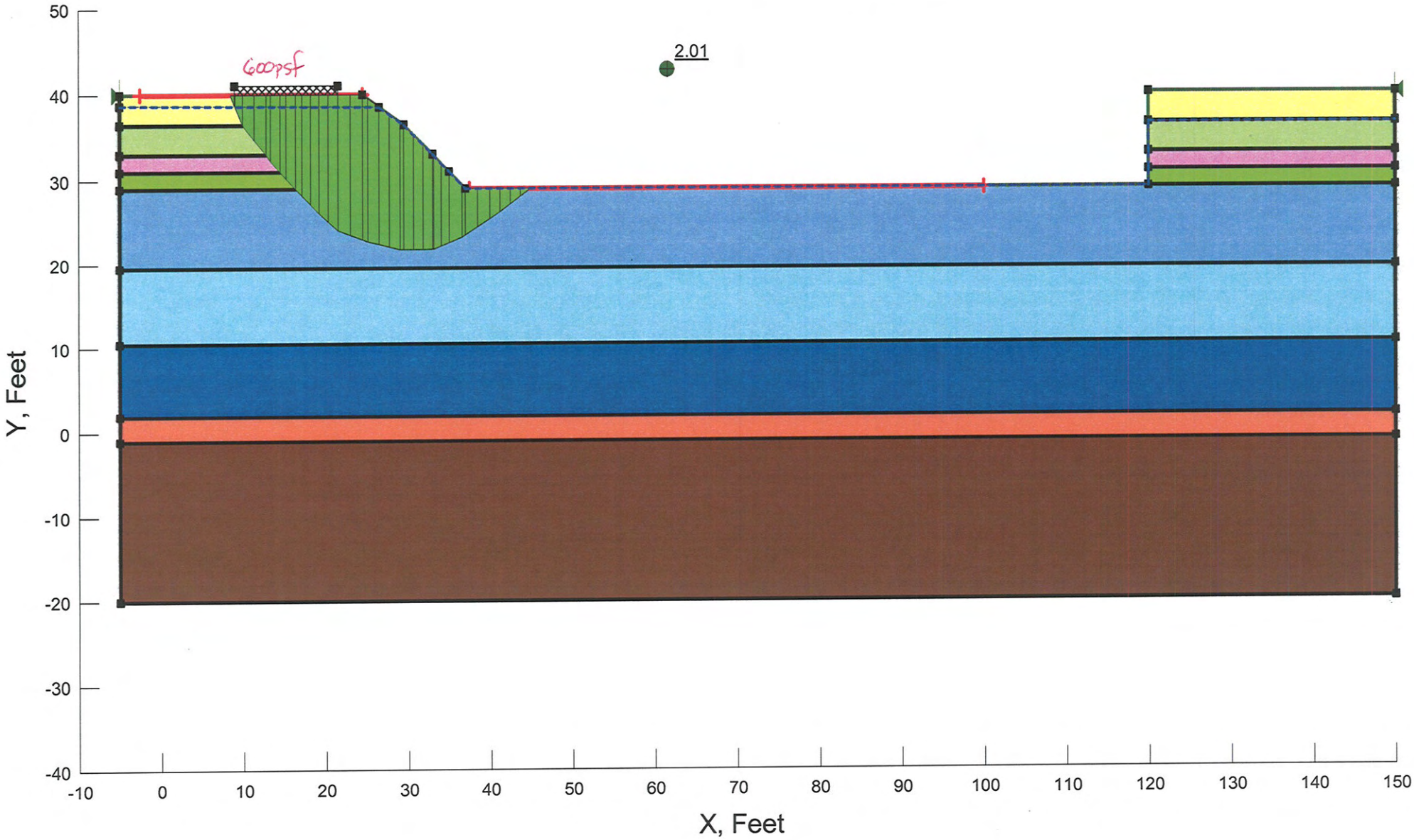


ATTACHMENT 8

AREA E
SLOPE/W OUTPUT
ESTIMATED FACTORS OF SAFETY

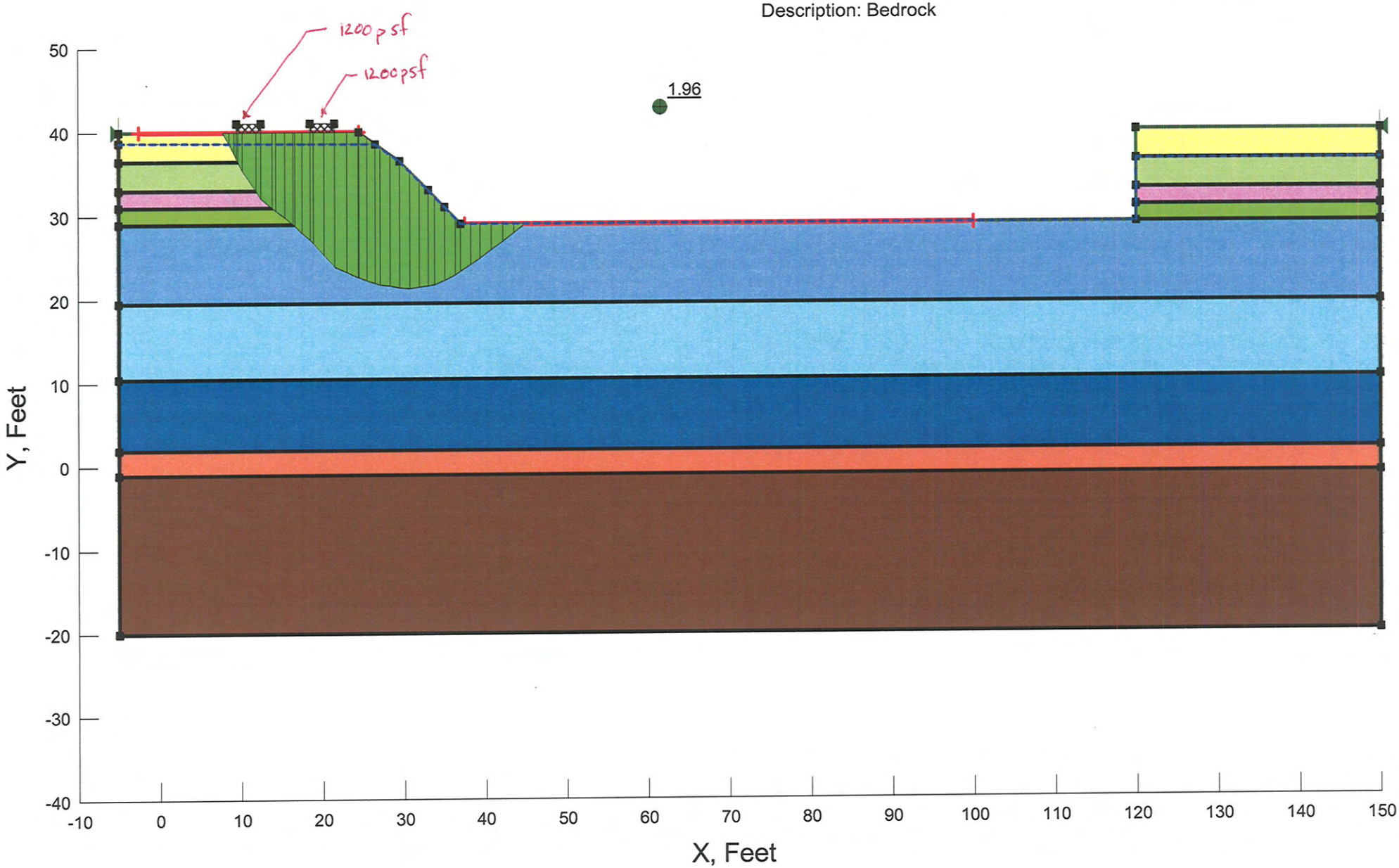
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area E - Remedial Excavations
Date: 9/24/2010
Name: Area E_C over B Sidewalls_600 psf_3' offset.gsz
Method: Spencer
Factor of Safety: 2.01

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1250 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1000 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 550 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 500 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



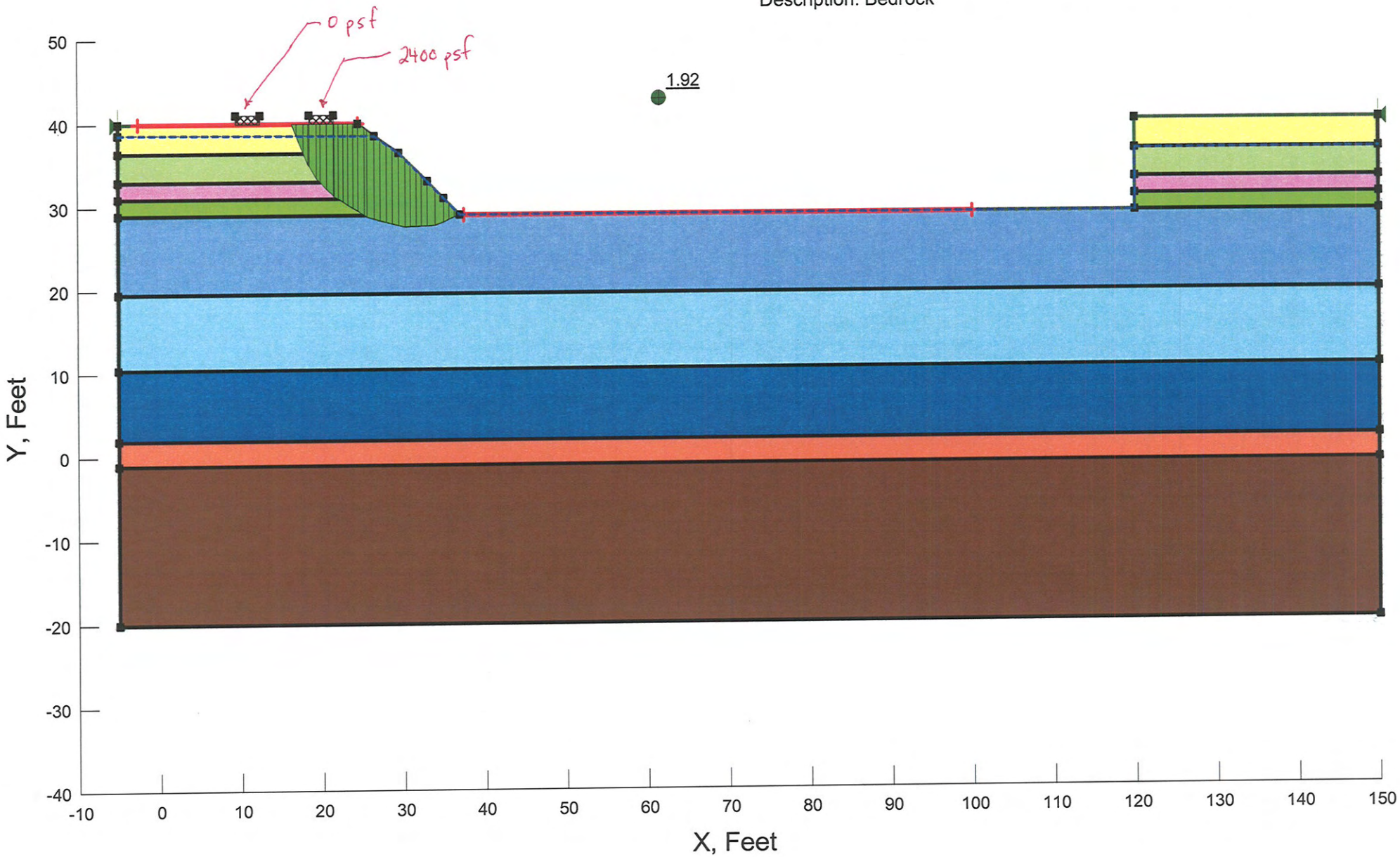
Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area E - Remedial Excavations
Date: 9/24/2010
Name: Area E_C over B Sidewalls_1200-2 psf_3' offset.gsz
Method: Spencer
Factor of Safety: 1.96

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1250 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1000 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 550 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 500 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



Title: Former Buffalo Color Corporation Site - Buffalo, NY
Comments: Area E - Remedial Excavations
Date: 9/24/2010
Name: Area E_C over B Sidewalls_2400 psf_3' offset.gsz
Method: Spencer
Factor of Safety: 1.92

Description: Granular Fill Wt: 125 Cohesion: 0 Phi: 30
Description: Stiff Clay 1 Wt: 120 Cohesion: 1250 Phi: 0
Description: Stiff Clay 2 Wt: 125 Cohesion: 1600 Phi: 0
Description: Stiff Clay 3 Wt: 120 Cohesion: 1000 Phi: 0
Description: Med Stiff Clay 1 Wt: 115 Cohesion: 650 Phi: 0
Description: Med Stiff Clay 2 Wt: 115 Cohesion: 550 Phi: 0
Description: Med Stiff Clay 3 Wt: 115 Cohesion: 500 Phi: 0
Description: Glacial Till Wt: 125 Cohesion: 500 Phi: 34
Description: Bedrock



APPENDIX L

ERFS PILOT AND BENCH TEST REPORT

ENVIRONMENTAL REMEDIATION and FINANCIAL SERVICES, LLC
2150 Highway 35, Suite 250
Sea Girt, NJ 08750
(732) 974-3570
Fax (732) 974-3571

March 12, 2010

Mr. Ryan Belcher
MACTEC Engineering and Consulting, Inc.,
511 Congress Street
Portland, Maine 04101
Direct 207-828-3530
Fax 207-772-4762
Cell 207-831-7779
RTBelcher@mactec.com

RE: Pilot and Bench Testing Report Draft Final
In Situ Treatment Areas C & E
Buffalo Color Site, Buffalo, New York
MACTEC Project No. 3410090701-04
ERFS Project No. 12-1005-DR

Dear Mr. Belcher:

Environmental Remediation and Financial Services, LLC (ERFS) conducted field pilot testing and bench testing activities under Work Order 200919036 for MACTEC Engineering and Consulting, Inc. (MACTEC). This letter report has been prepared to document those activities, the results obtained, and conclusions and recommendations based on those results. Also attached are the monitoring and injection logs from the field pilot test, figures illustrating the work areas, results of SiteVision™ soil resistivity monitoring, and the results of bench testing completed by Clarkson University with bench test laboratory analytical reports from Northeast Analytical Laboratories (NEAL).

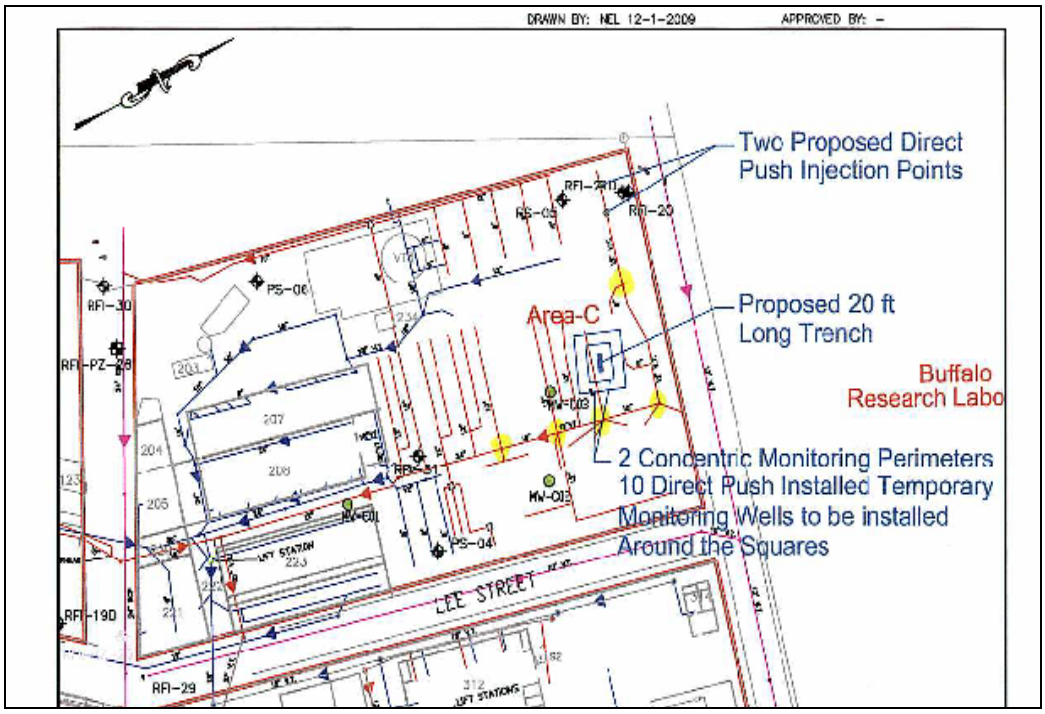
Background. MACTEC is evaluating remediation alternatives at the Buffalo Color site, Areas C and E. Among these alternatives, in situ chemical oxidation (ISCO) is being considered for possible application to treat contaminated soil and groundwater at the sites. As part of that evaluation, MACTEC solicited proposals and selected ERFS to implement an ISCO field pilot test to ascertain potential injection rates and lateral distribution of reagents in the subsurface and a laboratory bench test to evaluate the oxidant demand and to confirm the treatability of site contaminants using commonly available oxidizing reagents.

MACTEC authorized ERFS to conduct the work in December 2009; field work was completed in mid-December 2009; and, bench testing was completed in mid-January 2010. Previous investigations relied on monitoring well data to determine the location and size of chlorobenzene (CB), trichlorobenzene (TCB), and dichlorobenzene (DCB) impacted areas. The understanding

of chlorobenzene hot spots was widened and better defined through MACTEC's recent geoprobe soil and groundwater investigation where larger impacted areas were found to be better represented as multiple smaller source areas.

Only the upper, unconfined aquifer will be targeted for in situ treatment. This interval is generally described as moderate to low permeability soil composed of fine sand, silt, and fill material. Depth to water ranges from 3 to 8 ft bgs. The galciolacustrine clay unit is generally noted at about 10 ft bgs and defines the lower limit of the upper unconfined aquifer. At Area C, the most highly impacted location appears to be around boring PDI-C25 where CB was detected at 130,000 ug/L in groundwater.

Exhibit 1 - Area C ISCO Pilot Testing Area



Purpose and Scope. The field pilot testing was conducted to estimate the potential lateral area of influence of injected ISCO reagents using two delivery methods: a lateral trench via gravity and direct push installed nozzles under pressure. Sampling and analysis of soil and groundwater were not conducted pre-pilot and post-pilot testing since contaminant destruction potential is being assessed in the bench testing. The bench testing was conducted to estimate the oxidant demand of Area C soil and groundwater and to confirm the degree of contaminant destruction attained using two oxidizers: iron initiated sodium persulfate and iron catalyzed hydrogen peroxide.

Implementation. In order to provide quick-turnaround services and to meet the site owner's development schedule, field work was completed the week of December 14 through18, 2009. Weather conditions were harsh during field work as fresh snow fell almost daily after installation, temperatures were in the mid 20s deg-F, and wind chill factored into even lower temperatures. Weather affected field instruments and slowed the pace of site work considerably.

A summary of activities and dates is provided below:

- ERFS mobilized on December 14, 2009.
- On December 15 and 16, 2009, ERFS attended site safety orientation, received oxidizer and catalyst from our local supplier, collected soil and groundwater samples for bench testing, and ERFS supervised installation of the injection trench, the ten temporary monitoring wells surrounding the trench, and two direct push rods fitted with injection nozzles by Russo Development, Inc. (Russo).
- Baseline SiteVision™ surveys were completed on December 15 & 16, 2009, and additional surveys were completed during and after injection through December 18, 2009.
- Reagent application and field monitoring were conducted December 16 through 18, 2009.

ERFS conducted pilot testing in two areas as shown in Exhibit 1 above in order to test two delivery methods – infiltration via gravity feed into lateral slotted pipe in a trench and higher pressure injection through nozzles driven using direct push methods. Monitoring at the trench injection area was conducted using newly installed monitoring points. Monitoring at the DP injection area was conducted using existing monitoring wells. SiteVision™ surveys were conducted at both areas before, during, and after injections were completed.

Exhibit 2 – Debris Pile from Trench



Trench Installation

ERFS installed the injection trench to approximately 3.5 ft below grade. Concrete and asphalt pavement were encountered between one to two feet below grade in all areas explored during installation. Therefore the trench was ultimately installed within a 1.5 to 2 ft vertical interval between the top of the water table and the subsurface pavement and consisted of a 20-ft long, 4-inch diameter Schedule 40 PVC, 20-slot slotted screen within a bed of three-quarter-inch crushed stone. The trench was completed by placing geotextile fabric over the upper stone layer and backfilling using excavated soil. The debris (railroad ties, timbers, bricks, blocks, etc.) removed during excavation was stockpiled next to the trench.

Exhibit 3 – Trench Installation Progression



Temporary Monitoring Well Installation

ERFS directed Russo to install 10 temporary monitoring wells at varying distances from the trench (Figure 2 and Exhibit 4). Each well was installed by driving a 3-inch push rod to 7.5 ft bgs and then installing 2-inch diameter, Schedule 40, PVC screen (5 ft long) and riser (5 ft long). A small amount of sand was tremmied into the annular space as the rods were withdrawn and the stick up riser was sealed with bentonite and grouted at the surface. Each well was developed for 15 to 30 minutes; however, purge water remained murky and discolored from the pigments and contaminants present in site groundwater. Purge water was containerized into drums available onsite for future management/disposal by MACTEC.

Drive Point Installation

ERFS provided the drive point nozzles and the drive rods for Russo to install by direct push to approximately 9.5 ft bgs. DP-1 was installed to 9.5 ft bgs and DP-2 was installed to 7.5 ft bgs due to drilling refusal at that depth. DP injection points were positioned between existing monitoring wells PS-05, RFI-20, and RFI-21D (Figure 2). Drive rods were removed and rinsed by ERFS prior to demobilizing.

Trench Injection

ERFS received reagents onsite from our local supplier. Hydrogen peroxide was received as a 34% aqueous solution in plastic, 55-gallon, drums. Ferrous sulfate was received as a dry solid in 50-lb bags. Reagents were mixed with potable water onsite available from a nearby fire hydrant with a connection provided by MACTEC. Hydrogen peroxide was mixed as a 4% to 7% solution and ferrous sulfate was mixed as a 3% to 6% solution. Injection logs are provided as an attachment.

ERFS applied reagents to the trench using gravity feed to avoid reagent surfacing. The trench application concept was to measure the lateral spread of reagents using gravity infiltration of reagents within a lateral subsurface device. Applied reagents could then migrate outward and downward over the target interval from the top of water table to the lower clay layer at 9 to 10 ft bgs. The storage volume of the trench void space was estimated at 150 to 200 gallons.

ERFS applied 220 gallons of peroxide solution to the trench late in the day on December 16, 2009, and noted that some reagent surface around the trench riser, likely due to mild reactions with the contaminated and organic-laden surrounding soils. Iron catalyst solution (200 gallons) was applied early on December 17, 2009 and allowed to drain over the course of the work day. Additional peroxide solution was added at the end of the work day (160 gallons) and again the following morning (160 gallons) and surfacing was noted either just after the total volume was added or after two-thirds of the volume was added. A final addition of 90 gallons of iron catalyst was applied mid-day on December 18, 2009 with no surfacing observed. A total of 810 gallons of reagents were applied to the trench.

ERFS observed that the trench held the estimated storage volume although the fluids took most of a work day (6 to 8 hours) to migrate out of the trench. This slow ex-filtration is likely due to the low permeability soils and the high organic content (contaminants and backfill debris/organic soil). The high organic content can result in quick reaction of the oxidizer, producing reaction by-product gases with then bind into to the soil matrix, further reducing permeability.

Direct Push Point Injection

The DP point injections were conducted to determine the approximate lateral dispersion of

reagents when applied through vertically driven nozzles under pressure. Two DP points were used in case significant breakthrough or surfacing of reagents was observed at one point (common with pressurized injections) then the other point could be relied upon for data collection. DP points however, tend to influence a more narrow vertical interval that is several feet thick centered on the nozzle depth. Further, DP injections must be completed at sufficient depth (typically 10 ft bgs or more) to avoid significant reagent surfacing. Breakthrough, or surfacing, may be limited at the Area C site due to the pervasive buried pavement layer at one to two feet below grade. This buried pavement layer may hinder upward movement of the injected reagents such that little to no reagent volume reaches the surface.

ERFS applied reagents to the DP injectors using pressurized injection methods. Injection pressures ranged from 50 to 100 psig with injected flow rates ranging from 1.6 to 6 gpm at each point. A total of 230 gallons of peroxide and 130 gallons of iron catalyst solution was injected into temporary point (DP) DP-1 over an approximately 2.5 hours total injection time on December 17, 2009. Excessive breakthrough of reagents occurred around the drive pipe for DP-2 and only 50 gallons of peroxide and 20 gallons or iron catalyst could be injected at that location.

Monitoring

Monitoring was conducted for both field pilot testing areas by measuring groundwater parameters at monitoring wells, vapor parameters in the headspace of monitoring wells, and by employing ERFS' soil resistivity survey technique, SiteVision™. Monitoring logs are included as an attachment. Additionally, SiteVision™ methodology and results are presented in detail in the attached SiteVision™ Report. Groundwater parameters included dissolved oxygen (DO), oxidation reduction potential (ORP), specific conductance, temperature, water level, and hydrogen peroxide. Vapor parameters included volatile organic vapors using a Photoionization detector (PID), lower explosive limit (LEL), oxygen, and carbon dioxide. SiteVision™ surveys measure changes in soil resistivity due to the presence of reagents and were conducted in multiple orientations across the work areas.

Pilot Test Results and Discussion. As previously stated, the purpose of the field pilot testing was to estimate possible injection flow rates and pressures and to determine the lateral dispersion of ISCO reagent using two injection devices – trenches and DP points. Sampling and analysis of soil and groundwater were not conducted pre-pilot and post-pilot testing since contaminant destruction potential is being assessed in the bench testing.

Trench Test Area

Injections at the trench area were monitored using temporary monitoring wells TMW-1 through TMW-10 and existing well MW-C03, and two SiteVision™ survey lines. The summary of these wells, their distance from the trench, and comments regarding field observations and

measurements are presented in Exhibit 4 below:

Exhibit 4 – Monitoring Well Observations/Measurements Summary

Well ID	Distance from Trench (ft)	Comments/Observations
TMW-1	15	Slight pH decrease, ORP increase, temperature increase, PID increase, and carbon dioxide increase.
TMW-2	20	Slight pH decrease, other parameters fluctuated inconsistently.
TMW-3	15	Slight pH decrease, large increase in PID.
TMW-4	5	Slight pH decrease, water level increase, ORP fluctuation, slight PID increase.
TMW-5	5	Slight pH decrease, water level increase, ORP increase, temperature increase, PID increase, and carbon dioxide increase.
TMW-6	15	Slight pH decrease, ORP increase, temperature increase, PID increase, and carbon dioxide changes.
TMW-7	20	LNAPL detected after baseline – prevented further reading to avoid groundwater equipment damage. Significant PID changes during injection.
TMW-8	15	ORP increase, fluctuation in PID and carbon dioxide readings.
TMW-9	20	Significant pH drop, water table change, PID and ORP increases.
TMW-10	13	Significant pH change, temperature change, water level change, increased ORP, PID, and fluctuating carbon dioxide.
MW-C03	25	Significant pH change, PID changes, ORP changes, and carbon dioxide changes.

As is evident from Exhibit 4 and as discussed in the attached SiteVision™ report there was clear dispersion of reagents over at least 10 ft from the injection lateral with some influence measured at 15 to 20 ft in some directions. Additionally, as is noted on the cross-section B-B' within the SiteVision™ report, an approximately 15 ft lateral spread of reagents was noted. It is expected at a site such as Area C, where debris is prevalent and the soils are heterogeneous, that lateral dispersion is not uniform in all directions. Injection trenches are a viable method of applying reagents at the site.

Direct Push Injection Area

Injections at the DP injection area were monitored using monitoring wells RFI-20 and PS-05 along with SiteVision™ surveys along the injection points. PS-05 is located 25 ft from DP-1 and 15 ft from DP-2. Only the PID readings and the carbon dioxide readings at PS-05 appear to be clearly affected by the injections while other parameters seem to fluctuate. At RFI-20, located nearly 80 ft away, there appeared to be changes in pH and ORP; however, due to the large distance, it is unlikely that these changes were caused by injections. SiteVision™ results indicated a radius of influence for DP-1 at 5 to 10 ft. No radial influence was measured for DP-2 due to the small injected volume. Based on field observations and on the SiteVision™ survey results, it appears that DP injection is also a viable method for injecting ISCO reagents at Area C.

Bench Test Results. ERFS collected soil samples from a soil boring location installed adjacent to well MW-C03 and collected groundwater from well MW-C03 for bench testing. Samples were containerized unpreserved and shipped to Clarkson University for microcosm treatment. Treated samples were shipped by Clarkson to NEAL for chemical analysis. Clarkson also performed chemical oxygen demand (COD) testing on soil and groundwater. A description of the bench testing procedures and results is included in the attached bench test report from Clarkson. NEAL laboratory results are also included as an attachment.

In summary, the bench testing yielded mixed results and indicated that the highly organic soils can absorb large amounts of contaminants and that persulfate reactions ceased unexpectedly after two doses. A summary of bench test findings and conclusions is provided below:

- COD measured in soil was high at 34.45 g/kg;
- Peroxide was depleted rapidly during testing (e.g. within 3-4 hours of dosing) which may explain why little peroxide was observed in the field pilot scale monitoring wells;
    - Persulfate was depleted by 80% within about 48 hours of the first dosing, but showed little depletion after over 200 hours following the second dose. Continued additions of iron and peroxide initiator to the persulfate containers failed to cause further initiation. Determination of why the persulfate ceased reacting is beyond the scope of the bench test;
- Contaminant concentration trends in treated sample groundwater:
    - Comparing Baseline concentrations with Control concentrations – Control concentrations are significantly lower than Baseline. This may be due to the mixing steps that could have served to better mix the soil and groundwater such that absorption sites within the soil could take up contaminants more efficiently, resulting in an ‘apparent’ decrease in contaminants in groundwater. Since the target contaminants are not easily stripped from liquid to gas, losses via that route are considered insignificant;
    - Comparing oxidizer types and doses it appears that the 3% peroxide applied in four doses resulted in the best contaminant reduction; however acetone

generation was significant. Persulfate treatment apparently ceased reacting after the second dose was applied even though additional iron was applied and even peroxide was applied to initiate the persulfate.

Please call me at (904) 280-2596 if you need any additional information or have any questions or comments regarding this letter report.

Sincerely,

Ron Adams

Ronald F. Adams, P.E.
Executive VP Remediation

Attachments -Pilot Test Figures 1, 2 & 3
-Pilot Test Injection Logs
-Pilot Test Monitoring Logs
-SiteVision™ Report
-Bench Test Report & Lab Reports

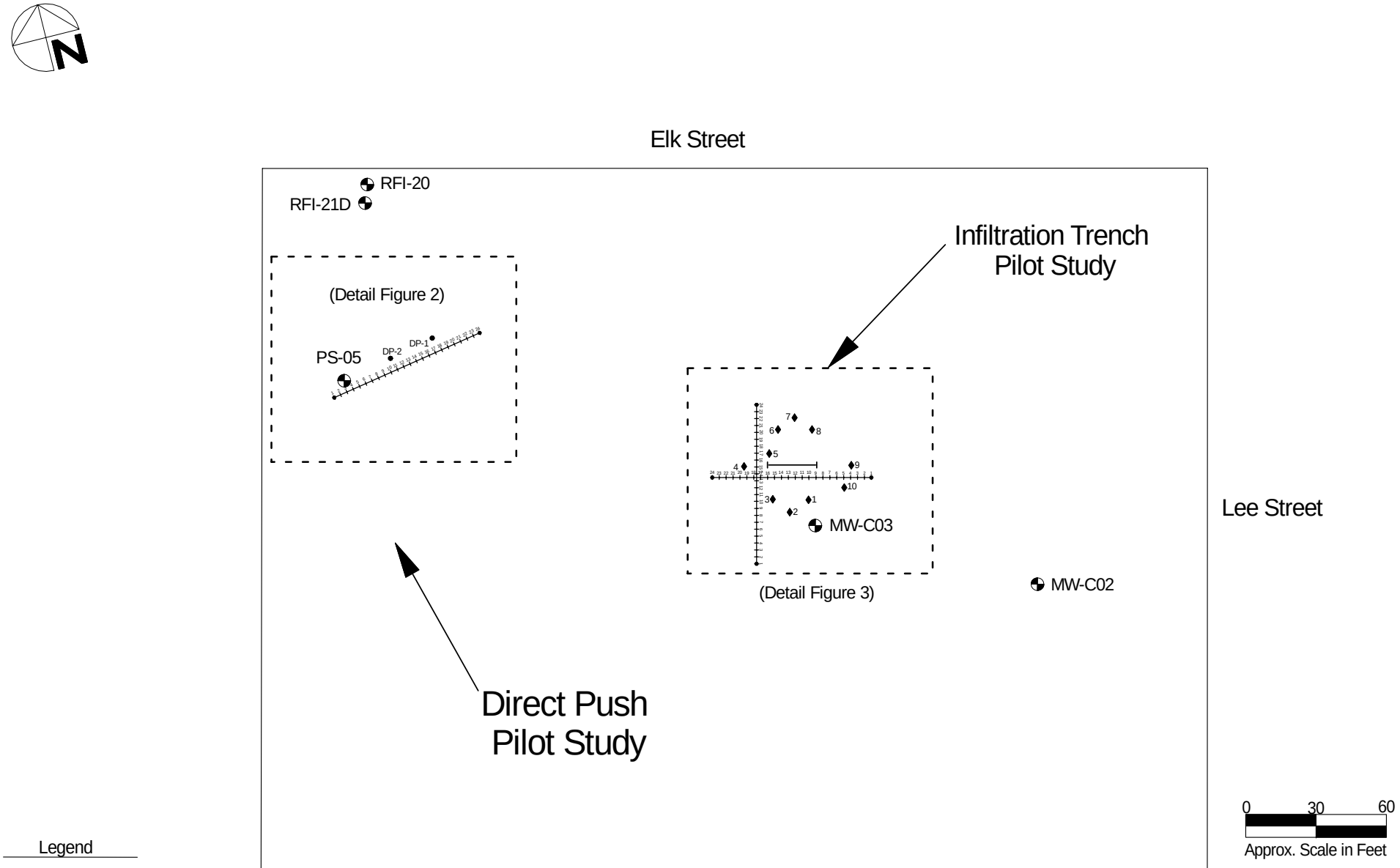
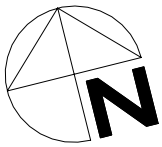


Figure 1
Area C Pilot Study
Location Map

Buffalo Color Site
Buffalo, New York

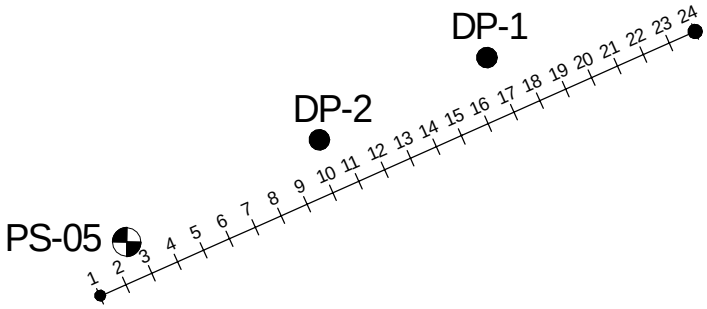
Prepared By:
Environmental Remediation and Financial Services, LLC
ERFS
Pay-for-Performance Remediation Services
999 Airport Road, Unit 4
Lakewood, NJ 08701

Date:	Scale:	Draftsperson:
2/5/10	1" = 60'	BG



RFI-20

RFI-21D



Legend

- Direct Push Injection Point

- Site Vision Survey Line

0 10 20

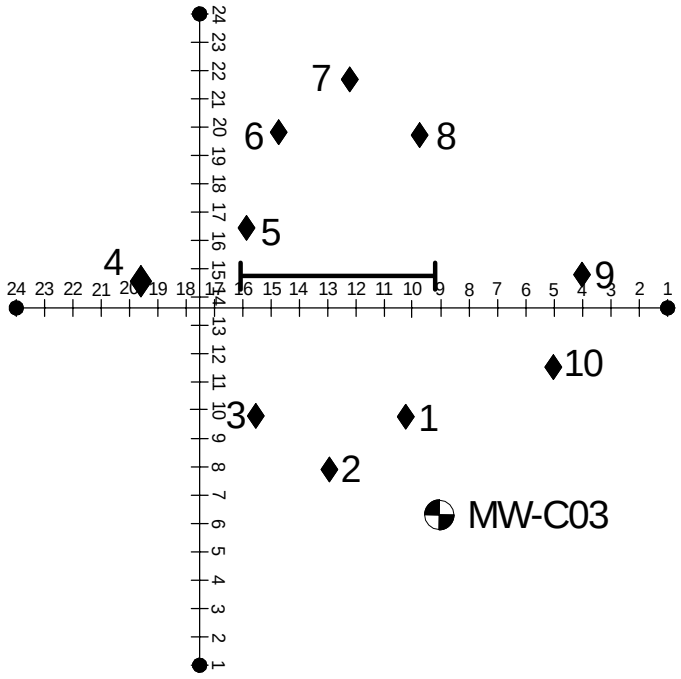
Approx. Scale in Feet

Figure 2
Direct Push Pilot Study Detail

Buffalo Color Site
Buffalo, New York

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Pay-for-Performance Remediation Services
999 Airport Road, Unit 4
Lakewood, NJ 08701

Date:	Scale:	Draftsperson:
2/05/10	1" = 20'	BG



MW-C02

Legend

-Infiltration Trench

-Monitoring Point

- Site Vision Survey Line

0 10 20

Approx. Scale in Feet

Figure 3
Infiltration Trench Pilot Study Detail

Buffalo Color Site
Buffalo, New York

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Environmental Remediation and Financial Services, LLC
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Lakewood, NJ 08701

Date:	Scale:	Draftsperson:
2/05/10	1" = 60'	BG

Environmental Remediation and Financial Services, LLC
ERFS
Pay-for-Performance Remediation Services

999 Airport Road, Unit 4
Lakewood, NJ 08701
(732) 370-6640
Fax (732) 370-6647

Project Name: Buffalo Color
PM: Ron Adams
Field Leader: Patrick Boska

Activity: Pilot Test with Trench and Direct Push injection

IP ID	Date	Time Start	Time Stop	Inj Interval (ft bgs)	Vol Inj. (gal)	Material Injected	Injection Pressure (PSIG)	Flow Rate (gpm)	Comments
TRENCH	12/16/2009	1500	1545	NA	220	H2O2	GRAV	4.9	Breakthrough after injection
TRENCH	12/17/2009	850	930	NA	200	Iron Catalyst	GRAV	5	
TP-1	12/17/2009	1055	1105	10	50	H2O2	100	5	
TP-1	12/17/2009	1105	1115	10	30	Iron Catalyst	75	3	
TP-1	12/17/2009	1117	1130	9	30	Iron Catalyst	75	2.3	
TP-1	12/17/2009	1130	1140	9	60	H2O2	75	6	
TP-1	12/17/2009	1157	1210	8	40	Iron Catalyst	100	3	
TP-1	12/17/2009	1240	1300	8	60	H2O2	75	3	
TP-1	12/17/2009	1310	1329	7	60	H2O2	75	3.2	
TP-1	12/17/2009	1331	1350	7	30	Iron Catalyst	50	1.6	
TP-2	12/17/2009	1415	1535	7	50	H2O2	100	2.5	
TP-2	12/17/2009	1535	1545	7	20	Iron Catalyst	50	2	Breakthrough at pipe
TRENCH	12/17/2009	1455	1630	NA	160	H2O2	GRAV	1.7	Breakthrough after injection
TRENCH	12/18/2009	840	1130	NA	160	H2O2	GRAV	1	Breakthrough after 110 gal
TRENCH	12/18/2009	1210	1315	NA	90	Iron Catalyst	GRAV	1.4	
Totals:									
H2O2 Total:					**820**				
Iron Catalyst Total:					**440**				

Environmental Remediation And Financial Services, LLC
2150 Highway 35, Suite 250
Sea Girt, NJ 08750
(888) 576-3274

MONITORING POINT: TMW 1

Project Name: Buffalo Color
Project Number:
Project Manager: Ron Adams
Project Location: Buffalo NY

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1010			3.76	6.33	14	8.84	6.2	128				
12/17/2009	800	<1			6.4	15.2	7.13	8.7	159	0.2	0	20.8	600
12/17/2009	1400									4	0	20.9	0
12/17/2009	1515	<1			6.07	15.3	8.38	9.5	156	1.9	0	20.9	1200
12/18/2009	740	<1		3.67	6.02	31.70	NA*	8	217	0.8	0	20.9	50
12/18/2009	1200	<1		3.75	5.86	>99.9*	NA*	9.81	230	4.6	0	20.9	100

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

Environmental Remediation And Financial Services, LLC
2150 Highway 35, Suite 250
Sea Girt, NJ 08750
(888) 576-3274

MONITORING POINT: _____TMW 2_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1010			3.27	6.49	6.62	8.13	8.2	126				
12/17/2009	800	<1			6.6	4.34	2.75	7.2	33	25.3	0	20.9	250
12/17/2009	1400									2.1	0	20.9	0
12/17/2009	1518	<1			6.43	8.3	10.61	8.1	108	4	0	20.9	100
12/18/2009	745	<1		3.47	5.52	5.12	NA*	9.4	233	0.1	0	20.9	0
12/18/2009	1200	<1		3.52	6.29	28.4*	8.43	7.57	192	5.8	0	20.9	100

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

Environmental Remediation And Financial Services, LLC
2150 Highway 35, Suite 250
Sea Girt, NJ 08750
(888) 576-3274

MONITORING POINT: _____TMW3_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	930			3	6.47	10.7	7.79	7.9	100				
12/17/2009	1000	<1			6.79	4.66	4.12	7.8	30	0.2	0	20.9	100
12/17/2009	1400	<1								0	0	20.9	0
12/17/2009	1515	<1			6.61	5.77	9.42	8.4	59	2.1	0	20.9	0
12/18/2009	745	<1		3.03	6.55	7.23	NA*	7.8	157	3.1	0	20.9	50
12/18/2009	1200	<1		3.08	6.29	>99.9*	8.68	7.62	147	45.1	0	20.9	100

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

Environmental Remediation And Financial Services, LLC
2150 Highway 35, Suite 250
Sea Girt, NJ 08750
(888) 576-3274

MONITORING POINT: _____TMW 4_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	930			4.71	6.97	1.9	9.73	5.8	72				
12/17/2009	1000	<1			7.01	1.53	12.83	4.7	24	0	0	20.9	50
12/17/2009	1400									0	0	20.9	0
12/17/2009	1515	<1			7.11	1.61	10.44	6.5	3	0	0	20.9	0
12/18/2009	745	<1		4.63	6.80	1.76	NA*	5	107	0.2	0	20.9	0
12/18/2009	1200	<1		4.42	6.71	24.3*	7.48	6.88	75	1.2	0	20.9	50

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____TMW 5_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	930			3.01	6.84	6.31	8.85	6.8	23				
12/17/2009	1000	<1			7.03	2.24	7.91	6.2	26	0	0	20.9	100
12/17/2009	1400									0	0	20.9	0
12/17/2009	1515	<1			7.02	2.13	10.64	7	20	0	0	20.9	50
12/18/2009	745	<1		2.82	6.75	>99.9*	NA*	7.5	110	0	0	20.9	0
12/18/2009	1200	<1		2.45	6.64	53.15*	4.81	7.74	77	9.6	0	20.9	100

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MONITORING POINT: _____TMW 6_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1500			3.02	6.67	7.37	7.51	6.5	-38				
12/17/2009	850	<1			6.61	7.85	4.49	6.9	52	0.6	0	20.9	100
12/17/2009	1400									0	0	20.9	0
12/17/2009	1515	<1			6.78	5.31	9.52	7.6	33	0.2	0	20.9	200
12/18/2009	750	<1		3.1	6.65	>99.9*	NA*	8	115	0	0	20.9	0
12/18/2009	1200	<1		3.05	6.55	>99.9*	7.19	7.71	83	2.8	0	20.9	50

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____TMW 7_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1500			4.12	6.95	5.35	9.21	5.7	-40				
12/17/2009	840	<1			Free Product					0	0	20.9	100
12/17/2009	1400				Free Product					0.1	0	20.9	0
12/17/2009	1615	<1			Free Product					15.3	0	20.9	0
12/18/2009	750	<1		3.81	Free Product					4.8	0	20.9	0
12/18/2009	1200	<1		4.02	Free Product					136.8	0	20.9	100

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____TMW8_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1430			2.97	6.63	6.16	6.8	7.75	-36				
12/17/2009	810	<1			6.49	5.52	7.38	7.9	66	1.5	0	20.7	350
12/17/2009	1400									0	0	20.9	300
12/17/2009	1530	<1			5.98	5.94	8.69	9.1	47	5.4	0	20.9	250
12/18/2009	755	<1		2.82	6.59	>99.9*	NA*	8.8	62	1	0	20.9	50
12/18/2009	1200	<1		3.08	6.69	>99.9*	NA*	7.82	91	3.6	0	20.9	100

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____TMW 9____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1430			3.43	8.46	1.69	8.18	6.6	-126				
12/17/2009	810	<1			7.05	1.74	7.82	8.5	69	0.2	0	20.9	50
12/17/2009	1400									0	0	20.9	0
12/17/2009	1530	<1			5.95	1.64	9.26	8.4	45	5.4	0	20.9	0
12/18/2009	755	<1		2.66	6.80	7.90	NA*	85	23	3.2	0	20.9	0
12/18/2009	1200	<1		3.41	6.59	31.4*	3.91	7.61	72	33.6	0	20.9	50

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____TMW 10_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/16/2009	1430			3.78	7.53	5.69	7.36	5.1	-64				
12/17/2009	820	<1			6.59	6.01	10.68	6.2	99	0.3	0	20.9	450
12/17/2009	1400									0	0	20.9	300
12/17/2009	1530	<1			6.37	6.34	8.55	8.8	33	4.3	0	20.9	250
12/18/2009	755	<1		3.74	6.67	>99.9*	NA*	8.4	24	0.8	0	20.9	50
12/18/2009	1200	<1		3.61	6.63	41.4*	8.61	7.59	83	35	0	20.9	550

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____MW-CO3_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/15/2009	930			6.04	6.32	12.2	1.6	10.2	68	48.6	0	20.5	850
12/17/2009	900									38.4	0	20.9	350
12/17/2009	1200									1.1	0	2.7	350
12/17/2009	1630									12.6	0	20.9	300
12/18/2009	800	<1		6.11	6.32	>99.9*	NA*	7.2	38	171.3	0	20.9	3600
12/18/2009	1200	<1		6.15	5.76	>99.9*	NA*	8.62	124	713	0	20.9	750

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____RFI 20_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/15/2009	930			4.97	7.5	2.32	7.65	10	-5	42.4	0	20.7	350
12/17/2009	1200									0	0	20.9	0
12/18/2009	800	<1		5.33	6.68	2.68	ND*	8.6	18	78.3	0	20.9	250
12/18/2009	1200			5.4						21.7	0	20.9	50

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

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MONITORING POINT: _____PS-05_____

Project Name: _____Buffalo Color_____
Project Number: _____
Project Manager: _____Ron Adams_____
Project Location: _____Buffalo NY_____

DATE	TIME	Oil/Water Interface Parameters			Water Quality Analyzer Parameters					Multi RAE/Eagle Gas Detector Parameters			
		H2O2 (ppm)	Depth of product	Depth to water	pH	Cond.	DO	TEMP (°C)	ORP	VOC	LEL/TPH	Oxygen	Carbon Dioxide
12/15/2009	930			2.43	6.31	1.65	7.38	8.7	22	0.5	0	20.7	0
12/17/2009	1200									0	0	20.9	0
12/18/2009	800	<1		3.85	6.67	1.96	ND*	7.2	38	171.3	0	20.9	3600
12/18/2009	1200			3.67						1.8	0	20.9	800

* Having problems with conductivity and DO. Either cold, or contamination in ground water that has damaged sensor

SITEVISION™ REPORT
BUFFALO COLOR PILOT PROJECT
TREATMENT AREA C, BUFFALO, NY
ERFS, LLC

Background

SiteVision uses high resolution electrical resistivity equipment and imaging software to "map" shallow (i.e., typically less than 50 meters) geological and man-made features as well as real-time hydrogeological conditions. When used in conjunction with the On-Contact Remediation Process®, SiteVision can be used to monitor the distribution of chemical reagents as they are injected into a targeted Treatment Area. The resistivity data that are collected are used to create two- or three-dimensional images of the subsurface. By collecting data over successive time intervals, changes in subsurface conditions (i.e., resistivity domains) can be used to document successful infusion of reagents or to identify gaps where treatment reagents may not be contacting the contaminant-impacted media.

Electrical resistivity is a commonly used geophysical surveying technique founded on the principal that the resistance of electrical current flow in the subsurface is dependent on the conductivity of the subsurface material, the water content in the material and the chemical composition of the groundwater. The basic equipment array to obtain a single resistivity measurement includes a source for an electrical current with appropriate meters to measure current and voltage, two current electrodes to induce a high-voltage\low-amperage current into the ground and two voltage electrodes to measure the voltage drop at a measured distance from the current source. Using the known spacing of all four electrodes or "nodes" along the surface, an apparent resistivity measurement is calculated at a corresponding depth beneath the surface array. By calculating and comparing apparent resistivity values at multiple subsurface locations, subsurface conditions (i.e., resistivity domains) can be modeled and specific features recognized.

SiteVision uses a state-of-the-art automatic resistivity switch, capable of using up to 48-nodes, to quickly conduct a survey by obtaining multiple measurements (i.e., data points) at pre-determined depth levels along the desired survey line. By conducting multiple surveys over time during the course of in-situ treatment, it is possible to document the progress of treatment reagents as they infiltrate the subsurface.

Methodology

At the Buffalo Color Site, SiteVision was used in conjunction with a pilot injection program within Treatment Area C. One of the objectives of the pilot program was to evaluate two methods of treatment reagent delivery: shallow direct-push injection and injection via shallow trench (i.e., lateral injector). SiteVision was employed at each injection location to track reagent migration by evaluating changes in subsurface resistivity conditions over the course of the injection activities.

Two pilot study areas were selected within Area C of the Buffalo Color Site (See Figure 1 below). One study area was established near monitoring well MW-C03 by installing a 20-foot long lateral injector. The lateral injector was installed by excavating a shallow trench (approximately 3.5 feet deep) with a backhoe and laying a 1.5-foot bed of ¾-inch crushed stone followed by a 20-foot section of slotted 2-inch PVC (schedule 40) piping with a 4-inch riser section to the surface. The piping was covered by an additional 1.5-foot of crushed stone followed by a geo-textile fabric and fill materials from the excavation.

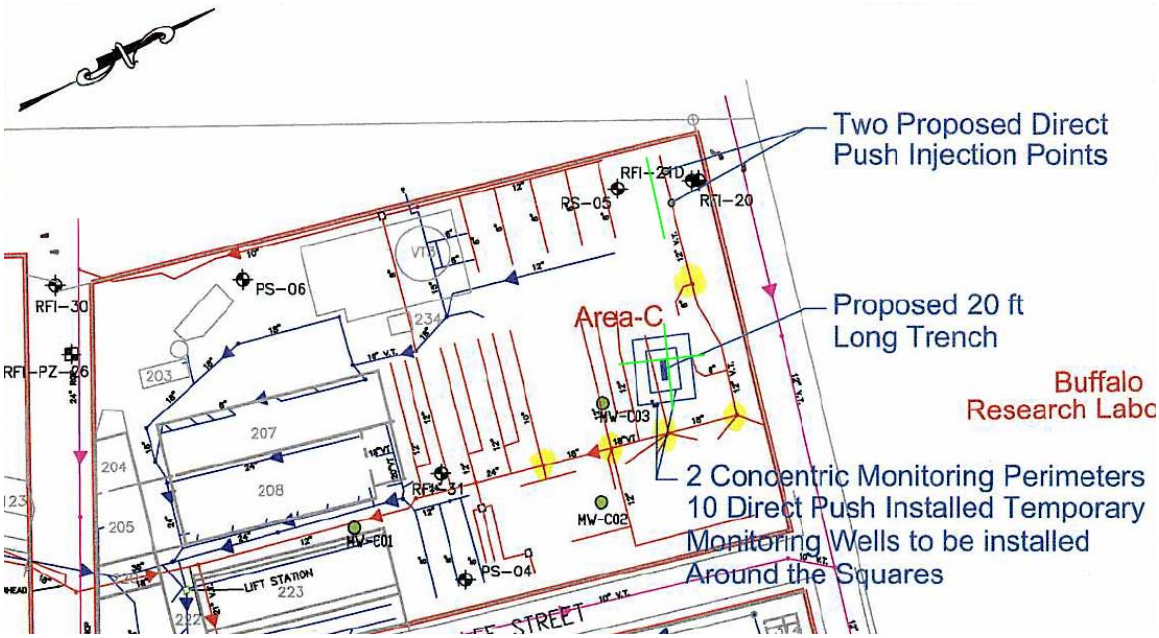


Figure 1: Portion of Buffalo Color Site, Treatment Area C. showing the locations of the Direct Push and Lateral Injector (trench) pilot areas.

The second study area was established adjacent to monitoring well PS-05. In this location a direct-push drill rig was used to install 1¾-inch vertical steel rods in two locations, designated as DP-1 and DP-2.

For the two pilot areas, ERFS designed a survey array that would fit within the confines of the site and provide an adequate depth of investigation. Given the relatively small pilot areas and shallow depths (i.e., no greater than 10 feet bgs), ERFS selected a 24-node Wenner-Schlumberger survey array using an electrode spacing of 2.9 feet (0.9 meters) giving a total array length of approximately 67 feet (20.4 meters). For each survey run, this array yielded a total of 117 individual measurements of apparent resistivity, in units of ohm-meters, over six depth intervals. The maximum investigation depth for the survey array is approximately 10.2 feet (3.1 meters).

At the lateral injector pilot area, two (2) perpendicular survey lines were established: survey line A-A' parallel to the lateral injector, and survey line B-B' perpendicular to the injector. Within the direct push pilot area, survey line C-C' was established parallel to a

line between the two injection points DP-1 and DP-2. Figures 2 and 3 below shows the relative configuration of the SiteVision survey lines and the injection points at the two study areas.

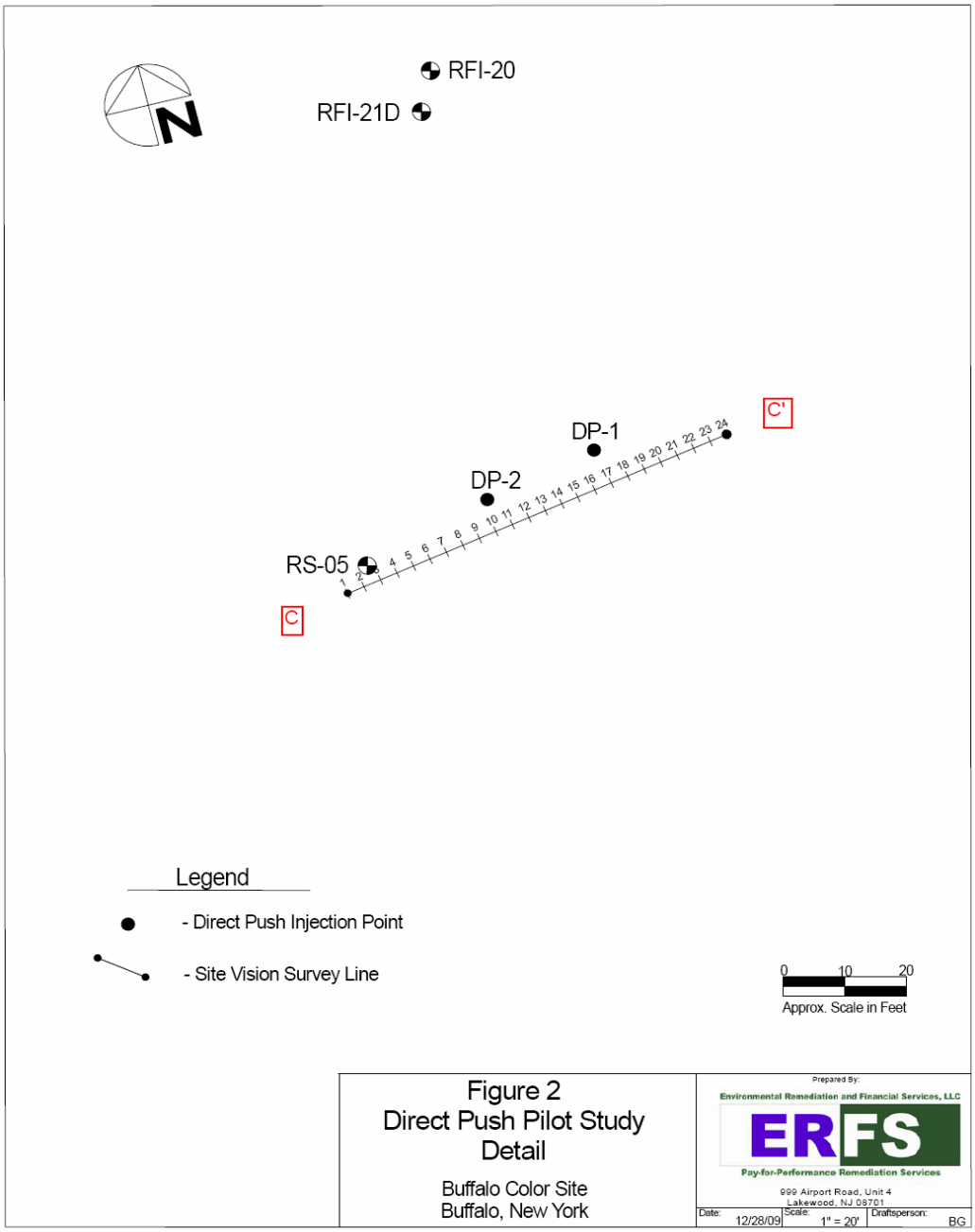


Figure 2: Orientation of SiteVision survey line within the Direct Push pilot areas

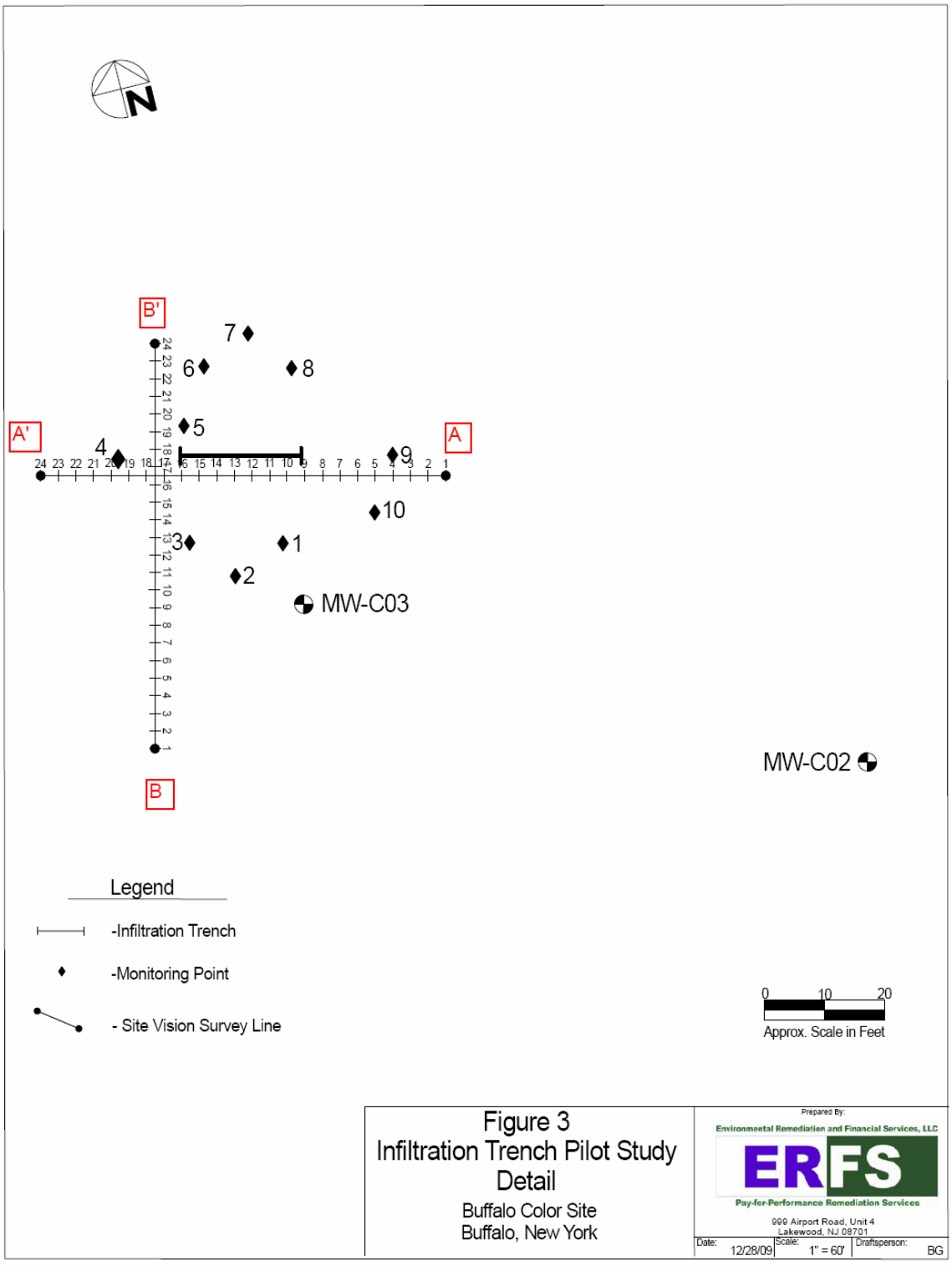


Figure 3: Orientation of SiteVision survey lines within Lateral Injector pilot area

Using the selected survey array, baseline resistivity surveys were obtained by ERFS at

each of the pilot study locations after the injection infrastructure (i.e., lateral injector and the direct-push vertical injection points) was installed. The baseline surveys were run to document pre-treatment resistivity domains in the subsurface of the treatment areas. Using the same survey lines, subsequent survey runs were conducted at the same locations over a three-day period (December 16, 17 and 18, 2009) as in-situ treatments were conducted.

From the measured apparent resistivity data points collected for each survey, an iterative series of contoured apparent resistivity profiles, or psuedosections, were generated using specialized modeling software. In the final iteration of the modeling process, psuedosections are converted into least-squares inversion models (also referred to as Inverse Model Resistivity Sections or "Sections"). The Sections are false-color contour, cross-sectional representations of the resistivity data in units of ohm-meters. In general, darker colors represent areas of lower relative resistivity while the progressively brighter colors are areas of higher relative resistivity. By adjusting the contour range and interval of the Sections, resolution of the data can be optimized within the area of interest. Once the contour parameters are fixed, Sections can easily be compared and evaluated for changes over distance and/or time. The Sections are then be interpreted in the context of other subsurface information derived from soil borings, groundwater monitoring wells, etc., as well as data from the injection logs.

For unconsolidated sediments and fill materials such as those occurring at the Site, resistivity values are dependent upon several factors including the type of sediments and fill, porosity of the materials, the degree of saturation, and the concentration of dissolved salts in the groundwater. The addition of treatment reagents into the subsurface will typically result in a measurable change of these resistivity values over time.

Results

Baseline surveys along each survey line were run on 12/16/09 after installation of the lateral injector and prior to the application of any treatment reagents. Over the course of the pilot program, a total of 830 gallons of treatment reagents were introduced into the Lateral Injector. A chronology of the in-situ chemical oxidation treatments and SiteVision surveys conducted in the Lateral Injector pilot area is summarized Table 1 below:

Table 1: Chronology of In-situ Treatment Activities Lateral Injection Area

Date	Time	Activity	Details
12/16/09	1000	Baseline survey	Survey line A-A'
12/16/09	1120	Baseline survey	Survey line B-B'
12/16/09	1500	ISCO injection	220 gallons oxidant
12/16/09	1540	Post injection survey	Survey line A-A'
12/16/09	1615	Post injection survey	Survey line B-B'
12/17/09	0800	Post injection survey	Survey line A-A'
12/17/09	0830	Post injection survey	Survey line B-B'
12/17/09	0850	ISCO injection	200 gallons catalyst

Date	Time	Activity	Details
12/17/09	1455	ISCO injection	160 gallons oxidant
12/17/09	1520	Post injection survey	Survey line B-B’
12/18/09	0840	ISCO Injection	160 gallons oxidant
12/18/09	1000	Post injection survey	Survey line B-B’
12/18/09	1030	Post injection survey	Survey line A-A’
12/18/09	1210	ISCO Injection	90 gallons catalyst

As indicated above, a total of four surveys were conducted along Survey Line A-A’ and a total of five surveys along Survey Line B-B’. The resulting SiteVision Sections are provided as Attachments 1 and 2 respectively. Each Section uses the same logarithmic color scale to display the calculated ranges of apparent resistivity. In general, these Sections show a sub-horizontal pattern with domains of relatively higher resistivity (>115 ohm-meters) near the surface that correspond to under-saturated soils, fill materials and debris. Deeper soils and fill materials are characterized by domains of lower resistivity (2 – 100 ohm-meters), which reflect a progressively higher level of saturation, and possibly clay content, with increasing depth. Overall, the range of resistivity for the upper 10 feet of the subsurface is relatively low, which was expected given the generally wet conditions observed at the surface, due to melting snow, and the shallow depth to water characteristic of the site (approximately 3 feet bgs). Departures from the horizontal “structure” of the resistivity Sections may be due to disturbance of the subsurface by installation of the lateral injector and the direct-push injection points and/or may be a reflection of the heterogeneous nature of the subsurface at the site. Observations made during installation of the injection infrastructure noted buried debris such as concrete and railroad ties. In addition, the site apparently has many abandoned utilities buried within the subsurface. For purposes of the pilot study, however, the changes to the resistivity domains over time, due to ISCO injections, are more important than the overall structure of the Section. Typically resistivity will decrease temporarily in areas affected by the introduction of the treatment reagents, which act as an electrolyte for the current induced by the SiteVision equipment. This effect is manifested by a shift in color and shape within discrete areas of the resistivity Sections. Within the saturated zone, shifts as little 5 to 10 ohm-meters may represent a significant influence by the injected reagents.

When comparing the Sections for Survey Line A-A’, as well as those for B-B’, significant reductions in resistivity were noted. These areas are indicated in Attachments 1 and 2, respectively. In each of the final Sections for A-A’ and B-B’ reductions of 30 to 50 ohm-meters were observed within the depth interval of 4 to 10 feet (1.2 to 3.1 meters) bgs. These resistivity changes tend to be associated with discrete areas of the subsurface, which suggests non-uniform infiltration over the course of the survey.

Similar effects are apparent in the Sections representing Survey Line C-C’. Here, direct-push injections were conducted at two locations – DP-1 and DP-2. A total of 430 gallons of treatment reagents were introduced into the subsurface. Table 2 below provides a chronology for the injection and survey activities.

Table 2: Chronology of In-situ Treatment Activities
Direct-Push Injection Area

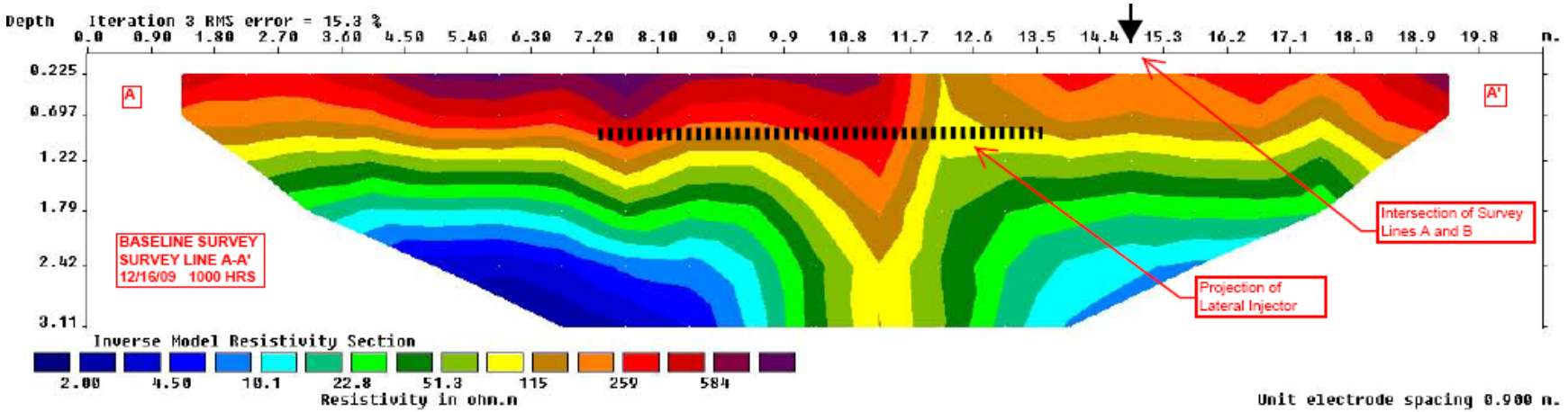
Date	Time	Activity	Details
12/15/09	1600	Baseline survey	Survey line C-C’
12/17/09	1055	ISCO injection – DP-1	230 gallons oxidant; 130 gallons catalyst
12/17/09	1415	ISCO injection – DP-2	50 gallons oxidant; 20 gallons catalyst
12/17/09	1545	Post injection survey	Survey line C-C’
12/18/09	0830	Post injection survey	Survey line C-C’

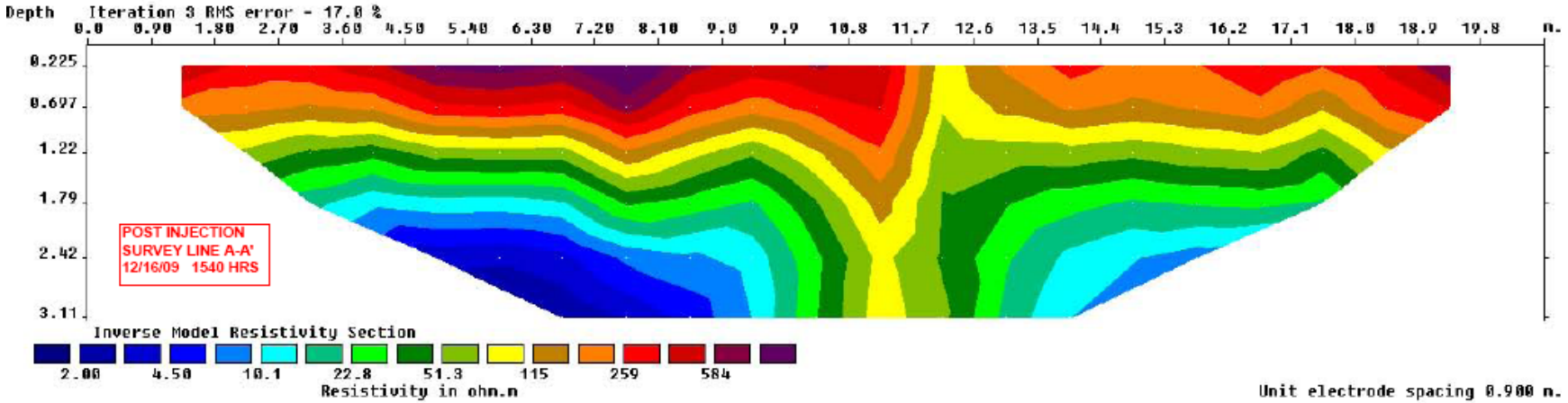
In comparing the Sections for Survey Line C-C’, changes in subsurface resistivity are more apparent near injection point DP-1 than DP-2 (refer to Attachment 3). This appears to reflect the relative volume of reagents that ERFS was able to inject at each point during the course of the pilot program. According to the summary table above, injection point DP-1 received a volume of treatment reagents nearly 5 times more than DP-2. At DP-1, a decrease of 5 to 10 ohm-meters is apparent at a depth of 4 to 8 feet (1.2 to 3.1 meters) bgs. The radius of influence, with respect to resistivity response, from DP-1 is approximately 5 feet. At DP-2, changes in resistivity are most apparent in the upper 4 feet (1.2 meters) of the subsurface and within approximately 1.5 feet (0.5 meter) of the injection point. These effects are likely due to surfacing of the reagents during injection.

Conclusion

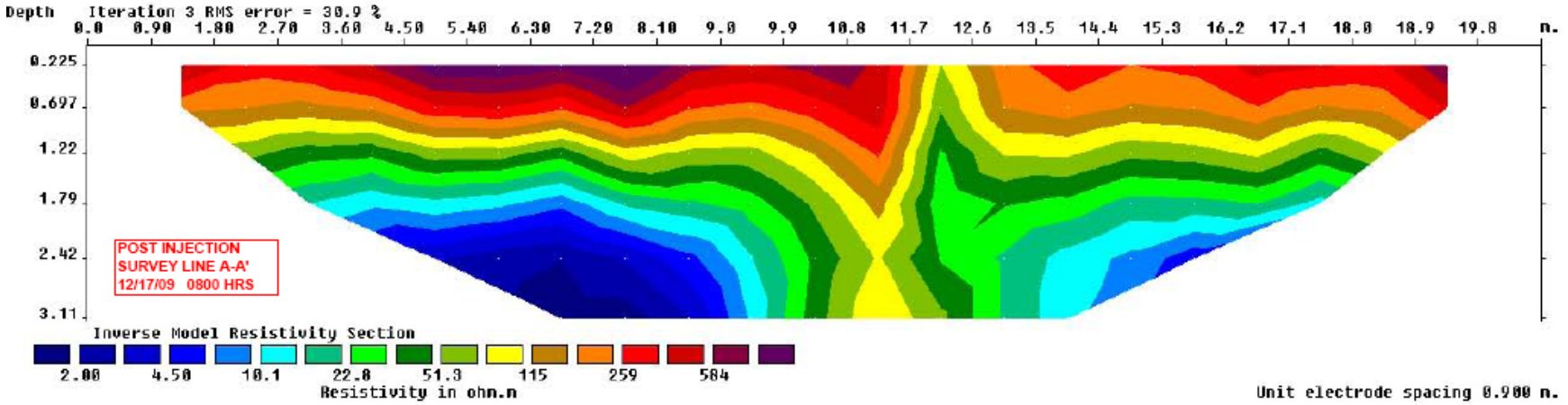
The results of the SiteVision surveys conducted within the two pilot study areas indicate that the extent of subsurface infiltration for the treatment reagents was limited by the relatively low and variable permeability of the soil and fill materials present within the pilot areas. In particular, injection efficiency with the direct-push method seemed to be dependent on the location of the injection point. These conditions limited the volume of reagents that could be introduced over the course of the two-day injection program. Nevertheless, significant changes to the resistivity characteristics within the treatment areas indicated that treatment reagents were able to infiltrate into the saturated interval of approximately 4 to 10 feet bgs.

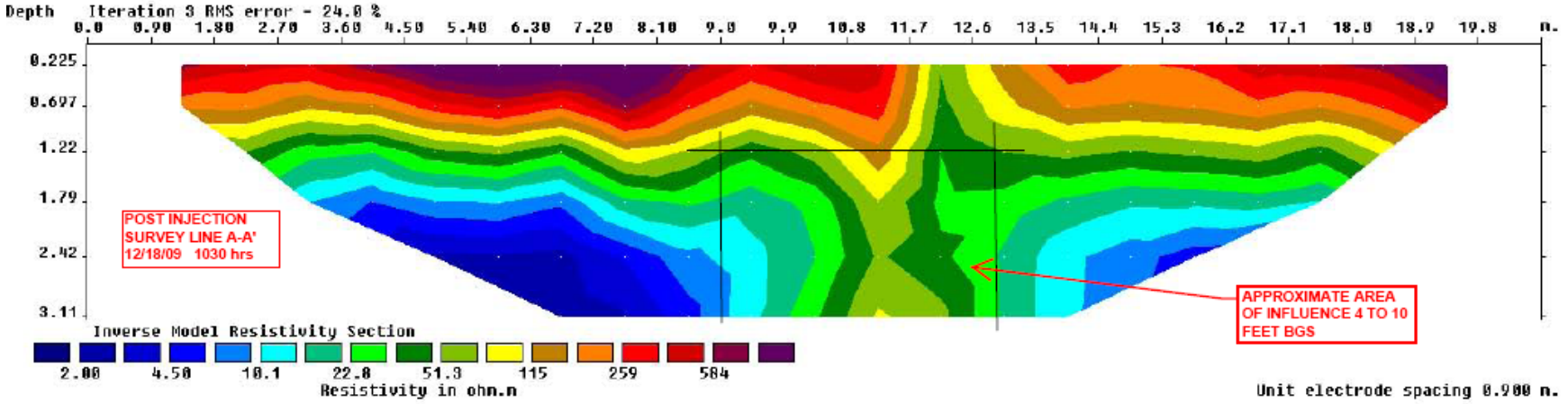
ATTACHMENT 1
Lateral Injector: Survey Line A – A'



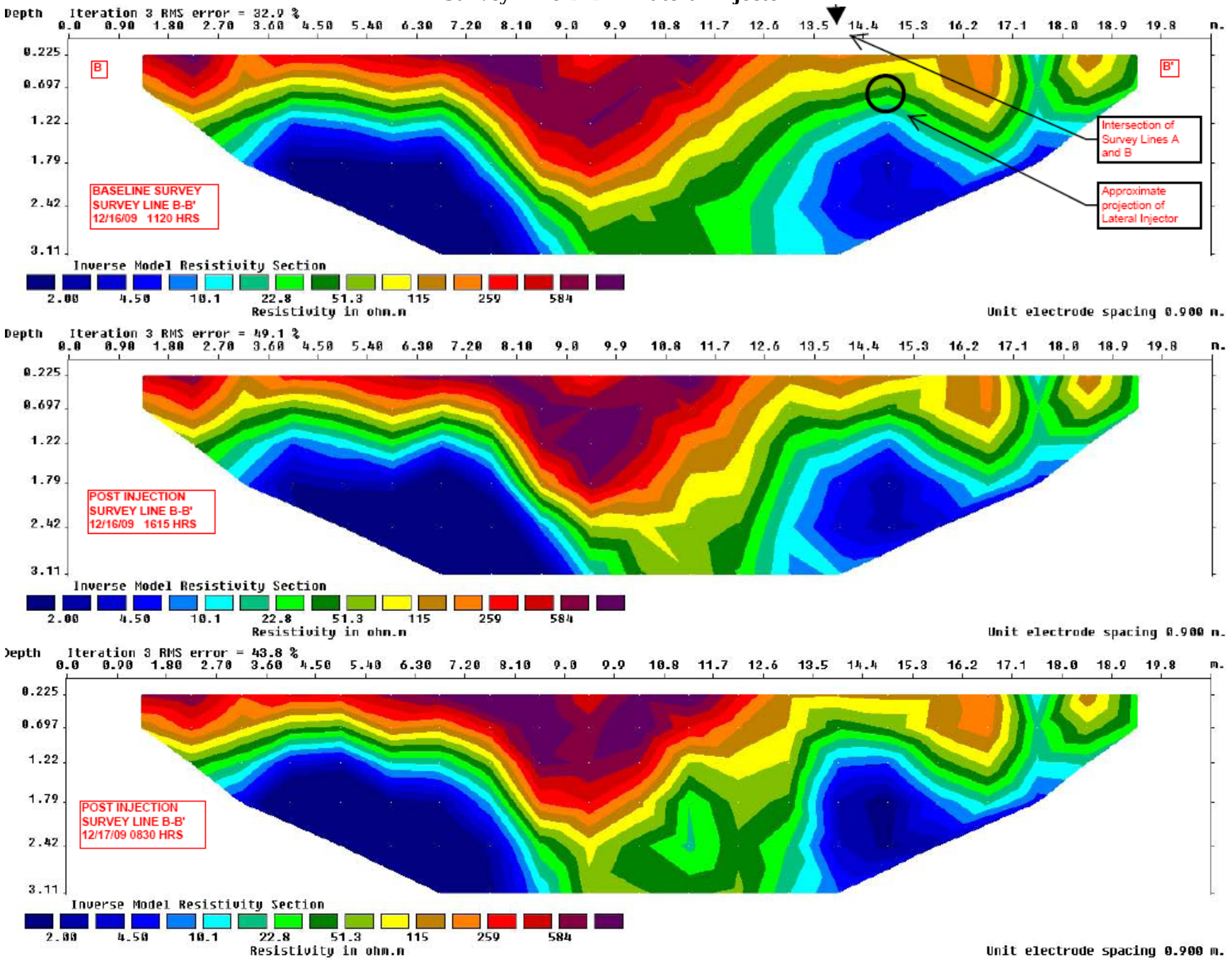


ATTACHMENT 1 (Continued)

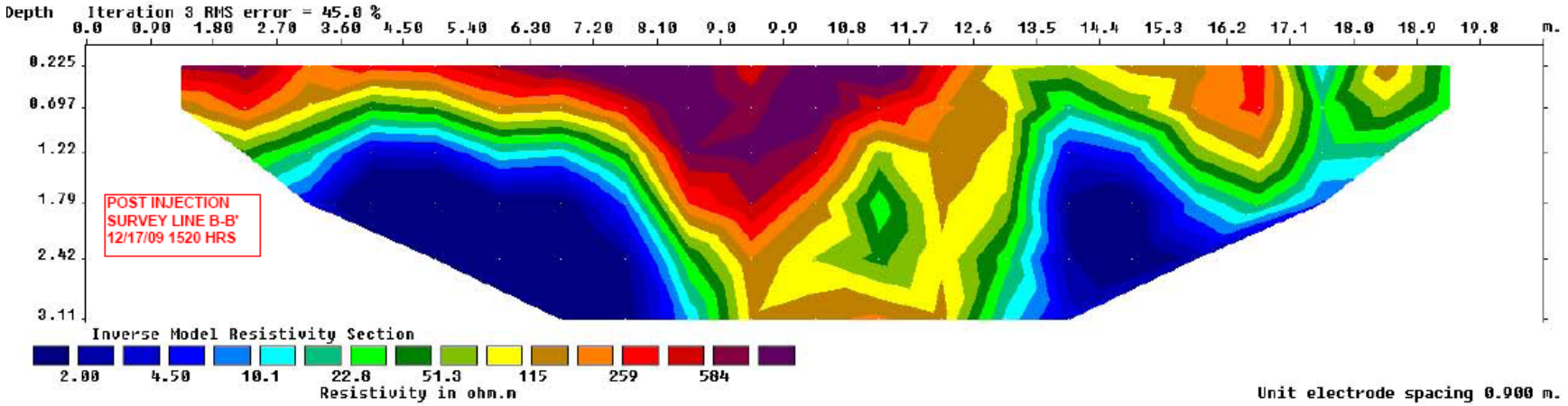


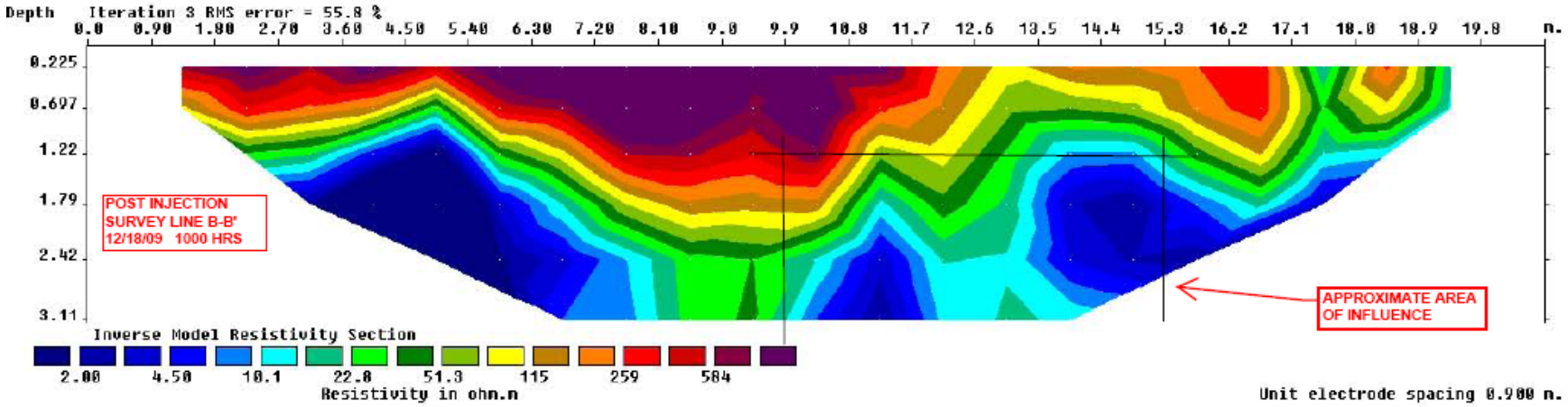


ATTACHMENT 2
Survey Line B-B' – Lateral Injector

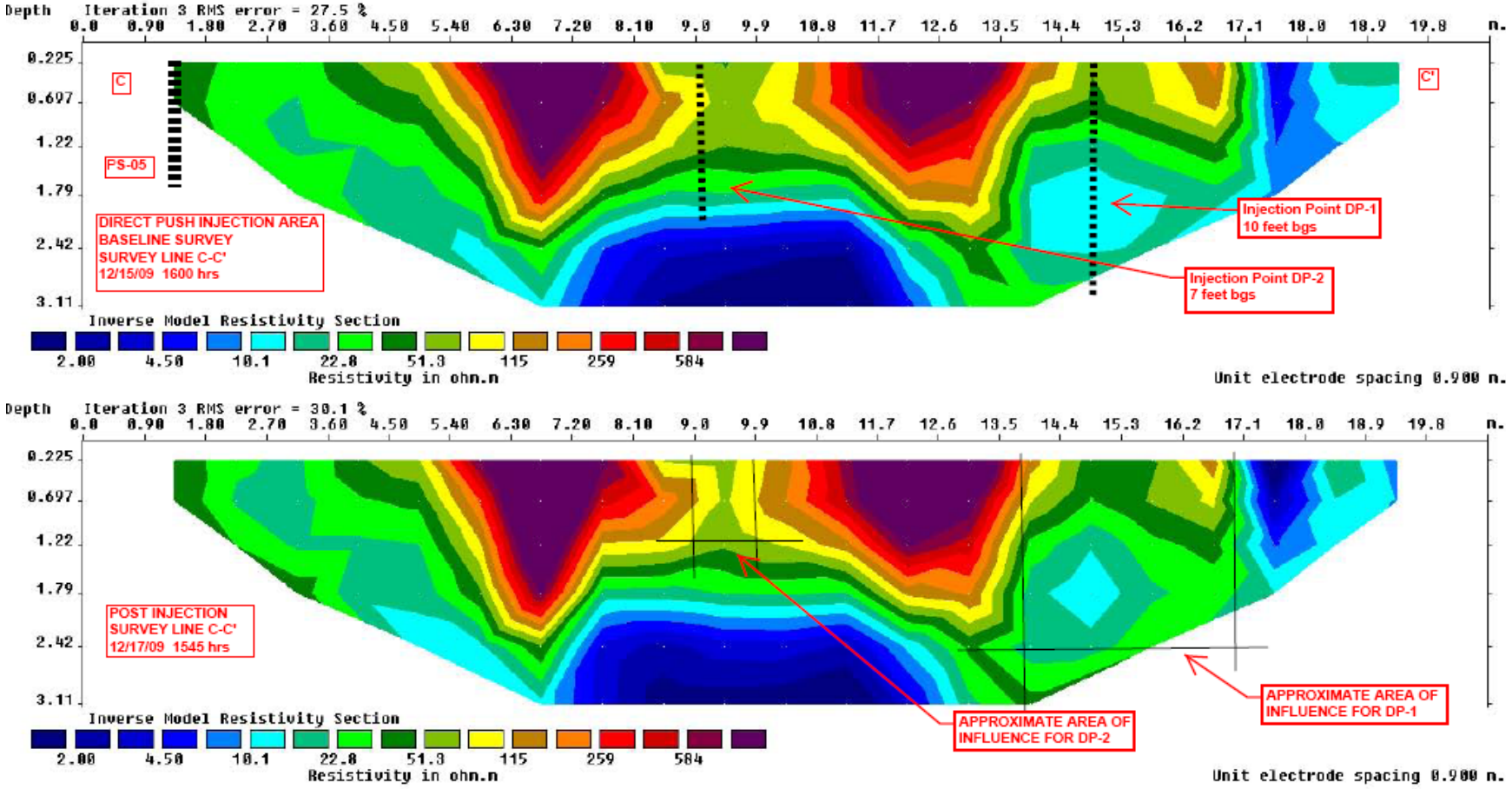


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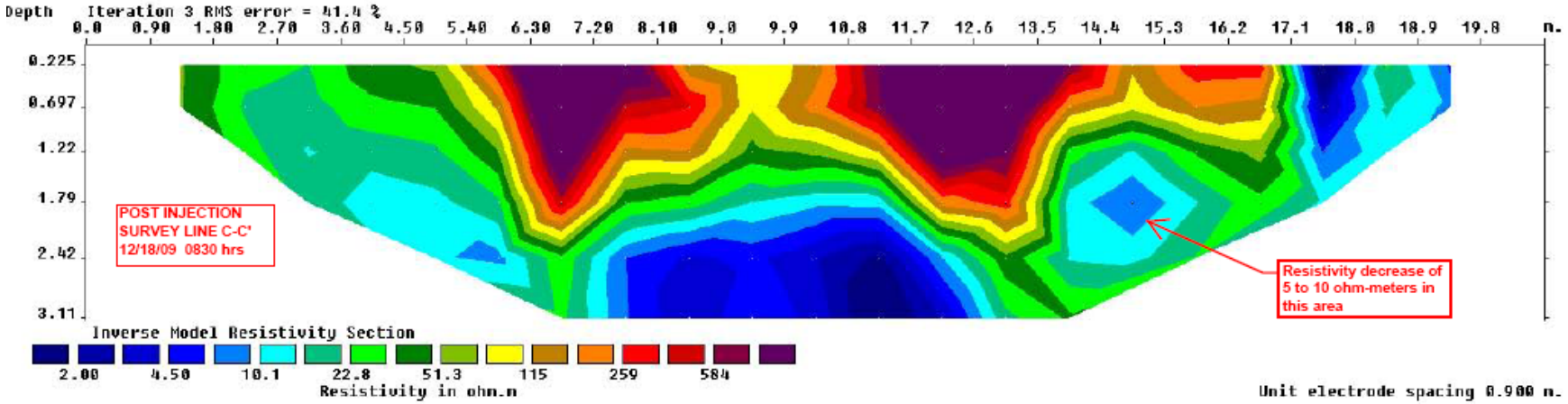




ATTACHMENT 3 - Direct Push Injections: Survey Line C-C'



ATTACHMENT 3 (Continued)



Laboratory Evaluation of Oxidant Demand for Potential Field Application of Catalyzed Hydrogen Peroxide or Sodium Persulfate

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1.0 Introduction

Bench scale treatability tests were performed on buffalo site soil and groundwater in January 2010 to evaluate the persistence of catalyzed hydrogen peroxide (CHP) and sodium persulfate in the presence of field media with the following specific objectives:

- To determine the natural oxidant demand of contaminated media for catalyzed hydrogen peroxide (CHP) and sodium persulfate, and
- To assess the effectiveness of CHP and sodium persulfate for chlorobenzenes treatment.

2.0 Materials and Methods

2.1 Sample collection

Soil and groundwater samples were obtained from the contaminated site and shipped to Clarkson University for evaluate. Soil cores and groundwater samples were co-located.

2.2 Materials

Hydrogen peroxide (30%) and ferrous sulfate heptahydrate were purchased from J.T Baker, Inc. Sodium persulfate and Sodium meta-bisulfite were purchased from Fisher. Precleaned, 125-mL jars with Septa and screw caps were employed as reaction systems. Samples from each experimental system were extracted with gas-tight syringes to minimize sample loss through volatilization.

2.3 Test Approach

Media Characterization

Site groundwater and soil samples were analyzed for pH, oxidation-reduction potential (ORP), chemical oxygen demand (COD), and organic contaminants (chlorobenzene, and other VOCs).

Oxidant Demand

The persistence of oxidants CHP and sodium persulfate was evaluated by measuring changes in oxidant concentration with respect to time. A multiple injection approach was employed. The concentration of oxidant in the reaction vial was measured at specific time intervals. When the measured oxidant concentration was less than or equal to 10% of the initial concentration, an additional dose of oxidant was added. A maximum of four doses of oxidant were given.

Experimental Conditions

Table 1 includes the experimental conditions that were evaluated. The evaluations were conducted in two sets to facilitate contaminant analysis after the 2^{nd} (Set 1) and 4^{th} (Set 2) doses of oxidant. pH, ORP, and oxidant concentrations were measured in all systems after each injection. Each sample run was conducted in duplicate with field soil and site groundwater samples provided. A no oxidant control was prepared handled similarly to the oxidant treatment conditions, where the only difference was that the control receive de-ionized water (DI) water in place of oxidant treatment solution at each injection time point to assure samples and controls were subjected to the same dilutions that result from multiple injection. Experimental runs were prepared with DI water or site groundwater and using stock solutions of sodium persulfate, hydrogen peroxide, and iron sulfate (1:10 mass ratio of iron to oxidant).

Table 1. Experimental Conditions

Run ID	Oxidant	Oxidant Conc (g/L)	Activation Method	Treatment Solutions	Note
A	None	0	None	Soil+ Groundwater+ DI water	CONTROL
B	H_2O_2	10 (1%)	Fe	Soil+ Groundwater+ Iron+ 1%H_2O_2	Iron to oxidant ratio = 1:10
C	H_2O_2	30 (3%)	Fe	Soil+ Groundwater+ Iron+ 3%H_2O_2	Iron to oxidant ratio = 1:10
D	Persulfate	15	Fe	Soil+ Groundwater+ Iron+ 15g/l Per	Iron to oxidant ratio = 1:10
E	Persulfate	30	Fe	Soil+ Groundwater+ Iron+ 30g/l Per	Iron to oxidant ratio = 1:10

Experimental Procedure

For each experimental condition in Table 1, two sets of vials (20 vials) were prepared by adding 40 g of field moist soil to the 125 mL vials. Next, 69 mL of site groundwater were introduced. Then, 1 mL of iron sulfate solution was added to the reactors to achieve the predefined mass ratio of oxidant and iron species. The reactors were then capped, and samples were mixed by shaker for one hour then were left to sit and equilibrate for one hour. Zero time point samples were taken for pH and ORP. Through the reactor's PTFE septa, 10 mL of oxidant solution were introduced via gas-tight syringe to achieve the required concentration of oxidant in the reactor. In the control a volume equivalent to the iron and oxidant solutions added to the reaction systems was added (i.e., 11mL of DI water). The reactors were hand mixed for 1 minute after adding treatment solutions and again between sampling periods throughout the reaction timeframe.

Periodically following the first treatment dose (based on the oxidant decomposition rate, see Table 2), a 0.1 mL of aliquot was extracted from the reactor vial via gas-tight syringe for pH, ORP, and oxidant analysis. Samples from the control vials were analyzed for pH and ORP. When the measured oxidant concentration in the oxidant treatment vials was less than the 10% of the initial concentration, 9 mL of solution were removed from the sample vials and an equivalent volume of oxidant treatment solution (Oxidant + iron) (Inj-2) was added to replace that volume. In the controls, 9 mL of DI water were added each time when the treatment solution was added to other treatment conditions. Several hours following Inj-2, when the oxidant concentration was less than 10% of the initial concentration, Set 1 samples (10 vials) were quenched by transferring 40 mL of solution from reaction vials to 40 mL sample vials containing the requisite amount of sodium meta-bisulfite. Quenched samples were preserved by adding HCl and were prepared for organic analysis. Then, from Set 2 samples (remaining 10 vials), 9 mL of solution were removed and an equivalent volume of oxidant treatment solution (Inj-3) was added to replace that volume. This process was repeated until Set 2 samples received up to four oxidant doses. After the fourth oxidant dose, Set 2 samples were quenched and prepared for organic. Dilution factors due to treatment solution and quenching agent addition were noted to correct measured contaminant concentrations in the reported data.

Table 2: Sampling Times

	Treatment	Time samples were taken (hours)																
Set 1	**Control**	0	3	8	16	18	26	38	48	75	88	100	112	136				
	H_2O_2 +Fe	0	3	8	16	18	26	38	48									
	Persulfate +Fe	0	3	8	16	26	48	51	63	75	88	100	112	136	160	185	212	236
Set 2	**Control**	0	3	8	16	18	26	38	48	63	71	75	88	96	100	185	212	236
	H_2O_2 +Fe	0	3	8	16	18	26	38	48	63	71	75	88	96	100			
	Persulfate +Fe	0	3	8	16	26	48	51	63	75	88	100	112	136	160	185	212	236

2.4 Analyses

Standard Methods were employed for pH and ORP analyses (APHA 1998). Sodium persulfate concentrations were measured using the spectrophotometric methods of Huang et al., (2002). Hydrogen peroxide concentrations were measured using a standard Hach test kit for H_2O_2 with a detection limit of – 0.2 mg/l -10 mg/l. Chemical oxygen demand (COD) of soil was measured using method given in Xu and

Thomson (2008). COD of groundwater was measured using a standard Hach test kit for COD with a detection limit of 3 mg/l -1500 mg/l. Samples were diluted for analysis where needed. Samples for contaminant measurement were shipped to Northeast Analytical.

3.0 Results and Discussion

3.1 Media Characteristics

Table 3 presents the baseline pH, ORP, COD, and contaminant concentrations in the untreated soil and groundwater samples from the site.

Table 3. Media Characteristics

	Soil	Groundwater		
pH	7.8	6.6		
ORP	-49.2 mv	22 mv		
COD	34.45 g/kg soil	373 mg/L		
Contaminants	**µg/kg**	**Rep 1 (µg/L)**	**Rep 2 (µg/L)**	**Rep 3 (µg/L)**
1,2,4-Trichlorobenzene	4560	1740	1850	1970
1,2-Dichlorobenzene	ND	14800	15700	15800
1,3-Dichlorobenzene	ND	2370	2830	2720
1,4-Dichlorobenzene	ND	2800	3340	3210
Chlorobenzene	ND	45100	58100	59600
2-Butanone	ND	ND	ND	ND
Acetone	ND	ND	ND	ND
Napthalene	ND	ND	ND	ND
Tetrachloroethene	2790	ND	ND	ND

3.2 Oxidant Decomposition

Results indicate that hydrogen peroxide decomposition occurred at a faster rate than persulfate, as anticipated. The concentration of hydrogen peroxide was reduced to less than 10% of its initial concentration within 16 hours of the initial dose (Figure 1). Decomposition of high concentration of oxidant was fast compared to the lower concentration of oxidant, again as anticipated. The 3% hydrogen peroxide decomposed faster than the 1% hydrogen peroxide. Similarly, decomposition of the 30 g/L persulfate concentration was faster than the 15 g/L concentration (Figure 2). Overall decomposition of persulfate was very slow for these media. Even after 48 hours of reaction, the persulfate concentration was not less than 10% of its initial concentration (in both sets of persulfate treatment vials). Following the second dose, the persulfate concentration didn't change significantly. It appeared that any activation of the persulfate by iron was not very rigorous. To increase the decomposition rate of persulfate, an additional dose of iron was added to both sets of persulfate treatment vials. There was no change in the decomposition rate of persulfate even after the additional dose of iron. To activate the persulfate, 0.1% hydrogen peroxide was added, and 8 hours laters the samples for both persulfate sets were quenched without the addition of third and fourth dose to the Set 2 vials as was initially planned. Adding additional oxidant would provide no further benefit in the time period of these studies. The decomposition rate of persulfate in both set of vials (both set received only two doses) is similar as can be seen in Figure 2 & 4.

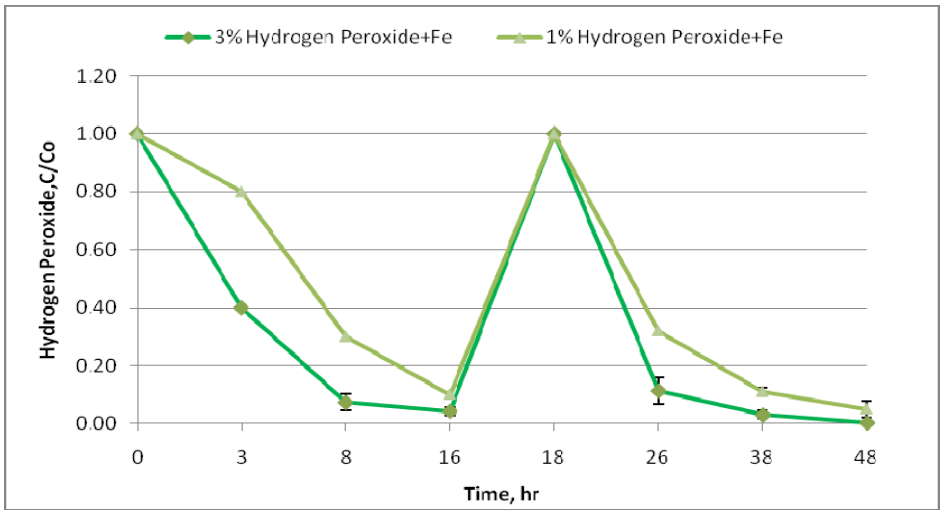


Figure 1. Hydrogen peroxide decomposition following the addition of two treatment doses (Set 1)

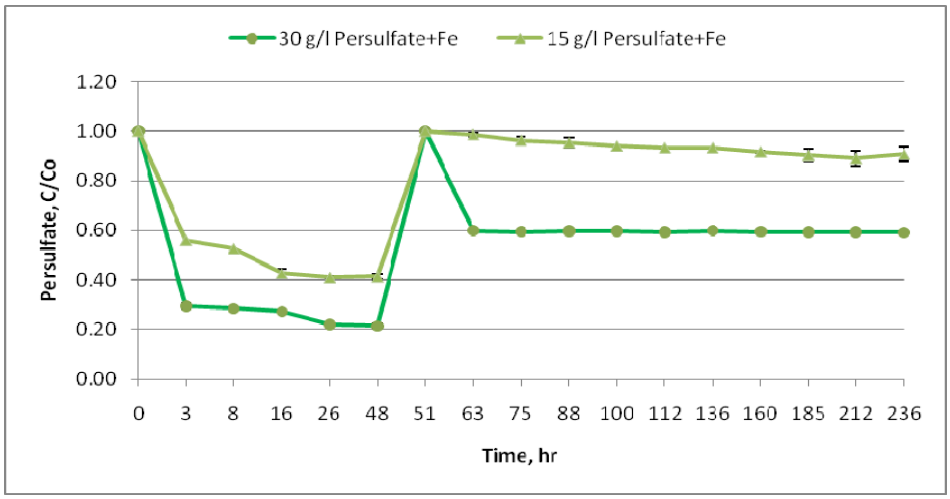


Figure 2. Persulfate decomposition following the addition of two treatment doses (Set 1)

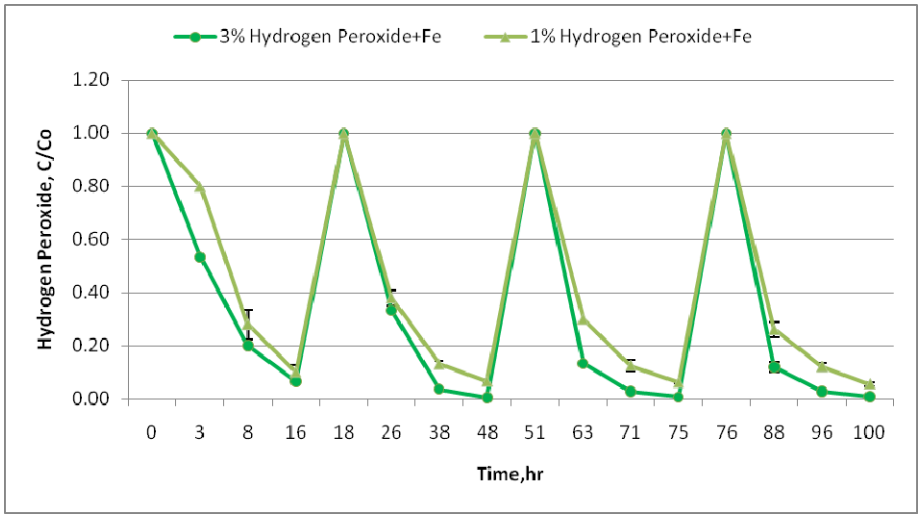


Figure 3. Hydrogen peroxide decomposition following the addition of four treatment doses (Set 2)

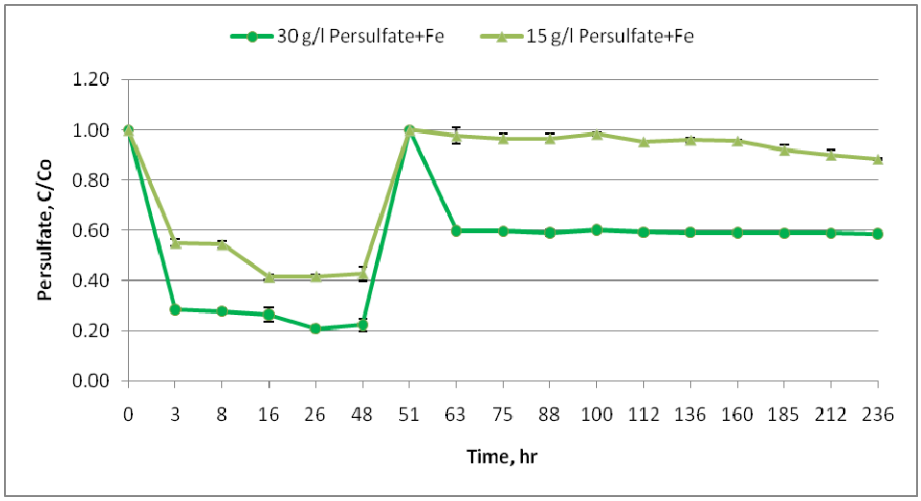


Figure 4. Persulfate decomposition following the addition of two treatment doses (Set 2)

3.3 Changes in pH and ORP

The pH of the oxidant treatment conditions decreased with the addition of the oxidant compared to the control (Figures 5, 6, 9, and 10). The pH for both hydrogen peroxide and persulfate treatments remained higher than 5 throughout the reaction period. Addition of the oxidants increased the oxidation reduction potential (ORP) of the treatment conditions, as expected. Changes in ORP are higher with high concentration of oxidant (Figure 7, 8, 11, 12). The typical Fenton's process meant to be generated in the CHP systems occurs at a pH of 3.0. Addition of acid may be desirable in these systems. The modest pH change observed in persulfate systems is indication that the persulfate is not being effectively activated, as acidity is generated and pH typically drops in activated persulfate systems. Of course, natural soil and groundwater buffering could mask such an effect.

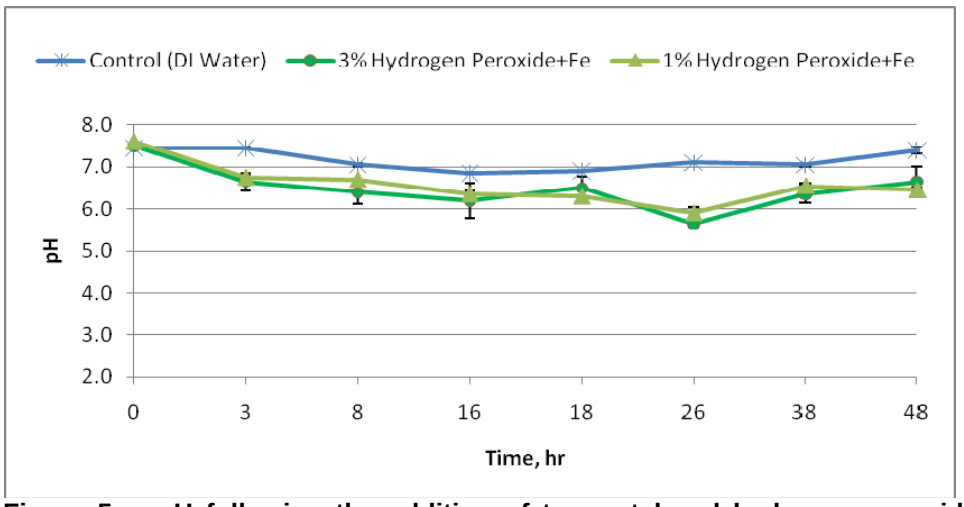


Figure 5. pH following the addition of two catalyzed hydrogen peroxide (CHP) doses and in control with DI water (Set 1)

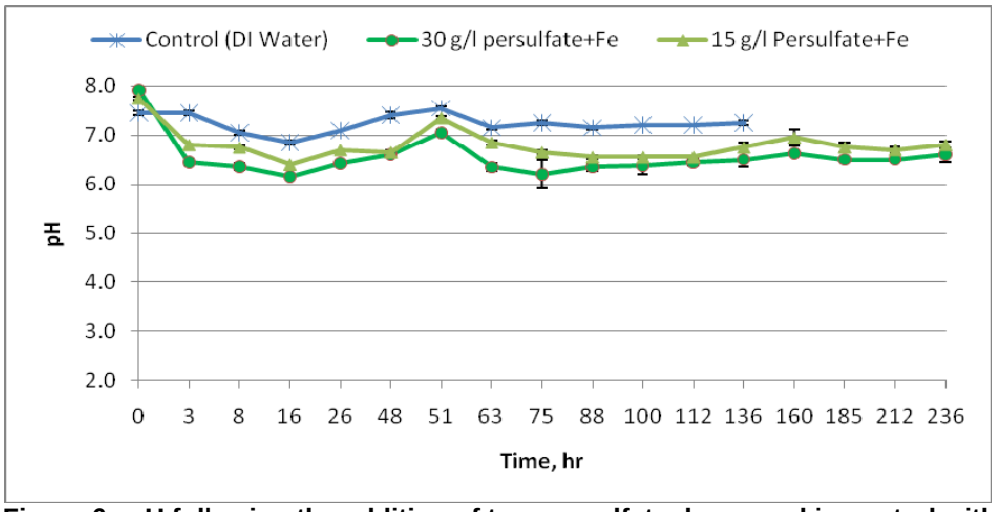


Figure 6. pH following the addition of two persulfate doses and in control with DI water (Set 1)

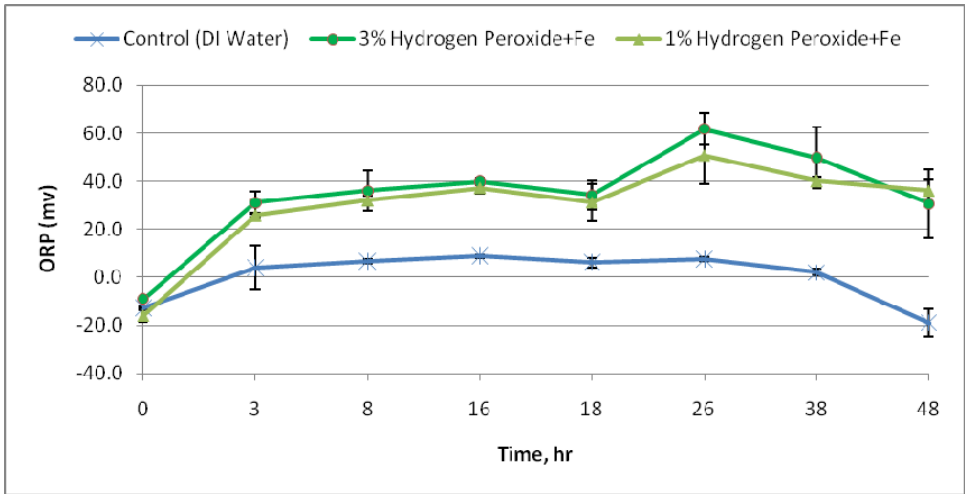


Figure 7. ORP following the addition of two CHP doses and in control with DI water (Set 1)

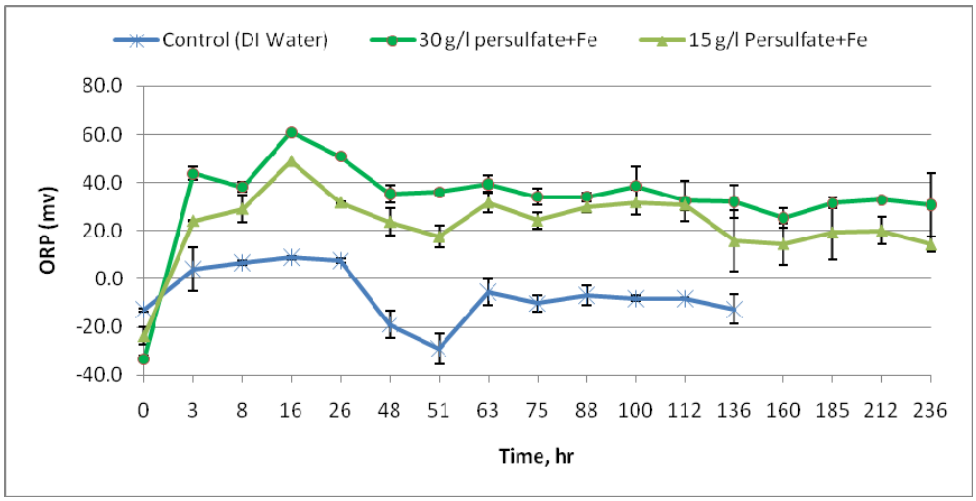


Figure 8. ORP following the addition of two persulfate doses and in control with DI water (Set 1)

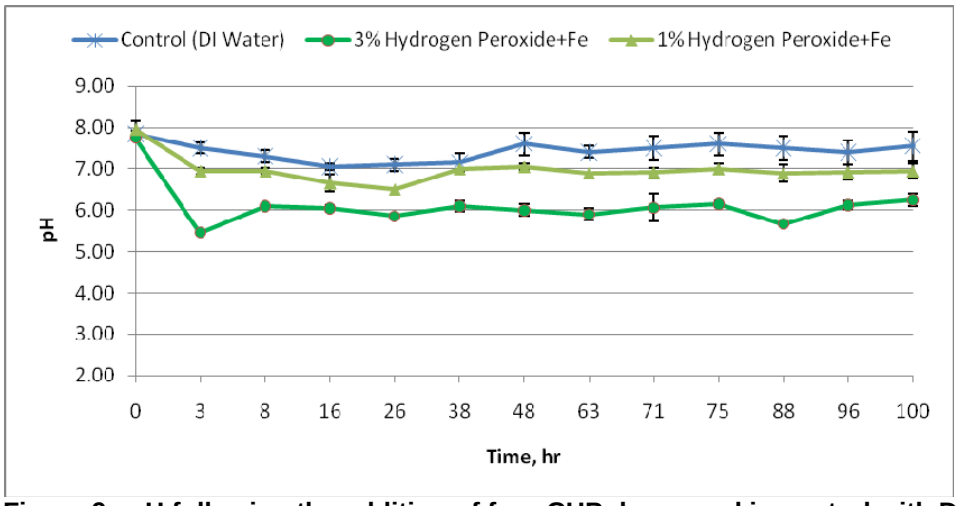


Figure 9. pH following the addition of four CHP doses and in control with DI water (Set 2)

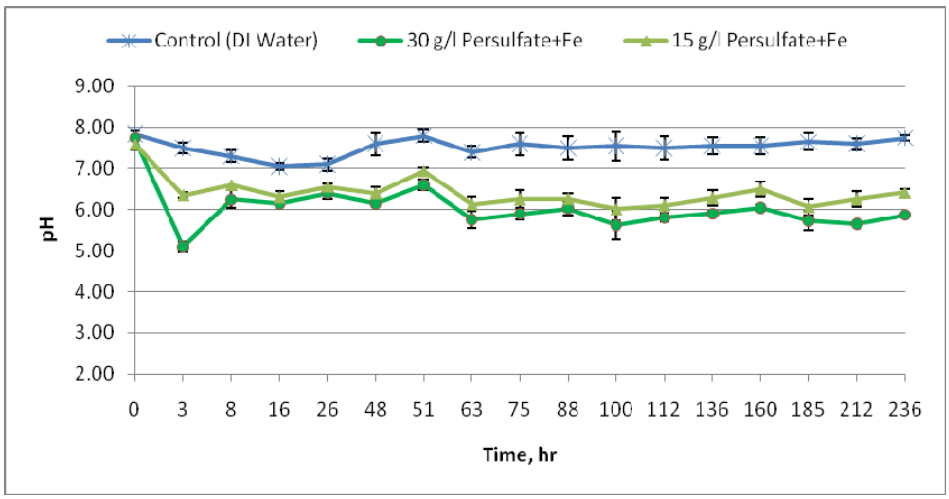


Figure 10. pH following the addition of two persulfate doses and in control with DI water (Set 2)

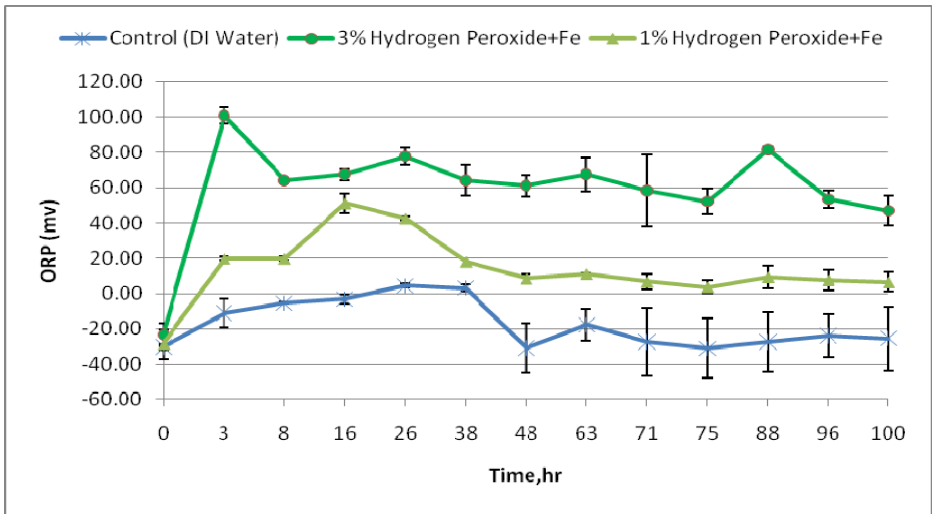


Figure 11. ORP following the addition of four CHP doses and in control with DI water (Set 2)

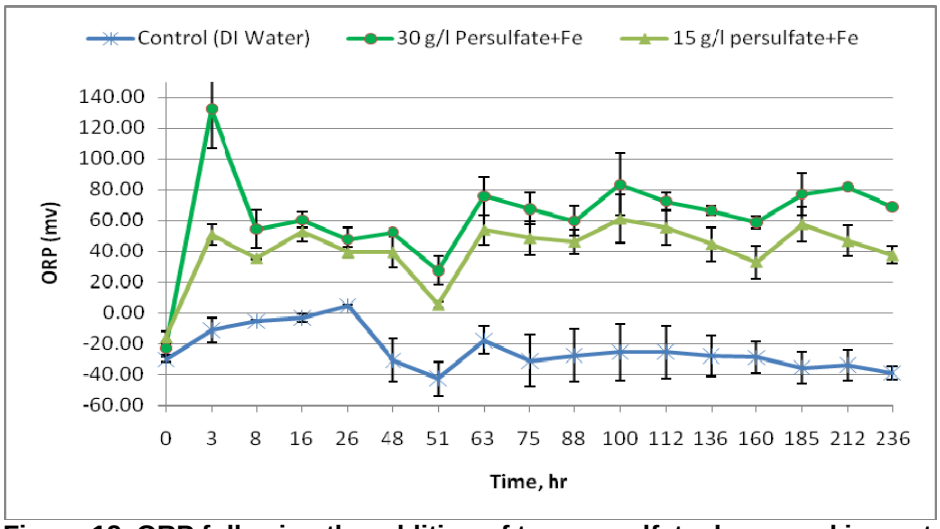


Figure 12. ORP following the addition of two persulfate doses and in control with DI water (Set 2)

3.4 Contaminant Treatment

Table 4 presents the results for contaminant treatment. Northeast Analytical provided the raw data (Appendix Table 7) to Clarkson, which were then corrected for the sample dilution by applying a dilution factor to account for solution removed to make volume available for oxidant additions (9 mL), and a dilution factor to account for 0.1 mL solution removed for analysis at each sampling time.

Results in Table 4 show lower concentrations of contaminant in controls relative to the untreated groundwater (Table 3). Because the majority of these contaminants were not found in the soil sample used for these evaluations, it is possible that significant contaminant mass sorbed onto the soil, "removing" it from groundwater. In fact, calculations considering the octanol-water partitioning coefficients (k_{ow}) for the contaminants shown in Table 5 indicate that this is probable. Additional data on soil organic carbon content would be beneficial to verifying the source of the difference between control sample aqueous phase concentrations and the actual groundwater samples. Similar calculations using Henry's Law constants for the contaminants indicate that losses to volatilization are less than 2% (based on initial headspace available for partitioning prior to first injection; samples were maintained at zero headspace thereafter).

Interestingly, many of the treatment systems, particularly Set 1 systems, show higher contaminant concentrations than control systems. This could be attributable to inherent system heterogeneities (differences in field soils) or enhanced contaminant desorption. Enhanced contaminant desorption could results from (1) destruction or alteration of organic carbon in the soil, releasing sorbed contaminant, (2) presence of superoxide anion in CHP systems, which can enhance contaminant desorption, (3) biotic or abiotic dechlorination of chlorobenzenes (particularly in the persulfate systems, and/or (4) generation of byproducts that can enhance the solubility of other contaminants (i.e., acetone generation in CHP systems can potentially enhance the solubility of the chlorobenzenes). Acetone can be generated as a byproduct during CHP reactions. A means of possibly avoiding acetone generation is use of iron nitrate rather than the iron sulfate that was used in these studies (Burbano et al., 2002). The acetone concentrations generated were higher than can be attributed to conversion of 100% of contaminant available in the aqueous phase of the control systems, particularly in Set 2 of the 3% CHP systems (higher concentration, four doses). This indicates that acetone is perhaps being generated through oxidation of contaminant sorbed to soil or other mechanisms. Additional study would be necessary to fully understand the mechanisms of acetone generation, including reaction intermediates and the role of organic carbon.

Table 4. Contaminant Concentrations in Set 1 (Two Injections) and Set 2 (Four CHP or TWO Persulfate Injections) Samples after Accounting for Dilution Laboratory-Reported Data

Contaminant Conc. (µg/L) After TWO Injections of Oxidant Solution (Set 1)										
	Control		1% H_2O_2 + Fe		3% H_2O_2 + Fe		15g/l Per + Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
1,2,4-Trichlorobenzene	ND	161	ND	ND	245	191	ND	157	ND	ND
1,2-Dichlorobenzene	1384	2067	1015	490	610	833	1136	1162	1170	927
1,3-Dichlorobenzene	ND	283	198	ND	ND	ND	145	150	152	137
1,4-Dichlorobenzene	ND	333	234	ND	ND	ND	170	177	178	161
Chlorobenzene	339	1963	3405	1663	3220	1702	2643	3756	2348	1597
2-Butanone	ND	ND	752	491	425	166	ND	ND	219	160
Acetone	ND	ND	4619	2916	3457	1218	ND	ND	ND	691
Napthalene	ND	227	ND	ND	199	185	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Contaminant Conc. (µg/L) After Four Injections of Oxidant Solution (Set 2)										
	Control		1% H_2O_2 + Fe		3% H_2O_2 + Fe		15g/l Per + Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
1,2,4-Trichlorobenzene	330	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1334	1320	688	659	ND	ND	1516	895	1088	769
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	195	ND	146	ND
1,4-Dichlorobenzene	ND	174	ND	ND	ND	ND	229	145	172	ND
Chlorobenzene	725	1192	580	695	ND	ND	3072	843	1338	955
2-Butanone	ND	ND	226	735	453	ND	ND	ND	256	170
Acetone	ND	ND	2214	5358	28735	10936	ND	ND	961	741
Napthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not detected

NOTES: Peroxide – liquid was flowing out of 3% H_2O_2 condition in both sets (less in Set 1 samples).

Persulfate – At 89 hours an additional iron dose was added (no oxidant) to both sets. There was no change in persulfate concentration even after the addition of iron. At 160 hours, one more dose of iron was injected, and still there was no change. At 188 hours, a 0.1% solution of H_2O_2 was injected into the persulfate samples to activate persulfate. Peroxide was allowed to react with persulfate for 48 hours and then samples were quenched and prepared for analysis.

Table 5. % Contaminant Potentially Sorbed on Soil as a Function of Soil Organic Carbon Content (estimated values based on octanol-water partitioning coefficients of contaminants)

	% Contaminant Potentially Sorbed			
	f_{oc} = 1%	f_{oc} = 0.6%	f_{oc} = 0.3%	f_{oc} = 0.1%
Chlorobenzene	23.5	14.1	7.1	0.2
1,2,4-Trichlorobenzene	281.1	168.6	84.3	2.8
1,2-Dichlorobenzene	70.7	42.4	21.2	0.7
1,3-Dichlorobenzene	95.1	57.1	28.5	1.0
1,4-Dichlorobenzene	77.3	46.4	23.2	0.8

f_{oc} = fraction of organic carbon of soil

4.0 Recommendations

Recommendations toward full-scale design include the following:

- Measurement of soil TOC to understand potential for and extent of contaminant sorption
- A more rigorous persulfate activation approach, assuming treatment time is of concern – hydrogen peroxide activation of persulfate or alkaline pH activation may result in more rigorous oxidation conditions.
- Modification of CHP systems to pH ~ 3 or use of a chelating agent such as citric acid to enhance neutral pH oxidation.

5.0 References

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Xu, X.,Thomson,N.R. 2008. Estimation of the maximum consumption of permanganate by aquifer solids using a modified chemical oxygen demand test. Journal of environmental engineering. 353-361.

Appendix

*NA =Samples not taken
*Values in yellow are after second dose of treatment solution
*Values in orange are after third dose of treatment solution
*values in green are after fourth dose of treatment solution
*In control DI water was added in place of treatment solution

Table 1. pH following addition of two doses of treatment solution (Set 1)

Time (Hours)	Control		1% H_2O_2+Fe		3% H_2O_2+Fe		15 g/l Per+Fe		30g/l Per+Fe	
	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
0.0	7.4	7.5	7.6	7.6	7.5	7.5	7.7	7.8	7.9	7.9
3.0	7.4	7.5	6.6	6.6	6.7	7.2	6.8	6.8	6.5	6.4
8.0	7.1	7.0	6.7	6.7	6.5	7.1	6.8	6.7	6.4	6.3
16.0	6.9	6.8	5.8	6.1	5.9	6.5	6.4	6.4	6.2	6.2
18.0	6.9	6.9	6.2	6.4	6.3	6.7	NA	NA	NA	NA
26.0	7.1	7.1	5.8	6.0	6.2	6.8	6.7	6.7	6.5	6.45
38.0	7.1	7.0	6.5	6.6	6.4	6.9	NA	NA	NA	NA
48.0	7.5	7.3	6.4	6.5	6.4	6.9	6.6	6.7	6.6	6.6
51.0	7.5	7.6	Quenched				7.3	7.4	7.0	7.1
63.0	7.1	7.2					6.6	6.5	6.4	6.3
71.0	7.2	7.2					NA	NA	NA	NA
75.0	7.2	7.3					6.7	6.6	6.0	6.4
76.0	NA	NA					NA	NA	NA	NA
88.0	7.2	7.2					6.6	6.5	6.4	6.3
100.0	7.2	7.2					6.6	6.5	6.5	6.3
112.0	7.2	7.2					6.6	6.5	6.5	6.4
136.0	7.3	7.2					6.9	6.6	6.7	6.4
160.0							7.2	6.7	6.8	6.6
185.0							6.9	6.6	6.5	6.5
212.0							6.8	6.6	6.5	6.5
236.0							6.9	6.8	6.7	6.5
							Quenched			

Table 2. pH following four doses of CHP and two doses of persulfate treatment solution (Set 2)

Time (Hours)	Control		1% H_2O_2+Fe		3% H_2O_2+Fe		15 g/l Per+Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
0.0	7.8	7.9	7.8	8.1	7.8	7.7	7.5	7.7	7.8	7.7
3.0	7.4	7.6	6.9	7.0	5.4	5.5	6.3	6.4	3.7	5.2
8.0	7.2	7.4	6.9	7.0	6.1	6.1	6.6	6.6	6.1	6.4
16.0	7.1	7.0	6.8	6.5	6.0	6.1	6.2	6.4	6.1	6.2
18.0	6.9	7.0	6.8	6.9	NA	NA	NA	NA	NA	NA
26.0	7.0	7.2	6.5	6.5	5.8	5.9	6.5	6.6	6.3	6.5
38.0	7.0	7.3	7.0	7.0	6.0	6.2	NA	NA	NA	NA
48.0	7.4	7.8	7.0	7.1	5.9	6.1	6.3	6.5	6.1	6.2
51.0	7.7	7.9	7.1	7.2	NA	NA	7.0	6.9	6.5	6.7
63.0	7.3	7.5	6.9	6.9	5.8	6.0	6.0	6.3	5.6	5.9
71.0	7.3	7.8	7.1	6.8	5.8	6.3	NA	NA	NA	NA
75.0	7.4	7.8	7.1	6.9	6.1	6.2	6.1	6.4	5.8	6.0
76.0	7.4	7.7	7.2	7.1	NA	NA	NA	NA	NA	NA
88.0	7.3	7.7	7.0	6.7	5.6	5.7	6.2	6.4	5.9	6.2
96.0	7.2	7.6	7.1	6.8	6.1	6.2	NA	NA	NA	NA
100.0	7.3	7.9	7.1	6.8	6.2	6.4	5.8	6.2	5.4	5.9
112.0	7.3	7.7	Quenched				6.0	6.2	5.7	5.9
136.0	7.4	7.7					6.2	6.4	5.9	6.0
160.0	7.4	7.7					6.4	6.6	6.0	6.1
185.0	7.5	7.8					5.9	6.2	5.6	5.9
212.0	7.5	7.7					6.1	6.4	5.7	5.7
236.0	7.7	7.8					6.3	6.5	5.9	5.9
							Quenched			

Table 3: ORP (mV) following addition of two doses of treatment solution (Set 1)

Time (Hours)	Control		1% H_2O_2+Fe		3% H_2O_2+Fe		15 g/l Per+Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
0.0	-13.3	-12.4	-14.0	-17.8	-8.8	-9.2	-21.0	-26.3	-34.3	-32.3
3.0	-2.5	-10.4	26.5	25.3	34.4	27.8	24.0	24.2	41.8	45.6
8.0	7.5	6.1	30.5	33.4	41.9	30.2	25.1	33.0	36.8	39.6
16.0	8.5	9.4	39.0	35.5	40.8	38.7	48.9	48.7	60.9	60.9
18.0	7.7	4.8	36.8	25.7	38.5	30.0	NA	NA	NA	NA
26.0	8.4	7.1	42.4	59.2	66.4	57.1	31.9	31.5	50.7	50.9
38.0	3.0	1.1	41.3	38.9	58.8	40.8	NA	NA	NA	NA
48.0	-22.9	-15.0	39.3	32.9	40.6	20.5	27.6	19.7	32.8	37.9
51.0	-24.6	-33.5	Quenched				-14.3	-20.7	35.3	36.8
63.0	-1.7	-9.2					28.9	34.5	37.0	41.8
71.0	-5.7	-8.0					NA	NA	NA	NA
75.0	-7.8	-12.6					21.7	26.7	31.7	36.5
76.0	NA	NA					NA	NA	NA	NA
88.0	-3.9	-9.8					28.4	31.4	32.8	35.3
100.0	-7.4	-9.0					28.3	35.4	33.0	44.3
112.0	-8.6	-7.8					29.3	32.3	26.4	38.4
136.0	-17.0	-8.4					6.7	24.8	27.3	37.0
160.0							-8.4	20.7	22.5	28.3
185.0							11.4	27.1	29.9	33.1
212.0							16.0	24.1	32.3	33.4
236.0							12.0	16.6	21.3	40.1
							Quenched			

Table 4. ORP (mV) following four doses of CHP and two doses of persulfate treatment solution (Set 2)

Time (Hours)	Control		1% H_2O_2+Fe		3% H_2O_2+Fe		15 g/l Per+Fe		30g/l Per+Fe	
	Rep1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
0.0	-29.1	-31.4	-16.6	-40.6	-27.8	-18.9	-13.0	-19.1	-25.8	-19.6
3.0	-5.5	-16.9	21.6	18.3	104.1	97.8	55.3	46.3	150.5	114.4
8.0	-5.8	-5.0	21.3	18.4	63.6	65.0	35.1	36.1	63.1	45.7
16.0	-1.1	-5.1	59.0	43.4	69.9	65.4	57.1	48.3	63.8	56.8
18.0	6.0	0.6	11.1	8.1	NA	NA	NA	NA	NA	NA
26.0	5.3	3.7	44.1	41.2	81.3	74.2	41.6	37.0	53.2	42.4
38.0	4.8	1.6	17.8	18.4	70.2	58.1	NA	NA	NA	NA
48.0	-20.9	-40.7	12.4	4.7	65.5	56.9	46.5	32.5	53.5	51.1
51.0	-34.9	-50.5	8.1	1.3	NA	NA	3.8	6.6	34.2	20.7
63.0	-11.4	-24.1	10.2	12.2	74.4	60.8	60.8	46.9	84.5	67.2
71.0	-13.9	-41.1	0.4	13.2	72.8	44.1	NA	NA	NA	NA
75.0	-19.1	-43.1	-1.6	9.0	57.4	46.9	56.4	40.7	74.9	60.3
76.0	-22.7	-39.5	-9.7	-3.6	NA	NA	NA	NA	NA	NA
88.0	-15.6	-39.5	0.3	18.6	83.1	80.3	51.7	40.7	66.8	52.8
96.0	-15.3	-32.7	-0.7	16.2	57.0	49.9	NA	NA	NA	NA
100.0	-12.6	-38.3	-1.4	14.5	52.8	41.1	72.7	49.9	97.6	69.1
112.0	-13.3	-37.5	Quenched				63.1	47.6	76.6	68.3
136.0	-18.3	-37.4					52.5	36.7	68.6	64.2
160.0	-21.6	-36.0					40.5	25.5	61.9	56.0
185.0	-28.4	-42.8					65.8	49.8	86.7	67.4
212.0	-26.7	-38.3					53.6	39.5	81.8	81.5
236.0	-36.0	-41.9					41.6	33.6	69.1	68.5
							Quenched			

Table 5. Oxidant conc. (g/L) with time following the addition of two oxidant doses (Set 1)

Time (Hours)	1% H_2O_2+Fe		3% H_2O_2+Fe		15 g/l Per+Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
0.0	10.0	10.0	30.0	30.0	15.0	15.0	30.0	30.0
3.0	8.0	8.0	12.0	12.0	8.4	8.4	8.6	9.1
8.0	3.0	3.0	2.8	1.6	7.9	7.9	8.6	8.5
16.0	1.0	1.0	1.6	1.0	6.2	6.6	8.2	8.2
18.0	10.0	10.0	30.0	30.0	NA	NA	NA	NA
26.0	3.2	3.2	4.4	2.4	6.1	6.2	6.7	6.5
38.0	1.0	1.2	1.2	0.6	NA	NA	NA	NA
48.0	0.3	0.7	0.1	0.1	6.1	6.3	6.7	6.2
51.0	Quenched				15.0	15.0	30.0	30.0
63.0					14.9	14.7	18.0	17.9
71.0					NA	NA	NA	NA
75.0					14.6	14.3	17.8	17.9
76.0					NA	NA	NA	NA
88.0					14.1	14.5	17.8	18.0
100.0					14.2	14.1	17.8	18.0
112.0					14.0	14.0	17.8	17.8
136.0					14.0	14.0	17.9	18.0
160.0					13.8	13.7	17.8	17.9
185.0					13.8	13.3	17.8	17.8
212.0					13.6	13.0	17.8	17.8
236.0					13.9	13.3	17.8	17.7
					Quenched			

Table 6. Oxidant conc. (g/L) with time following the addition of four oxidant doses of CHP and two oxidant doses of persulfate (Set 2)

Time (Hours)	1% H_2O_2+Fe		3% H_2O_2+Fe		15 g/l Per+Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
0.0	10.0	10.0	30.0	30.0	15.0	15.0	30.0	30.0
3.0	8.0	8.0	16.0	16.0	8.1	8.4	8.4	8.7
8.0	3.2	2.4	6.0	6.0	8.0	8.3	8.1	8.6
16.0	1.2	0.8	2.0	1.9	6.3	6.1	7.3	8.5
18.0	10.0	10.0	30.0	30.0	NA	NA	NA	NA
26.0	4.0	3.6	10.0	10.0	6.2	6.3	6.2	6.3
38.0	1.2	1.4	1.2	1.0	NA	NA	NA	NA
48.0	0.6	0.7	0.1	0.2	6.1	6.7	6.2	7.2
51.0	10.0	10.0	30.0	30.0	15.0	15.0	30.0	30.0
63.0	3.0	3.0	4.0	4.0	14.3	15.0	17.8	18.1
71.0	1.1	1.4	0.7	0.9	NA	NA	NA	NA
75.0	0.6	0.6	0.2	0.2	14.3	14.7	17.8	18.0
76.0	10.0	10.0	30.0	30.0	NA	NA	NA	NA
88.0	2.4	2.8	3.2	4.0	15.3	15.6	NA	18.0
96.0	1.1	1.3	0.7	1.0	NA	NA	17.4	NA
100.0	0.5	0.6	0.2	0.3	14.8	15.7	NA	18.0
112.0	Quenched				14.3	15.3	18.1	17.8
136.0					14.5	15.3	17.8	17.7
160.0					14.4	15.3	17.8	17.7
185.0					13.6	15.0	17.7	17.6
212.0					13.3	14.7	17.7	17.6
236.0					13.3	14.2	17.7	17.7

Table 7. Contaminant concentrations in set 1 (Two Injections) and set 2 (Four CHP or TWO Persulfate Injections) according to data reported by analytical lab.

Contaminant Conc. (µg/L) After TWO Injections of Oxidant Solution (Set 1)										
	Control		1% H_2O_2 + Fe		3% H_2O_2 + Fe		15g/l Per + Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
1,2,4-Trichlorobenzene	ND	108	ND	ND	186	145	ND	117	ND	ND
1,2-Dichlorobenzene	931	1390	769	371	462	631	847	866	872	691
1,3-Dichlorobenzene	ND	190	150	ND	ND	ND	108	112	113	102
1,4-Dichlorobenzene	ND	224	177	ND	ND	ND	127	132	133	120
Chlorobenzene	228	1320	2580	1260	2440	1290	1970	2800	1750	1190
2-Butanone	ND	ND	570	372	322	126	ND	ND	163	119
Acetone	ND	ND	3500	2210	2620	923	ND	ND	ND	515
Napthalene	ND	153	ND	ND	151	140	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Contaminant Conc. (µg/L) After Four Injections of Oxidant Solution (Set 2)										
	Control		1% H_2O_2 + Fe		3% H_2O_2 + Fe		15g/l Per + Fe		30g/l Per+Fe	
	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2	Rep 1	Rep 2
1,2,4-Trichlorobenzene	195	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	789	781	407	390	ND	ND	1130	667	811	573
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	145	ND	109	ND
1,4-Dichlorobenzene	ND	103	ND	ND	ND	ND	171	108	128	ND
Chlorobenzene	429	705	343	411	ND	ND	2290	628	997	712
2-Butanone	ND	ND	134	435	268	ND	ND	ND	191	127
Acetone	ND	ND	1310	3170	17000	6470	ND	ND	716	552
Napthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

NORTHEAST ANALYTICAL, INC.

2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.nealab.com information @nealab.com

LRF # <10010182P1>

100101821

DISPOSAL REQUIREMENTS: (To be filled in by Client)

- ( ) RETURN TO CLIENT
- ( ) DISPOSAL BY NORTHEAST ANALYTICAL
- (X) ARCHIVAL BY NORTHEAST ANALYTICAL

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): ERFS

PROJECT#/PROJECT NAME: Buffalo Site Bench test

PROJECT MANAGER: Michelle Crimi

PROJECT LOCATION (CITY/STATE) ADDRESS: Clarkson U

PHONE: 315 - 268 - 4174

SAMPLED BY: (Please Print) Kowalpeat

REQUIRED TURN AROUND TIME: 10-day Std.

SAMPLING FIRM: Clarkson University

NAME OF COURIER (IF USED):

Data Report: [ ] CLP* [X] Certificates Only

ELECTRONIC RESULTS FORMAT: .PDF [X] EXCEL (.CSV) [X]

E-MAIL ADDRESS:

FAXED RESULTS [ ] FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE CODE:
BOTTLE TYPE:
BOTTLE SIZE:

PRESERVATIVE KEY
0 - NONE
1 - HCL
2 - HNO3
3 - H2SO4
4 - NaOH
5 - Zn. Acetate
6 - MeOH
7 - NaHSO4
8 - Other _____

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (NEA USE ONLY)	NUMBER OF CONTAINERS	8260 Full List	REMARKS:
Trip Blank	01/20/10	3:00 PM	Water		AN00841	1	X	
Trip Blank	01/20/10	3:00 PM	Water		↓	1		
GW 1	01/20/10	3:00 PM	Water		AN00842	1		High Level Sample ↓
GW 2	01/20/10	3:00 PM	Water		AN00843	1		
GW 3	01/20/10	3:00 PM	Water		AN00844	1		
C-1	01/20/10	3:00 PM	Water		AN00845	1		
C-2	01/20/10	3:00 PM	Water		AN00846	1		
1H-1-01	01/20/10	3:00 PM	Water		AN00847	1		
1H-8-01	01/20/10	3:00 PM	Water		AN00848	1		
3H-1-01	01/20/10	3:00 PM	Water		AN00849	1	↓	

AMBIENT OR (CHILLED) TEMP: 0.6°C

COC TAPE: Y (N)

PROPERLY PRESERVED: (Y) N

OTHER NOTES:

RECEIVED BROKEN OR LEAKING: Y (N)

COC DISCREPANCIES: (Y) N

RECVD W/I HOLDING TIMES: (Y) N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE A.Moore	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME A.MOORE	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY NEA	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME 1/21/10 952	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

* CLP LIKE DATA PACKAGE ADDITIONAL COST

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

NORTHEAST ANALYTICAL, INC.

2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.nealab.com information @nealab.com

LRF # <10010182P2>

100101822

DISPOSAL REQUIREMENTS: (To be filled in by Client)

- ( ) RETURN TO CLIENT
- ( ) DISPOSAL BY NORTHEAST ANALYTICAL
- (✓) ARCHIVAL BY NORTHEAST ANALYTICAL

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): ERFS

PROJECT#/PROJECT NAME:

PROJECT MANAGER: Michelle Crimi

PROJECT LOCATION (CITY/STATE) ADDRESS:

PHONE: 315 - 268 - 4174

SAMPLED BY: (Please Print) Kowalkoeet

REQUIRED TURN AROUND TIME:

SAMPLING FIRM: Clarkson University

NAME OF COURIER (IF USED):

Data Report: ☐ CLP* ☐ Certificates Only

ELECTRONIC RESULTS FORMAT: .PDF ☐ EXCEL (.CSV) ☐

E-MAIL ADDRESS:

FAXED RESULTS ☐

FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE KEY: 0 - NONE; 1 - HCL; 2 - HNO3; 3 - H2SO4; 4 - NaOH; 5 - Zn. Acetate; 6 - MeOH; 7 - NaHSO4; 8 - Other _____

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (NEA USE ONLY)	NUMBER OF CONTAINERS	8260 Full List	REMARKS:
3H-2-01	01/20/10	3:00 Pm	water		AN00850	1		
1H-1-02	01/20/10	3:00 Pm	water		AN00851	1		
1H-2-02	01/20/10	3:00 Pm	water		AN00852	1		
3H-1-02	01/20/10	3:00 Pm	water		AN00853	1		
3H-2-02	01/20/10	3:00 Pm	water		AN00854	1		
Soil-1	01/20/10	3:00 Pm	Soil		AN00855	1		High level sample

AMBIENT OR CHILLED: TEMP: 0.6°C

COC TAPE: Y (N)

PROPERLY PRESERVED: (Y) N

OTHER NOTES:

RECEIVED BROKEN OR LEAKING: Y (N)

COC DISCREPANCIES: (Y) N

RECVD W/I HOLDING TIMES: (Y) N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME A. MOORE	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY NEA	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME 1/21/10 952	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

* CLP LIKE DATA PACKAGE ADDITIONAL COST

CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: TRIP BLANK
MATRIX: WATER
DATE RECEIVED: 01/21/2010 **TIME:** 09:52
SAMPLED BY: KAWAL/ORECT
CUSTOMER PO: N/A

NEA ID: AN00841 **NEA LRF:** 10010182-01
DATE SAMPLED: 01/20/2010 **TIME:** 15:00
PROJECT: BUFFALO SITE BENCH TEST
LOCATION: POTSDAM, NY
LAB ELAP#: 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	1.00	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	1.00	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	1.00	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	1.00	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	1.00	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	1.00	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	1.00	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	1.00	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	1.00	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	ND	1.00	ug/L	01/26/2010	U
1,2,4-Trimethylbenzene	ND	1.00	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	1.00	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	1.00	ug/L	01/26/2010	U
1,2-Dichlorobenzene	ND	1.00	ug/L	01/26/2010	U
1,2-Dichloroethane	ND	1.00	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	1.00	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	1.00	ug/L	01/26/2010	U
1,3-Dichlorobenzene	ND	1.00	ug/L	01/26/2010	U
1,3-Dichloropropane	ND	1.00	ug/L	01/26/2010	U
1,4-Dichlorobenzene	ND	1.00	ug/L	01/26/2010	U
2,2-Dichloropropane	ND	1.00	ug/L	01/26/2010	U
2-Butanone	ND	1.00	ug/L	01/26/2010	U
2-Chloroethylvinylether	ND	1.00	ug/L	01/26/2010	U
2-Chlorotoluene	ND	1.00	ug/L	01/26/2010	U
2-Hexanone	ND	1.00	ug/L	01/26/2010	U
4-Chlorotoluene	ND	1.00	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	1.00	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	1.00	ug/L	01/26/2010	U
Acetone	ND	5.00	ug/L	01/26/2010	U

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CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: TRIP BLANK
MATRIX: WATER
DATE RECEIVED: 01/21/2010 **TIME:** 09:52
SAMPLED BY: KAWAL/ORECT
CUSTOMER PO: N/A

NEA ID: AN00841 **NEA LRF:** 10010182-01
DATE SAMPLED: 01/20/2010 **TIME:** 15:00
PROJECT: BUFFALO SITE BENCH TEST
LOCATION: POTSDAM, NY
LAB ELAP#: 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	1.00	ug/L	01/26/2010	U
Bromobenzene	ND	1.00	ug/L	01/26/2010	U
Bromochloromethane	ND	1.00	ug/L	01/26/2010	U
Bromodichloromethane	ND	1.00	ug/L	01/26/2010	U
Bromoform	ND	1.00	ug/L	01/26/2010	U
Bromomethane	ND	1.00	ug/L	01/26/2010	U
Carbon disulfide	ND	1.00	ug/L	01/26/2010	U
Carbon tetrachloride	ND	1.00	ug/L	01/26/2010	U
Chlorobenzene	ND	1.00	ug/L	01/26/2010	U
Chloroethane	ND	1.00	ug/L	01/26/2010	U
Chloroform	ND	1.00	ug/L	01/26/2010	U
Chloromethane	ND	1.00	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	1.00	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	1.00	ug/L	01/26/2010	U
Dibromochloromethane	ND	1.00	ug/L	01/26/2010	U
Dibromomethane	ND	1.00	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	1.00	ug/L	01/26/2010	U
Ethylbenzene	ND	1.00	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	1.00	ug/L	01/26/2010	U
Isopropylbenzene	ND	1.00	ug/L	01/26/2010	U
m&p-Xylene	ND	1.00	ug/L	01/26/2010	U
Methylene chloride	ND	1.00	ug/L	01/26/2010	U
MTBE	ND	1.00	ug/L	01/26/2010	U
n-Butylbenzene	ND	1.00	ug/L	01/26/2010	U
n-Propylbenzene	ND	1.00	ug/L	01/26/2010	U
Naphthalene	ND	1.00	ug/L	01/26/2010	U
o-Xylene	ND	1.00	ug/L	01/26/2010	U
sec-Butylbenzene	ND	1.00	ug/L	01/26/2010	U
Styrene	ND	1.00	ug/L	01/26/2010	U

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: TRIP BLANK
MATRIX: WATER
DATE RECEIVED: 01/21/2010 **TIME:** 09:52
SAMPLED BY: KAWAL/ORECT
CUSTOMER PO: N/A

NEA ID: AN00841 **NEA LRF:** 10010182-01
DATE SAMPLED: 01/20/2010 **TIME:** 15:00
PROJECT: BUFFALO SITE BENCH TEST
LOCATION: POTSDAM, NY
LAB ELAP#: 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	1.00	ug/L	01/26/2010	U
Tetrachloroethene	ND	1.00	ug/L	01/26/2010	U
Toluene	ND	1.00	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	1.00	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	1.00	ug/L	01/26/2010	U
Trichloroethene	ND	1.00	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	1.00	ug/L	01/26/2010	U
Vinyl acetate	ND	1.00	ug/L	01/26/2010	U
Vinyl chloride	ND	1.00	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 1 **NEA ID:** AN00842 **NEA LRF:** 10010182-02
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	500	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	500	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	500	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	500	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	500	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	500	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	500	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	500	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	500	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	1740	500	ug/L	01/26/2010	
1,2,4-Trimethylbenzene	ND	500	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	500	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	500	ug/L	01/26/2010	U
1,2-Dichlorobenzene	14800	500	ug/L	01/26/2010	
1,2-Dichloroethane	ND	500	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	500	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	500	ug/L	01/26/2010	U
1,3-Dichlorobenzene	2370	500	ug/L	01/26/2010	
1,3-Dichloropropane	ND	500	ug/L	01/26/2010	U
1,4-Dichlorobenzene	2800	500	ug/L	01/26/2010	
2,2-Dichloropropane	ND	500	ug/L	01/26/2010	U
2-Butanone	ND	500	ug/L	01/26/2010	U
2-Chloroethylvinylether	ND	500	ug/L	01/26/2010	U
2-Chlorotoluene	ND	500	ug/L	01/26/2010	U
2-Hexanone	ND	500	ug/L	01/26/2010	U
4-Chlorotoluene	ND	500	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	500	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	500	ug/L	01/26/2010	U
Acetone	ND	2500	ug/L	01/26/2010	U

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 1 **NEA ID:** AN00842 **NEA LRF:** 10010182-02
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	500	ug/L	01/26/2010	U
Bromobenzene	ND	500	ug/L	01/26/2010	U
Bromochloromethane	ND	500	ug/L	01/26/2010	U
Bromodichloromethane	ND	500	ug/L	01/26/2010	U
Bromoform	ND	500	ug/L	01/26/2010	U
Bromomethane	ND	500	ug/L	01/26/2010	U
Carbon disulfide	ND	500	ug/L	01/26/2010	U
Carbon tetrachloride	ND	500	ug/L	01/26/2010	U
Chlorobenzene	45100	500	ug/L	01/26/2010	
Chloroethane	ND	500	ug/L	01/26/2010	U
Chloroform	ND	500	ug/L	01/26/2010	U
Chloromethane	ND	500	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	500	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	500	ug/L	01/26/2010	U
Dibromochloromethane	ND	500	ug/L	01/26/2010	U
Dibromomethane	ND	500	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	500	ug/L	01/26/2010	U
Ethylbenzene	ND	500	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	500	ug/L	01/26/2010	U
Isopropylbenzene	ND	500	ug/L	01/26/2010	U
m&p-Xylene	ND	500	ug/L	01/26/2010	U
Methylene chloride	ND	500	ug/L	01/26/2010	U
MTBE	ND	500	ug/L	01/26/2010	U
n-Butylbenzene	ND	500	ug/L	01/26/2010	U
n-Propylbenzene	ND	500	ug/L	01/26/2010	U
Naphthalene	ND	500	ug/L	01/26/2010	U
o-Xylene	ND	500	ug/L	01/26/2010	U
sec-Butylbenzene	ND	500	ug/L	01/26/2010	U
Styrene	ND	500	ug/L	01/26/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 1 **NEA ID:** AN00842 **NEA LRF:** 10010182-02
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	500	ug/L	01/26/2010	U
Tetrachloroethene	ND	500	ug/L	01/26/2010	U
Toluene	ND	500	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	500	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	500	ug/L	01/26/2010	U
Trichloroethene	ND	500	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	500	ug/L	01/26/2010	U
Vinyl acetate	ND	500	ug/L	01/26/2010	U
Vinyl chloride	ND	500	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 2 **NEA ID:** AN00843 **NEA LRF:** 10010182-03
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	500	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	500	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	500	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	500	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	500	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	500	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	500	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	500	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	500	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	1850	500	ug/L	01/26/2010	
1,2,4-Trimethylbenzene	ND	500	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	500	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	500	ug/L	01/26/2010	U
1,2-Dichlorobenzene	15700	500	ug/L	01/26/2010	
1,2-Dichloroethane	ND	500	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	500	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	500	ug/L	01/26/2010	U
1,3-Dichlorobenzene	2830	500	ug/L	01/26/2010	
1,3-Dichloropropane	ND	500	ug/L	01/26/2010	U
1,4-Dichlorobenzene	3340	500	ug/L	01/26/2010	
2,2-Dichloropropane	ND	500	ug/L	01/26/2010	U
2-Butanone	ND	500	ug/L	01/26/2010	U
2-Chloroethylvinylether	ND	500	ug/L	01/26/2010	U
2-Chlorotoluene	ND	500	ug/L	01/26/2010	U
2-Hexanone	ND	500	ug/L	01/26/2010	U
4-Chlorotoluene	ND	500	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	500	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	500	ug/L	01/26/2010	U
Acetone	ND	2500	ug/L	01/26/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 2 **NEA ID:** AN00843 **NEA LRF:** 10010182-03
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	500	ug/L	01/26/2010	U
Bromobenzene	ND	500	ug/L	01/26/2010	U
Bromochloromethane	ND	500	ug/L	01/26/2010	U
Bromodichloromethane	ND	500	ug/L	01/26/2010	U
Bromoform	ND	500	ug/L	01/26/2010	U
Bromomethane	ND	500	ug/L	01/26/2010	U
Carbon disulfide	ND	500	ug/L	01/26/2010	U
Carbon tetrachloride	ND	500	ug/L	01/26/2010	U
Chlorobenzene	58100	500	ug/L	01/26/2010	E
Chloroethane	ND	500	ug/L	01/26/2010	U
Chloroform	ND	500	ug/L	01/26/2010	U
Chloromethane	ND	500	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	500	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	500	ug/L	01/26/2010	U
Dibromochloromethane	ND	500	ug/L	01/26/2010	U
Dibromomethane	ND	500	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	500	ug/L	01/26/2010	U
Ethylbenzene	ND	500	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	500	ug/L	01/26/2010	U
Isopropylbenzene	ND	500	ug/L	01/26/2010	U
m&p-Xylene	ND	500	ug/L	01/26/2010	U
Methylene chloride	ND	500	ug/L	01/26/2010	U
MTBE	ND	500	ug/L	01/26/2010	U
n-Butylbenzene	ND	500	ug/L	01/26/2010	U
n-Propylbenzene	ND	500	ug/L	01/26/2010	U
Naphthalene	ND	500	ug/L	01/26/2010	U
o-Xylene	ND	500	ug/L	01/26/2010	U
sec-Butylbenzene	ND	500	ug/L	01/26/2010	U
Styrene	ND	500	ug/L	01/26/2010	U

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 2 **NEA ID:** AN00843 **NEA LRF:** 10010182-03
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	500	ug/L	01/26/2010	U
Tetrachloroethene	ND	500	ug/L	01/26/2010	U
Toluene	ND	500	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	500	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	500	ug/L	01/26/2010	U
Trichloroethene	ND	500	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	500	ug/L	01/26/2010	U
Vinyl acetate	ND	500	ug/L	01/26/2010	U
Vinyl chloride	ND	500	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.
E - denotes analytes exceeded calibration range of instrument and should be considered as estimated.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 3 **NEA ID:** AN00844 **NEA LRF:** 10010182-04
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	500	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	500	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	500	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	500	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	500	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	500	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	500	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	500	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	500	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	1970	500	ug/L	01/26/2010	
1,2,4-Trimethylbenzene	ND	500	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	500	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	500	ug/L	01/26/2010	U
1,2-Dichlorobenzene	15800	500	ug/L	01/26/2010	
1,2-Dichloroethane	ND	500	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	500	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	500	ug/L	01/26/2010	U
1,3-Dichlorobenzene	2720	500	ug/L	01/26/2010	
1,3-Dichloropropane	ND	500	ug/L	01/26/2010	U
1,4-Dichlorobenzene	3210	500	ug/L	01/26/2010	
2,2-Dichloropropane	ND	500	ug/L	01/26/2010	U
2-Butanone	ND	500	ug/L	01/26/2010	U
2-Chloroethylvinylether	ND	500	ug/L	01/26/2010	U
2-Chlorotoluene	ND	500	ug/L	01/26/2010	U
2-Hexanone	ND	500	ug/L	01/26/2010	U
4-Chlorotoluene	ND	500	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	500	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	500	ug/L	01/26/2010	U
Acetone	ND	2500	ug/L	01/26/2010	U

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 3 **NEA ID:** AN00844 **NEA LRF:** 10010182-04
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	500	ug/L	01/26/2010	U
Bromobenzene	ND	500	ug/L	01/26/2010	U
Bromochloromethane	ND	500	ug/L	01/26/2010	U
Bromodichloromethane	ND	500	ug/L	01/26/2010	U
Bromoform	ND	500	ug/L	01/26/2010	U
Bromomethane	ND	500	ug/L	01/26/2010	U
Carbon disulfide	ND	500	ug/L	01/26/2010	U
Carbon tetrachloride	ND	500	ug/L	01/26/2010	U
Chlorobenzene	59600	500	ug/L	01/26/2010	E
Chloroethane	ND	500	ug/L	01/26/2010	U
Chloroform	ND	500	ug/L	01/26/2010	U
Chloromethane	ND	500	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	500	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	500	ug/L	01/26/2010	U
Dibromochloromethane	ND	500	ug/L	01/26/2010	U
Dibromomethane	ND	500	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	500	ug/L	01/26/2010	U
Ethylbenzene	ND	500	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	500	ug/L	01/26/2010	U
Isopropylbenzene	ND	500	ug/L	01/26/2010	U
m&p-Xylene	ND	500	ug/L	01/26/2010	U
Methylene chloride	ND	500	ug/L	01/26/2010	U
MTBE	ND	500	ug/L	01/26/2010	U
n-Butylbenzene	ND	500	ug/L	01/26/2010	U
n-Propylbenzene	ND	500	ug/L	01/26/2010	U
Naphthalene	ND	500	ug/L	01/26/2010	U
o-Xylene	ND	500	ug/L	01/26/2010	U
sec-Butylbenzene	ND	500	ug/L	01/26/2010	U
Styrene	ND	500	ug/L	01/26/2010	U

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CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: GW 3 **NEA ID:** AN00844 **NEA LRF:** 10010182-04
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	500	ug/L	01/26/2010	U
Tetrachloroethene	ND	500	ug/L	01/26/2010	U
Toluene	ND	500	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	500	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	500	ug/L	01/26/2010	U
Trichloroethene	ND	500	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	500	ug/L	01/26/2010	U
Vinyl acetate	ND	500	ug/L	01/26/2010	U
Vinyl chloride	ND	500	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.
E - denotes analytes exceeded calibration range of instrument and should be considered as estimated.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-1 **NEA ID:** AN00845 **NEA LRF:** 10010182-05
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/26/2010	U
1,2-Dichlorobenzene	931	100	ug/L	01/26/2010	
1,2-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/26/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/26/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
2-Butanone	ND	100	ug/L	01/26/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/26/2010	U
2-Chlorotoluene	ND	100	ug/L	01/26/2010	U
2-Hexanone	ND	100	ug/L	01/26/2010	U
4-Chlorotoluene	ND	100	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/26/2010	U
Acetone	ND	500	ug/L	01/26/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-1 **NEA ID:** AN00845 **NEA LRF:** 10010182-05
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/26/2010	U
Bromobenzene	ND	100	ug/L	01/26/2010	U
Bromochloromethane	ND	100	ug/L	01/26/2010	U
Bromodichloromethane	ND	100	ug/L	01/26/2010	U
Bromoform	ND	100	ug/L	01/26/2010	U
Bromomethane	ND	100	ug/L	01/26/2010	U
Carbon disulfide	ND	100	ug/L	01/26/2010	U
Carbon tetrachloride	ND	100	ug/L	01/26/2010	U
Chlorobenzene	228	100	ug/L	01/26/2010	
Chloroethane	ND	100	ug/L	01/26/2010	U
Chloroform	ND	100	ug/L	01/26/2010	U
Chloromethane	ND	100	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Dibromochloromethane	ND	100	ug/L	01/26/2010	U
Dibromomethane	ND	100	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/26/2010	U
Ethylbenzene	ND	100	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/26/2010	U
Isopropylbenzene	ND	100	ug/L	01/26/2010	U
m&p-Xylene	ND	100	ug/L	01/26/2010	U
Methylene chloride	ND	100	ug/L	01/26/2010	U
MTBE	ND	100	ug/L	01/26/2010	U
n-Butylbenzene	ND	100	ug/L	01/26/2010	U
n-Propylbenzene	ND	100	ug/L	01/26/2010	U
Naphthalene	ND	100	ug/L	01/26/2010	U
o-Xylene	ND	100	ug/L	01/26/2010	U
sec-Butylbenzene	ND	100	ug/L	01/26/2010	U
Styrene	ND	100	ug/L	01/26/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-1 **NEA ID:** AN00845 **NEA LRF:** 10010182-05
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/26/2010	U
Tetrachloroethene	ND	100	ug/L	01/26/2010	U
Toluene	ND	100	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Trichloroethene	ND	100	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/26/2010	U
Vinyl acetate	ND	100	ug/L	01/26/2010	U
Vinyl chloride	ND	100	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-2 **NEA ID:** AN00846 **NEA LRF:** 10010182-06
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	108	100	ug/L	01/26/2010	
1,2,4-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/26/2010	U
1,2-Dichlorobenzene	1390	100	ug/L	01/26/2010	
1,2-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,3-Dichlorobenzene	190	100	ug/L	01/26/2010	
1,3-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,4-Dichlorobenzene	224	100	ug/L	01/26/2010	
2,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
2-Butanone	ND	100	ug/L	01/26/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/26/2010	U
2-Chlorotoluene	ND	100	ug/L	01/26/2010	U
2-Hexanone	ND	100	ug/L	01/26/2010	U
4-Chlorotoluene	ND	100	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/26/2010	U
Acetone	ND	500	ug/L	01/26/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-2 **NEA ID:** AN00846 **NEA LRF:** 10010182-06
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/26/2010	U
Bromobenzene	ND	100	ug/L	01/26/2010	U
Bromochloromethane	ND	100	ug/L	01/26/2010	U
Bromodichloromethane	ND	100	ug/L	01/26/2010	U
Bromoform	ND	100	ug/L	01/26/2010	U
Bromomethane	ND	100	ug/L	01/26/2010	U
Carbon disulfide	ND	100	ug/L	01/26/2010	U
Carbon tetrachloride	ND	100	ug/L	01/26/2010	U
Chlorobenzene	1320	100	ug/L	01/26/2010	
Chloroethane	ND	100	ug/L	01/26/2010	U
Chloroform	ND	100	ug/L	01/26/2010	U
Chloromethane	ND	100	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Dibromochloromethane	ND	100	ug/L	01/26/2010	U
Dibromomethane	ND	100	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/26/2010	U
Ethylbenzene	ND	100	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/26/2010	U
Isopropylbenzene	ND	100	ug/L	01/26/2010	U
m&p-Xylene	ND	100	ug/L	01/26/2010	U
Methylene chloride	ND	100	ug/L	01/26/2010	U
MTBE	ND	100	ug/L	01/26/2010	U
n-Butylbenzene	ND	100	ug/L	01/26/2010	U
n-Propylbenzene	ND	100	ug/L	01/26/2010	U
Naphthalene	153	100	ug/L	01/26/2010	
o-Xylene	ND	100	ug/L	01/26/2010	U
sec-Butylbenzene	ND	100	ug/L	01/26/2010	U
Styrene	ND	100	ug/L	01/26/2010	U

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02/03/2010
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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-2 **NEA ID:** AN00846 **NEA LRF:** 10010182-06
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/26/2010	U
Tetrachloroethene	ND	100	ug/L	01/26/2010	U
Toluene	ND	100	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Trichloroethene	ND	100	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/26/2010	U
Vinyl acetate	ND	100	ug/L	01/26/2010	U
Vinyl chloride	ND	100	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-1-01 **NEA ID:** AN00847 **NEA LRF:** 10010182-07
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/26/2010	U
1,2-Dichlorobenzene	769	100	ug/L	01/26/2010	
1,2-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,3-Dichlorobenzene	150	100	ug/L	01/26/2010	
1,3-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,4-Dichlorobenzene	177	100	ug/L	01/26/2010	
2,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
2-Butanone	570	100	ug/L	01/26/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/26/2010	U
2-Chlorotoluene	ND	100	ug/L	01/26/2010	U
2-Hexanone	ND	100	ug/L	01/26/2010	U
4-Chlorotoluene	ND	100	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/26/2010	U
Acetone	3500	500	ug/L	01/26/2010	

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-1-01 **NEA ID:** AN00847 **NEA LRF:** 10010182-07
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/26/2010	U
Bromobenzene	ND	100	ug/L	01/26/2010	U
Bromochloromethane	ND	100	ug/L	01/26/2010	U
Bromodichloromethane	ND	100	ug/L	01/26/2010	U
Bromoform	ND	100	ug/L	01/26/2010	U
Bromomethane	ND	100	ug/L	01/26/2010	U
Carbon disulfide	ND	100	ug/L	01/26/2010	U
Carbon tetrachloride	ND	100	ug/L	01/26/2010	U
Chlorobenzene	2580	100	ug/L	01/26/2010	
Chloroethane	ND	100	ug/L	01/26/2010	U
Chloroform	ND	100	ug/L	01/26/2010	U
Chloromethane	ND	100	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Dibromochloromethane	ND	100	ug/L	01/26/2010	U
Dibromomethane	ND	100	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/26/2010	U
Ethylbenzene	ND	100	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/26/2010	U
Isopropylbenzene	ND	100	ug/L	01/26/2010	U
m&p-Xylene	ND	100	ug/L	01/26/2010	U
Methylene chloride	ND	100	ug/L	01/26/2010	U
MTBE	ND	100	ug/L	01/26/2010	U
n-Butylbenzene	ND	100	ug/L	01/26/2010	U
n-Propylbenzene	ND	100	ug/L	01/26/2010	U
Naphthalene	ND	100	ug/L	01/26/2010	U
o-Xylene	ND	100	ug/L	01/26/2010	U
sec-Butylbenzene	ND	100	ug/L	01/26/2010	U
Styrene	ND	100	ug/L	01/26/2010	U

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CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-1-01 **NEA ID:** AN00847 **NEA LRF:** 10010182-07
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/26/2010	U
Tetrachloroethene	ND	100	ug/L	01/26/2010	U
Toluene	ND	100	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Trichloroethene	ND	100	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/26/2010	U
Vinyl acetate	ND	100	ug/L	01/26/2010	U
Vinyl chloride	ND	100	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-2-01 **NEA ID:** AN00848 **NEA LRF:** 10010182-08
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/26/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/26/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/26/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/26/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/26/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/26/2010	U
1,2-Dichlorobenzene	371	100	ug/L	01/26/2010	
1,2-Dichloroethane	ND	100	ug/L	01/26/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/26/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/26/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/26/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/26/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/26/2010	U
2-Butanone	372	100	ug/L	01/26/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/26/2010	U
2-Chlorotoluene	ND	100	ug/L	01/26/2010	U
2-Hexanone	ND	100	ug/L	01/26/2010	U
4-Chlorotoluene	ND	100	ug/L	01/26/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/26/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/26/2010	U
Acetone	2210	500	ug/L	01/26/2010	

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-2-01 **NEA ID:** AN00848 **NEA LRF:** 10010182-08
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/26/2010	U
Bromobenzene	ND	100	ug/L	01/26/2010	U
Bromochloromethane	ND	100	ug/L	01/26/2010	U
Bromodichloromethane	ND	100	ug/L	01/26/2010	U
Bromoform	ND	100	ug/L	01/26/2010	U
Bromomethane	ND	100	ug/L	01/26/2010	U
Carbon disulfide	ND	100	ug/L	01/26/2010	U
Carbon tetrachloride	ND	100	ug/L	01/26/2010	U
Chlorobenzene	1260	100	ug/L	01/26/2010	
Chloroethane	ND	100	ug/L	01/26/2010	U
Chloroform	ND	100	ug/L	01/26/2010	U
Chloromethane	ND	100	ug/L	01/26/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Dibromochloromethane	ND	100	ug/L	01/26/2010	U
Dibromomethane	ND	100	ug/L	01/26/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/26/2010	U
Ethylbenzene	ND	100	ug/L	01/26/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/26/2010	U
Isopropylbenzene	ND	100	ug/L	01/26/2010	U
m&p-Xylene	ND	100	ug/L	01/26/2010	U
Methylene chloride	ND	100	ug/L	01/26/2010	U
MTBE	ND	100	ug/L	01/26/2010	U
n-Butylbenzene	ND	100	ug/L	01/26/2010	U
n-Propylbenzene	ND	100	ug/L	01/26/2010	U
Naphthalene	ND	100	ug/L	01/26/2010	U
o-Xylene	ND	100	ug/L	01/26/2010	U
sec-Butylbenzene	ND	100	ug/L	01/26/2010	U
Styrene	ND	100	ug/L	01/26/2010	U

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-2-01 **NEA ID:** AN00848 **NEA LRF:** 10010182-08
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/26/2010	U
Tetrachloroethene	ND	100	ug/L	01/26/2010	U
Toluene	ND	100	ug/L	01/26/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/26/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/26/2010	U
Trichloroethene	ND	100	ug/L	01/26/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/26/2010	U
Vinyl acetate	ND	100	ug/L	01/26/2010	U
Vinyl chloride	ND	100	ug/L	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-1-01 **NEA ID:** AN00849 **NEA LRF:** 10010182-09
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	186	100	ug/L	01/27/2010	
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	462	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	322	100	ug/L	01/27/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	2620	500	ug/L	01/27/2010	

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-1-01 **NEA ID:** AN00849 **NEA LRF:** 10010182-09
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	2440	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	151	100	ug/L	01/27/2010	
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-1-01 **NEA ID:** AN00849 **NEA LRF:** 10010182-09
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-2-01 **NEA ID:** AN00850 **NEA LRF:** 10010182-10
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	145	100	ug/L	01/27/2010	
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	631	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	126	100	ug/L	01/27/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	923	500	ug/L	01/27/2010	

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-2-01 **NEA ID:** AN00850 **NEA LRF:** 10010182-10
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	1290	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	140	100	ug/L	01/27/2010	
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-2-01 **NEA ID:** AN00850 **NEA LRF:** 10010182-10
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-1-02 **NEA ID:** AN00851 **NEA LRF:** 10010182-11
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	407	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	134	100	ug/L	01/27/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	1310	500	ug/L	01/27/2010	

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-1-02 **NEA ID:** AN00851 **NEA LRF:** 10010182-11
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	343	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-1-02 **NEA ID:** AN00851 **NEA LRF:** 10010182-11
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

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Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-2-02 **NEA ID:** AN00852 **NEA LRF:** 10010182-12
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	390	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	435	100	ug/L	01/27/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	3170	500	ug/L	01/27/2010	

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-2-02 **NEA ID:** AN00852 **NEA LRF:** 10010182-12
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	411	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 1H-2-02 **NEA ID:** AN00852 **NEA LRF:** 10010182-12
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
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Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-1-02 **NEA ID:** AN00853 **NEA LRF:** 10010182-13
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	268	100	ug/L	01/27/2010	
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	17000	500	ug/L	01/27/2010	E

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-1-02 **NEA ID:** AN00853 **NEA LRF:** 10010182-13
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	ND	100	ug/L	01/27/2010	U
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-1-02 **NEA ID:** AN00853 **NEA LRF:** 10010182-13
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.
E - denotes analytes exceeded calibration range of instrument and should be considered as estimated.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-2-02 **NEA ID:** AN00854 **NEA LRF:** 10010182-14
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	ND	100	ug/L	01/27/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	6470	500	ug/L	01/27/2010	

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CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-2-02 **NEA ID:** AN00854 **NEA LRF:** 10010182-14
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	ND	100	ug/L	01/27/2010	U
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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CERTIFICATE OF ANALYSIS
02/03/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 3H-2-02 **NEA ID:** AN00854 **NEA LRF:** 10010182-14
MATRIX: WATER **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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CERTIFICATE OF ANALYSIS
02/04/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: SOIL-1 **NEA ID:** AN00855 **NEA LRF:** 10010182-15
MATRIX: SOIL **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	1020	ug/kg	01/26/2010	U
1,1,1-Trichloroethane	ND	1020	ug/kg	01/26/2010	U
1,1,2,2-Tetrachloroethane	ND	1020	ug/kg	01/26/2010	U
1,1,2-Trichloroethane	ND	1020	ug/kg	01/26/2010	U
1,1-Dichloroethane	ND	1020	ug/kg	01/26/2010	U
1,1-Dichloroethene	ND	1020	ug/kg	01/26/2010	U
1,1-Dichloropropene	ND	1020	ug/kg	01/26/2010	U
1,2,3-Trichlorobenzene	ND	1020	ug/kg	01/26/2010	U
1,2,3-Trichloropropane	ND	1020	ug/kg	01/26/2010	U
1,2,4-Trichlorobenzene	4560	1020	ug/kg	01/26/2010	
1,2,4-Trimethylbenzene	ND	1020	ug/kg	01/26/2010	U
1,2-Dibromo-3-chloropropane	ND	1020	ug/kg	01/26/2010	U
1,2-Dibromoethane	ND	1020	ug/kg	01/26/2010	U
1,2-Dichlorobenzene	ND	1020	ug/kg	01/26/2010	U
1,2-Dichloroethane	ND	1020	ug/kg	01/26/2010	U
1,2-Dichloropropane	ND	1020	ug/kg	01/26/2010	U
1,3,5-Trimethylbenzene	ND	1020	ug/kg	01/26/2010	U
1,3-Dichlorobenzene	ND	1020	ug/kg	01/26/2010	U
1,3-Dichloropropane	ND	1020	ug/kg	01/26/2010	U
1,4-Dichlorobenzene	ND	1020	ug/kg	01/26/2010	U
2,2-Dichloropropane	ND	1020	ug/kg	01/26/2010	U
2-Butanone	ND	1020	ug/kg	01/26/2010	U
2-Chloroethylvinylether	ND	1020	ug/kg	01/26/2010	U
2-Chlorotoluene	ND	1020	ug/kg	01/26/2010	U
2-Hexanone	ND	1020	ug/kg	01/26/2010	U
4-Chlorotoluene	ND	1020	ug/kg	01/26/2010	U
4-Isopropyltoluene	ND	1020	ug/kg	01/26/2010	U
4-Methyl-2-pentanone	ND	1020	ug/kg	01/26/2010	U
Acetone	ND	5110	ug/kg	01/26/2010	U

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CERTIFICATE OF ANALYSIS
02/04/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: SOIL-1 **NEA ID:** AN00855 **NEA LRF:** 10010182-15
MATRIX: SOIL **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	1020	ug/kg	01/26/2010	U
Bromobenzene	ND	1020	ug/kg	01/26/2010	U
Bromochloromethane	ND	1020	ug/kg	01/26/2010	U
Bromodichloromethane	ND	1020	ug/kg	01/26/2010	U
Bromoform	ND	1020	ug/kg	01/26/2010	U
Bromomethane	ND	1020	ug/kg	01/26/2010	U
Carbon Disulfide	ND	1020	ug/kg	01/26/2010	U
Carbon Tetrachloride	ND	1020	ug/kg	01/26/2010	U
Chlorobenzene	ND	1020	ug/kg	01/26/2010	U
Chloroethane	ND	1020	ug/kg	01/26/2010	U
Chloroform	ND	1020	ug/kg	01/26/2010	U
Chloromethane	ND	1020	ug/kg	01/26/2010	U
cis-1,2-Dichloroethene	ND	1020	ug/kg	01/26/2010	U
cis-1,3-Dichloropropene	ND	1020	ug/kg	01/26/2010	U
Dibromochloromethane	ND	1020	ug/kg	01/26/2010	U
Dibromomethane	ND	1020	ug/kg	01/26/2010	U
Dichlorodifluoromethane	ND	1020	ug/kg	01/26/2010	U
Ethylbenzene	ND	1020	ug/kg	01/26/2010	U
Hexachlorobutadiene	ND	1020	ug/kg	01/26/2010	U
Isopropylbenzene	ND	1020	ug/kg	01/26/2010	U
m&p-Xylene	ND	1020	ug/kg	01/26/2010	U
Methyl-tert-butyl-ether (MTBE)	ND	1020	ug/kg	01/26/2010	U
Methylene Chloride	ND	1020	ug/kg	01/26/2010	U
n-Butylbenzene	ND	1020	ug/kg	01/26/2010	U
n-Propylbenzene	ND	1020	ug/kg	01/26/2010	U
Naphthalene	ND	1020	ug/kg	01/26/2010	U
o-Xylene	ND	1020	ug/kg	01/26/2010	U
sec-Butylbenzene	ND	1020	ug/kg	01/26/2010	U
Styrene	ND	1020	ug/kg	01/26/2010	U

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CERTIFICATE OF ANALYSIS
02/04/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: SOIL-1 **NEA ID:** AN00855 **NEA LRF:** 10010182-15
MATRIX: SOIL **DATE SAMPLED:** 01/20/2010 **TIME:** 15:00
DATE RECEIVED: 01/21/2010 **TIME:** 09:52 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: KAWAL/ORECT **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	1020	ug/kg	01/26/2010	U
Tetrachloroethene	2790	1020	ug/kg	01/26/2010	
Toluene	ND	1020	ug/kg	01/26/2010	U
trans-1,2-Dichloroethene	ND	1020	ug/kg	01/26/2010	U
trans-1,3-Dichloropropene	ND	1020	ug/kg	01/26/2010	U
Trichloroethene	ND	1020	ug/kg	01/26/2010	U
Trichlorofluoromethane	ND	1020	ug/kg	01/26/2010	U
Vinyl Acetate	ND	1020	ug/kg	01/26/2010	U
Vinyl Chloride	ND	1020	ug/kg	01/26/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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CHAIN OF CUSTODY RECORD

NORTHEAST ANALYTICAL, INC.

2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.nealab.com information @nealab.com

PAGE 1 OF 2

<10010204P1>

LRF # 100102041

DISPOSAL REQUIREMENTS: (To be filled in by Client)

- ◯ RETURN TO CLIENT
- ◯ DISPOSAL BY NORTHEAST ANALYTICAL
- ◯ ARCHIVAL BY NORTHEAST ANALYTICAL

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): ERFS

PROJECT#/PROJECT NAME:

PROJECT MANAGER: Michelle Crimi

PROJECT LOCATION (CITY/STATE) ADDRESS:

PHONE:

SAMPLED BY: (Please Print)

REQUIRED TURN AROUND TIME:

SAMPLING FIRM: Clarkson University

NAME OF COURIER (IF USED):

Data Report: ☐ CLP* ☐ Certificates Only

ELECTRONIC RESULTS FORMAT: .PDF ☐ EXCEL (.CSV) ☐

E-MAIL ADDRESS: mcrimi@clarkson.edu

FAXED RESULTS ☐ FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE KEY: 0 - NONE; 1 - HCL; 2 - HNO3; 3 - H2SO4; 4 - NaOH; 5 - Zn. Acetate; 6 - MeOH; 7 - NaHSO4; 8 - Other

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (NEA USE ONLY)	NUMBER OF CONTAINERS	REMARKS:
C-1-S-2	01/25/10	3:00	Water		AN00942	1	
C-2-S-2	01/25/10	2:00	Water		AN00943	1	
15P-1-S-2	01/24/10	3:00	Water		AN00944	1	
15P-2-S-2	01/24/10	3:00	Water		AN00945	1	
15P-1-S-1	01/24/10	3:00	Water		AN00946	1	
15P-2-S-1	01/24/10	3:00	Water		AN00947	1	
30P-1-S-2	01/24/10	3:00	Water		AN00948	1	
30P-2-S-2	01/24/10	3:00	Water		AN00949	1	
30P-1-S-1	01/24/10	3:00	Water		AN00950	1	
30P-2-S-1	01/24/10	3:00	Water		AN00951	1	

AMBIENT OR CHILLED TEMP: 4.6

COC TAPE: Y (N)

PROPERLY PRESERVED: (Y) N

OTHER NOTES:

RECEIVED BROKEN OR LEAKING: Y (N)

COC DISCREPANCIES: Y (N) 1/26/10

RECVD W/I HOLDING TIMES: (Y) N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE A.Moore	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME A.MOORE	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY NEA	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME 1/26/10 954	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

* CLP LIKE DATA PACKAGE ADDITIONAL COST

CHAIN OF CUSTODY RECORD

NORTHEAST ANALYTICAL, INC.

2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.nealab.com information @nealab.com

PAGE 2 OF 2

<10010204P2>

LRF # 100102042

DISPOSAL REQUIREMENTS: (To be filled in by Client)

- ◯ RETURN TO CLIENT
- ◯ DISPOSAL BY NORTHEAST ANALYTICAL
- ◯ ARCHIVAL BY NORTHEAST ANALYTICAL

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): ERFS	PROJECT#/PROJECT NAME:
PROJECT MANAGER: Michelle Grimi	PROJECT LOCATION (CITY/STATE) ADDRESS:
PHONE:	
SAMPLED BY: (Please Print)	REQUIRED TURN AROUND TIME:
SAMPLING FIRM: Clarkson University	NAME OF COURIER (IF USED):
	Data Report: ☐ CLP* ☐ Certificates Only
ELECTRONIC RESULTS FORMAT: .PDF ☐ EXCEL (.CSV) ☐	E-MAIL ADDRESS: mgrimi@clarkson.edu
FAXED RESULTS ☐	FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE KEY: 0 - NONE; 1 - HCL; 2 - HNO3; 3 - H2SO4; 4 - NaOH; 5 - Zn. Acetate; 6 - MeOH; 7 - NaHSO4; 8 - Other _____

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (NEA USE ONLY)	NUMBER OF CONTAINERS	PRESERVATIVE CODE	BOTTLE TYPE	BOTTLE SIZE	REMARKS:
B-1	01/25/10	9:15	water		AN00952	1				
B-2	01/25/10	9:15	water		AN00953	1				

AMBIENT OR CHILLED: TEMP: 4.6

RECEIVED BROKEN OR LEAKING: Y (N)

COC TAPE: Y (N)

COC DISCREPANCIES: (Y) N

PROPERLY PRESERVED: (Y) N

RECVD W/I HOLDING TIMES: (Y) N

OTHER NOTES:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE A. Moore	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME A. MOORE	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY NEA	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME 1/26/10 954	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

* CLP LIKE DATA PACKAGE ADDITIONAL COST

CERTIFICATE OF ANALYSIS
2/4/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-1-S-2 **NEA ID:** AN00942 **NEA LRF:** 10010204-01
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	195	100	ug/L	01/27/2010	
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	789	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	ND	100	ug/L	01/27/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	ND	500	ug/L	01/27/2010	U

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CERTIFICATE OF ANALYSIS
2/4/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-1-S-2 **NEA ID:** AN00942 **NEA LRF:** 10010204-01
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	429	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-1-S-2 **NEA ID:** AN00942 **NEA LRF:** 10010204-01
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-2-S-2 **NEA ID:** AN00943 **NEA LRF:** 10010204-02
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	781	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	103	100	ug/L	01/27/2010	
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	ND	100	ug/L	01/27/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	ND	500	ug/L	01/27/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-2-S-2 **NEA ID:** AN00943 **NEA LRF:** 10010204-02
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	705	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: C-2-S-2 **NEA ID:** AN00943 **NEA LRF:** 10010204-02
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-1-S-2 **NEA ID:** AN00944 **NEA LRF:** 10010204-03
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	1130	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	145	100	ug/L	01/27/2010	
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	171	100	ug/L	01/27/2010	
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	ND	100	ug/L	01/27/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	ND	500	ug/L	01/27/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-1-S-2 **NEA ID:** AN00944 **NEA LRF:** 10010204-03
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	2290	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-1-S-2 **NEA ID:** AN00944 **NEA LRF:** 10010204-03
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-2-S-2 **NEA ID:** AN00945 **NEA LRF:** 10010204-04
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	667	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	108	100	ug/L	01/27/2010	
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	ND	100	ug/L	01/27/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	ND	500	ug/L	01/27/2010	U

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CERTIFICATE OF ANALYSIS
2/4/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-2-S-2 **NEA ID:** AN00945 **NEA LRF:** 10010204-04
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	628	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-2-S-2 **NEA ID:** AN00945 **NEA LRF:** 10010204-04
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-1-S-1 **NEA ID:** AN00946 **NEA LRF:** 10010204-05
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	01/27/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,1-Dichloroethene	ND	100	ug/L	01/27/2010	U
1,1-Dichloropropene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	01/27/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	01/27/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	01/27/2010	U
1,2-Dibromoethane	ND	100	ug/L	01/27/2010	U
1,2-Dichlorobenzene	847	100	ug/L	01/27/2010	
1,2-Dichloroethane	ND	100	ug/L	01/27/2010	U
1,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	01/27/2010	U
1,3-Dichlorobenzene	108	100	ug/L	01/27/2010	
1,3-Dichloropropane	ND	100	ug/L	01/27/2010	U
1,4-Dichlorobenzene	127	100	ug/L	01/27/2010	
2,2-Dichloropropane	ND	100	ug/L	01/27/2010	U
2-Butanone	ND	100	ug/L	01/27/2010	U
2-Chloroethylvinylether	ND	100	ug/L	01/27/2010	U
2-Chlorotoluene	ND	100	ug/L	01/27/2010	U
2-Hexanone	ND	100	ug/L	01/27/2010	U
4-Chlorotoluene	ND	100	ug/L	01/27/2010	U
4-Isopropyltoluene	ND	100	ug/L	01/27/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	01/27/2010	U
Acetone	ND	500	ug/L	01/27/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-1-S-1 **NEA ID:** AN00946 **NEA LRF:** 10010204-05
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	01/27/2010	U
Bromobenzene	ND	100	ug/L	01/27/2010	U
Bromochloromethane	ND	100	ug/L	01/27/2010	U
Bromodichloromethane	ND	100	ug/L	01/27/2010	U
Bromoform	ND	100	ug/L	01/27/2010	U
Bromomethane	ND	100	ug/L	01/27/2010	U
Carbon disulfide	ND	100	ug/L	01/27/2010	U
Carbon tetrachloride	ND	100	ug/L	01/27/2010	U
Chlorobenzene	1970	100	ug/L	01/27/2010	
Chloroethane	ND	100	ug/L	01/27/2010	U
Chloroform	ND	100	ug/L	01/27/2010	U
Chloromethane	ND	100	ug/L	01/27/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Dibromochloromethane	ND	100	ug/L	01/27/2010	U
Dibromomethane	ND	100	ug/L	01/27/2010	U
Dichlorodifluoromethane	ND	100	ug/L	01/27/2010	U
Ethylbenzene	ND	100	ug/L	01/27/2010	U
Hexachlorobutadiene	ND	100	ug/L	01/27/2010	U
Isopropylbenzene	ND	100	ug/L	01/27/2010	U
m&p-Xylene	ND	100	ug/L	01/27/2010	U
Methylene chloride	ND	100	ug/L	01/27/2010	U
MTBE	ND	100	ug/L	01/27/2010	U
n-Butylbenzene	ND	100	ug/L	01/27/2010	U
n-Propylbenzene	ND	100	ug/L	01/27/2010	U
Naphthalene	ND	100	ug/L	01/27/2010	U
o-Xylene	ND	100	ug/L	01/27/2010	U
sec-Butylbenzene	ND	100	ug/L	01/27/2010	U
Styrene	ND	100	ug/L	01/27/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-1-S-1 **NEA ID:** AN00946 **NEA LRF:** 10010204-05
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	01/27/2010	U
Tetrachloroethene	ND	100	ug/L	01/27/2010	U
Toluene	ND	100	ug/L	01/27/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	01/27/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	01/27/2010	U
Trichloroethene	ND	100	ug/L	01/27/2010	U
Trichlorofluoromethane	ND	100	ug/L	01/27/2010	U
Vinyl acetate	ND	100	ug/L	01/27/2010	U
Vinyl chloride	ND	100	ug/L	01/27/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-2-S-1 **NEA ID:** AN00947 **NEA LRF:** 10010204-06
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	100	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	117	100	ug/L	02/01/2010	
1,2,4-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	100	ug/L	02/01/2010	U
1,2-Dichlorobenzene	866	100	ug/L	02/01/2010	
1,2-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,3-Dichlorobenzene	112	100	ug/L	02/01/2010	
1,3-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,4-Dichlorobenzene	132	100	ug/L	02/01/2010	
2,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
2-Butanone	ND	100	ug/L	02/01/2010	U
2-Chloroethylvinylether	ND	100	ug/L	02/01/2010	U
2-Chlorotoluene	ND	100	ug/L	02/01/2010	U
2-Hexanone	ND	100	ug/L	02/01/2010	U
4-Chlorotoluene	ND	100	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	100	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	02/01/2010	U
Acetone	ND	500	ug/L	02/01/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-2-S-1 **NEA ID:** AN00947 **NEA LRF:** 10010204-06
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	02/01/2010	U
Bromobenzene	ND	100	ug/L	02/01/2010	U
Bromochloromethane	ND	100	ug/L	02/01/2010	U
Bromodichloromethane	ND	100	ug/L	02/01/2010	U
Bromoform	ND	100	ug/L	02/01/2010	U
Bromomethane	ND	100	ug/L	02/01/2010	U
Carbon disulfide	ND	100	ug/L	02/01/2010	U
Carbon tetrachloride	ND	100	ug/L	02/01/2010	U
Chlorobenzene	2800	100	ug/L	02/01/2010	
Chloroethane	ND	100	ug/L	02/01/2010	U
Chloroform	ND	100	ug/L	02/01/2010	U
Chloromethane	ND	100	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Dibromochloromethane	ND	100	ug/L	02/01/2010	U
Dibromomethane	ND	100	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	100	ug/L	02/01/2010	U
Ethylbenzene	ND	100	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	100	ug/L	02/01/2010	U
Isopropylbenzene	ND	100	ug/L	02/01/2010	U
m&p-Xylene	ND	100	ug/L	02/01/2010	U
Methylene chloride	ND	100	ug/L	02/01/2010	U
MTBE	ND	100	ug/L	02/01/2010	U
n-Butylbenzene	ND	100	ug/L	02/01/2010	U
n-Propylbenzene	ND	100	ug/L	02/01/2010	U
Naphthalene	ND	100	ug/L	02/01/2010	U
o-Xylene	ND	100	ug/L	02/01/2010	U
sec-Butylbenzene	ND	100	ug/L	02/01/2010	U
Styrene	ND	100	ug/L	02/01/2010	U

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CONTACT: MICHELLE CRIMI

CUSTOMER ID: 15P-2-S-1 **NEA ID:** AN00947 **NEA LRF:** 10010204-06
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	02/01/2010	U
Tetrachloroethene	ND	100	ug/L	02/01/2010	U
Toluene	ND	100	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Trichloroethene	ND	100	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	100	ug/L	02/01/2010	U
Vinyl acetate	ND	100	ug/L	02/01/2010	U
Vinyl chloride	ND	100	ug/L	02/01/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-1-S-2 **NEA ID:** AN00948 **NEA LRF:** 10010204-07
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	100	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	100	ug/L	02/01/2010	U
1,2-Dichlorobenzene	811	100	ug/L	02/01/2010	
1,2-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,3-Dichlorobenzene	109	100	ug/L	02/01/2010	
1,3-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,4-Dichlorobenzene	128	100	ug/L	02/01/2010	
2,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
2-Butanone	191	100	ug/L	02/01/2010	
2-Chloroethylvinylether	ND	100	ug/L	02/01/2010	U
2-Chlorotoluene	ND	100	ug/L	02/01/2010	U
2-Hexanone	ND	100	ug/L	02/01/2010	U
4-Chlorotoluene	ND	100	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	100	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	02/01/2010	U
Acetone	716	500	ug/L	02/01/2010	

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CERTIFICATE OF ANALYSIS
2/4/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-1-S-2 **NEA ID:** AN00948 **NEA LRF:** 10010204-07
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	02/01/2010	U
Bromobenzene	ND	100	ug/L	02/01/2010	U
Bromochloromethane	ND	100	ug/L	02/01/2010	U
Bromodichloromethane	ND	100	ug/L	02/01/2010	U
Bromoform	ND	100	ug/L	02/01/2010	U
Bromomethane	ND	100	ug/L	02/01/2010	U
Carbon disulfide	ND	100	ug/L	02/01/2010	U
Carbon tetrachloride	ND	100	ug/L	02/01/2010	U
Chlorobenzene	997	100	ug/L	02/01/2010	
Chloroethane	ND	100	ug/L	02/01/2010	U
Chloroform	ND	100	ug/L	02/01/2010	U
Chloromethane	ND	100	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Dibromochloromethane	ND	100	ug/L	02/01/2010	U
Dibromomethane	ND	100	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	100	ug/L	02/01/2010	U
Ethylbenzene	ND	100	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	100	ug/L	02/01/2010	U
Isopropylbenzene	ND	100	ug/L	02/01/2010	U
m&p-Xylene	ND	100	ug/L	02/01/2010	U
Methylene chloride	ND	100	ug/L	02/01/2010	U
MTBE	ND	100	ug/L	02/01/2010	U
n-Butylbenzene	ND	100	ug/L	02/01/2010	U
n-Propylbenzene	ND	100	ug/L	02/01/2010	U
Naphthalene	ND	100	ug/L	02/01/2010	U
o-Xylene	ND	100	ug/L	02/01/2010	U
sec-Butylbenzene	ND	100	ug/L	02/01/2010	U
Styrene	ND	100	ug/L	02/01/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-1-S-2 **NEA ID:** AN00948 **NEA LRF:** 10010204-07
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	02/01/2010	U
Tetrachloroethene	ND	100	ug/L	02/01/2010	U
Toluene	ND	100	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Trichloroethene	ND	100	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	100	ug/L	02/01/2010	U
Vinyl acetate	ND	100	ug/L	02/01/2010	U
Vinyl chloride	ND	100	ug/L	02/01/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-2-S-2 **NEA ID:** AN00949 **NEA LRF:** 10010204-08
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	100	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	100	ug/L	02/01/2010	U
1,2-Dichlorobenzene	573	100	ug/L	02/01/2010	
1,2-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,3-Dichlorobenzene	ND	100	ug/L	02/01/2010	U
1,3-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,4-Dichlorobenzene	ND	100	ug/L	02/01/2010	U
2,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
2-Butanone	127	100	ug/L	02/01/2010	
2-Chloroethylvinylether	ND	100	ug/L	02/01/2010	U
2-Chlorotoluene	ND	100	ug/L	02/01/2010	U
2-Hexanone	ND	100	ug/L	02/01/2010	U
4-Chlorotoluene	ND	100	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	100	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	02/01/2010	U
Acetone	552	500	ug/L	02/01/2010	

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-2-S-2 **NEA ID:** AN00949 **NEA LRF:** 10010204-08
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	02/01/2010	U
Bromobenzene	ND	100	ug/L	02/01/2010	U
Bromochloromethane	ND	100	ug/L	02/01/2010	U
Bromodichloromethane	ND	100	ug/L	02/01/2010	U
Bromoform	ND	100	ug/L	02/01/2010	U
Bromomethane	ND	100	ug/L	02/01/2010	U
Carbon disulfide	ND	100	ug/L	02/01/2010	U
Carbon tetrachloride	ND	100	ug/L	02/01/2010	U
Chlorobenzene	712	100	ug/L	02/01/2010	
Chloroethane	ND	100	ug/L	02/01/2010	U
Chloroform	ND	100	ug/L	02/01/2010	U
Chloromethane	ND	100	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Dibromochloromethane	ND	100	ug/L	02/01/2010	U
Dibromomethane	ND	100	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	100	ug/L	02/01/2010	U
Ethylbenzene	ND	100	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	100	ug/L	02/01/2010	U
Isopropylbenzene	ND	100	ug/L	02/01/2010	U
m&p-Xylene	ND	100	ug/L	02/01/2010	U
Methylene chloride	ND	100	ug/L	02/01/2010	U
MTBE	ND	100	ug/L	02/01/2010	U
n-Butylbenzene	ND	100	ug/L	02/01/2010	U
n-Propylbenzene	ND	100	ug/L	02/01/2010	U
Naphthalene	ND	100	ug/L	02/01/2010	U
o-Xylene	ND	100	ug/L	02/01/2010	U
sec-Butylbenzene	ND	100	ug/L	02/01/2010	U
Styrene	ND	100	ug/L	02/01/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-2-S-2 **NEA ID:** AN00949 **NEA LRF:** 10010204-08
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	02/01/2010	U
Tetrachloroethene	ND	100	ug/L	02/01/2010	U
Toluene	ND	100	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Trichloroethene	ND	100	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	100	ug/L	02/01/2010	U
Vinyl acetate	ND	100	ug/L	02/01/2010	U
Vinyl chloride	ND	100	ug/L	02/01/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-1-S-1 **NEA ID:** AN00950 **NEA LRF:** 10010204-09
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	100	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	100	ug/L	02/01/2010	U
1,2-Dichlorobenzene	872	100	ug/L	02/01/2010	
1,2-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,3-Dichlorobenzene	113	100	ug/L	02/01/2010	
1,3-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,4-Dichlorobenzene	133	100	ug/L	02/01/2010	
2,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
2-Butanone	163	100	ug/L	02/01/2010	
2-Chloroethylvinylether	ND	100	ug/L	02/01/2010	U
2-Chlorotoluene	ND	100	ug/L	02/01/2010	U
2-Hexanone	ND	100	ug/L	02/01/2010	U
4-Chlorotoluene	ND	100	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	100	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	02/01/2010	U
Acetone	ND	500	ug/L	02/01/2010	U

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ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-1-S-1 **NEA ID:** AN00950 **NEA LRF:** 10010204-09
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	02/01/2010	U
Bromobenzene	ND	100	ug/L	02/01/2010	U
Bromochloromethane	ND	100	ug/L	02/01/2010	U
Bromodichloromethane	ND	100	ug/L	02/01/2010	U
Bromoform	ND	100	ug/L	02/01/2010	U
Bromomethane	ND	100	ug/L	02/01/2010	U
Carbon disulfide	ND	100	ug/L	02/01/2010	U
Carbon tetrachloride	ND	100	ug/L	02/01/2010	U
Chlorobenzene	1750	100	ug/L	02/01/2010	
Chloroethane	ND	100	ug/L	02/01/2010	U
Chloroform	ND	100	ug/L	02/01/2010	U
Chloromethane	ND	100	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Dibromochloromethane	ND	100	ug/L	02/01/2010	U
Dibromomethane	ND	100	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	100	ug/L	02/01/2010	U
Ethylbenzene	ND	100	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	100	ug/L	02/01/2010	U
Isopropylbenzene	ND	100	ug/L	02/01/2010	U
m&p-Xylene	ND	100	ug/L	02/01/2010	U
Methylene chloride	ND	100	ug/L	02/01/2010	U
MTBE	ND	100	ug/L	02/01/2010	U
n-Butylbenzene	ND	100	ug/L	02/01/2010	U
n-Propylbenzene	ND	100	ug/L	02/01/2010	U
Naphthalene	ND	100	ug/L	02/01/2010	U
o-Xylene	ND	100	ug/L	02/01/2010	U
sec-Butylbenzene	ND	100	ug/L	02/01/2010	U
Styrene	ND	100	ug/L	02/01/2010	U

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830-13 A1A NORTH, #371
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CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-1-S-1 **NEA ID:** AN00950 **NEA LRF:** 10010204-09
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	02/01/2010	U
Tetrachloroethene	ND	100	ug/L	02/01/2010	U
Toluene	ND	100	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Trichloroethene	ND	100	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	100	ug/L	02/01/2010	U
Vinyl acetate	ND	100	ug/L	02/01/2010	U
Vinyl chloride	ND	100	ug/L	02/01/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-2-S-1 **NEA ID:** AN00951 **NEA LRF:** 10010204-10
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	100	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	100	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	100	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	ND	100	ug/L	02/01/2010	U
1,2,4-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	100	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	100	ug/L	02/01/2010	U
1,2-Dichlorobenzene	691	100	ug/L	02/01/2010	
1,2-Dichloroethane	ND	100	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	100	ug/L	02/01/2010	U
1,3-Dichlorobenzene	102	100	ug/L	02/01/2010	
1,3-Dichloropropane	ND	100	ug/L	02/01/2010	U
1,4-Dichlorobenzene	120	100	ug/L	02/01/2010	
2,2-Dichloropropane	ND	100	ug/L	02/01/2010	U
2-Butanone	119	100	ug/L	02/01/2010	
2-Chloroethylvinylether	ND	100	ug/L	02/01/2010	U
2-Chlorotoluene	ND	100	ug/L	02/01/2010	U
2-Hexanone	ND	100	ug/L	02/01/2010	U
4-Chlorotoluene	ND	100	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	100	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	100	ug/L	02/01/2010	U
Acetone	515	500	ug/L	02/01/2010	

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2/4/2010
ERFS
830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-2-S-1 **NEA ID:** AN00951 **NEA LRF:** 10010204-10
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	100	ug/L	02/01/2010	U
Bromobenzene	ND	100	ug/L	02/01/2010	U
Bromochloromethane	ND	100	ug/L	02/01/2010	U
Bromodichloromethane	ND	100	ug/L	02/01/2010	U
Bromoform	ND	100	ug/L	02/01/2010	U
Bromomethane	ND	100	ug/L	02/01/2010	U
Carbon disulfide	ND	100	ug/L	02/01/2010	U
Carbon tetrachloride	ND	100	ug/L	02/01/2010	U
Chlorobenzene	1190	100	ug/L	02/01/2010	
Chloroethane	ND	100	ug/L	02/01/2010	U
Chloroform	ND	100	ug/L	02/01/2010	U
Chloromethane	ND	100	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Dibromochloromethane	ND	100	ug/L	02/01/2010	U
Dibromomethane	ND	100	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	100	ug/L	02/01/2010	U
Ethylbenzene	ND	100	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	100	ug/L	02/01/2010	U
Isopropylbenzene	ND	100	ug/L	02/01/2010	U
m&p-Xylene	ND	100	ug/L	02/01/2010	U
Methylene chloride	ND	100	ug/L	02/01/2010	U
MTBE	ND	100	ug/L	02/01/2010	U
n-Butylbenzene	ND	100	ug/L	02/01/2010	U
n-Propylbenzene	ND	100	ug/L	02/01/2010	U
Naphthalene	ND	100	ug/L	02/01/2010	U
o-Xylene	ND	100	ug/L	02/01/2010	U
sec-Butylbenzene	ND	100	ug/L	02/01/2010	U
Styrene	ND	100	ug/L	02/01/2010	U

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: 30P-2-S-1 **NEA ID:** AN00951 **NEA LRF:** 10010204-10
MATRIX: WATER **DATE SAMPLED:** 01/24/2010 **TIME:** 03:00
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	100	ug/L	02/01/2010	U
Tetrachloroethene	ND	100	ug/L	02/01/2010	U
Toluene	ND	100	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	100	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	100	ug/L	02/01/2010	U
Trichloroethene	ND	100	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	100	ug/L	02/01/2010	U
Vinyl acetate	ND	100	ug/L	02/01/2010	U
Vinyl chloride	ND	100	ug/L	02/01/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: B-1 **NEA ID:** AN00952 **NEA LRF:** 10010204-11
MATRIX: WATER **DATE SAMPLED:** 01/25/2010 **TIME:** 09:15
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	1.00	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	1.00	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	1.00	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	1.00	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	1.00	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	1.00	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	1.00	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	1.00	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,2,4-Trimethylbenzene	ND	1.00	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	1.00	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	1.00	ug/L	02/01/2010	U
1,2-Dichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,2-Dichloroethane	ND	1.00	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	1.00	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	1.00	ug/L	02/01/2010	U
1,3-Dichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,3-Dichloropropane	ND	1.00	ug/L	02/01/2010	U
1,4-Dichlorobenzene	ND	1.00	ug/L	02/01/2010	U
2,2-Dichloropropane	ND	1.00	ug/L	02/01/2010	U
2-Butanone	ND	1.00	ug/L	02/01/2010	U
2-Chloroethylvinylether	ND	1.00	ug/L	02/01/2010	U
2-Chlorotoluene	ND	1.00	ug/L	02/01/2010	U
2-Hexanone	ND	1.00	ug/L	02/01/2010	U
4-Chlorotoluene	ND	1.00	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	1.00	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	1.00	ug/L	02/01/2010	U
Acetone	ND	1.00	ug/L	02/01/2010	U

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CUSTOMER ID: B-1 **NEA ID:** AN00952 **NEA LRF:** 10010204-11
MATRIX: WATER **DATE SAMPLED:** 01/25/2010 **TIME:** 09:15
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	1.00	ug/L	02/01/2010	U
Bromobenzene	ND	1.00	ug/L	02/01/2010	U
Bromochloromethane	ND	1.00	ug/L	02/01/2010	U
Bromodichloromethane	ND	1.00	ug/L	02/01/2010	U
Bromoform	ND	1.00	ug/L	02/01/2010	U
Bromomethane	ND	1.00	ug/L	02/01/2010	U
Carbon disulfide	ND	1.00	ug/L	02/01/2010	U
Carbon tetrachloride	ND	1.00	ug/L	02/01/2010	U
Chlorobenzene	ND	1.00	ug/L	02/01/2010	U
Chloroethane	ND	1.00	ug/L	02/01/2010	U
Chloroform	ND	1.00	ug/L	02/01/2010	U
Chloromethane	ND	1.00	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	1.00	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	1.00	ug/L	02/01/2010	U
Dibromochloromethane	ND	1.00	ug/L	02/01/2010	U
Dibromomethane	ND	1.00	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	1.00	ug/L	02/01/2010	U
Ethylbenzene	ND	1.00	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	1.00	ug/L	02/01/2010	U
Isopropylbenzene	ND	1.00	ug/L	02/01/2010	U
m&p-Xylene	ND	1.00	ug/L	02/01/2010	U
Methylene chloride	ND	1.00	ug/L	02/01/2010	U
MTBE	ND	1.00	ug/L	02/01/2010	U
n-Butylbenzene	ND	1.00	ug/L	02/01/2010	U
n-Propylbenzene	ND	1.00	ug/L	02/01/2010	U
Naphthalene	ND	1.00	ug/L	02/01/2010	U
o-Xylene	ND	1.00	ug/L	02/01/2010	U
sec-Butylbenzene	ND	1.00	ug/L	02/01/2010	U
Styrene	ND	1.00	ug/L	02/01/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: B-1 **NEA ID:** AN00952 **NEA LRF:** 10010204-11
MATRIX: WATER **DATE SAMPLED:** 01/25/2010 **TIME:** 09:15
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	1.00	ug/L	02/01/2010	U
Tetrachloroethene	ND	1.00	ug/L	02/01/2010	U
Toluene	ND	1.00	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	1.00	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	1.00	ug/L	02/01/2010	U
Trichloroethene	ND	1.00	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	1.00	ug/L	02/01/2010	U
Vinyl acetate	ND	1.00	ug/L	02/01/2010	U
Vinyl chloride	ND	1.00	ug/L	02/01/2010	U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

AUTHORIZED SIGNATURE:

William A. Kotas
Sr. Laboratory Representative

Robert E. Wagner
Laboratory Director

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: B-2 **NEA ID:** AN00953 **NEA LRF:** 10010204-12
MATRIX: WATER **DATE SAMPLED:** 01/25/2010 **TIME:** 09:15
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
1,1,1,2-Tetrachloroethane	ND	1.00	ug/L	02/01/2010	U
1,1,1-Trichloroethane	ND	1.00	ug/L	02/01/2010	U
1,1,2,2-Tetrachloroethane	ND	1.00	ug/L	02/01/2010	U
1,1,2-Trichloroethane	ND	1.00	ug/L	02/01/2010	U
1,1-Dichloroethane	ND	1.00	ug/L	02/01/2010	U
1,1-Dichloroethene	ND	1.00	ug/L	02/01/2010	U
1,1-Dichloropropene	ND	1.00	ug/L	02/01/2010	U
1,2,3-Trichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,2,3-Trichloropropane	ND	1.00	ug/L	02/01/2010	U
1,2,4-Trichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,2,4-Trimethylbenzene	ND	1.00	ug/L	02/01/2010	U
1,2-Dibromo-3-chloropropane	ND	1.00	ug/L	02/01/2010	U
1,2-Dibromoethane	ND	1.00	ug/L	02/01/2010	U
1,2-Dichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,2-Dichloroethane	ND	1.00	ug/L	02/01/2010	U
1,2-Dichloropropane	ND	1.00	ug/L	02/01/2010	U
1,3,5-Trimethylbenzene	ND	1.00	ug/L	02/01/2010	U
1,3-Dichlorobenzene	ND	1.00	ug/L	02/01/2010	U
1,3-Dichloropropane	ND	1.00	ug/L	02/01/2010	U
1,4-Dichlorobenzene	ND	1.00	ug/L	02/01/2010	U
2,2-Dichloropropane	ND	1.00	ug/L	02/01/2010	U
2-Butanone	ND	1.00	ug/L	02/01/2010	U
2-Chloroethylvinylether	ND	1.00	ug/L	02/01/2010	U
2-Chlorotoluene	ND	1.00	ug/L	02/01/2010	U
2-Hexanone	ND	1.00	ug/L	02/01/2010	U
4-Chlorotoluene	ND	1.00	ug/L	02/01/2010	U
4-Isopropyltoluene	ND	1.00	ug/L	02/01/2010	U
4-Methyl-2-pentanone	ND	1.00	ug/L	02/01/2010	U
Acetone	ND	1.00	ug/L	02/01/2010	U

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CONTACT: MICHELLE CRIMI

CUSTOMER ID: B-2 **NEA ID:** AN00953 **NEA LRF:** 10010204-12
MATRIX: WATER **DATE SAMPLED:** 01/25/2010 **TIME:** 09:15
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
Benzene	ND	1.00	ug/L	02/01/2010	U
Bromobenzene	ND	1.00	ug/L	02/01/2010	U
Bromochloromethane	ND	1.00	ug/L	02/01/2010	U
Bromodichloromethane	ND	1.00	ug/L	02/01/2010	U
Bromoform	ND	1.00	ug/L	02/01/2010	U
Bromomethane	ND	1.00	ug/L	02/01/2010	U
Carbon disulfide	ND	1.00	ug/L	02/01/2010	U
Carbon tetrachloride	ND	1.00	ug/L	02/01/2010	U
Chlorobenzene	ND	1.00	ug/L	02/01/2010	U
Chloroethane	ND	1.00	ug/L	02/01/2010	U
Chloroform	ND	1.00	ug/L	02/01/2010	U
Chloromethane	ND	1.00	ug/L	02/01/2010	U
cis-1,2-Dichloroethene	ND	1.00	ug/L	02/01/2010	U
cis-1,3-Dichloropropene	ND	1.00	ug/L	02/01/2010	U
Dibromochloromethane	ND	1.00	ug/L	02/01/2010	U
Dibromomethane	ND	1.00	ug/L	02/01/2010	U
Dichlorodifluoromethane	ND	1.00	ug/L	02/01/2010	U
Ethylbenzene	ND	1.00	ug/L	02/01/2010	U
Hexachlorobutadiene	ND	1.00	ug/L	02/01/2010	U
Isopropylbenzene	ND	1.00	ug/L	02/01/2010	U
m&p-Xylene	ND	1.00	ug/L	02/01/2010	U
Methylene chloride	ND	1.00	ug/L	02/01/2010	U
MTBE	ND	1.00	ug/L	02/01/2010	U
n-Butylbenzene	ND	1.00	ug/L	02/01/2010	U
n-Propylbenzene	ND	1.00	ug/L	02/01/2010	U
Naphthalene	ND	1.00	ug/L	02/01/2010	U
o-Xylene	ND	1.00	ug/L	02/01/2010	U
sec-Butylbenzene	ND	1.00	ug/L	02/01/2010	U
Styrene	ND	1.00	ug/L	02/01/2010	U

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830-13 A1A NORTH, #371
PONTE VEDRA, FL 32082
CONTACT: MICHELLE CRIMI

CUSTOMER ID: B-2 **NEA ID:** AN00953 **NEA LRF:** 10010204-12
MATRIX: WATER **DATE SAMPLED:** 01/25/2010 **TIME:** 09:15
DATE RECEIVED: 1/26/2010 **TIME:** 09:54 **PROJECT:** BUFFALO SITE BENCH TEST
SAMPLED BY: N/A **LOCATION:** POTSDAM, NY
CUSTOMER PO: N/A **LAB ELAP#:** 11078

PARAMETER PERFORMED	RESULTS	PQL	UNITS	DATE ANALYZED	FLAGS
EPA Method 8260B					
tert-Butylbenzene	ND	1.00	ug/L	02/01/2010	U
Tetrachloroethene	ND	1.00	ug/L	02/01/2010	U
Toluene	ND	1.00	ug/L	02/01/2010	U
trans-1,2-Dichloroethene	ND	1.00	ug/L	02/01/2010	U
trans-1,3-Dichloropropene	ND	1.00	ug/L	02/01/2010	U
Trichloroethene	ND	1.00	ug/L	02/01/2010	U
Trichlorofluoromethane	ND	1.00	ug/L	02/01/2010	U
Vinyl acetate	ND	1.00	ug/L	02/01/2010	U
Vinyl chloride	ND	1.00	ug/L	02/01/2010	U

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Sample vials received for volatiles analysis contained headspace that exceeded 6mm in size.

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APPENDIX M

MICROBIAL STUDY RESULTS

REGENESIS

Advanced Technologies for Groundwater Resources

March 30, 2010

TO: Ryan Belcher, Mactec E&C

FROM: Joy Fuangtharnthip
Ben Mork, Ph.D.
Maureen Dooley

RE: RegenOx Bench Studies, South Buffalo Site.

Background

Regenesis was commissioned by Mactec to perform laboratory testing to demonstrate the effects of ORC-Advanced™ on chlorobenzene contamination in the Buffalo Colors site. ORC-Advanced is a calcium-based peroxygen used to deliver a constant supply of oxygen to the naturally present microbial communities to enhance contaminant bioremediation. ORC-Advanced is a slow-release source of oxygen that supports aerobic bioremediation for approximately one year in typical sites. The goals of the experiments outlined below are to demonstrate the ability of ORC-Advanced to facilitate bioremediation of chlorobenzene in the Buffalo Colors site.

Experimental section

All analyses and preparations were performed by Microbial Insights, Rockford, TN, as part of a Stable Isotope Probing (SIP) study. Two Bio-Trap® samples from Microbial Insights were supplied to Mactec and deployed in the field for 28 days. Each Bio-Trap contained ^{13}C labeled chlorobenzene. The first Bio-Trap was used to simulate monitored natural attenuation (MNA) conditions and did not contain an additive. The second Bio-Trap was amended with ORC-Advanced.

Summary of Results

Analysis of the Bio-Traps and comparison of the MNA and ORC-Advanced samples resulted in the following observations:

- Both samples showed a high incorporation of ^{13}C into dissolved inorganic carbon, indicating that the aerobic biodegradation of chlorobenzene is an effective technology for this site.
- Total measured biomass was higher in the ORC-Advanced amended sample, suggesting that the ORC-Advanced promotes bacterial growth in the site.
- ^{13}C was incorporated into the biomass communities in both samples, however the degree of incorporation was higher in the ORC-Advanced Bio-Trap at 3.44%, vs. 1.13% in the MNA treatment.

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info@regenesis.com · www.regenesis.com

The results of these Bio-Trap studies suggest that aerobic bioremediation of chlorobenzene will occur at the Buffalo Colors site. Furthermore, ORC-Advanced is compatible with the naturally present chlorobenzene-degrading microbes, and will facilitate degradation by slowly supplying oxygen for approximately one year when applied in situ. The dyes reportedly present within the site do not prevent the microbial community to from aerobically degrading chlorobenzene. Complete analytical results can be found in the attached Microbial Insights Report 025HA.

Attached: Microbial Insights Site Logic Report 025HA

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info@regenesis.com · www.regenesis.com

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

SITE LOGIC Report

Stable Isotope Probing (SIP) Study

Contact: Maureen Dooley
Address: Regenesis – Wakefield MA
19 Belmont Road
Wakefield, MA 01880

Phone: 781.223.5201

Email: mdooley@regenesis.com

MI Identifier: 025HA

Report Date: March 30, 2010

Project: SBD Buffalo Color

Comments: Revised for 28 day incubation

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Executive Summary

Bio-Trap® samplers baited with ^{13}C labeled chlorobenzene were deployed for 28 days and then recovered for analysis. One sampler was used to simulate MNA conditions while the second sampler was amended with ORC-A. A complete summary of the results is provided in Table 1.

- A moderate level of biomass (~10^5 - ~10^6 cells/bead) was seen in both of the bio-trap samplers.
- Quantification of ^{13}C enriched biomass indicated that there was incorporation of the ^{13}C labeled chlorobenzene in both of the samplers. The highest level of incorporation (3.44%) was seen in the ORC-A amended sampler with a lower amount of incorporation (1.13%) seen in the MNA sampler.
- Quantification of the ^{13}C dissolved inorganic carbon (DIC) indicated that a high amount of mineralization was occurring in both of the samplers.
- Comparison of pre- and post-deployment concentrations of ^{13}C labeled chlorobenzene demonstrated a contaminant loss in both samplers. (MNA 32% and ORC-A sampler 22%).
- There was no significant difference seen in the quantity of Phenol Hydroxylase or Toluene Dioxygenase genes.

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Overview of Approach

Stable Isotope Probing (SIP)

Stable isotope probing (SIP) is an innovative method to track the environmental fate of a "labeled" contaminant of concern to unambiguously demonstrate biodegradation. Two stable carbon isotopes exist in nature – carbon 12 (^{12}C) which accounts for 99% of carbon and carbon 13 (^{13}C) which is considerably less abundant (~1%). With the SIP method, the Bio-Trap® sampler is baited with a specially synthesized form of the contaminant containing ^{13}C labeled carbon. Since ^{13}C is rare, the labeled compound can be readily differentiated from the contaminants present at the site. Following deployment, the Bio-Trap® is recovered and three approaches are used to conclusively demonstrate biodegradation of the contaminant of concern.

- The loss of the labeled compound provides an estimate of the degradation rate (% loss of ^{13}C).
- Quantification of ^{13}C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.
- Quantification of ^{13}C enriched dissolved inorganic carbon (DIC) indicates contaminant mineralization.

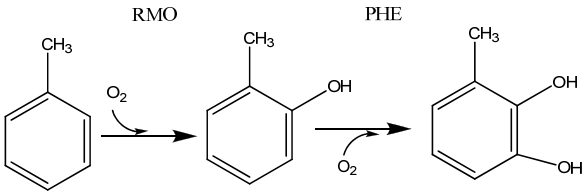
Phospholipid Fatty Acids (PLFA): PLFA are a primary component of the membrane of all living cells including bacteria. PLFA decomposes rapidly upon cell death (1, 2), so the total amount of PLFA present in a sample is indicative of the viable biomass. When combined with stable isotope probing (SIP), incorporation of ^{13}C into PLFA is a conclusive indicator of biodegradation.

Some organisms produce "signature" types of PLFA allowing quantification of important microbial functional groups (e.g. iron reducers, sulfate reducers, or fermenters). The relative proportions of the groups of PLFA provide a "fingerprint" of the microbial community. In addition, *Proteobacteria* modify specific PLFA during periods of slow growth or in response to environmental stress providing an index of their health and metabolic activity.

CENSUS - Based on quantitative polymerase chain reaction (qPCR), CENSUS is a nucleic acid-based approach to quantify specific microorganisms, groups of microorganisms, or functional genes involved in bioremediation or other biological processes. CENSUS targets include bacteria and functional genes responsible for biodegradation of chlorinated solvents and petroleum products among others.

CENSUS Targets

- **Phenol Hydroxylase (qPHE):** Phenol hydroxylase catalyzes the continued oxidation of phenol and cresol intermediates. In single compound microcosm studies, PHE was detected following amendment with naphthalene (in addition to microcosms containing benzene, toluene, *p*-xylene, and biphenyl) suggesting a role in the biodegradation of numerous aromatic compounds or their metabolites.



- **Toluene Dioxygenase (qTOD):** Toluene dioxygenase catalyzes the initial oxidation of toluene and benzene but is also capable of co-oxidation of TCE if the enzyme is expressed. At mixed waste sites where TCE is a co-contaminant with petroleum hydrocarbons, expression of toluene dioxygenase under aerobic conditions could promote cometabolism of TCE. The qTOD assay may not be appropriate for sites in which chlorinated ethenes are the only contaminants of concern and BTEX compounds are not present. Toluene dioxygenase expression may be induced by dioxane although the archetypal toluene dioxygenase from *Psueodomonas putida* F1 does not appear to be capable of dioxane oxidation.

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Results

Table 1. Summary of the results obtained from the Bio-Trap® Units. Interpretation guidelines and definitions are found later in the document.

Sample Name	Control - Micro	ORC-A Micro
^{13}C Contaminant Loss		
Chlorobenzene Pre-deployment (mg/bd)	0.62	0.62
Chlorobenzene Post-deployment (mg/bd)	0.42	0.48
% Loss	32%	22%
First Order Rate Constant (1/days)	0.014	0.009
Biomass & ^{13}C Incorporation		
Total Biomass (Cells/bd)	5.44E+05	2.44E+06
^{13}C Enriched Biomass (Cells/bd)	6.15E+03	8.40E+04
% ^{13}C Incorporation	1.13%	3.44%
Average PLFA Del (‰)	715	2621
Maximum PLFA Del (‰)	1413	4967
^{13}C Mineralization		
DIC Del (‰)	4443	3687
% 13C	5.74%	4.98%
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	7.5	1.1
Proteobacteria (Monos)	56.1	72.2
Anaerobic metal reducers (BrMonos)	1.3	0.6
Actinomycetes (MidBrSats)	1.0	0.0
General (Nsats)	14.4	15.2
Eukaryotes (Polyenoics)	19.8	10.9
Physiological Status (Proteobacteria only)		
Slowed Growth	0.14	0.36
Decreased Permeability	0.60	0.51
Census (cells/bead)		
Phenol Hydroxylase (PHE)	1.78E+07	9.46E+06
Toluene Dioxygenase (TOD)	4.42E+08	5.55E+08

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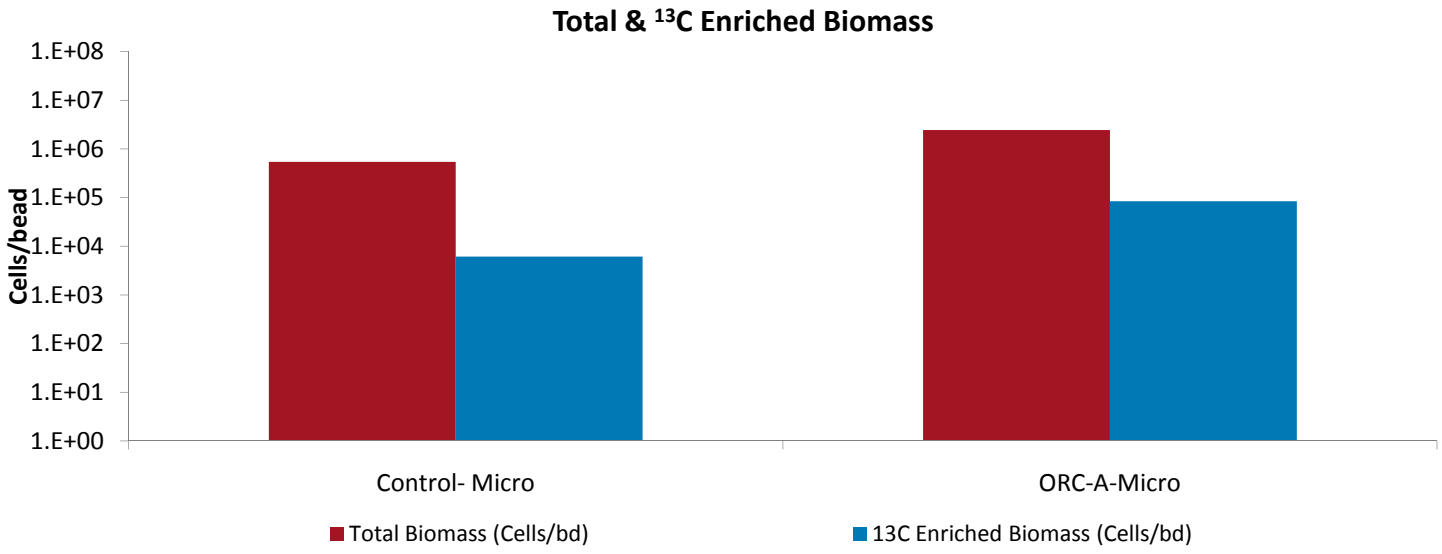


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

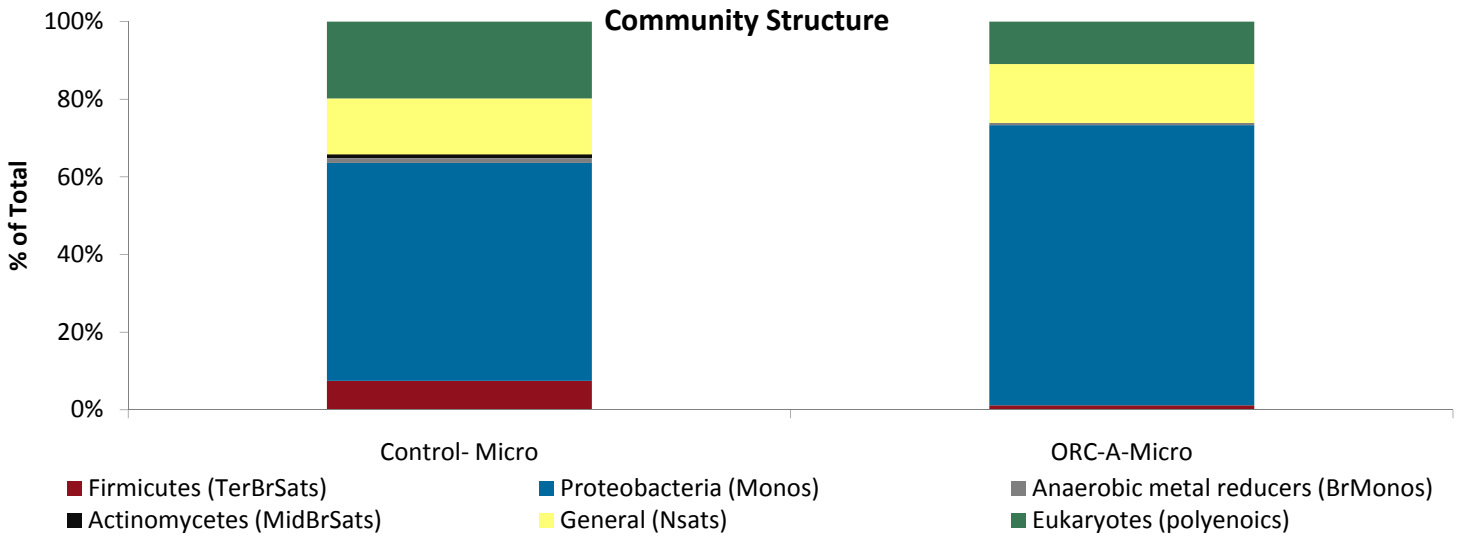


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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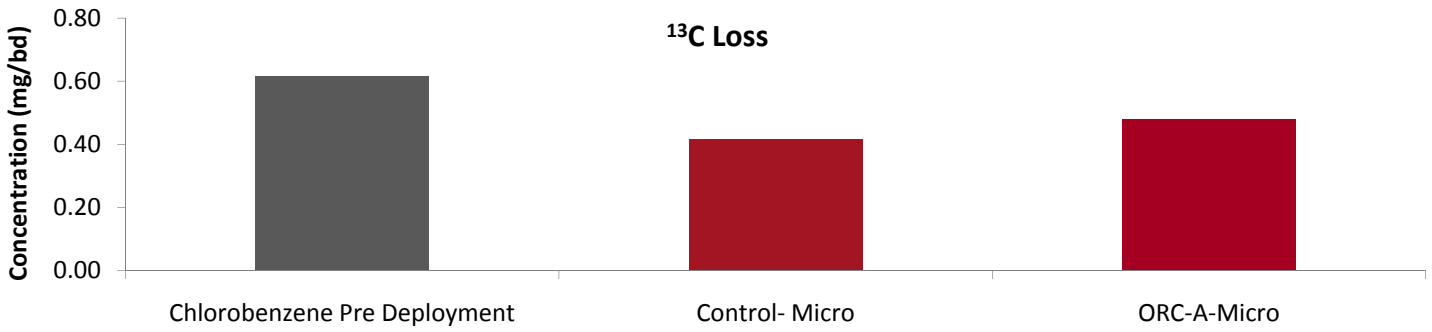


Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

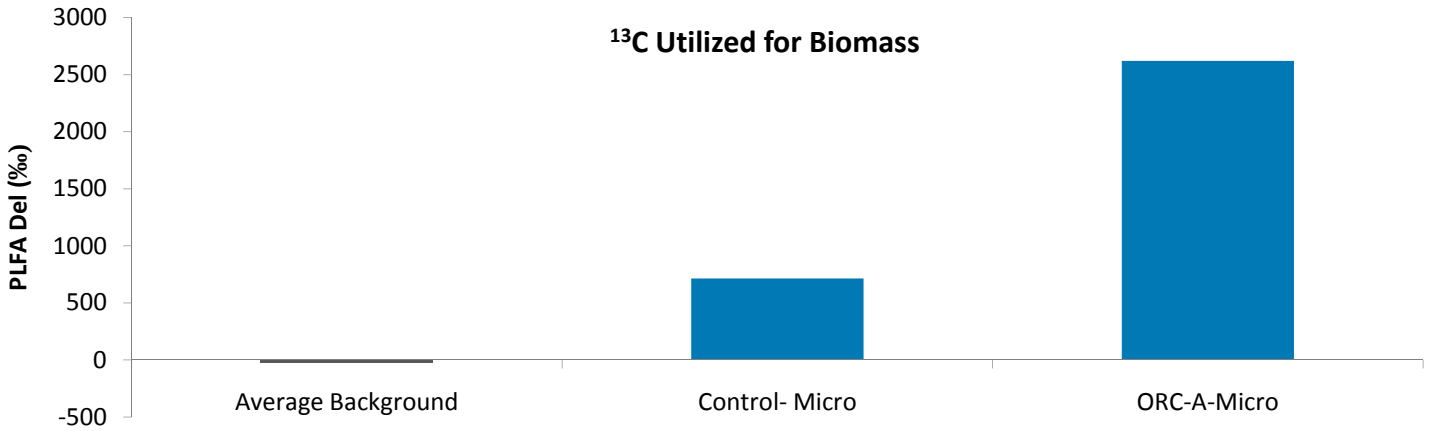


Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

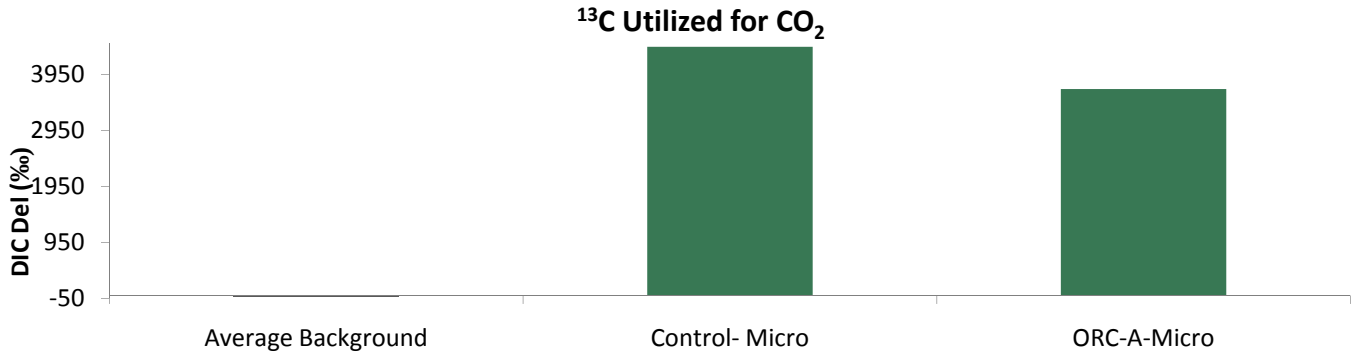


Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

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Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss, to estimate the first order degradation rate constant (k), and to estimate the contaminant half life (Results Summary Table). For a description of how the first order rate constant is calculated, please see the glossary at the end of the report. The first order rate constant can be used to compare different wells or treatments depending on the design of the study. A higher value is indicative of a greater biodegradation rate.

Alternatively, the contaminant half life can be used to make the same types of comparisons between wells and treatments. By definition, half life is the amount of time required for the contaminant concentration to equal half of the initial concentration (see glossary for calculation).

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include "fossil" lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

Total Biomass		
Low	**Moderate**	**High**
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

For SIP studies, the ^{13}C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ^{13}C being used for cellular growth. The % ^{13}C incorporation (^{13}C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % ^{13}C incorporation value could be low despite significant ^{13}C labeled biomass and loss of the compound. The % ^{13}C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

^{13}C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

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R_{std} is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is ^{13}C). The isotopic ratio, R_x, of PLFA is typically less than the R_{std} under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the ^{13}C labeled compound into PLFA results in a larger $^{13}C/^{12}C$ ratio (R_x) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

PLFA Del (‰)		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000

Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the ^{13}C labeled compound as both a carbon and energy source. The ^{13}C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ^{13}C used for energy is oxidized to $^{13}CO_2$ (mineralized).

^{13}C enriched CO_2 data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO_2 is approximately the same as R_{std} (0.01118 or about 1.1% ^{13}C). For an SIP Bio-Trap® study, mineralization of the ^{13}C labeled contaminant of concern would lead to a greater value of R_x (increased $^{13}CO_2$ production) and thus a positive del value. As with PLFA, del values between 0 and 100‰ are considered low, values between 100 and 1,000‰ are considered moderate, and values greater than 1,000‰ are considered high. Thus DIC $\%^{13}C$ are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and % ^{13}C		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000
1.11 to 1.23%	1.23 to 2.24 %	>2.24 %

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a "fingerprint" of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and *Actinomycetes*, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

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Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in eukaryotes such as fungi, protozoa, algae, higher plants, and animals.	Eukaryotic scavengers will often rise up and prey on contaminant utilizing bacteria

Physiological Status (*Proteobacteria*): Some *Proteobacteria* modify specific PLFA as a strategy to adapt to stressful environmental conditions (3, 4). For example, *cis* monounsaturated fatty acids may be modified to cyclopropyl fatty acids during periods of slowed growth or modified to *trans* monounsaturated fatty acids to decrease membrane permeability in response to environmental stress. The ratio of product to substrate fatty acid thus provides an index of their health and metabolic activity. In general, status ratios greater than 0.25 indicate a response to unfavorable environmental conditions.

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Glossary

Del: A Del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand denoted ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

First Order Rate Constant: The first order rate is expression is $C=C_oe^{-kt}$ where C is the post-deployment concentration (mg/bead), C_o is the pre-deployment concentration (mg/bead), k is the first order rate constant (1/days), and t is the deployment time (days). Upon rearrangement and using pre-and post-deployment concentrations, $k=-\ln(C/C_o)/t$.

Half Life: Half life is the amount of time required for the contaminant concentration to equal half of the initial concentration and is expressed as $C=C_o/2$. Substituting into the rate expression and solving for half life ($t_{1/2}$), $t_{1/2} = \ln(0.5)/-k$. As opposed to the rate constant, a higher half life ($t_{1/2}$) indicates a lower degradation rate.

References

1. White, D.C., W.M. Davis, J.S. Nickels, J.D. King, and R.J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Oecologia 40:51-62.
2. White, D.C. and D.B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass. In P.S. Amy and D.L. Halderman (eds.) The microbiology of the terrestrial surface. CRC Press, Boca Raton.
3. Guckert, J.B., M.A. Hood, and D.C. White. 1986. Phospholipid ester-linked fatty acid profile changes during nutrient deprivation of *Vibrio chloerae*: increases in the trans/cis ratio and proportions of cyclopropyl fatty acids. Applied and Environmental Microbiology. 52:794-801.
4. Tsitko, I.V., G. M. Zaitsev, A. G. Lobanok, and M.S. Salkinoja-Salonen. 1999. Effect of aromatic compounds on cellular fatty acid composition of *Rhodococcus opacus*. Applied and Environmental Microbiology. 65:853-855.

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APPENDIX N

UNDERGROUND INJECTION CONTROL PERMIT APPLICATION

MACTEC

engineering and constructing a better tomorrow

December 9, 2009

Nicole Kraft
US EPA Region 2
290 Broadway
New York, NY 10007-1866

Subject: **Application – Underground Injection Control Permit Authorization by Rule**

Permittee: MACTEC Engineering and Consulting, Inc., 511 Congress Street, 2nd floor, Portland, Maine 04101
Property Owner Name and Address: South Buffalo Development, LLC, 333 Ganson Street, Buffalo, New York 14203
Site Name and Address: Former Buffalo Color Corporation Site, 100 Lee Street, Buffalo, New York

MACTEC Engineering and Consulting, Inc. (MACTEC) is submitting this letter and the attached Inventory of Injection Wells to request an Underground Injection Control Permit Authorization by Rule for the above referenced site, on behalf of the property owner, South Buffalo Development, LLC.

The Former Buffalo Color Corporation Site is zoned industrial and is approximately 40 acres in size, consisting of multiple parcels. The property was formerly the location of Buffalo Color Corporation, and is currently undergoing demolition and remediation under the NY Brownfield Cleanup Program so that the site can be redeveloped for commercial/light industrial use.

MACTEC has subcontracted the execution of an on-site field pilot-test for in-situ treatment of groundwater contamination at Area C and Area E of the former Buffalo Color Corporation site. The field pilot-test is scheduled for the week of December 14, 2009. The proposed injection locations, quantities, and monitoring are described in the following paragraphs.

Former Buffalo Color Corporation Site Area C: At Area C of the Former Buffalo Color Corporation Site, which is located at 229 Elk Street (refer to attached Figure 1), injection work is planned to occur over a two day period starting December 14, 2009 with approximately:

- 1,000 to 2,000 gallons total of 3% to 6% hydrogen peroxide and 3% to 6% ferrous sulfate solutions introduced via an infiltration trench (refer to Figure 1 attached). Hydrogen peroxide and ferrous sulfate solutions will be introduced in approximately equal volumes (500 to 1,000 gallons each); and
- Up to 1,500 gallons total of 3% to 6% hydrogen peroxide and 3% to 6% ferrous sulfate solutions injected at two direct push points (750 gallons per point) (refer to Figure 1 attached). Hydrogen peroxide and ferrous sulfate solutions will be introduced in approximately equal volumes.

Monitoring of the injection work at Area C will include:

- Collection of field parameter data from the temporary well points (refer to attached Figure 1) to evaluate distribution and effectiveness of reagents delivered via the injection trench; and
- A SiteVision™ survey (a soil resistivity survey method used to track reagent migration in the subsurface by plotting changes in soil resistivity profiles caused by electrolytic reagents) at baseline and multiple times during treatment to track reagent migration in the subsurface.

Former Buffalo Color Corporation Site Area E: At Area E of the Former Buffalo Color Corporation Site, which is located at 85 Lee Street (refer to attached Figure 1), injection work is planned over a two to five day period starting December 14, 2009 with approximately 40 grams of oxygen per day added to a single infusion well to be screened from 4 feet to 11 feet below ground surface. The oxygen will be added to the groundwater using 30-inch oxygen cylinders connected by tubing to an in-situ submerged oxygen curtain® (iSOC®) infusion device installed within the infusion well. The proposed infusion well (IW-E01) will be located approximately 3 feet from existing groundwater monitoring well RFI-32 as shown on Figure 1 attached. Monitoring of the injection work at Area E will include measuring dissolved oxygen at IW-E01 and RFI-32. Each monitoring event will last approximately 15 minutes. During day one, dissolved oxygen will be recorded every hour. On subsequent days, the frequency of monitoring may be decreased as appropriate.

Please send any return correspondence and direct any questions or comments regarding this application to:

Ryan Belcher
MACTEC Engineering and Consulting, Inc.
511 Congress Street, 2nd Floor
Portland, Maine 04101

Office: (207) 775-5401
Direct: (207 828-3530
Email: RTBelcher@MACTEC.com

Sincerely,

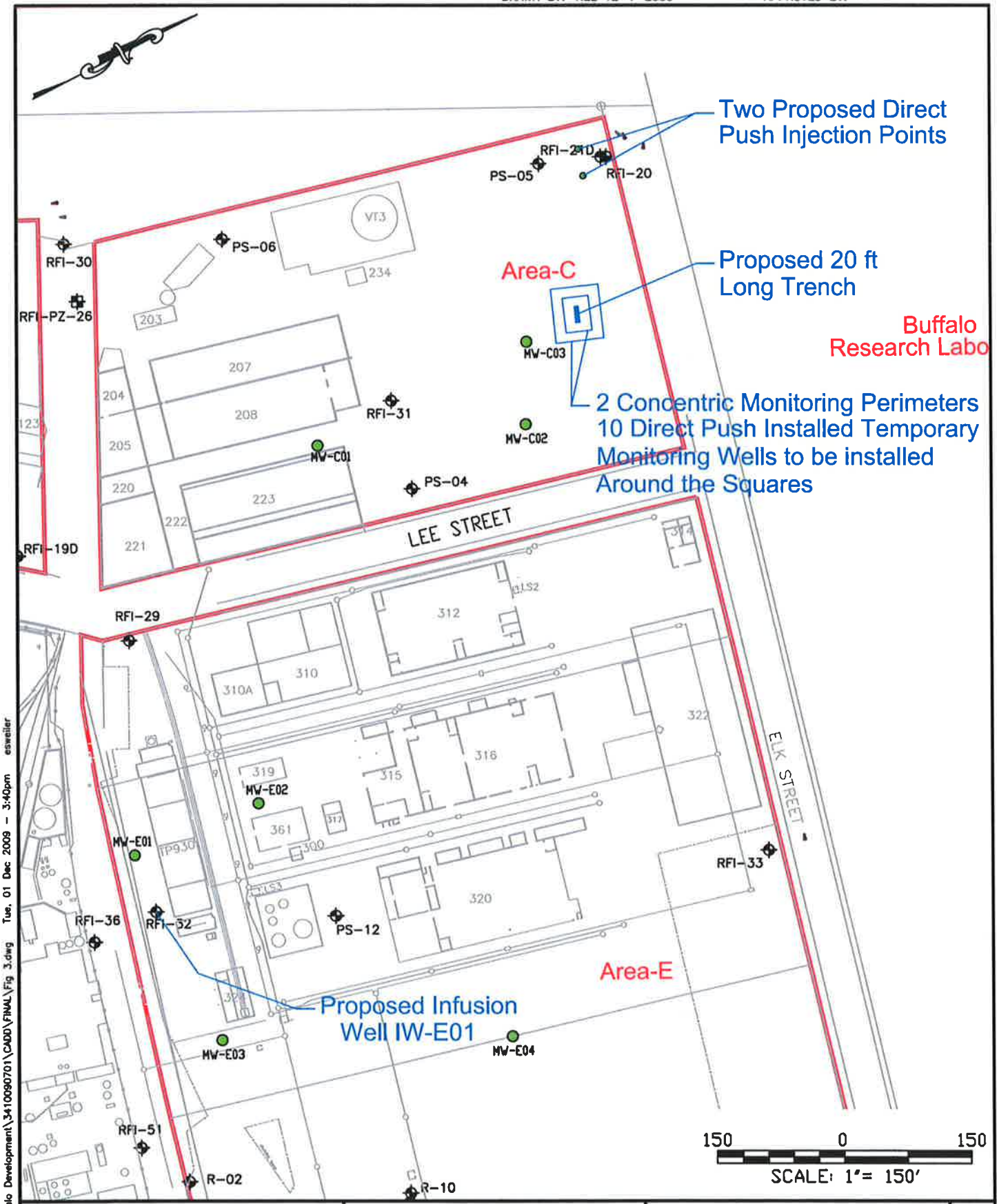
Ryan Belcher
Project Engineer

Sur John Scrabis with permission
Principal Engineer

Enclosures:
Figure 1 – Site Plan with Pilot Study Activities

cc: electronic copy
John Scrabis — MACTEC Engineering and Consulting, Inc.
Jon Williams — South Buffalo Development, LLC
Gene Melnyk — NY State Department of Environmental Conservation

DRAWN BY: NEL 12-1-2009 APPROVED BY: –



P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Fig 3.dwg Tue, 01 Dec 2009 - 3:40pm eswelter

SOUTH BUFFALO DEVELOPMENT LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	SITE PLAN WITH PILOT STUDY ACTIVITIES BUFFALO COLOR AREAS ABCE FIGURE: 1	X

Type or print all information. See reverse for instructions.

OMB No. 2040-0042 Approval Expires 12/31/2011

INVENTORY OF INJECTION WELLS

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF GROUND WATER AND DRINKING WATER

(This information is collected under the authority of the Safe Drinking Water Act)

1. DATE PREPARED *(Year, Month, Day)*: 09-12-08

2. FACILITY ID NUMBER:

PAPERWORK REDUCTION ACT NOTICE

The public reporting burden for this collection of information is estimated at about 0.5 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, Director, Collection Strategies Division (2822), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, and to the Office of Management and Budget, Paperwork Reduction Project, Washington, DC20503.

3. TRANSACTION TYPE *(Please mark one of the following)*

- [ ] Deletion
- [x] First Time Entry
- [ ] Entry Change
- [ ] Replacement

4. FACILITY NAME AND LOCATION

A. NAME *(last, first, and middle initial)*: Former Buffalo Color Corporation Site

B. STREET ADDRESS/ROUTE NUMBER: 100 Lee Street

C. LATITUDE: DEG 42 | MIN 51 | SEC 56.3034

D. LONGITUDE: DEG -78 | MIN 50 | SEC 32.1714

E. TOWNSHIP/RANGE

TOWNSHIP	RANGE	SECT	1/4 SECT

F. CITY/TOWN: Buffalo

G. STATE: New York

H. ZIP CODE: 14210

I. NUMERIC COUNTY CODE: ERIE

J. INDIAN LAND *(mark "x")*: [ ] Yes [x] No

5. LEGAL CONTACT

A. TYPE *(mark "x")*: [x] Owner [ ] Operator

B. NAME *(last, first, and middle initial)*: Jon Williams

C. PHONE *(area code and number)*: (716) 856-3333

D. ORGANIZATION: South Buffalo Development, LLC

E. STREET/P.O. BOX: 333 Ganson Street

F. CITY/TOWN: Buffalo

G. STATE: New York

H. ZIP CODE: 14203

I. OWNERSHIP *(mark "x")*

- [x] PRIVATE
- [ ] PUBLIC
- [ ] SPECIFY OTHER
- [ ] STATE
- [ ] FEDERAL

6. WELL INFORMATION

A. CLASS AND TYPE	B. NUMBER OF WELLS: COMM	B. NUMBER OF WELLS: NON-COMM	C. TOTAL NUMBER OF WELLS	D. WELL OPERATION STATUS: UC	AC	TA	PA	AN
V 5X26		2	2	2				
V 5X26		1	1	1				
			0					
			0					
			0					
			0					
			0					

COMMENTS *(Optional)*:

Injection wells to include two temporary Class V, Type 5X26, injection points and one permanent Class V, Type 5X26 injection well. Additionally, reagents to be added to the groundwater via a shallow infiltration trench constructed above the water table. Further details of the proposed activities are provided in attached letter.

KEY:

DEG = Degree
MIN = Minute
SEC = Second
SECT = Section
1/4 SECT = Quarter Section

COMM = Commercial
NON-COMM = Non-Commercial
AC = Active
UC = Under Construction
TA = Temporarily Abandoned
PA = Permanently Abandoned and Approved by State
AN = Permanently Abandoned and not Approved by State

APPENDIX O

REGENESIS BENCH TEST REPORT

REGENESIS
Advanced Technologies for Groundwater Resources

LABORATORY REPORT

MACTEC – BUFFALO COLORS SITE LABORATORY TESTING: EFFECTS OF REGENOX™ ISCO TREATMENT ON DEGRADATION OF CHLOROBENZENE AND SOLUBILITY OF METALS IN GROUNDWATER

FOR: MACTEC Engineering and Consulting, Inc.
John Scrabis, Senior P.E.

PREPARED October 4, 2010
Per proposal of August 3, 2010
by
REGENESIS
Joy Gravitt, Maureen Dooley and Ben Mork, Ph.D.

INTRODUCTION

Mactec contracted Regenesis to perform laboratory testing to determine the feasibility of using an alkaline contaminant oxidation process that incorporated RegenOx and hydrogen peroxide to reduce the concentration of chlorobenzene on soil at the former Buffalo Colors site, located in Buffalo, NY. RegenOx™ is an in-situ chemical oxidation (ISCO) agent comprised of a two-part formulation. RegenOx part A, a soluble solid oxidant, is combined with RegenOx part B, the activator, and can be applied to contaminated soil and groundwater for the purpose of oxidizing contaminants. In addition to contaminant degradation, toxic metals contamination is a concern at the Buffalo Colors site. The goals of the performed experiments below are to demonstrate the ability of RegenOx to degrade chlorobenzene and to predict the effects, if any, of RegenOx on the liberation of metals into the site groundwater.

EXPERIMENTAL SECTION

Soil Samples

The soil used in this study was provided by Mactec from the Buffalo Colors site. All samples were sent to Regenesis in San Clemente, CA for bench-scale laboratory testing. Six amber glass jars with Teflon®-lined lids were received from Mactec. Due to sampling restrictions, two areas were sampled to obtain the minimum requirement for soil material; 20 lbs. Upon receipt, all soil was homogenized in a plastic-lined 5 gallon bucket and repacked into the original containers. When manipulating the soil, it was noted that soils contained rocks and some pieces of debris (wood chips, twigs). The consistency of the soil was very dense clay that was naturally formed into large chunks. This made the soil difficult to homogenize. The soil was kept in sealed containers and stored at 4^{o}C before its use in all experiments.

VOC Experiments

All of the experimental treatment conditions were set up in duplicate in air-tight, 250 mL glass containers with Teflon®-lined lids. Duplicate soil samples were taken and immediately analyzed at the beginning of the experiment to establish baseline concentrations of chlorobenzenes (monochlorobenzene, dichlorobenzene and trichlorobenzene). Each experimental sample was prepared with 250 g of contaminated soil and 125 mL of purified laboratory water. For the control samples, 125 mL of purified lab water was the only additive in the reaction vessel. For RegenOx-treated samples, a 125 mL solution of RegenOx Part A (oxidant) and RegenOx Part B (activator) in purified lab water was added. For this study, a single RegenOx loading of 0.74% w/w versus soil of total RegenOx was used with a 1:1 ratio of part A to part B. In addition to the RegenOx, each treated reaction vessel was also dosed with 0.33% w/w versus soil of hydrogen peroxide, H_2O_2. Details of the experimental setup are listed in Table 1. All reactors were sealed and stored at room temperature (approximately 20 ^{o}C) for either 7 or 14 days.

Chlorobenzenes concentrations were determined by EPA method 8260B for volatile organic compounds. All analyses were performed by a third-party analytical lab, TestAmerica in Irvine, CA.

Metals Experiments

All of the experimental treatment conditions were set up in duplicate in air-tight, 2 L plastic containers with Teflon®-lined lids. Duplicate soil samples were taken and immediately analyzed at the beginning of the experiment to establish baseline concentrations of the 13 priority pollutant metals on soil. Each sample was prepared with 1000 g of contaminated soil and 1500 mL of purified laboratory water. For the control samples, 1500 mL of purified lab water was the only additive in the reaction vessel. For the treatment experiments, a single RegenOx loading of 0.74% w/w versus soil of total RegenOx were used with a 1:1 ratio of part A to part B. In addition to the RegenOx, each treated reaction vessel was also dosed with 0.33% w/w versus soil of hydrogen peroxide, H_2O_2. Details of the experimental setup are listed in Table 2. All reactors were sealed and stored at room temperature (approximately 20 ^{o}C) for an incubation period of 7 days.

The supernatant water was sampled and filtered through a 0.45µm syringe filter prior to sending out for analysis. All laboratory equipment used was composed of plastic in order to avoid metals contamination from laboratory borosilicate glass. Metals levels in soil were determined by EPA method 6010B and EPA method 7471A for mercury. Dissolved metals levels in water were quantified using EPA method 6020 and EPA method 7470A for mercury. All analyses were performed by a third-party analytical lab, TestAmerica in Irvine, CA.

RESULTS AND DISCUSSION

For each experimental condition, results are reported as averages of duplicate reactors. Analytical results were reported in concentrations of mg/kg (soil) or µg/L (water). The contaminant data are summarized in Tables 3, 4 & 5. Total contaminant mass was also calculated and reported for each reaction vessel. Dichlorobenzene and trichlorobenzene data are reported as the sum of their isomers; 1,2-, 1,3-, and 1,4-dichlorobenzene and 1,2,3- and 1,2,4-, 1,3,5-trichlorobenzene. The baseline metals data were reported in concentrations on soil in mg/kg, and the final analyses for the control and treated samples were performed on the water phase to determine the amount of dissolved metals in µg/L.

VOC Results

At the conclusion of the 7-day treatment period, each reactor was opened and the soil and water were tested for monochlorobenzene (MCB), dichlorobenzenes (DCB) and trichlorobenzenes (TCB). For the purpose of performance evaluation, it is helpful to calculate the total mass of contaminant in a reactor including the water and soil phases. Duplicate analyses of baseline composite soil samples, resulted in total chlorobenzene mass levels of 5.8 mg MCB, 27 mg DCB and 27.1 mg TCB. All tabulated contaminant data and reductions can be found in Tables 3, 4 & 5. Illustrations of reductions can also be found in Figures 1, 2 & 3.

When sampling the aqueous layers of the treated reaction vessels, it was found that there was insufficient sample to fill the sample VOA vial completely. In order to prevent loss of contaminant through volatization, the vial was filled with laboratory DI water to the point at which zero headspace remained. All contaminant concentrations reported from Test America were re-calculated based upon the percentage of aqueous sample to yield the final reported concentrations in Tables 3, 4 & 5. Sample dilution data can be found in Table 6.

For the monochlorobenzene contaminant, control samples had a total mass of 3.2 mg and 2.7 mg at 7 and 14 days, respectively. The treated monochlorobenzene samples have 3.5 mg and 1.5 mg at 7 and 14 days, respectively. Though the RegenOx treated sample at 7 days did not show a difference compared with the control sample, the 14 day treated reaction vessel showed a 44% reduction in monochlorobenzene compared to the control. When data are compared to baseline results, a 73% reduction in monochlorobenzene was observed in the RegenOx treated samples.

For the dichlorobenzene contaminant, control samples had a total mass of 13.2 mg and 11.8 mg at 7 and 14 days, respectively. The treated dichlorobenzene samples have 14.5 mg and 9.4 mg at 7 and 14 days, respectively. Again, the RegenOx treated samples performed similarly to control samples at 7 days. At 14 days, analyses of the soil and groundwater show a 20% advantage of the RegenOx treated samples versus control. This translates to an overall reduction of 65% versus baseline concentrations of dichlorobenzene. It was observed that the water phase of the treated samples had less contaminant (approximately 45-50%) versus the control water samples. This speaks to the effectiveness of RegenOx to oxidize DCB in the groundwater.

For the trichlorobenzene reaction vessels, control samples had a total mass of 16.2 mg and 12.0 mg at 7 and 14 days, respectively. The treated trichlorobenzene samples have 15.2 mg and 12.9 mg at 7 and 14 days, respectively. Several factors could have contributed to the poor performance with trichlorobenzene. Inability to access the contaminant due to the dense compaction of the soil might have caused the lack of degradation. As with the DCB water phase results, the treated TCB reaction vessels contained 35-38% less contaminant in the water phase compared with controls.

Substantial reductions were shown after 14 days with both monochlorobenzene and dichlorobenzene. Degradation of trichlorobenzene is apparently slower and not resolved with only duplicate analyses at 14 days. This is presumably due to the lower chemical reactivity and water solubility that is expected for the more highly chlorinated aromatic compounds. Degradation of trichlorobenzenes might become evident if a higher number of replicates were run over a longer period of time. For mono- and dichlorobenzenes, the addition of a slow release oxygen source, such as ORC-Advanced, will provide further contaminant degradation for several months to several years by aerobic biodegradation.

Metals Results

After a 7-day incubation period, water samples from both the treated and control reaction vessels were collected and analyzed for dissolved metals. It was observed that there was a slight green-yellow tint to the water of the control containers. The RegenOx-treated samples had a high level of colloidal particulate material. The colloid-containing samples were difficult to filter through a syringe filter and a HPDE Buchner funnel equipped with 0.45µm filter paper. Under instructions from the project manager at TestAmerica, Irvine, samples were taken and sent “as-is” to the analytical lab, where they were able to filter the samples prior to running the ICP-MS methods.

The metals analyses results are reported in Table 7, several of the analytes concentrations in water were increased in the RegenOx-treated samples compared with controls. These data suggest that the oxidizing conditions generated by in-situ chemical oxidation can liberate small fractions of the soil-based metals into water. Although the dissolved metals represent a small fraction of the quantities in the site soil, the water concentrations exceed EPA MCLs for drinking water in the cases of mercury, arsenic, chromium, and lead. Hexavalent chromium was also detected in RegenOx-treated samples at the level of 1,500 µg/L. This elevated level may be a temporary spike in groundwater during a period of oxidizing conditions and elevated pH. Each reaction vessel was thoroughly mixed to obtain maximum contact with the soil. This increased contact might have yielded a higher amount of metals mobilization than would be observed in the pilot or full-scale field application.

CONCLUSIONS

This study provides evidence that the RegenOx ISCO technology has the potential for oxidative degradation of chlorobenzene at the Buffalo Colors site. Reductions of monochlorobenzene and dichlorobenzene concentrations show the ability of RegenOx to oxidize two of the main contaminants in the site. Persistence of trichlorobenzene could be due to difficulty desorbing TCB from soil, and it may take a longer time period than the scope of this study to observe significant destruction of TCB. Trichlorobenzene concentrations in water showed substantial reductions compared with controls at both 7 and 14 days. In the 14-day monochlorobenzene experiments, 44% more contaminant was degraded in the RegenOx reaction vessels over the control samples with lab water. The laboratory bench scale test is performed on short time scale, 14 days. RegenOx persists in the subsurface for up to 30 days and additional degradation of contaminants would be expected in a field application due to longer timeframe for chemical oxidation and additional biodegradation.

The soluble metals experiments showed that RegenOx-treated samples dissolved small fractions of the soil-bound metals into the slurry water. For example, mercury was detected in the water-treated sample at 470 µg/L. Although this is less than 0.3% of the theoretical mercury in that soil sample, the possibility of ISCO-related solubilization of mercury and other metals at the amounts of Table 7. should be considered in the context of site-specific requirements, regulations, and remediation plans.

The results from the bench scale testing suggest RegenOx can be considered as an effective technology to address chlorobenzene contamination present at the Buffalo Colors site. Addition of ORC-Advanced would also provide a steady source of oxygen to promote and sustain aerobic biodegradation of contaminants to further assist in achieving cleanup targets. The results of a previously performed Bio-Trap study (Regenesis/Microbial Insights, Report 025HA, March 2010) suggest that aerobic bioremediation of chlorobenzene will occur at the Buffalo Colors site. It was concluded from the report that the dyes reportedly present within the site do not inhibit aerobic degradation of chlorobenzene.

Table 1. Treatment descriptions for chlorobenzene oxidation in soil experiments

Treatment #	Soil, g	Purified Lab Water, mL	RegenOx Part A, %	RegenOx Part B, %	H_2O_2, %	RegenOx Part A, g	RegenOx Part B, g	H_2O_2, g	Sampling Time, days
B1 Baseline	-	-	0	0	0	0	0	0	0
B2 Baseline	-	-	0	0	0	0	0	0	0
C1.1 Control	250	125	0	0	0	0	0	0	7
C1.2 Control	250	125	0	0	0	0	0	0	7
T1.1 RegenOx	250	125	0.44	0.30	0.33	1.1	0.75	0.84	7
T1.2 RegenOx	250	125	0.44	0.30	0.33	1.1	0.75	0.84	7
C2.1 Control	250	125	0	0	0	0	0	0	14
C2.2 Control	250	125	0	0	0	0	0	0	14
T2.1 RegenOx	250	125	0.44	0.30	0.33	1.1	0.75	0.84	14
T2.2 RegenOx	250	125	0.44	0.30	0.33	1.1	0.75	0.84	14

Table 2. Treatment descriptions for metals experiments

Treatment #	Soil, g	Purified Lab Water, mL	RegenOx Part A, %	RegenOx Part B, %	H_2O_2, %	RegenOx Part A, g	RegenOx Part A, g	H_2O_2, g	Sampling Time, days
B1 Baseline	-	-	0	0	0	0	0	0	0
B2 Baseline	-	-	0	0	0	0	0	0	0
C1.1 Control	1000	1500	0	0	0	0	0	0	7
C1.2 Control	1000	1500	0	0	0	0	0	0	7
T1.1 RegenOx	1000	1500	0.44	0.30	0.33	4.4	3.0	3.3	7
T1.2 RegenOx	1000	1500	0.44	0.30	0.33	4.4	3.0	3.3	7

Table 3. Monochlorobenzene(MCB) tabulated results and reductions

	soil mass (kg)	soil conc. (µg/kg)	mg MCB in soil	water volume (L)	water conc. (µg/L)	mg MCB in water	Total MCB mass (mg)
Baseline	0.25	23,000	5.75	0		0	5.8
Control 7 d	0.25	11,200	2.80	0.125	2,885	0.36	3.2
Treated 7 d	0.25	13,350	3.34	0.125	1,346	0.17	3.5
Control 14 d	0.25	10,700	2.68	0.125	370	0.05	2.7
Treated 14 d	0.25	5,700	1.43	0.125	800	0.10	1.5

Treatment #	Total MCB, mg	% Reduction vs. Control	% Reduction vs. Baseline
Baseline	5.8	-	-
Control 7d	3.2	-	45%
Treated 7d	3.5	-11%	39%
Control 14d	2.7	-	53%
Treated 14d	1.5	44%	73%

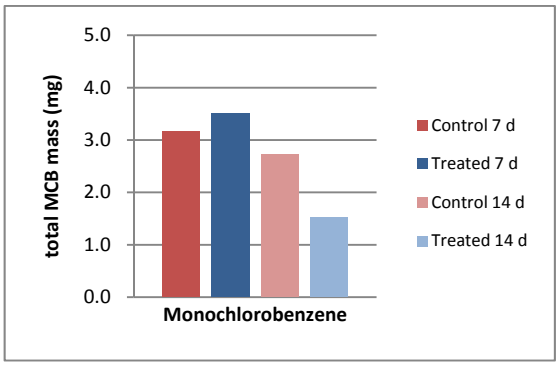


Figure 1. Graph of monochlorobenzene reduction with RegenOx.

Table 4. Dichlorobenzene(DCB) tabulated results and reductions

	soil mass (kg)	soil conc. (µg/kg)	mg DCB in soil	water volume (L)	water conc. (µg/L)	mg DCB in water	Total DCB mass (mg)
Baseline	0.25	107,800	26.95	0		0	27.0
Control 7 d	0.25	49,900	12.48	0.125	5,655	0.71	13.2
Treated 7 d	0.25	56,700	14.18	0.125	2,777	0.35	14.5
Control 14 d	0.25	45,350	11.34	0.125	3,800	0.48	11.8
Treated 14 d	0.25	36,600	9.15	0.125	2,179	0.27	9.4

Treatment #	Total DCB, mg	% Reduction vs. Control	% Reduction vs. Baseline
Baseline	27.0	-	-
Control 7d	13.2	-	51%
Treated 7d	14.5	-10%	46%
Control 14d	11.8	-	56%
Treated 14d	9.4	20%	65%

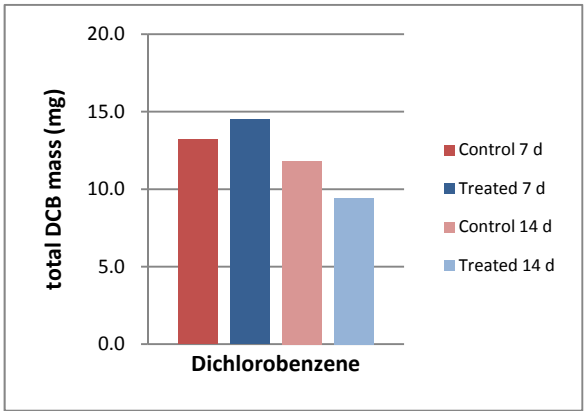


Figure 2. Graph of dichlorobenzene reduction with RegenOx.

Table 5. Trichlorobenzene(TCB) tabulated results and reductions

	soil mass (kg)	soil conc (µg/kg)	mg TCB in soil	water volume (L)	water conc (µg/L)	mg TCB in water	Total TCB mass (mg)
Baseline	0.25	108,300	27.08	0		0	27.1
Control 7 d	0.25	64,250	16.06	0.125	1,350	0.169	16.2
Treated 7 d	0.25	60,270	15.07	0.125	831	0.104	15.2
Control 14 d	0.25	47,150	11.79	0.125	1,499	0.187	12.0
Treated 14 d	0.25	51,100	12.78	0.125	893	0.112	12.9

Treatment #	Total BTEX, mg	% Reduction vs. Control	% Reduction vs. Baseline
Baseline	27.1	-	-
Control 7d	16.2	-	40%
Treated 7d	15.2	7%	44%
Control 14d	12.0	-	56%
Treated 14d	12.9	-8%	52%

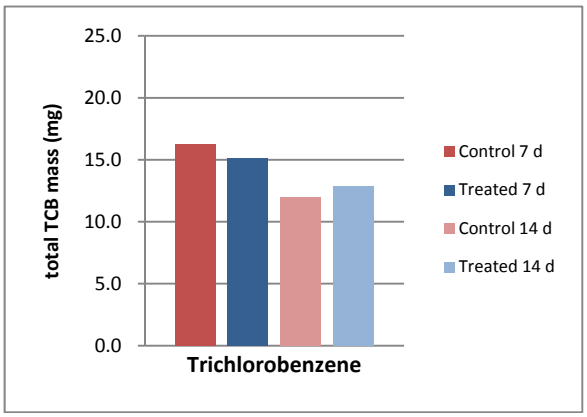


Figure 3. Graph of trichlorobenzene reduction with RegenOx.

Table 6. VOC sampling dilutions for treated reaction vessels

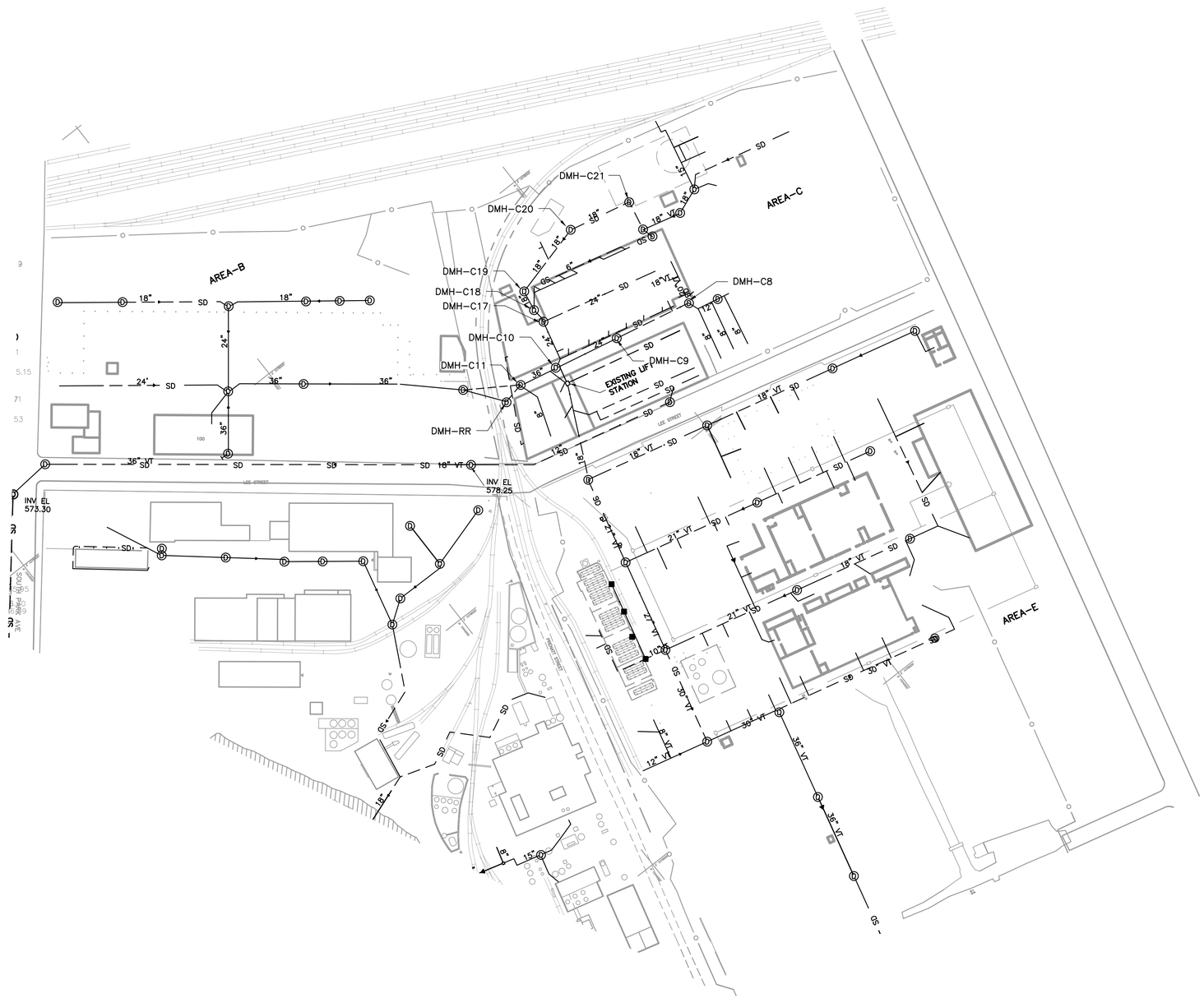
Treatment #	Incubation Time (days)	Aqueous Sample (g)	DI water (g)	% Aqueous Sample
Treated 7d (T1.1)	7	25.35	15.88	61%
Treated 7d (T1.2)	7	23.60	17.80	57%
Treated 14d (T2.1)	14	30.74	11.04	74%
Treated 14d (T2.2)	14	16.05	25.35	39%

Table 7. Priority Pollutant Metals Data

	Baseline conc. in soil (mg/kg)	Metals conc. in water - control (µg/L)	Metals conc. in water - treated (µg/L)
Mercury	263.5	2.75	470
Antimony	<9.9	<2	<20
Arsenic	9.3	1.2	94.5
Beryllium	0.62	<0.5	<5
Cadmium	<0.5	<1	<10
Chromium	47	<2	1,650
Copper	83	5.3	1,050
Lead	39.5	1.5	350
Nickel	24.5	<2	110
Selenium	<2	<2	<20
Silver	<0.99	<1	<10
Thallium	<9.9	<1	<10
Zinc	127.5	<20	935
Chromium VI	<1	<2	1,550

APPENDIX P (CD)

STORM SEWER CCTV REPORTS



LEGEND

DMH-C19 — DRAINAGE STRUCTURE

SOURCES AND NOTES:

1. TOPOGRAPHIC FIELD SURVEY OF AREAS A, B, C, AND E COMPLETED MARCH 2010 BY NIAGARA BOUNDARY & MAPPING SERVICES, 2475 MILITARY ROAD, NIAGARA FALLS, NY 14304.
2. LIMITED LOCATION AND TOPOGRAPHIC FIELD SURVEY OF AREA A AND AREA E COMPLETED BY LU ENGINEERS IN JULY 2005.
3. KNOWN UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN ON THE DRAWINGS. THE LOCATION OF THESE EXISTING UNDERGROUND UTILITIES AND STRUCTURES SHOULD BE CONSIDERED APPROXIMATE.

0 50 100 200
SCALE IN FEET

Prepared/Date: RJR 12/06/10
Checked/Date: KLS 12/06/10

STORM SEWER EVALUATION
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

MACTEC

AREA C
DRAINAGE STRUCTURES
Project 3410-09-0701
Figure 1

M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA C & E FIGURES\AREA C Drainage.dwg Mon, 06 Dec 2010 - 11:51am rjrhauler

#	STREET	FT	MH	~	MH	VCR #
1		142.1	a-2	<--	a-1	00:00:00
2		151.05	a-2	-->	a-3	00:00:00
3		159.65	a-3	-->	a-4	00:00:00
4		121.6	a-4	-->	a-5	00:00:00
5		112.95	A-8	<--	A-7	00:00:00
6		61.9	A-7	<--	A-6	00:00:00
7		39	A-8	-->	A-9	00:00:00
8		63.8	A-9	<--	A-8	00:00:00
9		112.95	A-9	-->	outfall 011	00:00:00
10		229.3	A-3	<--	A3A	00:00:00
11		20	A3A	<--	A3B	00:00:00
12		41.05	C-1	<--	C-2	00:00:00
13		14.25	C-2	<--	C-3	00:00:00
14		45.2	C-1	<--	C-1A	00:00:00
15		6.65	C-1	<--	C-1C	00:00:00
16		1.05	C-1	-->	lift station	00:00:00

CONTRACTOR



NAME: NATIONAL VACUUM CORPORATION
RESPONSIBLE: Roger Letendre
DEPARTMENT: NATIONAL VACUUM CORPORATION
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TELEPHONE: 18667731167
FAX:
MOBILE:
E-MAIL: NATIONALVACUUM.COM

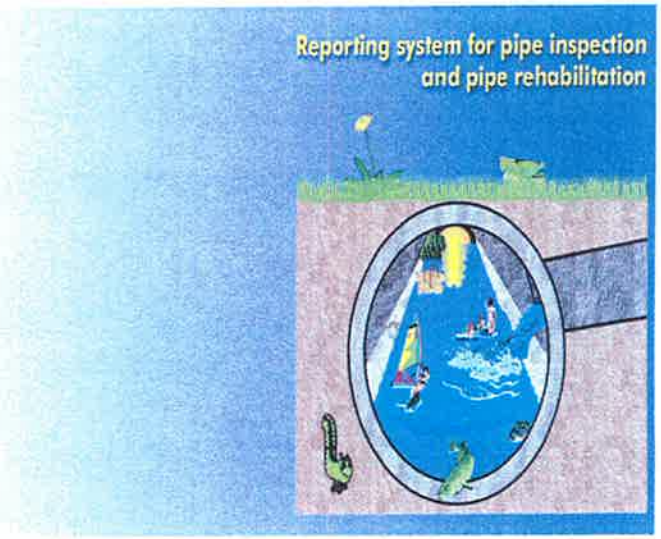
CITY: Buffalo NY
PROJ NAME: Buffalo Color (Honeywell)
INSPECT REASON: gen. condition control
DATE: 03/18/2010
PROJECT NUM:
TAPE #: 01

CLIENT

NAME: **Buffalo Color (honeywell)**
RESPONSIBLE:
DEPARTMENT:
PO BOX:
STREET:
CITY, ST ZIP:
TELEPHONE:
FAX:
MOBILE:
E-MAIL:

PROJ MGR

NAME:
RESPONSIBLE:
DEPARTMENT:
PO BOX:
STREET:
CITY, ST ZIP:
TELEPHONE:
FAX:
MOBILE:
E-MAIL:



NATIONAL VACUUM CORPORATION
Niagara Falls NY
Tel: 18667731167, Fax:

PROJ INFO

PROJ NAME:	PROJECT NUM:	RESPONSIBLE:	DATE:
Buffalo Color (Honeywell)			03/18/2010

CLIENT	**Buffalo Color (honeywell)**
RESPONSIBLE:	
DEPARTMENT:	
PO BOX:	
STREET:	
CITY, ST ZIP:	
TELEPHONE:	
FAX:	
MOBILE:	
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PROJ MGR	
RESPONSIBLE:	
DEPARTMENT:	
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STREET:	
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NATIONAL VACUUM CORPORATION
Niagara Falls NY
Tel: 18667731167, Fax:

RATING LEGEND

PROJ NAME:	PROJECT NUM:	RESPONSIBLE:	DATE:
Buffalo Color (Honeywell)			03/18/2010

1: Occurances without damage: for example, laterals, joints etc.

NO DEFECTS WERE DETECTED.

2: Constructional deficiencies or occurances with insignificant influence to tightness, hydraulic or static pressure of pipe: f.e. wide joints, badly torched intakes, minor deformation of plastic pipes, minor erosions etc.

REHABILITATION CAN BE SCHEDULED LONG-TERM.

3: Constructional deficiencies diminishing static, hydraulic and tightness: f.e. open joints, untorched intakes, cracks, minor drainage obstructions such as calcide build ups, protruding laterals, minor damages to pipe wall, individual root penetrations, corroded pipe walls etc.

REHABILITATION IS NECESSARY MEDIUM-TERM WITHIN 3 TO 5 YEARS.

4: Constructional damages with nonsufficient static safety, hydraulic or tightness: f.e. axial/radial pipebursts, pipe deformations, visually noticeable infiltration/exfiltration, cavities in pipe-wall, severe protruding, laterals severe root penetrations, severe corrosion of pipe wall etc.

REHABILITATION PROCEDURE IS URGENT AND HAS TO BE COMPLETED WITHIN 1 TO 2 YEARS. NECESSITY FOR EMERCENCY OPERATIONS HAS TO BE EXAMINED.

5: Pipe is already or will shortly be impermeable: f.e. collapsed pipe, deeply rooted pipe or other drainage obstructions. Pipe loses water or danger of backwater in basements etc.

REHABILITATION IS URGENT AND SHORT-TERM. IN ORDER TO PREVENT FURTHER DAMAGE, NECESSARY TEMPORARY SPOT REPAIR HAS TO BE CONDUCTED ON EMERGENCY LEVEL.

NATIONAL VACUUM CORPORATION
Niagara Falls NY
Tel: 18667731167, Fax:

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	1	STORM DRAIN
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	900

STREET:		MAP #1:		MH:	a-2
CITY:	Buffalo NY	MAP #2:		MH:	a-1
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	142.1 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	21
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:



1:350 POSITION	CODE	OBSERVATION	RATE
0.00	0	inspection begins at downstream manhole	0
20.95	0	service connection, at 02 o´clock	0
27.35	130	encrustation at joint, from 09 to 03 o´clock light	1
73.35	0	service connection, at 10 o´clock	0
111.90	0	Longitudinal Crack, at 11 o´clock	2
119.55	150	offset joint, slight	1
142.10	0	inspection ends at upstream manhole	0


3.05 FT // 00:00:00


20.95 FT // 00:00:00


27.35 FT // 00:00:00


73.35 FT // 00:00:00


91.75 FT // 00:00:00

NATIONAL VACUUM CORPORATION
Niagara Falls NY
Tel: 18667731167, Fax:

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	1	STORM DRAIN

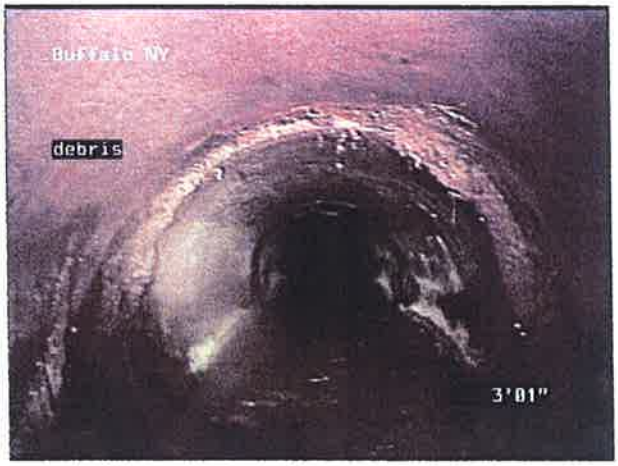


IMAGE: 2a, TAPE #: 01, 00:00:00
3.05FT, debris



IMAGE: 3a, TAPE #: 01, 00:00:00
20.95FT, service connection, at 02 o´clock

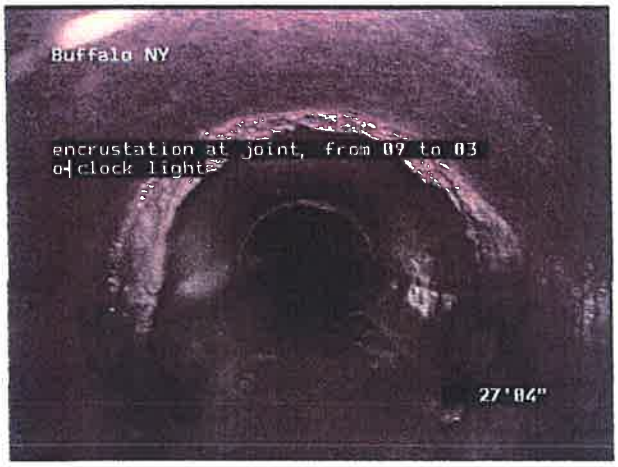


IMAGE: 4a, TAPE #: 01, 00:00:00
27.35FT, encrustation at joint, from 09 to 03 o´clock light



IMAGE: 5a, TAPE #: 01, 00:00:00
73.35FT, service connection, at 10 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	1	STORM DRAIN



IMAGE: 6a, TAPE #: 01, 00:00:00
91.75FT, debris (Brick)



IMAGE: 7a, TAPE #: 01, 00:00:00
111.9FT, Longitudinal Crack, at 11 o´clock



IMAGE: 8a, TAPE #: 01, 00:00:00
119.55FT, offset joint, slight



IMAGE: 9a, TAPE #: 01, 00:00:00
142.1FT, inspection ends at upstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	2	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	1585

STREET:		MAP #1:		MH:	a-2
CITY:	Buffalo NY	MAP #2:		MH:	a-3
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	151.05 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	27
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:



1:375 POSITION	CODE	OBSERVATION	RATE
a-2 0.00	0	inspection begins at upstream manhole	0
24.25	0	service connection, at 10 o´clock	0
53.35	130	encrustation at joint, from 04 to 08 o´clock light	1
79.05	0	service connection, at 11 o´clock	0
84.60	0	service connection, at 09 o´clock	0
136.65	0	service connection, at 11 o´clock	0
136.65	175	service connection with infiltration dripping inside, at 11 o´clock	1
138.55	0	service connection, at 09 o´clock	0
a-3 151.05	0	inspection ends at downstream manhole	0



0.85 FT // 00:00:00



24.25 FT // 00:00:00



53.35 FT // 00:00:00



79.05 FT // 00:00:00



79.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	2	



IMAGE: 11a, TAPE #: 01, 00:00:00
0.85FT, debris



IMAGE: 12a, TAPE #: 01, 00:00:00
24.25FT, service connection, at 10 o´clock



IMAGE: 13a, TAPE #: 01, 00:00:00
53.35FT, encrustation at joint, from 04 to 08 o´clock light



IMAGE: 14a, TAPE #: 01, 00:00:00
79.05FT, service connection, at 11 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	2	



IMAGE: 15a, TAPE #: 01, 00:00:00
79.05FT, Infiltration Dripping at 11 o´clock



IMAGE: 16a, TAPE #: 01, 00:00:00
79.05FT, debris



IMAGE: 17a, TAPE #: 01, 00:00:00
84.6FT, service connection, at 09 o´clock



IMAGE: 18a, TAPE #: 01, 00:00:00
107.45FT, heavy debris

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	2	



IMAGE: 19a, TAPE #: 01, 00:00:00
136.65FT, service connection, at 11 o´clock



IMAGE: 20a, TAPE #: 01, 00:00:00
136.65FT, service connection with infiltration dripping inside, at 11 o´clock



IMAGE: 21a, TAPE #: 01, 00:00:00
138.55FT, service connection, at 09 o´clock

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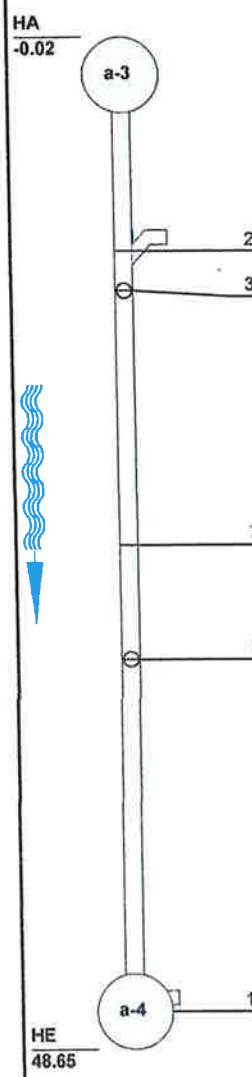
INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	3	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	295

STREET:		MAP #1:		MH:	a-3
CITY:	Buffalo NY	MAP #2:		MH:	a-4
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	159.65 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	30
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:



1:350 POSITION	CODE	OBSERVATION	RATE
26.70	0	service connection, at 10 o´clock	0
32.75	0	service connection, at 11 o´clock	0
71.30	120	Infiltration Dripping at joint at 11 o´clock	1
88.60	175	service connection with infiltration dripping inside, at 11 o´clock	1
142.05	0	service connection, at 10 o´clock	0


26.7 FT // 00:00:00


32.75 FT // 00:00:00


71.3 FT // 00:00:00


88.6 FT // 00:00:00


142.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	3	



IMAGE: 24a, TAPE #: 01, 00:00:00
26.7FT, service connection, at 10 o´clock



IMAGE: 25a, TAPE #: 01, 00:00:00
32.75FT, service connection, at 11 o´clock



IMAGE: 26a, TAPE #: 01, 00:00:00
71.3FT, Infiltration Dripping at joint at 11 o´clock



IMAGE: 27a, TAPE #: 01, 00:00:00
88.6FT, service connection with infiltration dripping inside, at 11 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	3	



IMAGE: 28a, TAPE #: 01, 00:00:00
142.05FT, service connection, at 10 o´clock



IMAGE: 29a, TAPE #: 01, 00:00:00
159.6FT, inspection ends at downstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	4	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
	ROVER 900	MAIN LINE		No	425

STREET:		MAP #1:		MH:	a-4
CITY:	Buffalo NY	MAP #2:		MH:	a-5
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	121.6 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	30
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:



1:300 POSITION	CODE	OBSERVATION	RATE
a-4 0.00	0	inspection begins at upstream manhole	0
4.05	130	encrustation at joint, from 09 to 03 o´clock light	1
32.85	0	service connection, at 09 o´clock	0
50.35	120	Infiltration Dripping at joint at 12 o´clock	1
57.40	0	service connection, at 02 o´clock	0
75.95	0	service connection, at 09 o´clock	0
90.90	0	service connection, at 03 o´clock	0
102.35	0	service connection, at 12 o´clock	0
111.20	175	service connection with infiltration dripping inside, at 12 o´clock	1
115.45	0	service connection, at 09 o´clock	0
a-5 121.60	0	inspection ends at downstream manhole	0


4.05 FT // 00:00:00


32.85 FT // 00:00:00


50.35 FT // 00:00:00


57.4 FT // 00:00:00


75.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	4	

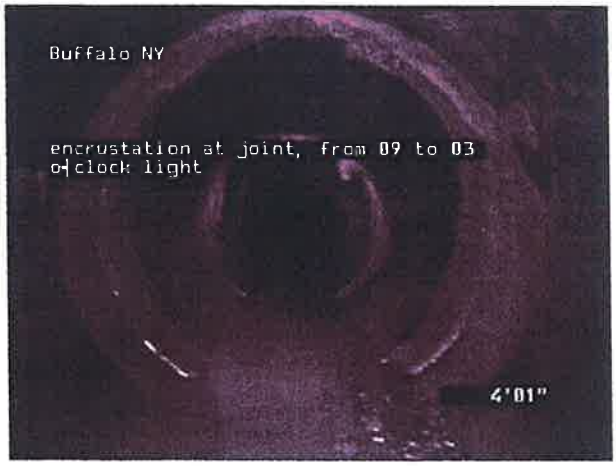


IMAGE: 31a, TAPE #: 01, 00:00:00
4.05FT, encrustation at joint, from 09 to 03 o´clock light



IMAGE: 32a, TAPE #: 01, 00:00:00
32.85FT, service connection, at 09 o´clock



IMAGE: 33a, TAPE #: 01, 00:00:00
50.35FT, Infiltration Dripping at joint at 12 o´clock



IMAGE: 34a, TAPE #: 01, 00:00:00
57.4FT, service connection, at 02 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	4	



IMAGE: 35a, TAPE #: 01, 00:00:00
75.95FT, service connection, at 09 o´clock



IMAGE: 36a, TAPE #: 01, 00:00:00
90.9FT, service connection, at 03 o´clock



IMAGE: 37a, TAPE #: 01, 00:00:00
102.35FT, service connection, at 12 o´clock



IMAGE: 38a, TAPE #: 01, 00:00:00
111.2FT, service connection with infiltration dripping inside, at 12 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	4	



IMAGE: 39a, TAPE #: 01, 00:00:00
115.45FT, service connection, at 09 o´clock

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	5	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	930

STREET:		MAP #1:		MH:	A-8
CITY:	Buffalo NY	MAP #2:		MH:	A-7
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	112.95 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
A-8	0.00	0	inspection begins at downstream manhole	0
A-7	112.95	0	inspection ends at upstream manhole	0



95.35 FT // 00:00:00


112.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	5	



IMAGE: 44a, TAPE #: 01, 00:00:00
95.35FT, debris

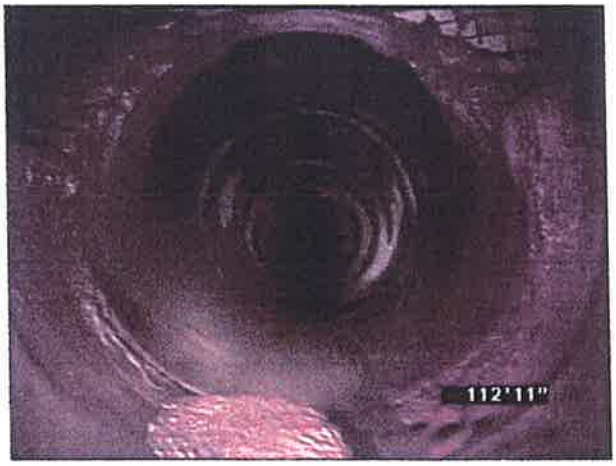


IMAGE: 45a, TAPE #: 01, 00:00:00
112.95FT, inspection ends at upstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		**sunny, dry**	**J Heeb**	**6**	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	**MAIN LINE**		**No**	**0**

STREET:		MAP #1:		MH:	**A-7**
CITY:	**Buffalo NY**	MAP #2:		MH:	**A-6**
LOCALE:	**Old Building Lot**	TAPE #:	**01**	TV'D LGTH:	**61.9 ft**

INSPECT REASON:	**gen. condition control**	PIPE SIZE:	**36"**
SECTION TYPE:	**storm water**	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:

1:175	POSITION	CODE	OBSERVATION	RATE
A-7	1.30	0	inspection begins at downstream manhole	0
A-6	61.90	0	inspection ends at upstream manhole	0



61.9 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	6	

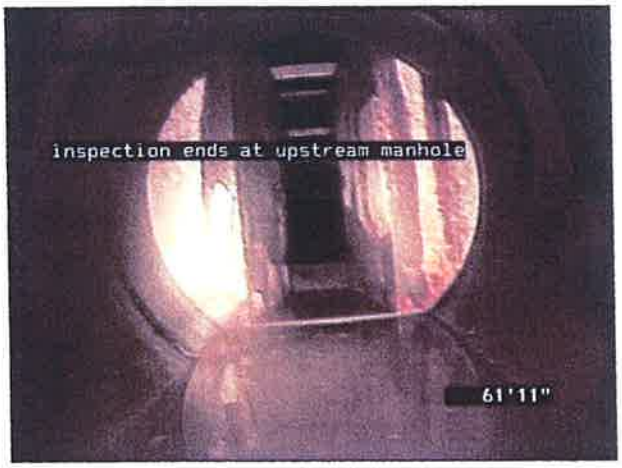


IMAGE: 47a, TAPE #: 01, 00:00:00
61.9FT, inspection ends at upstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	7	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	310

STREET:		MAP #1:		MH:	A-8
CITY:	Buffalo NY	MAP #2:		MH:	A-9
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	39 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:

1:100	POSITION	CODE	OBSERVATION	RATE
A-8	0.00	0	inspection begins at upstream manhole	0
	39.00	0	camera blocked, inspection abandoned	0



38.9 FT // 00:00:00



39 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	7	



IMAGE: 49a, TAPE #: 01, 00:00:00
38.9FT, Debris, at 06 o´clock



IMAGE: 50a, TAPE #: 01, 00:00:00
39FT, camera blocked, inspection abandoned

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		**sunny, dry**	**J Heeb**	**8**	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	**MAIN LINE**		**No**	**0**

STREET:		MAP #1:		MH:	**A-9**
CITY:	**Buffalo NY**	MAP #2:		MH:	**A-8**
LOCALE:	**Old Building Lot**	TAPE #:	**01**	TV'D LGTH:	**57.8 ft**

INSPECT REASON:	**gen. condition control**	PIPE SIZE:	**36"**
SECTION TYPE:	**storm water**	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:

1:150 POSITION	CODE	OBSERVATION	RATE
A-9 0.00	0	inspection begins at downstream manhole	0
57.80	0	camera blocked, inspection abandoned	0



57.8 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**03/19/2010**	**8**	



IMAGE: 52a, TAPE #: 01, 00:00:00
57.8FT, camera blocked, inspection abandoned

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	9	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	810

STREET:		MAP #1:		MH:	A-9
CITY:	Buffalo NY	MAP #2:		MH:	outfall 011
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	112.95 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	42"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
A-9	0.00	0	inspection begins at upstream manhole	0
	107.95		submersible pump in line	
	112.95	0	inspection abandoned pump (blocking foward progress)	0


15.05 FT // 00:00:00


49.3 FT // 00:00:00


107.95 FT //


112.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	9	

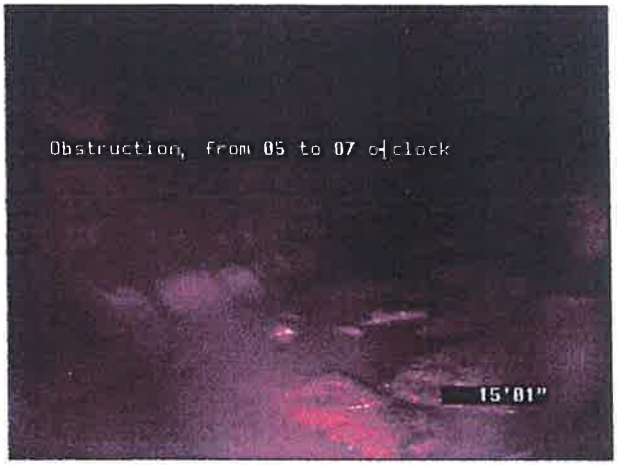


IMAGE: 57a, TAPE #: 01, 00:00:00
15.05FT, Obstruction, from 05 to 07 o´clock



IMAGE: 56a, TAPE #: 01, 00:00:00
49.3FT, Debris, at 06 o´clock

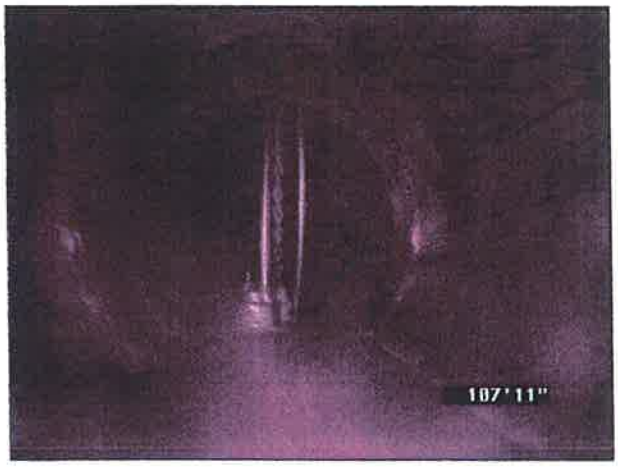


IMAGE: 54a, TAPE #: 01
107.95FT, submersible pump in line



IMAGE: 55a, TAPE #: 01, 00:00:00
112.95FT, inspection abandoned pump (blocking foward progress)

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	10	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	630

STREET:		MAP #1:		MH:	A-3
CITY:	Buffalo NY	MAP #2:		MH:	A3A
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	229.3 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	20"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:



1:575 POSITION	CODE	OBSERVATION	RATE
A-3 0.00	0	inspection begins at downstream manhole	0
32.65	0	service connection, at 09 o´clock	0
46.05	0	service connection, at 03 o´clock	0
51.35	160	break-in-connection, at 11 o´clock	1
53.85	0	service connection, at 03 o´clock	0
73.30	0	service connection, at 09 o´clock	0
94.15	0	service connection, at 03 o´clock	0
114.00	0	service connection, at 02 o´clock	0
114.90	0	service connection, at 09 o´clock	0
133.45	0	service connection, at 03 o´clock	0
146.85	0	service connection, at 02 o´clock	0
155.10	0	service connection, at 09 o´clock	0
[illegible]	[illegible]	[illegible]	3
173.20	0	service connection, at 03 o´clock	0
195.20	0	service connection, at 09 o´clock	0
203.40	160	break-in-connection, at 10 o´clock	1
216.70	0	service connection, at 03 o´clock	0
A3A 229.30	0	inspection ends at upstream manhole	0


32.65 FT // 00:00:00


46.05 FT // 00:00:00


51.35 FT // 00:00:00


73.3 FT // 00:00:00


94.15 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	



IMAGE: 59a, TAPE #: 01, 00:00:00
32.65FT, service connection, at 09 o´clock



IMAGE: 60a, TAPE #: 01, 00:00:00
46.05FT, service connection, at 03 o´clock



IMAGE: 61a, TAPE #: 01, 00:00:00
51.35FT, break-in-connection, at 11 o´clock



IMAGE: 63a, TAPE #: 01, 00:00:00
73.3FT, service connection, at 09 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	

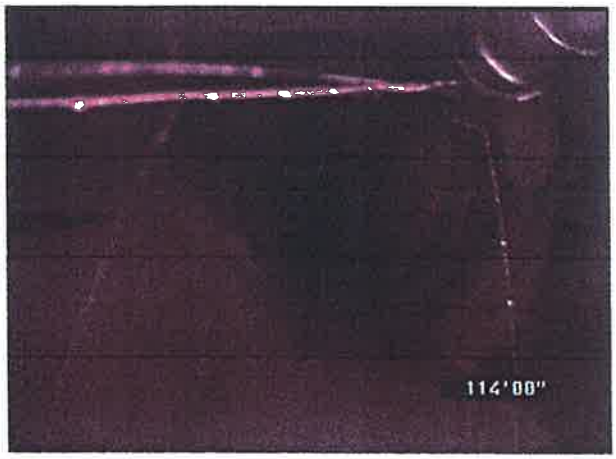


IMAGE: 64a, TAPE #: 01, 00:00:00
94.15FT, service connection, at 03 o´clock

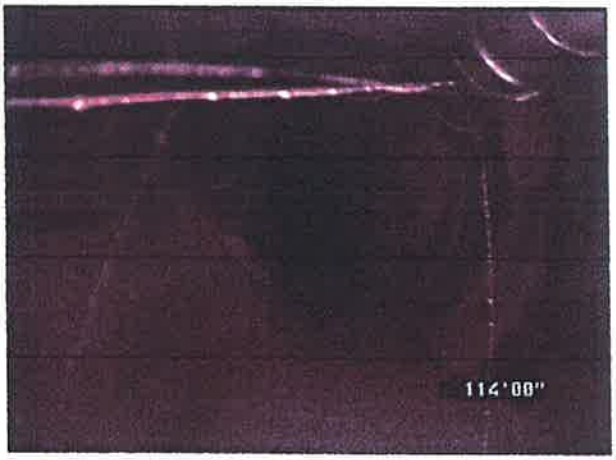


IMAGE: 65a, TAPE #: 01, 00:00:00
114FT, service connection, at 02 o´clock



IMAGE: 66a, TAPE #: 01, 00:00:00
114.9FT, service connection, at 09 o´clock



IMAGE: 67a, TAPE #: 01, 00:00:00
133.45FT, service connection, at 03 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	

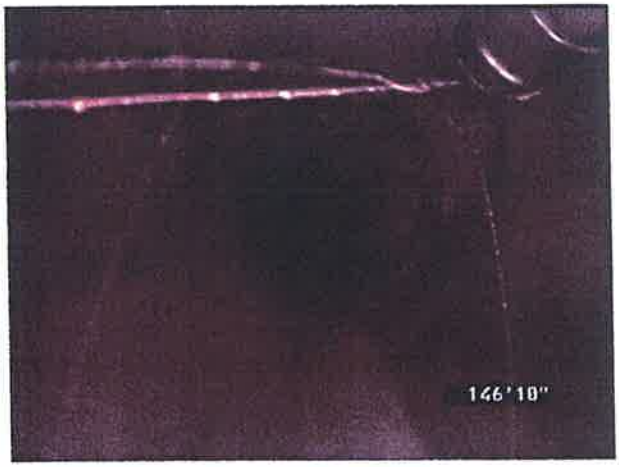


IMAGE: 68a, TAPE #: 01, 00:00:00
146.85FT, service connection, at 02 o´clock



IMAGE: 69a, TAPE #: 01, 00:00:00
155.1FT, service connection, at 09 o´clock



IMAGE: 70a, TAPE #: 01, 00:00:00
158FT, debris silt



IMAGE: 71a, TAPE #: 01, 00:00:00
173.2FT, service connection, at 03 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	



IMAGE: 72a, TAPE #: 01, 00:00:00
195.2FT, service connection, at 09 o´clock



IMAGE: 73a, TAPE #: 01, 00:00:00
203.4FT, break-in-connection, at 10 o´clock



IMAGE: 74a, TAPE #: 01, 00:00:00
216.7FT, service connection, at 03 o´clock

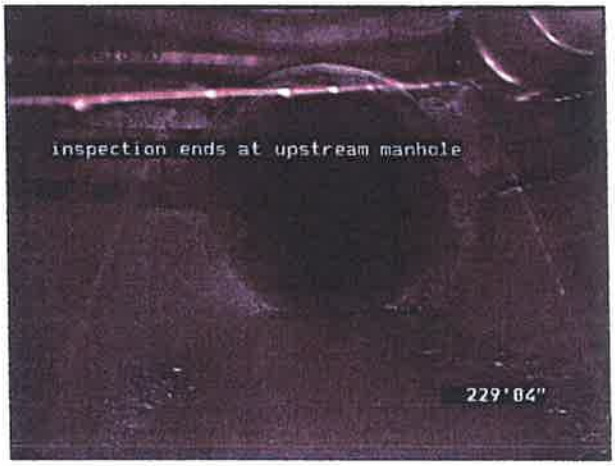


IMAGE: 75a, TAPE #: 01, 00:00:00
229.3FT, inspection ends at upstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	11	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	470

STREET:		MAP #1:		MH:	A3A
CITY:	Buffalo NY	MAP #2:		MH:	A3B
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	20 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:		LINING:	
		RSRVD:	

REMARK:

1:50	POSITION	CODE	OBSERVATION	RATE
A3A	0.00	0	inspection begins at downstream manhole	0
	18.20	160	break-in-connection, at 02 o´clock	1
	20.00	0	camera blocked, inspection abandoned	0


0 FT // 00:00:00


7.9 FT // 00:00:00


18.2 FT // 00:00:00


20 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	11	

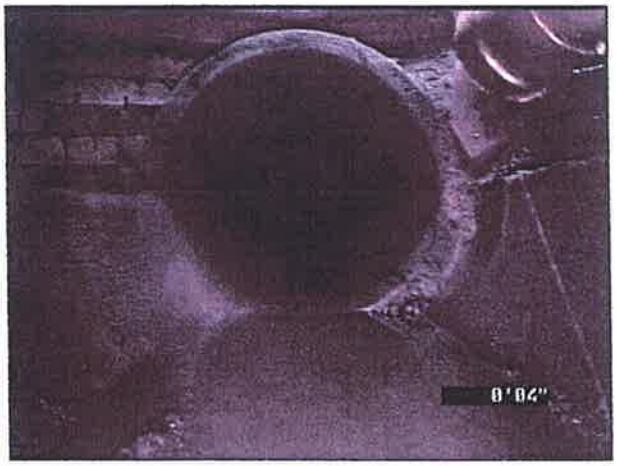


IMAGE: 76a, TAPE #: 01, 00:00:00
0FT, inspection begins at downstream manhole



IMAGE: 77a, TAPE #: 01, 00:00:00
7.9FT, debris silt



IMAGE: 78a, TAPE #: 01, 00:00:00
18.2FT, break-in-connection, at 02 o´clock



IMAGE: 79a, TAPE #: 01, 00:00:00
20FT, camera blocked, inspection abandoned

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/26/2010		sunny, dry	J Heeb	12	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	470

STREET:		MAP #1:		MH:	C-1
CITY:	Buffalo NY	MAP #2:		MH:	C-2
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	41.05 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:125	POSITION	CODE	OBSERVATION	RATE
C-1	0.05	0	inspection begins at downstream manhole	0
	9.60	160	break-in-connection, at 01 o´clock	1
C-2	41.05	0	inspection ends at upstream manhole	0



9.6 FT // 00:00:00



41.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**03/26/2010**	**12**	



IMAGE: 82a, TAPE #: 01, 00:00:00
9.6FT, break-in-connection, at 01 o´clock



IMAGE: 83a, TAPE #: 01, 00:00:00
41.05FT, inspection ends at upstream manhole

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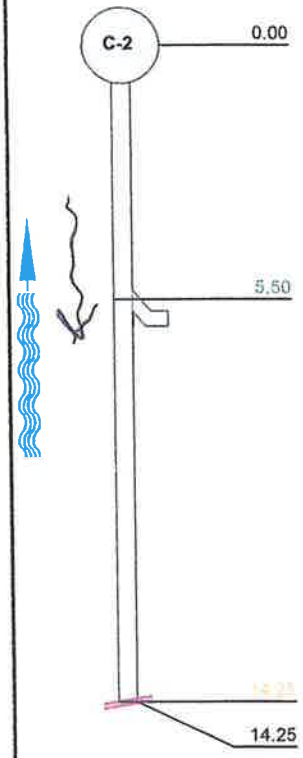
INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/26/2010		**sunny, dry**	**J Heeb**	**13**	
PRESENT:	VEHICLE: **ROVER 900**	CAMERA: **MAIN LINE**	PRESET:	CLEANED: **No**	RATE: **660**

STREET:		MAP #1:		MH:	**C-2**
CITY:	**Buffalo NY**	MAP #2:		MH:	**C-3**
LOCALE:	**Old Building Lot**	TAPE #:	**01**	TV'D LGTH:	**14.25 ft**

INSPECT REASON:	**gen. condition control**	PIPE SIZE:	**36"**
SECTION TYPE:	**storm water**	MATERIAL:	JT LGTH:
AREA:	**AREA-C**	LINING:	
		RSRVD:	

REMARK:



1:50 POSITION	CODE	OBSERVATION	RATE
0.00	0	inspection begins at upstream manhole	0
5.50	160	break-in-connection, at 10 o'clock	1
14.25	0	inspection abandoned	0


5.5 FT // 00:00:00


14.25 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/26/2010	13	



IMAGE: 85a, TAPE #: 01, 00:00:00
5.5FT, break-in-connection, at 10 o´clock



IMAGE: 87a, TAPE #: 01, 00:00:00
14.25FT, inspection abandoned

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/26/2010		sunny, dry	J Heeb	14	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
	ROVER 900	MAIN LINE		No	970

STREET:		MAP #1:		MH:	C-1
CITY:	Buffalo NY	MAP #2:		MH:	C-1A
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	45.2 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	24"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:125	POSITION	CODE	OBSERVATION	RATE
C-1	0.00	0	inspection begins at downstream manhole	0
	43.55	160	break-in-connection, at 01 o´clock	1
	45.20	0	inspection abandoned	0


4.2 FT // 00:00:00


33.65 FT // 00:00:00


39.75 FT // 00:00:00


43.55 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/26/2010	14	



IMAGE: 89a, TAPE #: 01, 00:00:00
4.2FT, Hole in pipe at 05 o´clock

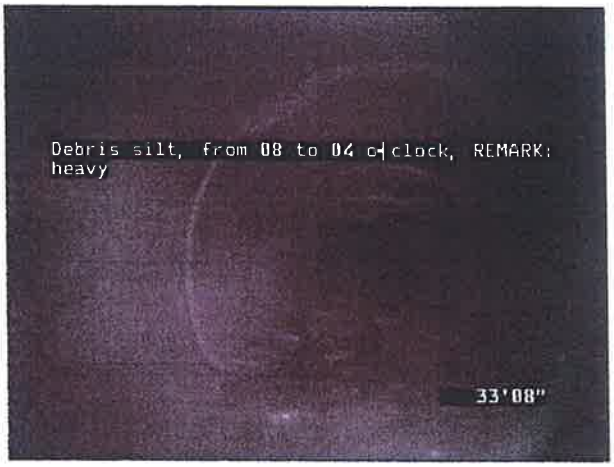


IMAGE: 90a, TAPE #: 01, 00:00:00
33.65FT, Debris silt, from 08 to 04 o´clock, REMARK: heavy



IMAGE: 92a, TAPE #: 01, 00:00:00
39.75FT, Obstruction, REMARK: heavy debris



IMAGE: 91a, TAPE #: 01, 00:00:00
43.55FT, break-in-connection, at 01 o´clock

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/26/2010		sunny, dry	J Heeb	15	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
	ROVER 900	MAIN LINE		No	720

STREET:		MAP #1:		MH:	C-1
CITY:	Buffalo NY	MAP #2:		MH:	C-1C
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	6.65 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	24"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:



1:25 POSITION	CODE	OBSERVATION	RATE
0.00	0	inspection begins at downstream manhole	0
3.75	160	break-in-connection, at 01 o'clock	1
4.95	0	Inspection abandoned (pipe bulkheaded off 3 feet ahead)	0


-1.7 FT // 00:00:00


0 FT // 00:00:00


3.75 FT // 00:00:00


3.75 FT // 00:00:00


4.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/26/2010	15	



IMAGE: 95a, TAPE #: 01, 00:00:00
-1.7FT, separated joint medium, from 10 to 02 o´clock



IMAGE: 94a, TAPE #: 01, 00:00:00
0FT, inspection begins at downstream manhole

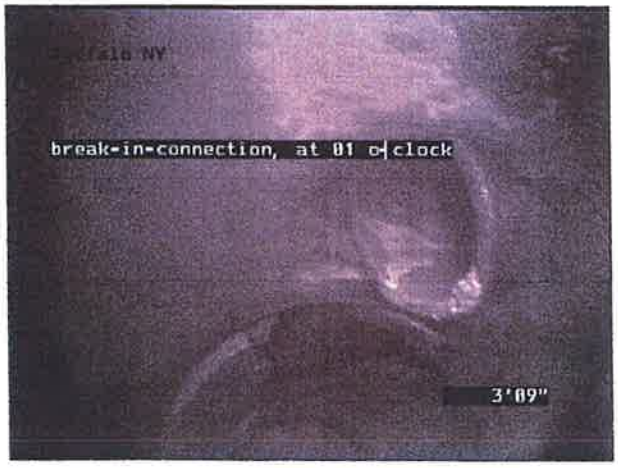


IMAGE: 96a, TAPE #: 01, 00:00:00
3.75FT, break-in-connection, at 01 o´clock

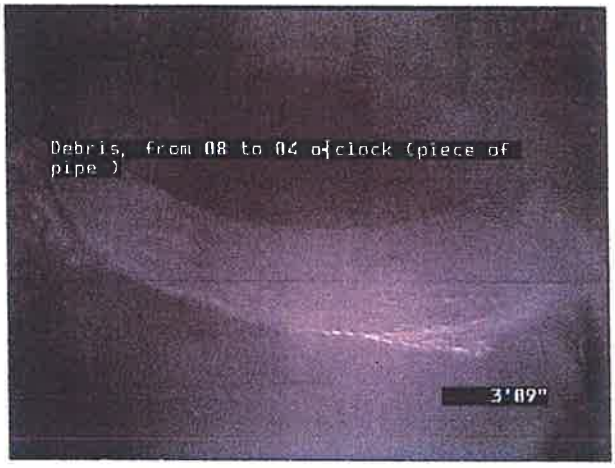


IMAGE: 97a, TAPE #: 01, 00:00:00
3.75FT, Debris, from 08 to 04 o´clock (piece of pipe)

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/26/2010	15	



IMAGE: 98a, TAPE #: 01, 00:00:00
4.95FT, Hole in pipe at 03 o'clock

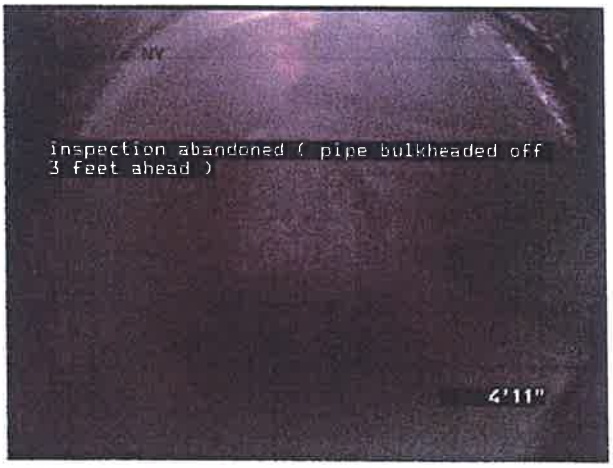


IMAGE: 99a, TAPE #: 01, 00:00:00
4.95FT, inspection abandoned (pipe bulkheaded off 3 feet ahead)

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INSPECTION REPORT

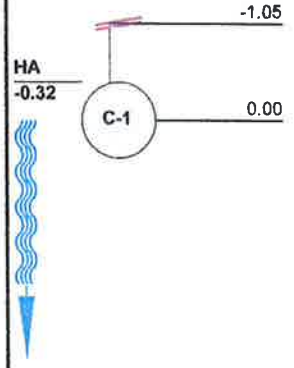
DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/26/2010		**sunny, dry**	**J Heeb**	**16**	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	**MAIN LINE**		**No**	**0**

STREET:		MAP #1:		MH:	**C-1**
CITY:	**Buffalo NY**	MAP #2:		MH:	**lift station**
LOCALE:	**Old Building Lot**	TAPE #:	**01**	TV'D LGTH:	**1.05 ft**

INSPECT REASON:	**gen. condition control**	PIPE SIZE:	**24"**
SECTION TYPE:	**storm water**	MATERIAL:	JT LGTH:
AREA:	**AREA-C**	LINING:	
		RSRVD:	

REMARK:

1:25 POSITION	CODE	OBSERVATION	RATE
-1.05	0	inspection abandoned (pipe lined with smaller pipe no foward progress)	0
0.00	0	inspection begins at upstream manhole	0





-1.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**03/26/2010**	**16**	

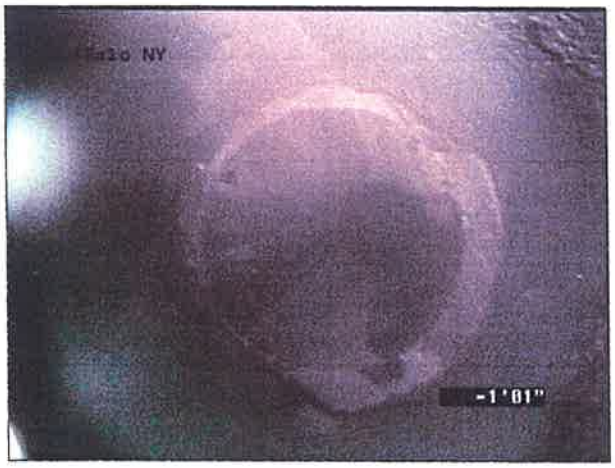


IMAGE: 102a, TAPE #: 01, 00:00:00
-1.05FT, inspection abandoned (pipe lined with smaller pipe no foward progress)

#	STREET	FT	MH	~	MH	VCR #
1		142.1	DMH-E16	<--	DMH-E7	00:00:00
2		151.05	DMH-E15	-->	DMH-E18	00:00:00
3		159.65	DMH-E18	-->	DMH-E21	00:00:00
4		121.6	DMH-E21	-->	DMH-E20	00:00:00
5		112.95	DMH-E30	<--	DMH-E29	00:00:00
6		61.9	DMH-E26	<--	DMH-E23	00:00:00
7		39	DMH-E30	-->	DMH-E31	00:00:00
8		63.8	DMH-E31	<--	DMH-E30	00:00:00
9		112.95	DMH-31	-->	PVS	00:00:00
10		229.3	DMH-E18	<--	DMH-E17	00:00:00
11		20	DMH-E17	<--	DMH-E16	00:00:00

DATE: 03/18/2010

PROJECT NUM: 3410-09-0701

TAPE #: 01

CONTRACTOR



NAME:	NATIONAL VACUUM CORPORATION
RESPONSIBLE:	Tim McInerney
DEPARTMENT:	NATIONAL VACUUM CORPORATION
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CITY, ST ZIP:	Niagara Falls NY 14304
TELEPHONE:	18667731167
FAX:	1-866-775-1213
MOBILE:	1-716-628-9400
E-MAIL:	NATIONALVACUUM.COM

CITY: Buffalo NY

PROJ NAME: AREA - E stormsewers

INSPECT REASON: gen. condition control

CLIENT

NAME:	Mactec Engineering & consulting Inc
RESPONSIBLE:	Karie Senus
DEPARTMENT:	Engineering
PO BOX:	
STREET:	511 Congress st
CITY, ST ZIP:	Portland, Maine 04101
TELEPHONE:	207-775-5401
FAX:	207-772-4762
MOBILE:	
E-MAIL:	KLSENUS@MACTEC.COM

PROJ MGR

NAME:	Mactec Engineering & Consulting Inc
RESPONSIBLE:	John Scrabis
DEPARTMENT:	
PO BOX:	
STREET:	
CITY, ST ZIP:	
TELEPHONE:	
FAX:	
MOBILE:	
E-MAIL:	



CCTV INSPECTION REPORT OF STORM SEWERS FOR MACTEC AT BUFFALO COLOR

STORM SEWER SEGMENT CONVERSION

INSPECTION REPORT SEGMENT DESCRIPTION (AS LISTED ON DVD)	MAP LOCATION SEGMENT DESCRIPTION	NOTES
Seg 1 / A1 to A2	DMH-E15 to DMH-E7	142.1'
Seg 2 / A2 to A3	DMH-E15 to DMH-E18	151.05'
Seg 3 / A3 to A4	DMH-E18 to DMH-E21	159.65'
Seg 4 / A4 to A5	DMH-E21 to DMH-E20	121.95'
Seg 10 / A3 to A3A	DMH-E30 to DMH-E26	229.3'
Seg 11 / A3A to A3B	DMH-E26 to DMH-E23	Inspection abandoned at 20' - Debris in line
Seg 5 / A8 to A7	DMH-E30 to DMH-E31	112'
Seg 6 / A7 to A6	DMH-E31 to DMH-E30	Inspection abandoned at 67' - Weir in line
Seg 7 / A8 to A9	DMH-E31 to PVS	Inspection abandoned at 39' - Debris in line
Seg 8 / A9 to A8	DMH-E18 to DMH-E17	Inspection abandoned at 63' - Debris in line
Seg 9 /A9 to Outfall	DMH-E17 to DMH-E16	Inspection abandoned at 110' - Submersible Pump in line
	Please Note	
	DMH-E20	Manhole is under Dirt Pile and access is not available
	DMH-E23	Manhole is under Dirt Pile and access is not available

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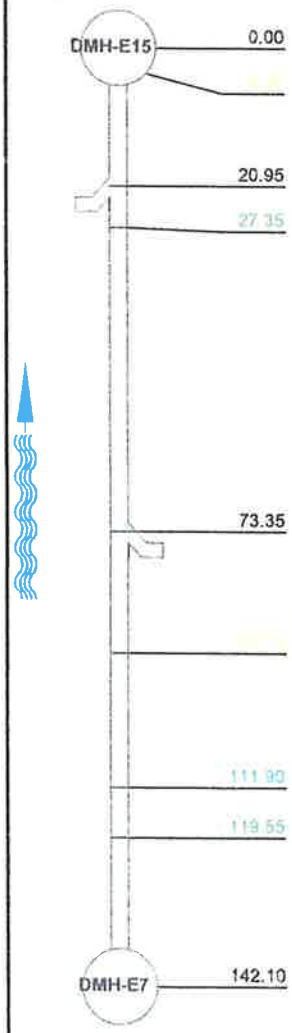
INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	1	STORM DRAIN
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	900

STREET:		MAP #1:		MH:	DMH-E15
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E7
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	142.1 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	21
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	area E	LINING:	
		RSRVD:	

REMARK:



1:350 POSITION	CODE	OBSERVATION	RATE	
0.00	0	inspection begins at downstream manhole	0	 3.05 FT // 00:00:00
20.95	0	service connection, at 02 o'clock	0	 20.95 FT // 00:00:00
27.35	130	encrustation at joint, from 09 to 03 o'clock light	1	
73.35	0	service connection, at 10 o'clock	0	 27.35 FT // 00:00:00
				 73.35 FT // 00:00:00
111.90	0	Longitudinal Crack, at 11 o'clock	2	
119.55	150	offset joint, slight	1	
142.10	0	inspection ends at upstream manhole	0	 91.75 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	1	STORM DRAIN

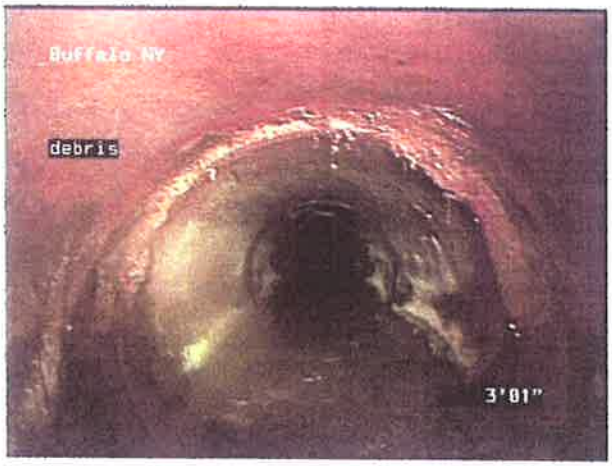


IMAGE: 2a, TAPE #: 01, 00:00:00
3.05FT, debris



IMAGE: 3a, TAPE #: 01, 00:00:00
20.95FT, service connection, at 02 o´clock

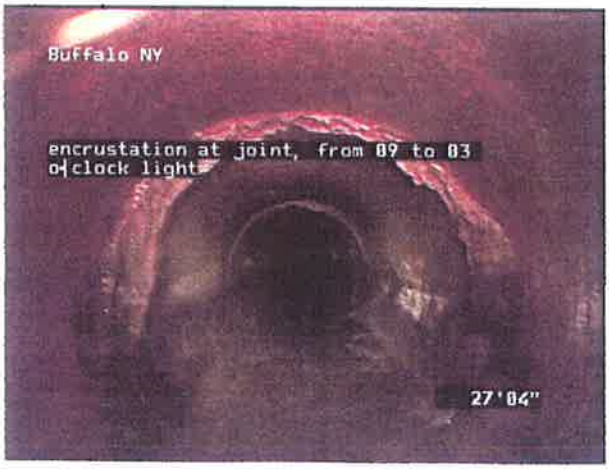


IMAGE: 4a, TAPE #: 01, 00:00:00
27.35FT, encrustation at joint, from 09 to 03 o´clock light



IMAGE: 5a, TAPE #: 01, 00:00:00
73.35FT, service connection, at 10 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	1	STORM DRAIN



IMAGE: 6a, TAPE #: 01, 00:00:00
91.75FT, debris (Brick)



IMAGE: 7a, TAPE #: 01, 00:00:00
111.9FT, Longitudinal Crack, at 11 o´clock

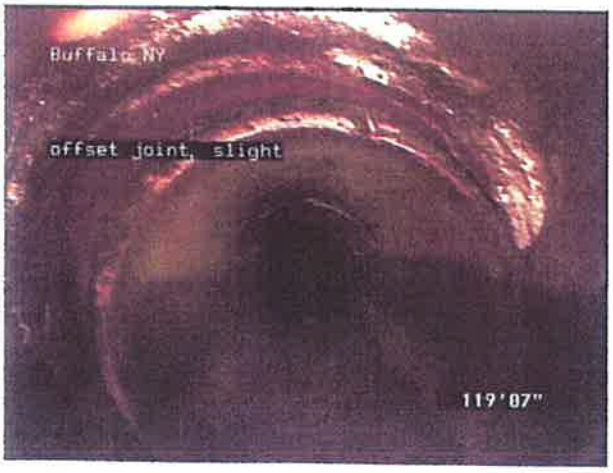


IMAGE: 8a, TAPE #: 01, 00:00:00
119.55FT, offset joint, slight



IMAGE: 9a, TAPE #: 01, 00:00:00
142.1FT, inspection ends at upstream manhole

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Niagara Falls NY
Tel 18667731167, Fax

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	2	
PRESENT	VEHICLE: ROVER 900	CAMERA: MAIN LINE	PRESET:	CLEANED: No	RATE: 1585

STREET:		MAP #1:		MH:	DMH-E15
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E18
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	151.05 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	27
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA.	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:375	POSITION	CODE	OBSERVATION	RATE
DMH-E15	0.00	0	inspection begins at upstream manhole	0
	24.25	0	service connection, at 10 o´clock	0
	53.35	130	encrustation at joint from 04 to 08 o clock light	1
	79.05	0	service connection, at 11 o´clock	0
	84.60	0	service connection, at 09 o´clock	0
	136.65	0	service connection, at 11 o´clock	0
	136.65	175	service connection with infiltration dripping inside at 11 o´clock	1
	138.55	0	service connection, at 09 o´clock	0
DMH-E18	151.05	0	inspection ends at downstream manhole	0


0.85 FT // 00:00:00


24.25 FT // 00:00:00


53.35 FT // 00:00:00


79.05 FT // 00:00:00


79.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	2	



IMAGE: 11a, TAPE #: 01, 00:00:00
0.85FT, debris



IMAGE: 12a, TAPE #: 01, 00:00:00
24.25FT, service connection, at 10 o´clock

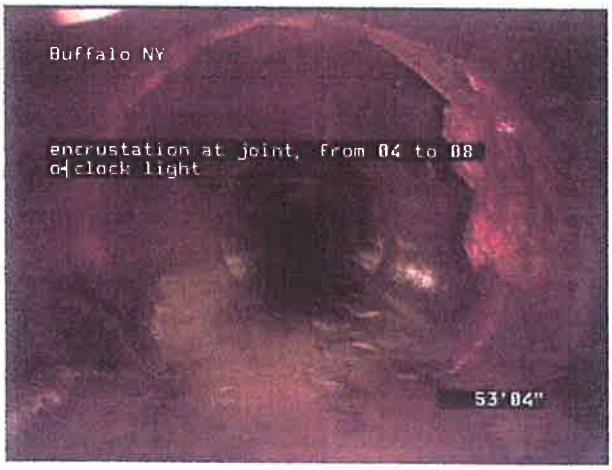


IMAGE: 13a, TAPE #: 01, 00:00:00
53.35FT, encrustation at joint, from 04 to 08 o´clock light



IMAGE: 14a, TAPE #: 01, 00:00:00
79.05FT, service connection, at 11 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	2	

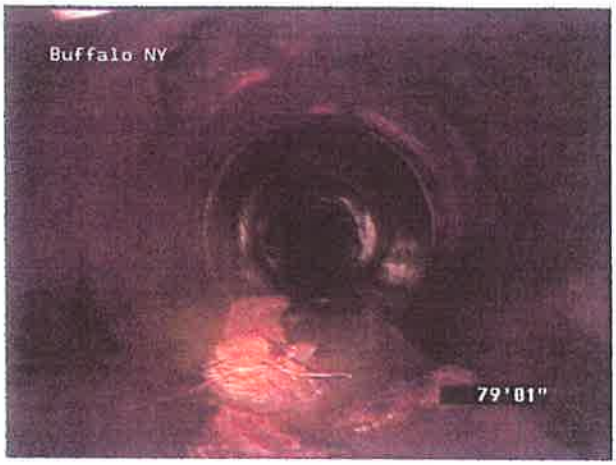


IMAGE: 15a, TAPE #: 01, 00:00:00
79.05FT, Infiltration Dripping at 11 o´clock

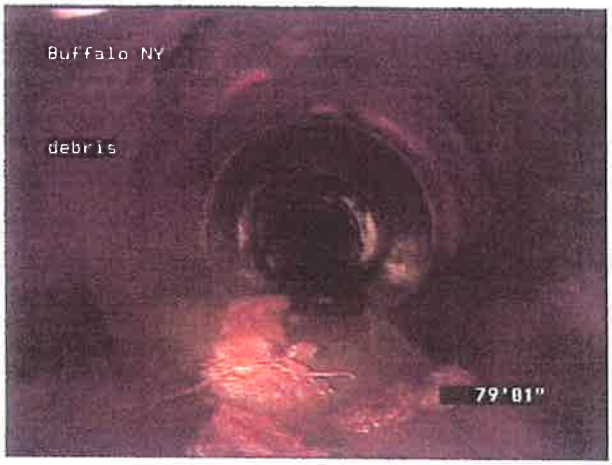


IMAGE: 16a, TAPE #: 01, 00:00:00
79.05FT, debris



IMAGE: 17a, TAPE #: 01, 00:00:00
84.6FT, service connection, at 09 o´clock

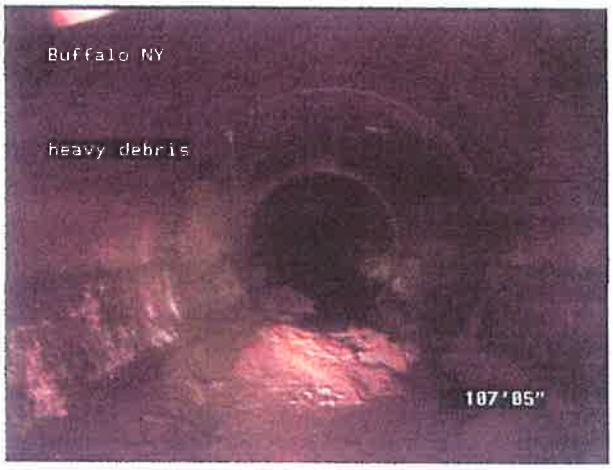


IMAGE: 18a, TAPE #: 01, 00:00:00
107.45FT, heavy debris

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	2	



IMAGE: 19a, TAPE #: 01, 00:00:00
136.65FT, service connection, at 11 o´clock



IMAGE: 20a, TAPE #: 01, 00:00:00
136.65FT, service connection with infiltration dripping inside, at 11 o´clock



IMAGE: 21a, TAPE #: 01, 00:00:00
138.55FT, service connection, at 09 o´clock

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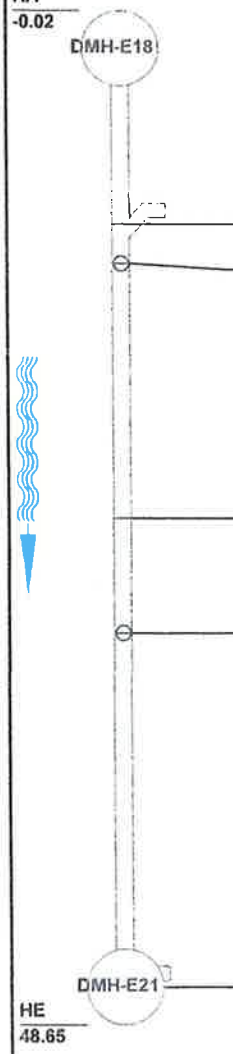
INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	3	
PRESENT	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	295

STREET:		MAP #1:		MH:	DMH-E18
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E21
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	159.65 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	30
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:



1:350 POSITION	CODE	OBSERVATION	RATE
26.70	0	service connection, at 10 o'clock	0
32.75	0	service connection, at 11 o'clock	0
71.30	120	Infiltration Dripping at joint at 11 o'clock	1
88.60	175	service connection with infiltration dripping inside, at 11 o'clock	1
142.05	0	service connection, at 10 o'clock	0


26.7 FT // 00:00:00


32.75 FT // 00:00:00


71.3 FT // 00:00:00


88.6 FT // 00:00:00


142.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	3	



IMAGE: 24a, TAPE #: 01, 00:00:00
26.7FT, service connection, at 10 o´clock



IMAGE: 25a, TAPE #: 01, 00:00:00
32.75FT, service connection, at 11 o´clock



IMAGE: 26a, TAPE #: 01, 00:00:00
71.3FT, Infiltration Dripping at joint at 11 o´clock



IMAGE: 27a, TAPE #: 01, 00:00:00
88.6FT, service connection with infiltration dripping inside, at 11 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**03/18/2010**	**3**	



IMAGE: 28a, TAPE #: 01, 00:00:00
142.05FT, service connection, at 10 o´clock



IMAGE: 29a, TAPE #: 01, 00:00:00
159.6FT, inspection ends at downstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/18/2010		sunny, dry	Roger L	4	
PRESENT:	VEHICLE:	CAMERA:	PRESET	CLEANED:	RATE
	ROVER 900	MAIN LINE		No	425

STREET:		MAP #1:		MH:	DMH-E21
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E20
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	121.6 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	30
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
DMH-E21	0.00	0	inspection begins at upstream manhole	0
	4.05	130	encrustation at joint from 09 to 03 o clock light	1
	32.85	0	service connection, at 09 o´clock	0
	50.35	120	Infiltration Dripping at joint at 12 o´clock	1
	57.40	0	service connection, at 02 o´clock	0
	75.95	0	service connection, at 09 o´clock	0
	90.90	0	service connection, at 03 o´clock	0
	102.35	0	service connection, at 12 o´clock	0
	111.20	175	service connection with infiltration dripping inside, at 12 o´clock	1
	115.45	0	service connection, at 09 o´clock	0
DMH-E20	121.60	0	inspection ends at downstream manhole	0


4.05 FT // 00:00:00


32.85 FT // 00:00:00


50.35 FT // 00:00:00


57.4 FT // 00:00:00


75.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	4	

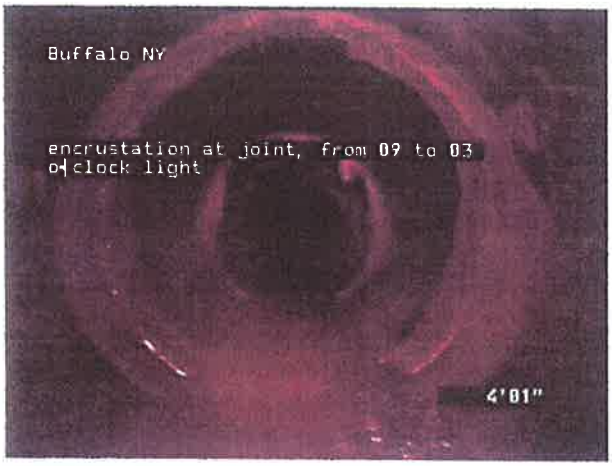


IMAGE: 31a, TAPE #: 01, 00:00:00
4.05FT, encrustation at joint, from 09 to 03 o´clock light



IMAGE: 32a, TAPE #: 01, 00:00:00
32.85FT, service connection, at 09 o´clock



IMAGE: 33a, TAPE #: 01, 00:00:00
50.35FT, Infiltration Dripping at joint at 12 o´clock



IMAGE: 34a, TAPE #: 01, 00:00:00
57.4FT, service connection, at 02 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/18/2010	4	



IMAGE: 35a, TAPE #: 01, 00:00:00
75.95FT, service connection, at 09 o´clock



IMAGE: 36a, TAPE #: 01, 00:00:00
90.9FT, service connection, at 03 o´clock

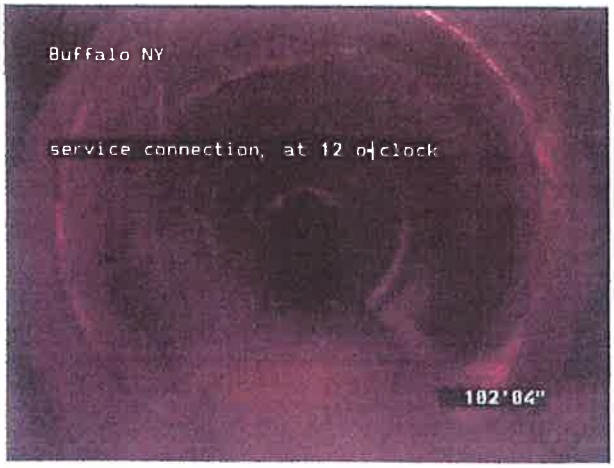


IMAGE: 37a, TAPE #: 01, 00:00:00
102.35FT, service connection, at 12 o´clock



IMAGE: 38a, TAPE #: 01, 00:00:00
111.2FT, service connection with infiltration dripping inside, at 12 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR.	SECTION NAME:
Buffalo NY		03/18/2010	4	



IMAGE: 39a, TAPE #: 01, 00:00:00
115.45FT, service connection, at 09 o´clock

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	5	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	930

STREET:		MAP #1:		MH:	DMH-E30
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E26
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	112.95 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
DMH-E30	0.00	0	inspection begins at downstream manhole	0
DMH-E26	112.95	0	inspection ends at upstream manhole	0



95.35 FT // 00:00:00



112.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	5	



IMAGE: 44a, TAPE #: 01, 00:00:00
95.35FT, debris



IMAGE: 45a, TAPE #: 01, 00:00:00
112.95FT, inspection ends at upstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	6	
PRESENT	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	0

STREET:		MAP #1:		MH:	DMH-E26
CITY	Buffalo NY	MAP #2:		MH:	DMH-E23
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	61.9 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:175	POSITION	CODE	OBSERVATION	RATE
DMH-E26	1.30	0	inspection begins at downstream manhole	0
DMH-E23	61.90	0	inspection ends at upstream manhole (weir in manhole)	0



61.9 FT // 00:00:00



61.9 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	6	



IMAGE: 47a, TAPE #: 01, 00:00:00
61.9FT, inspection ends at upstream manhole (weir in manhole)

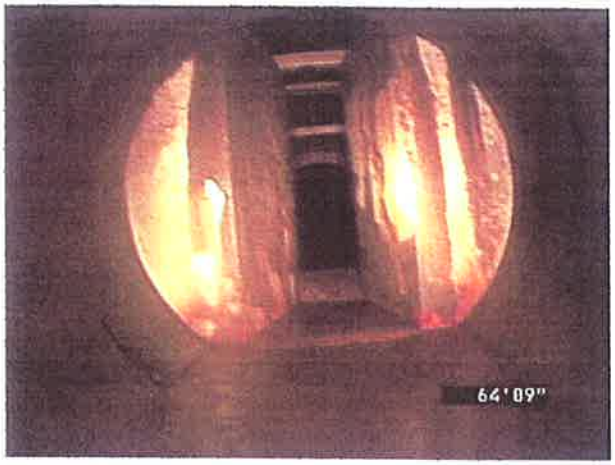


IMAGE: 47b, TAPE #: 01, 00:00:00
61.9FT, inspection ends at upstream manhole (weir in manhole)

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		**sunny, dry**	**J Heeb**	**7**	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	**MAIN LINE**		**No**	**310**

STREET:		MAP #1:		MH:	**DMH-E30**
CITY:	**Buffalo NY**	MAP #2:		MH:	**DMH-E31**
LOCALE:	**Old Building Lot**	TAPE #:	**01**	TV'D LGTH:	**39 ft**

INSPECT REASON:	**gen. condition control**	PIPE SIZE:	**36"**
SECTION TYPE:	**storm water**	MATERIAL:	JT LGTH:
AREA:	**AREA-E**	LINING:	
		RSRVD:	

REMARK:

1:100	POSITION	CODE	OBSERVATION	RATE
DMH-E30	0.00	0	inspection begins at upstream manhole	0
	39.00	0	camera blocked, inspection abandoned	0



38.9 FT // 00:00:00



39 FT // 00:00:00

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INSPECTION IMAGES

CITY	STREET	DATE	SECTION NR	SECTION NAME
Buffalo NY		03/19/2010	7	



IMAGE: 49a, TAPE #: 01, 00:00:00
38.9FT, Debris, at 06 o´clock



IMAGE: 50a, TAPE #: 01, 00:00:00
39FT, camera blocked, inspection abandoned

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	8	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	0

STREET:		MAP #1		MH:	DMH-E31
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E30
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	63.8 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:175	POSITION	CODE	OBSERVATION	RATE
DMH-E31	0.00	0	inspection begins at downstream manhole	0
	63.80	0	camera blocked, inspection abandoned	0



63.8 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	8	



IMAGE: 52a, TAPE #: 01, 00:00:00
63.8FT, camera blocked, inspection abandoned

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	9	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	810

STREET:		MAP #1:		MH:	DMH-31
CITY:	Buffalo NY	MAP #2:		MH:	PVS
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	112.95 ft

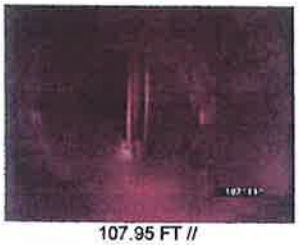
INSPECT REASON:	gen. condition control	PIPE SIZE:	42"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
DMH-31	0.00	0	inspection begins at upstream manhole	0
	107.95		submersible pump in line	
	112.95	0	inspection abandoned pump (blocking foward progress)	0


15.05 FT // 00:00:00


49.3 FT // 00:00:00


107.95 FT //


107.95 FT //


112.95 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	9	

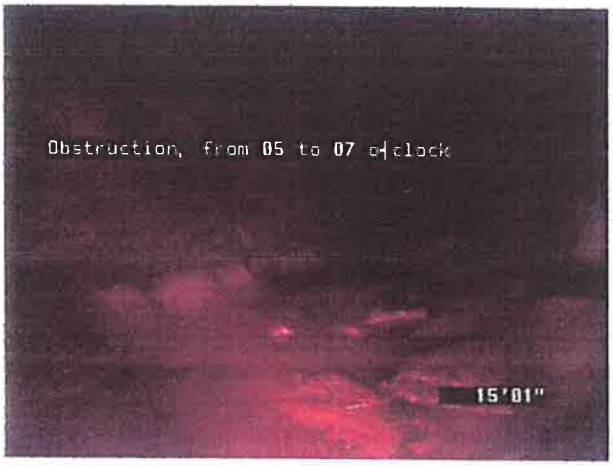


IMAGE: 57a, TAPE #: 01, 00:00:00
15.05FT, Obstruction, from 05 to 07 o´clock



IMAGE: 56a, TAPE #: 01, 00:00:00
49.3FT, Debris, at 06 o´clock

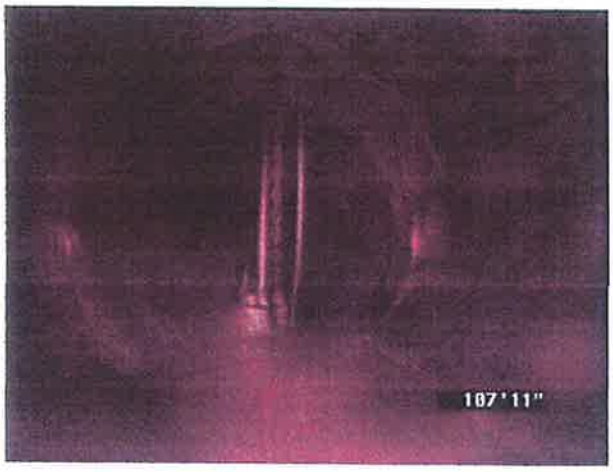


IMAGE: 54a, TAPE #: 01
107.95FT, submersible pump in line



IMAGE: 54b, TAPE #: 01
107.95FT, submersible pump in line

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**03/19/2010**	**9**	

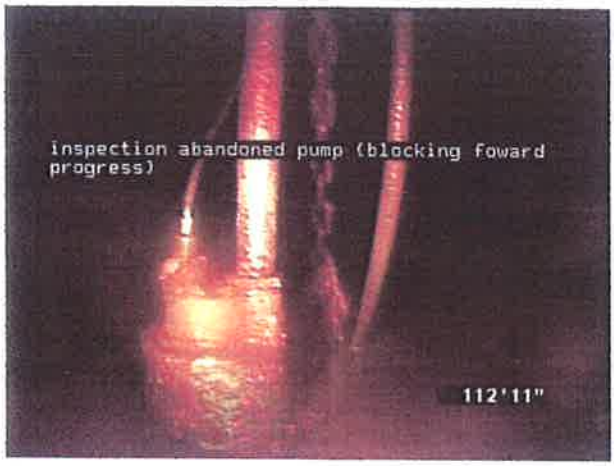


IMAGE: 55a, TAPE #: 01, 00:00:00
112.95FT, inspection abandoned pump (blocking foward progress)



IMAGE: 55b, TAPE #: 01, 00:00:00
112.95FT, inspection abandoned pump (blocking foward progress)

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME
03/19/2010		sunny, dry	J Heeb	10	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		No	630

STREET:		MAP #1:		MH:	DMH-E18
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E17
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	229.3 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	20"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:575	POSITION	CODE	OBSERVATION	RATE
DMH-E18	0.00	0	inspection begins at downstream manhole	0
	32.65	0	service connection, at 09 o´clock	0
	46.05	0	service connection, at 03 o´clock	0
	51.35	160	break-in-connection, at 11 o'clock	1
	53.85	0	service connection, at 03 o´clock	0
	73.30	0	service connection, at 09 o´clock	0
	94.15	0	service connection, at 03 o´clock	0
	114.00	0	service connection, at 02 o´clock	0
	114.90	0	service connection, at 09 o´clock	0
	133.45	0	service connection, at 03 o´clock	0
	146.85	0	service connection, at 02 o´clock	0
	155.10	0	service connection, at 09 o´clock	0
	[illegible]	[illegible]	[illegible]	[illegible]
	173.20	0	service connection, at 03 o´clock	0
	195.20	0	service connection, at 09 o´clock	0
	203.40	160	break-in-connection, at 10 o'clock	1
	216.70	0	service connection, at 03 o´clock	0
DMH-E17	229.30	0	inspection ends at upstream manhole	0


32.65 FT // 00:00:00


46.05 FT // 00:00:00


51.35 FT // 00:00:00


73.3 FT // 00:00:00


94.15 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	



IMAGE: 59a, TAPE #: 01, 00:00:00
32.65FT, service connection, at 09 o´clock



IMAGE: 60a, TAPE #: 01, 00:00:00
46.05FT, service connection, at 03 o´clock



IMAGE: 61a, TAPE #: 01, 00:00:00
51.35FT, break-in-connection, at 11 o´clock



IMAGE: 63a, TAPE #: 01, 00:00:00
73.3FT, service connection, at 09 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME
Buffalo NY		03/19/2010	10	

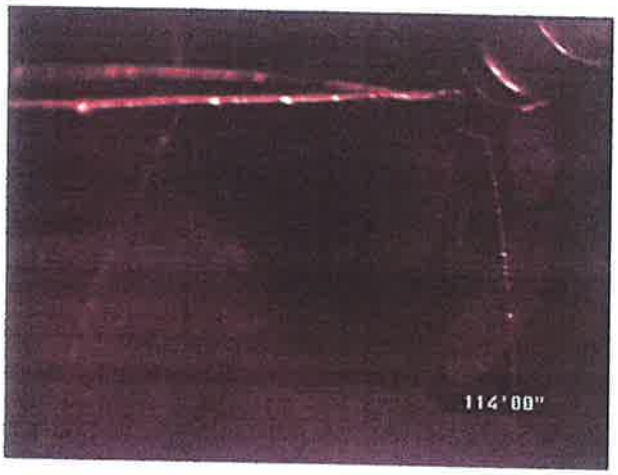


IMAGE: 64a, TAPE #: 01, 00:00:00
94.15FT, service connection, at 03 o´clock

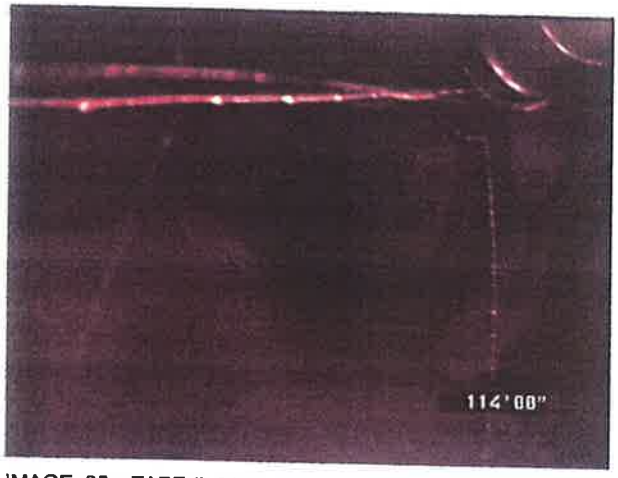


IMAGE: 65a, TAPE #: 01, 00:00:00
114FT, service connection, at 02 o´clock



IMAGE: 66a, TAPE #: 01, 00:00:00
114.9FT, service connection, at 09 o´clock



IMAGE: 67a, TAPE #: 01, 00:00:00
133.45FT, service connection, at 03 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	

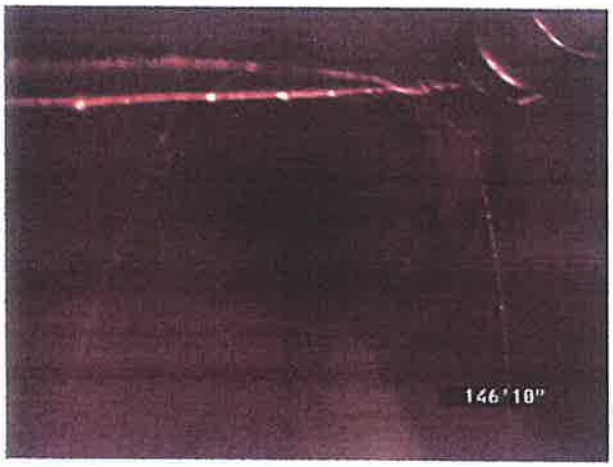


IMAGE: 68a, TAPE #: 01, 00:00:00
146.85FT, service connection, at 02 o´clock



IMAGE: 69a, TAPE #: 01, 00:00:00
155.1FT, service connection, at 09 o´clock



IMAGE: 70a, TAPE #: 01, 00:00:00
158FT, debris silt

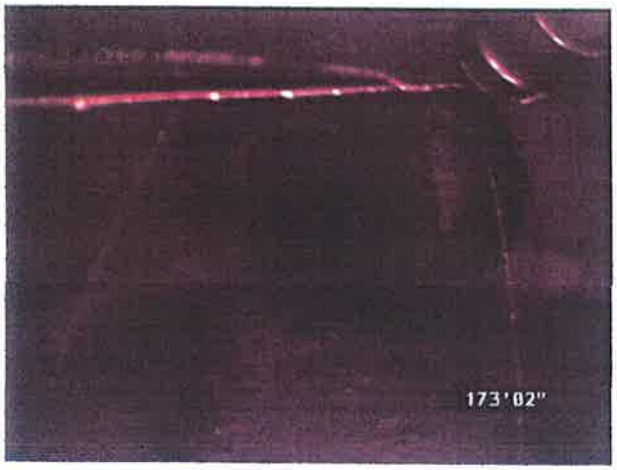


IMAGE: 71a, TAPE #: 01, 00:00:00
173.2FT, service connection, at 03 o´clock

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Niagara Falls NY
Tel. 18667731187 Fax

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	10	



IMAGE: 72a, TAPE #: 01, 00:00:00
195.2FT, service connection, at 09 o´clock

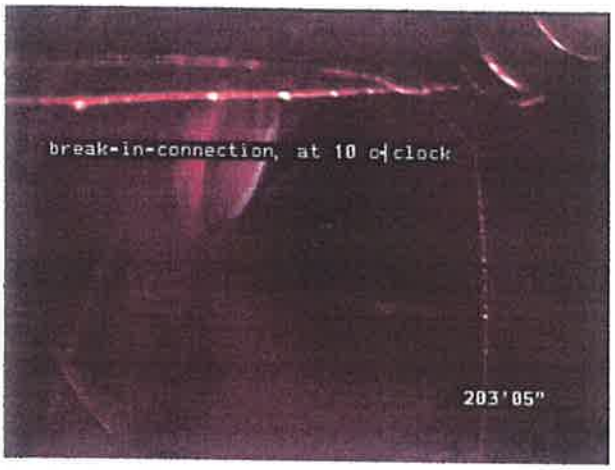


IMAGE: 73a, TAPE #: 01, 00:00:00
203.4FT, break-in-connection, at 10 o´clock

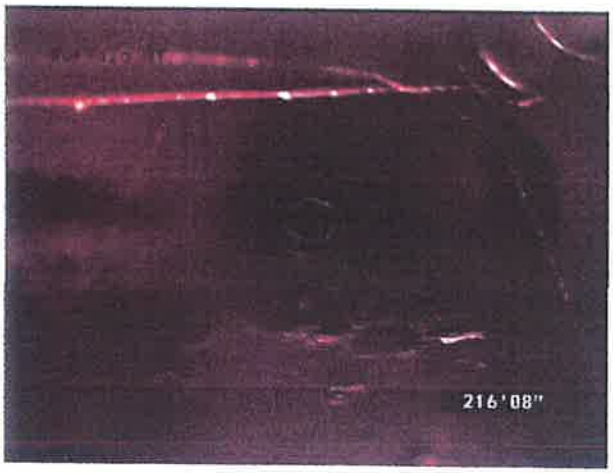


IMAGE: 74a, TAPE #: 01, 00:00:00
216.7FT, service connection, at 03 o´clock



IMAGE: 75a, TAPE #: 01, 00:00:00
229.3FT, inspection ends at upstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
03/19/2010		sunny, dry	J Heeb	11	
PRESENT:	VEHICLE: ROVER 900	CAMERA: MAIN LINE	PRESET:	CLEANED: No	RATE: 470

STREET:		MAP #1:		MH:	DMH-E17
CITY:	Buffalo NY	MAP #2:		MH:	DMH-E16
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	20 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:50	POSITION	CODE	OBSERVATION	RATE
DMH-E17	0.00	0	inspection begins at downstream manhole	0
	18.20	160	break-in-connection, at 02 o'clock	1
	20.00	0	camera blocked, inspection abandoned	0


0 FT // 00:00:00


7.9 FT // 00:00:00


18.2 FT // 00:00:00


20 FT // 00:00:00

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Tel 18667731167 Fax

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		03/19/2010	11	

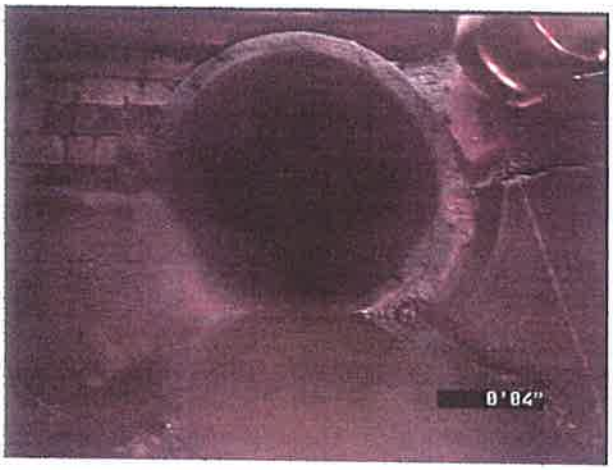


IMAGE: 76a, TAPE #: 01, 00:00:00
0FT, inspection begins at downstream manhole



IMAGE: 77a, TAPE #: 01, 00:00:00
7.9FT, debris silt



IMAGE: 78a, TAPE #: 01, 00:00:00
18.2FT, break-in-connection, at 02 o´clock



IMAGE: 79a, TAPE #: 01, 00:00:00
20FT, camera blocked, inspection abandoned

#	STREET	FT	MH	~	MH	VCR #
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17		117.45	DMH-C21	-->	DMH-C20	00:00:00
18		116.1	DMH-C19	<--	DMH-C20	00:00:00
19		32.1	DMH-C19	-->	UNKNOWN	00:00:00
20		9.75	DMH-C10	<--	UNKNOWN	00:00:00
21		123.4	DMH-C8	<--	DMH-C9	00:00:00
22		91.1	DMH-C9	-->	DMH-C10	00:00:00
23		43.15	DMH-C10	<--	DMH-C11	00:00:00
24		120.9	DMH-C11	<--	AREA-B	00:00:00
25						
26		22.04	UNKNOWN MH	-->	DMH-C10	00:00:00

CONTRACTOR



NAME:	NATIONAL VACUUM CORPORATION
RESPONSIBLE:	Tim McInerney
DEPARTMENT:	NATIONAL VACUUM CORPORATION
PO BOX:	
STREET:	408 47th st
CITY, ST ZIP:	Niagara Falls NY 14304
TELEPHONE:	18667731167
FAX:	1-866-775-1213
MOBILE:	1-716-628-9400
E-MAIL:	NATIONALVACUUM.COM

CITY: Buffalo NY

PROJ NAME: AREA-C stormsewers

INSPECT REASON: gen. condition control

DATE: 03/18/2010

PROJECT NUM: 3410-09-0701

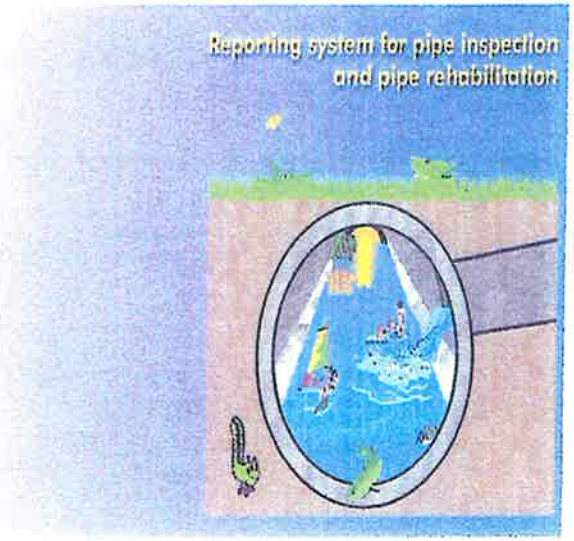
TAPE #: 01

CLIENT

NAME:	Mactec Engineering & consulting inc
RESPONSIBLE:	Karie Senus
DEPARTMENT:	Engineering
PO BOX:	
STREET:	511 Congress st
CITY, ST ZIP:	Portland, Maine 04101
TELEPHONE:	207-775-5401
FAX:	207-772-4762
MOBILE:	
E-MAIL:	KLSENUS@MACTEC.COM

PROJ MGR

NAME:	Mactec Engineering & Consulting inc
RESPONSIBLE:	John Scrabis
DEPARTMENT:	
PO BOX:	
STREET:	
CITY, ST ZIP:	
TELEPHONE:	
FAX:	
MOBILE:	
E-MAIL:	



CCTV INSPECTION REPORT OF STORM SEWERS FOR MACTEC AT BUFFALO COLOR

AREA "C" STORM SEWER INSPECTION REPORT

MAP LOCATION SEGMENT DESCRIPTION		NOTES
Seg. 17 DMH-C21 to DMH-C20		117.05' Line is good condition
Seg. 18 DMH-C19 to DMH-C20		115.01' Line is in good condition
Seg. 19 DMH-C19 to Unknown MH		32.10' Unknown manhole is located East of DMH-19 outside of Powerhouse. Line in good condition
Seg. 26 Unknown MH to DMH-C10		22.04' Cleaned Unknown MH and continued East towards DMH-10. At 22.04' hit what appears to be a pillar for foundation
Seg. 20 DMH-C10 to Unknown MH		9.75' Line is bulk headed at 11.01'. This Unknown MH is west of DMH-C10 in the basement of the powerhouse
Seg. 21 DMH-C8 to DMH-C9		123.05' Water level high in line. Cleaning halted per Tom Perkins. Heavy debris in line
Seg. 22 DMH-C9 to DMH-C10		91.01' Heavy debris in line. Cleaning halted per Tom Perkins. Hole in pipe at 89.01
Seg. 23 DMH-C10 to DMH-C11		43.02' Heavy debris in line at 17.65'. Cleaning halted per Tom Perkins.
Seg. 24 DMH-C11 to Area "B"		120.90' Heavy debris in line at 100.02'. Cleaning halted per Tom Perkins. Pipe 80% full at 120.11'. Inspection abandoned

NATIONAL VACUUM CORPORATION
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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/20/2010		sunny, dry	J Heeb	24	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		PARTIAL	1590

STREET:		MAP #1:		MH:	DMH-C11
CITY:	Buffalo NY	MAP #2:		MH:	AREA-B
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	120.9 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
DMH-C11	0.00	0	inspection begins at downstream manhole	0
	1.15	160	break-in-connection, at 11 o´clock	1
	19.05	160	break-in-connection, at 01 o´clock	1
	21.45	160	break-in-connection, at 09 o´clock	1
	30.25	160	break-in-connection, at 11 o´clock	1
	80.15	160	break-in-connection, at 11 o´clock	1
	108.85	160	break-in-connection, at 12 o´clock	1
	110.15	310	Debris, from 06 to 08 o´clock, REMARK: heavy	3
	112.50	160	break-in-connection, at 08 o´clock	1
	120.00	160	break-in-connection, at 02 o´clock	1
AREA-B	120.90	0	inspection abandoned, from 02 to 10 o´clock, REMARK: debris at 80%	0


1.15 FT // 00:00:00


19.05 FT // 00:00:00


21.45 FT // 00:00:00


30.25 FT // 00:00:00


80.15 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/20/2010	24	



IMAGE: 149a, TAPE #: 01, 00:00:00
1.15FT, break-in-connection, at 11 o´clock



IMAGE: 150a, TAPE #: 01, 00:00:00
19.05FT, break-in-connection, at 01 o´clock

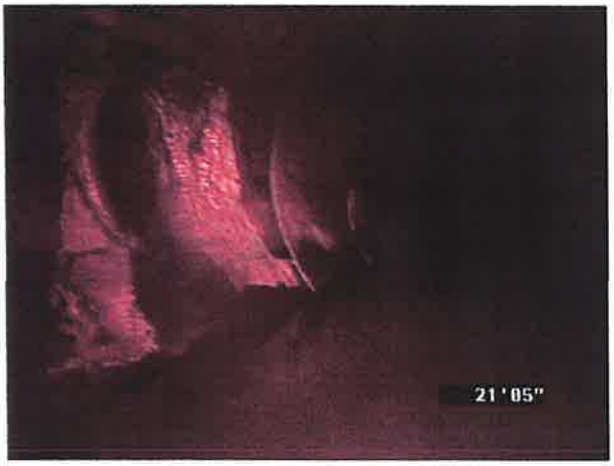


IMAGE: 151a, TAPE #: 01, 00:00:00
21.45FT, break-in-connection, at 09 o´clock



IMAGE: 152a, TAPE #: 01, 00:00:00
30.25FT, break-in-connection, at 11 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/20/2010	24	



IMAGE: 153a, TAPE #: 01, 00:00:00
80.15FT, break-in-connection, at 11 o´clock



IMAGE: 154a, TAPE #: 01, 00:00:00
108.85FT, break-in-connection, at 12 o´clock



IMAGE: 155a, TAPE #: 01, 00:00:00
110.15FT, Debris, from 06 to 09 o´clock, REMARK: heavy



IMAGE: 156a, TAPE #: 01, 00:00:00
112.5FT, break-in-connection, at 08 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/20/2010	24	



IMAGE: 157a, TAPE #: 01, 00:00:00
120FT, break-in-connection, at 02 o´clock

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/19/2010		sunny, dry	J Heeb	23	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		PARTIAL	310

STREET:		MAP #1:		MH:	DMH-C10
CITY:	Buffalo NY	MAP #2:		MH:	DMH-C11
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	43.15 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:125	POSITION	CODE	OBSERVATION	RATE
DMH-C10	0.00	0	inspection begins at downstream manhole	0
	17.65	310	Debris, at 08 o'clock (HEAVY)	3
DMH-C11	43.15	0	inspection ends at upstream manhole	0



17.65 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**05/19/2010**	**23**	



IMAGE: 147a, TAPE #: 01, 00:00:00
17.65FT, Debris, at 08 o´clock (HEAVY)

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/19/2010		sunny, dry	J Heeb	22	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		PARTIAL	640

STREET:		MAP #1:		MH:	DMH-C9
CITY:	Buffalo NY	MAP #2:		MH:	DMH-C10
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	91.1 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:225 POSITION	CODE	OBSERVATION	RATE
DMH-C9 0.00	0	inspection begins at upstream manhole	0
1.30	0	service connection, at 02 o´clock	0
18.25	0	Multiple Cracks, from 10 to 02 o´clock	2
32.95	160	break-in-connection, at 12 o´clock	1
40.15	0	pipe Broken, from 12 to 03 o´clock (possible repair area)	3
47.05	160	break-in-connection, at 12 o´clock	1
69.90	160	break-in-connection, at 12 o´clock	1
78.05	160	break-in-connection, at 12 o´clock	1
89.15	0	Hole in pipe at 07 o´clock	3
91.10	0	inspection abandoned (3 sections short of DMH-C10)	0


1.3 FT // 00:00:00


18.25 FT // 00:00:00


32.95 FT // 00:00:00


40.15 FT // 00:00:00


47.05 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/19/2010	22	



IMAGE: 135a, TAPE #: 01, 00:00:00
1.3FT, service connection, at 02 o´clock



IMAGE: 136a, TAPE #: 01, 00:00:00
18.25FT, Multiple Cracks, from 10 to 02 o´clock



IMAGE: 137a, TAPE #: 01, 00:00:00
32.95FT, break-in-connection, at 12 o´clock



IMAGE: 138a, TAPE #: 01, 00:00:00
40.15FT, pipe Broken, from 12 to 03 o´clock (possible repair area)

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/19/2010	22	



IMAGE: 139a, TAPE #: 01, 00:00:00
47.05FT, break-in-connection, at 12 o´clock



IMAGE: 140a, TAPE #: 01, 00:00:00
69.9FT, break-in-connection, at 12 o´clock



IMAGE: 142a, TAPE #: 01, 00:00:00
89.15FT, Hole in pipe at 07 o´clock



IMAGE: 144a, TAPE #: 01, 00:00:00
91.1FT, inspection abandoned (3 sections short of DMH-C10)

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/19/2010		sunny, dry	J Heeb	21	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		Yes	640

STREET:		MAP #1:		MH:	DMH-C8
CITY:	Buffalo NY	MAP #2:		MH:	DMH-C9
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	123.4 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	36"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:275 POSITION	CODE	OBSERVATION	RATE
HA -0.79 DMH-C8			
6.80	160	break-in-connection, at 02 o´clock	1
14.85	0	pipe Broken, from 11 to 03 o´clock	3
20.05	0	service connection, at 12 o´clock	0
30.55	160	break-in-connection, at 12 o´clock	1
38.35	0	service connection, at 12 o´clock	0
38.40	0	service connection, at 02 o´clock	0
42.85	0	Multiple Cracks, from 10 to 09 o´clock	2
55.65	0	service connection, at 12 o´clock	0
67.70	0	Longitudinal Fracture at 12 o´clock	3
76.25	160	break-in-connection, at 12 o´clock	1
95.80	0	service connection, at 01 o´clock	0
100.25	0	service connection, at 01 o´clock	0
105.55	0	service connection, at 01 o´clock	0
107.30	0	service connection, at 01 o´clock	0
DMH-C9 HE 37.61 109.75	0	service connection, at 01 o´clock	0
112.50	160	break-in-connection, at 01 o´clock	1


-2.6 FT // 00:00:00


6.8 FT // 00:00:00


30.55 FT // 00:00:00


38.35 FT // 00:00:00


38.4 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/19/2010	21	

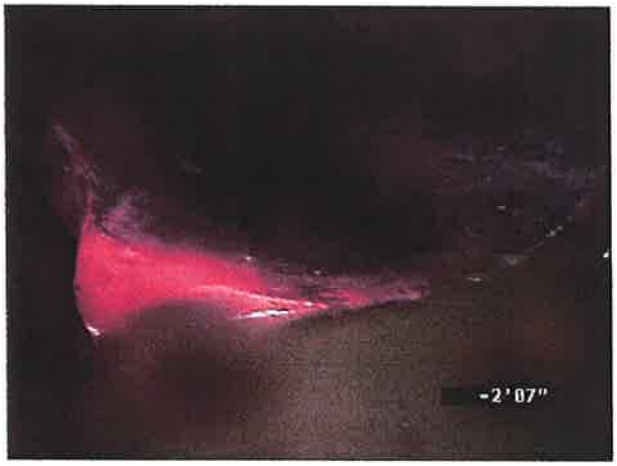


IMAGE: 133a, TAPE #: 01, 00:00:00
-2.6FT, inspection ends at upstream manhole



IMAGE: 132a, TAPE #: 01, 00:00:00
6.8FT, break-in-connection, at 02 o´clock



IMAGE: 129a, TAPE #: 01, 00:00:00
30.55FT, break-in-connection, at 12 o´clock



IMAGE: 127a, TAPE #: 01, 00:00:00
38.35FT, service connection, at 12 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/19/2010	21	



IMAGE: 128a, TAPE #: 01, 00:00:00
38.4FT, service connection, at 02 o´clock



IMAGE: 126a, TAPE #: 01, 00:00:00
42.85FT, Multiple Cracks, from 10 to 09 o´clock



IMAGE: 123a, TAPE #: 01, 00:00:00
76.25FT, break-in-connection, at 12 o´clock



IMAGE: 116a, TAPE #: 01, 00:00:00
123.4FT, inspection begins at downstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/18/2010		cloudy	J Heeb	20	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		Yes	160

STREET:		MAP #1:		MH:	DMH-C10
CITY:	Buffalo NY	MAP #2:		MH:	UNKNOWN MH
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	9.75 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-C10	0.00	0	inspection begins at downstream manhole	0
	6.75	160	break-in-connection, at 02 o´clock	1
	9.75	0	camera blocked, inspection abandoned	0


6.75 FT // 00:00:00


9.75 FT // 00:00:00


9.75 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/18/2010	20	



IMAGE: 114a, TAPE #: 01, 00:00:00
6.75FT, break-in-connection, at 02 o´clock

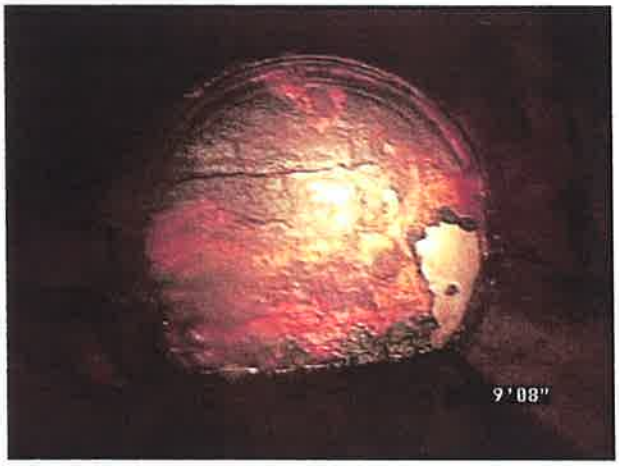


IMAGE: 115a, TAPE #: 01, 00:00:00
9.75FT, camera blocked, inspection abandoned



IMAGE: 115b, TAPE #: 01, 00:00:00
9.75FT, camera blocked, inspection abandoned

NATIONAL VACUUM CORPORATION
408 47th st
Niagara Falls NY 14304
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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/11/10		sunny, dry	J Heeb	26	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
	ROVER 900	MAIN LINE		PARTIAL	160

STREET:		MAP #1:		MH:	UNKNOWN MH
CITY:	Buffalo NY	MAP #2:		MH:	DMH-C10
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	22.04 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	BRICK JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:75	POSITION	CODE	OBSERVATION	RATE
UNKNOWN MH	0.00	0	inspection begins at upstream manhole	0
	17.02	160	break-in-connection, at 02 o´clock	1
	22.04	0	inspection abandoned (ENTERING UNKNOWN AREA UNDER BUILDING)	0



17.02 FT // 00:00:00



22.04 FT // 00:00:00

NATIONAL VACUUM CORPORATION
408 47th st
Niagara Falls NY 14304
Tel: 18667731167, Fax: 1-866-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/11/10	26	



IMAGE: 165a, TAPE #: 01, 00:00:00
17.02FT, break-in-connection, at 02 o´clock



IMAGE: 166a, TAPE #: 01, 00:00:00
22.04FT, inspection abandoned (ENTERING UNKNOWN AREA UNDER BUILDING)

NATIONAL VACUUM CORPORATION
408 47th st
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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/11/2010		cloudy	J Heeb	19	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
	ROVER 900	MAIN LINE		Yes	0

STREET:		MAP #1:		MH:	DMH-C19
CITY:	Buffalo NY	MAP #2:		MH:	UNKNOWN MH
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	32.1 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:100	POSITION	CODE	OBSERVATION	RATE
DMH-C19	0.00	0	inspection begins at upstream manhole	0
UNKNOWN MH				


0 FT // 00:00:00


32.1 FT // 00:00:00


32.1 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/11/2010	19	



IMAGE: 111a, TAPE #: 01, 00:00:00
0FT, inspection begins at upstream manhole



IMAGE: 112a, TAPE #: 01, 00:00:00
32.1FT, inspection ends at downstream manhole

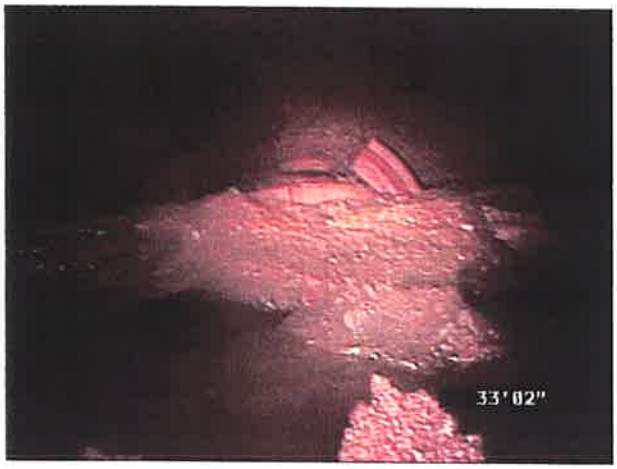


IMAGE: 112b, TAPE #: 01, 00:00:00
32.1FT, inspection ends at downstream manhole

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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/11/2010		cloudy	J Heeb	18	
PRESENT:	VEHICLE: ROVER 900	CAMERA: MAIN LINE	PRESET:	CLEANED: Yes	RATE: 160

STREET:		MAP #1:		MH:	DMH-C19
CITY:	Buffalo NY	MAP #2:		MH:	DMH-C20
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	115.1 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
DMH-C19	0.00	0	inspection begins at downstream manhole	0
	86.20	160	break-in-connection, at 12 o´clock	1
	105.05	0	service connection, at 09 o´clock	0
DMH-C20	115.10	0	inspection ends at upstream manhole	0


86.2 FT // 00:00:00


105.05 FT // 00:00:00


115.1 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/11/2010	18	



IMAGE: 108a, TAPE #: 01, 00:00:00
86.2FT, break-in-connection, at 12 o´clock



IMAGE: 109a, TAPE #: 01, 00:00:00
105.05FT, service connection, at 09 o´clock



IMAGE: 110a, TAPE #: 01, 00:00:00
115.1FT, inspection ends at upstream manhole

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INSPECTION REPORT

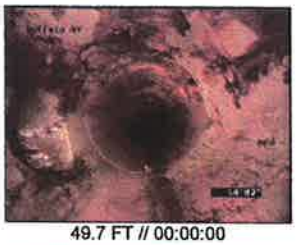
DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/11/2010		cloudy	J Heeb	17	
PRESENT:	VEHICLE:	CAMERA:	PRESET:	CLEANED:	RATE:
	ROVER 900	MAIN LINE		Yes	0

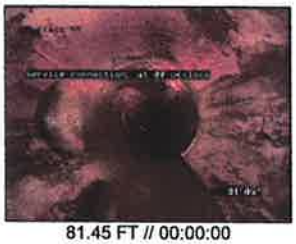
STREET:		MAP #1:		MH:	DMH-C21
CITY:	Buffalo NY	MAP #2:		MH:	DMH-C20
LOCALE:	Old Building Lot	TAPE #:	01	TV'D LGTH:	117.45 ft

INSPECT REASON:	gen. condition control	PIPE SIZE:	18"
SECTION TYPE:	storm water	MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-C	LINING:	
		RSRVD:	

REMARK:

1:300	POSITION	CODE	OBSERVATION	RATE
DMH-C21	0.00	0	inspection begins at upstream manhole	0
	49.70	0	service connection, at 09 o´clock	0
	81.45	0	service connection, at 09 o´clock	0
DMH-C20	117.45	0	inspection ends at downstream manhole	0


49.7 FT // 00:00:00


81.45 FT // 00:00:00


117.45 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		05/11/2010	17	

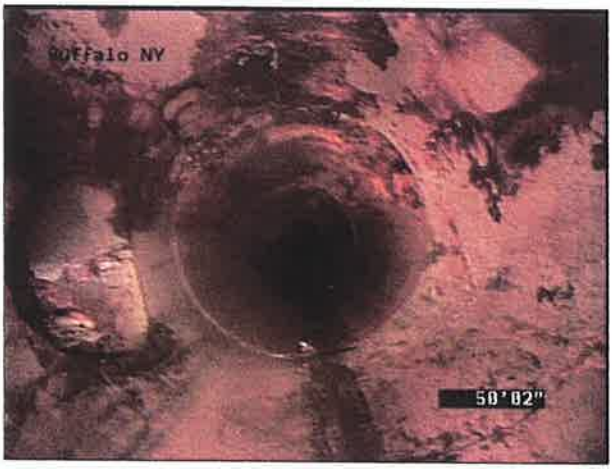


IMAGE: 104a, TAPE #: 01, 00:00:00
49.7FT, service connection, at 09 o´clock



IMAGE: 105a, TAPE #: 01, 00:00:00
81.45FT, service connection, at 09 o´clock



IMAGE: 106a, TAPE #: 01, 00:00:00
117.45FT, inspection ends at downstream manhole

#	STREET	FT	MH	~	MH	VCR #
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25		308.15	DMH-E31	-->	PVS	00:00:00

DATE: 03/18/2010

PROJECT NUM: 3410-09-0701

TAPE #: 01

CITY: Buffalo NY

PROJ NAME: AREA-C stormsewers

INSPECT REASON: gen. condition control

CONTRACTOR

NAME:	NATIONAL VACUUM CORPORATION
RESPONSIBLE:	Tim McInerney
DEPARTMENT:	NATIONAL VACUUM CORPORATION
PO BOX:	
STREET:	408 47th st
CITY, ST ZIP:	Niagara Falls NY 14304
TELEPHONE:	18667731167
FAX:	1-866-775-1213
MOBILE:	1-716-628-9400
E-MAIL:	NATIONALVACUUM.COM

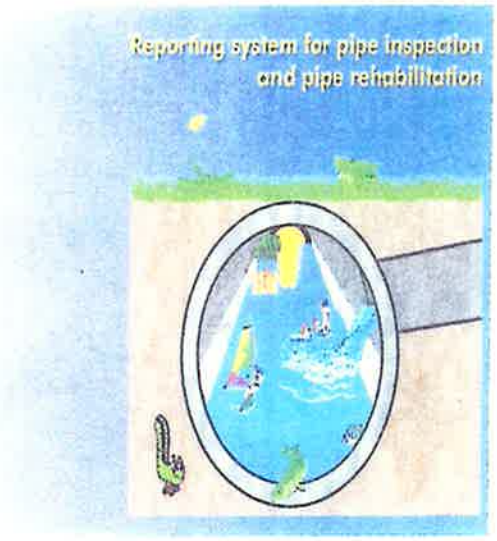


CLIENT

NAME:	Mactec Engineering & consulting Inc
RESPONSIBLE:	Karie Senus
DEPARTMENT:	Engineering
PO BOX:	
STREET:	511 Congress st
CITY, ST ZIP:	Portland, Maine 04101
TELEPHONE:	207-775-5401
FAX:	207-772-4762
MOBILE:	
E-MAIL:	KLSENUS@MACTEC.COM

PROJ MGR

NAME:	Mactec Engineering & Consulting Inc
RESPONSIBLE:	John Scrabis
DEPARTMENT:	
PO BOX:	
STREET:	
CITY, ST ZIP:	
TELEPHONE:	
FAX:	
MOBILE:	
E-MAIL:	



CCTV INSPECTION REPORT OF STORM SEWERS FOR MACTEC AT BUFFALO COLOR

STORM SEWER SEGMENT CONVERSION

MAP LOCATION SEGMENT DESCRIPTION	NOTES
DMH-E31 to Unknown Manhole on PVS Property	203.60' is Unknown Manhole on PVS Property / Submersible Pump in line
	at 109.90'. Could not verify that there was no power to the pump, the pump
	discharge line was bent to 90° angle to hold the pump at the top of line.
Unknown Manhole on PVS Property to Outfall	102.55' Heavy silt in line, unable to continue. Inspection abandoned

NATIONAL VACUUM CORPORATION
408 47th st
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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
05/28/2010		**sunny, dry**	**J Heeb**	**25**	
PRESENT:	VEHICLE: **ROVER 900**	CAMERA: **MAIN LINE**	PRESET:	CLEANED: **PARTIAL**	RATE: **0**

STREET:		MAP #1:		MH:	**DMH-E31**
CITY:	**Buffalo NY**	MAP #2:		MH:	**PVS**
LOCALE:	**Old Building Lot**	TAPE #:	**01**	TV'D LGTH:	**306.15 ft**

INSPECT REASON:	**gen. condition control**	PIPE SIZE:	**42"**
SECTION TYPE:	**storm water**	MATERIAL:	**BRICK** JT LGTH:
AREA:	**AREA-E**	LINING:	
		RSRVD:	

REMARK:

1:500	POSITION	CODE	OBSERVATION	RATE
HA -0.02				
DMH-E31				
	109.90		PUMP MOVED TO CONTINUE INSPECTION	
PVS	203.60		UNKNOWN MANHOLE ON PVS PROPERTY	
HE 93.3				


109.9 FT // 00:00:00


203.6 FT // 00:00:00


306.1 FT // 00:00:00

NATIONAL VACUUM CORPORATION
408 47th st
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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
Buffalo NY		**05/28/2010**	**25**	



IMAGE: 160a, TAPE #: 01, 00:00:00
109.9FT, PUMP MOVED TO CONTINUE INSPECTION

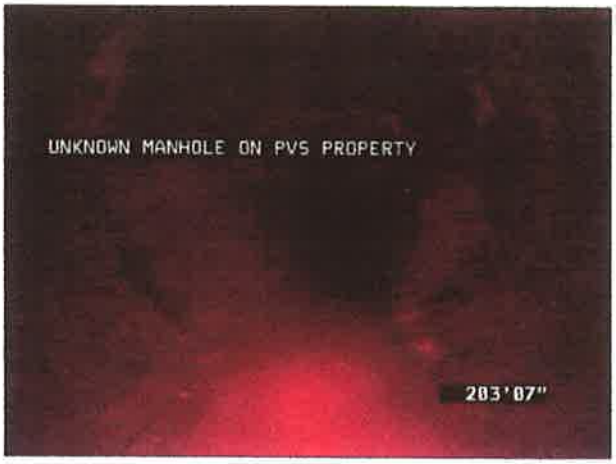


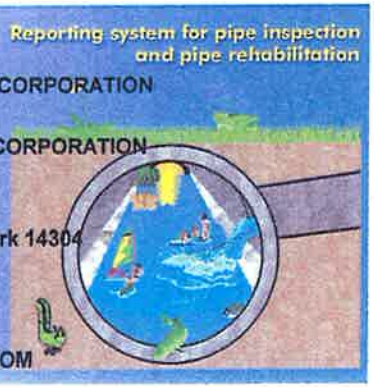
IMAGE: 161a, TAPE #: 01, 00:00:00
203.6FT, UNKNOWN MANHOLE ON PVS PROPERTY



IMAGE: 163a, TAPE #: 01, 00:00:00
306.1FT, inspection abandoned (silt in line no further foward progress)

#	STREET	FT	MH	~	MH	VCR #
1	Lee st	206.65	DMH-E7	<--	DMH-E6	00:00:00
2	Lee st	101.25	DMH-E6	<--	DMH-E5	00:00:00
3	Lee st	3.75	DMH-E5	-->	DMH-E6	00:00:00
4	Lee st	5.95	DMH-E5	<--	DMH-E4	00:00:00
5	Lee st	2.95	DMH-E4	-->	DMH-E5	00:00:00
6	Lee st	229.2	DMH-E15	<--	DMH-E14	00:00:00
7	Lee st	64.95	DMH-E14	<--	DMH-E13	00:00:00
8	Lee st	22.7	DMH-13	-->	DMH-14	00:00:00
9	Lee st	4.6	DMH-E13	-->	NORTH	00:00:00
10	Lee st	9.1	DMH-E23	-->	DMH-E26	00:00:00
11	Lee st	144.85	DMH-E23	-->	DMH-E20	00:00:00
12	Lee st	0	DMH-E19	-->	DMH-E20	00:00:00

CONTRACTOR



NAME: NATIONAL VACUUM CORPORATION
RESPONSIBLE: Tim McInerney
DEPARTMENT: NATIONAL VACUUM CORPORATION
PO BOX:
STREET: 408 47 th street
CITY, ST ZIP: Niagara Falls, New York 14304
TELEPHONE: 1-866-773-1167
FAX: 1-716-775-1213
MOBILE: 1-716-628-9400
E-MAIL: NATIONALVACUUM.COM

CITY: buffalo ny
PROJ NAME: AREA-E STORMSEWERS
INSPECT REASON:

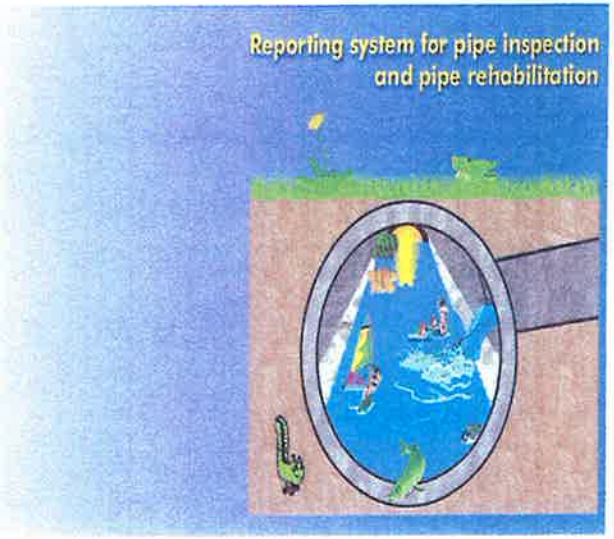
DATE: 06/10/2010
PROJECT NUM: 3410-09-0701
TAPE #: 01

CLIENT

NAME: Mactec Engineering & consulting inc
RESPONSIBLE: Karie Senus
DEPARTMENT: Engineering
PO BOX:
STREET: 511 Congress st
CITY, ST ZIP: Portland Maine 04101
TELEPHONE: 207-775-5401
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MOBILE:
E-MAIL: KLSENUS@MACTEC.COM

PROJ MGR

NAME: Mactec Engineering & consulting inc
RESPONSIBLE: John Scrabis
DEPARTMENT:
PO BOX:
STREET:
CITY, ST ZIP:
TELEPHONE:
FAX:
MOBILE:
E-MAIL:



CCTV INSPECTION REPORT OF STORM SEWERS FOR MACTEC AT BUFFALO COLOR

AREA "C" STORM SEWER INSPECTION REPORT

MAP LOCATION SEGMENT DESCRIPTION		NOTES
Seg. 1 DMH-E7 to DMH-E6		206.08' Multiple fractures in pipe at several locations. Infiltration at 160.95'
Seg. 2 DMH-E6 to DMH-E5		101.03' Offset joint at 43.25'. Camrea blocked at 101.03' - Inspection abandoned
Seg. 3 DMH-E5 to DMH-E6		3.75' Heavy debris in manhole and line - Inspection abandoned
Seg. 4 DMH-E5 to DMH-E4		5.95' Heavy debris in manhole and line - Inspection abandoned
Seg. 5 DMH-E4 to DMH-E5		3.09' Heavy debris in manhole and line - Inspection abandoned
Seg. 6 DMH-E15 to DMH-E14		229.02' Camera blocked ap. 2' from DMH-E14 - Inspection abandoned
Seg. 7 DMH-E14 to DMH-E13		64.11' Heavy debris in line - Inspection abandoned
Seg. 8 DMH-E13 to DMH-E14		22.07' Heavy debris in line - Inspection abandoned
Seg. 9 DMH-E13 to North		4.07' Bulkhead in line at 4.07'
Seg. 10 DMH-E23 to DMH-E26		9.11' Heavy debris in line - Inspection abandoned
Seg. 11 DMH-E23 to DMH-E20		144.10' Medium debris in line, camrea was able to navigate through material for inspection
Seg. 12 DMH-E19 to DMH-E20		No inspection - Pipe 1/2 full of water and debris, camera under water

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	1	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	320

STREET:	Lee st	MAP #1:		MH:	DMH-E7
CITY:	buffalo ny	MAP #2:		MH:	DMH-E6
LOCALE:	site	TAPE #:	01	TV'D LGTH:	206.65 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:525	POSITION	CODE	OBSERVATION	RATE
DMH-E7	0.00	0	inspection begins at downstream manhole	0
	47.00	0	service connection, at 09 o´clock	0
	58.90	0	service connection, at 03 o´clock	0
	96.05	0	service connection, at 03 o´clock	0
	124.40	0	service connection, at 02 o´clock	0
DMH-E6	206.65	0	inspection ends at upstream manhole	0


24.5 FT // 00:00:00


47 FT // 00:00:00


58.9 FT // 00:00:00


80.05 FT // 00:00:00


89.35 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	1	



IMAGE: 2a, TAPE #: 01, 00:00:00
24.5FT, Multiple Fractures from 09 to 03 o´clock



IMAGE: 3a, TAPE #: 01, 00:00:00
47FT, service connection, at 09 o´clock



IMAGE: 4a, TAPE #: 01, 00:00:00
58.9FT, service connection, at 03 o´clock

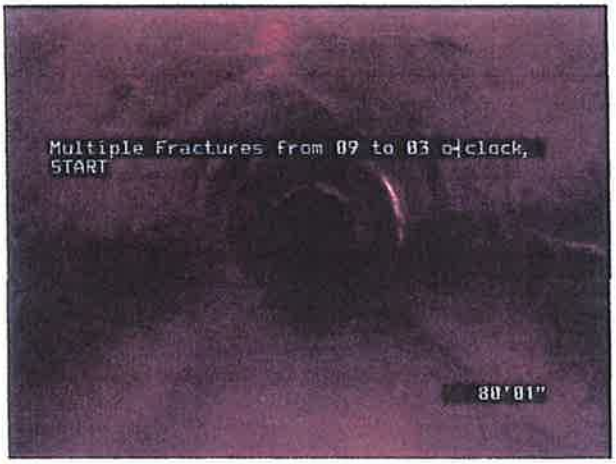


IMAGE: 7a, TAPE #: 01, 00:00:00
80.05FT, Multiple Fractures from 09 to 03 o´clock, START

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	1	

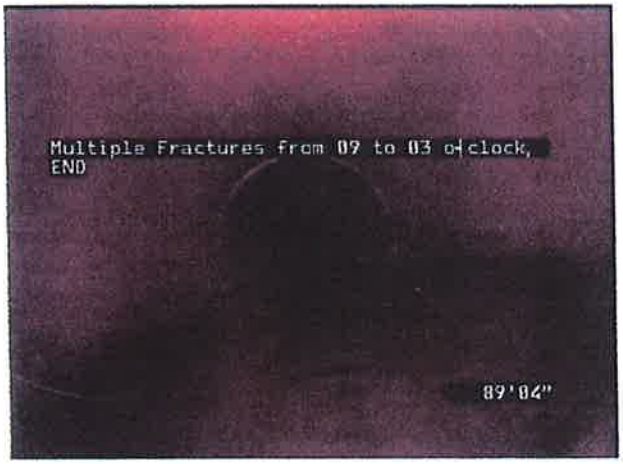


IMAGE: 8a, TAPE #: 01, 00:00:00
89.35FT, Multiple Fractures from 09 to 03 o´clock, END



IMAGE: 9a, TAPE #: 01, 00:00:00
96.05FT, service connection, at 03 o´clock



IMAGE: 10a, TAPE #: 01, 00:00:00
124.4FT, service connection, at 02 o´clock



IMAGE: 11a, TAPE #: 01, 00:00:00
160.95FT, Infiltration Running at joint at 04 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	1	



IMAGE: 12a, TAPE #: 01, 00:00:00
206.65FT, inspection ends at upstream manhole

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	2	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	470

STREET:	Lee st	MAP #1:		MH:	DMH-E6
CITY:	buffalo ny	MAP #2:		MH:	DMH-E5
LOCALE:	site	TAPE #:	01	TV'D LGTH:	101.25 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:



1:250 POSITION	CODE	OBSERVATION	RATE	
0.00	0	inspection begins at downstream manhole	0	 33.4 FT // 00:00:00
33.40	160	break-in-connection, at 01 o´clock	1	 38.9 FT // 00:00:00
38.90	0	service connection, at 10 o´clock	0	
43.25	150	offset joint, slight	1	 43.25 FT // 00:00:00
56.90	0	service connection, at 02 o´clock	0	
				 56.9 FT // 00:00:00
91.50	0	service connection, at 10 o´clock	0	
100.25	160	break-in-connection, at 01 o´clock	1	 91.5 FT // 00:00:00
101.25	0	camera blocked, inspection abandoned	0	

NATIONAL VACUUM CORPORATION
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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	2	



IMAGE: 14a, TAPE #: 01, 00:00:00
33.4FT, break-in-connection, at 01 o´clock



IMAGE: 15a, TAPE #: 01, 00:00:00
38.9FT, service connection, at 10 o´clock



IMAGE: 16a, TAPE #: 01, 00:00:00
43.25FT, offset joint, slight



IMAGE: 17a, TAPE #: 01, 00:00:00
56.9FT, service connection, at 02 o´clock

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	2	



IMAGE: 18a, TAPE #: 01, 00:00:00
91.5FT, service connection, at 10 o´clock



IMAGE: 20a, TAPE #: 01, 00:00:00
101.25FT, camera blocked, inspection abandoned

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	3	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	310

STREET:	Lee st	MAP #1:		MH:	DMH-E5
CITY:	buffalo ny	MAP #2:		MH:	DMH-E6
LOCALE:	site	TAPE #:	01	TVD LGTH:	3.75 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-E5	0.00	0	inspection begins at upstream manhole	0
	3.75	0	inspection abandoned, from 03 to 09 o´clock	0


0 FT // 00:00:00


3.75 FT // 00:00:00


3.75 FT // 00:00:00

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	3	



IMAGE: 22a, TAPE #: 01, 00:00:00
0FT, Debris, from 04 to 08 o´clock

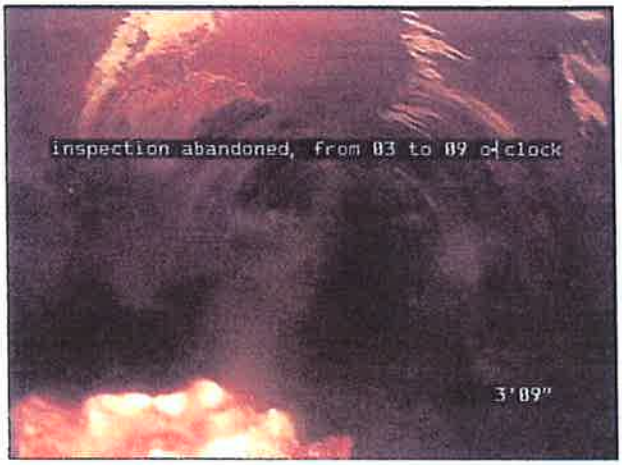


IMAGE: 23a, TAPE #: 01, 00:00:00
3.75FT, inspection abandoned, from 03 to 09 o´clock



IMAGE: 23b, TAPE #: 01, 00:00:00
3.75FT, inspection abandoned, from 03 to 09 o´clock

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	4	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	310

STREET:	Lee st	MAP #1:		MH:	DMH-E5
CITY:	buffalo ny	MAP #2:		MH:	DMH-E4
LOCALE:	site	TAPE #:	01	TV'D LGTH:	5.95 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-E5	0.00	0	inspection begins at downstream manhole	0
	5.95	0	inspection abandoned (debris silt 50%)	0



0 FT // 00:00:00



5.95 FT // 00:00:00

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	4	



IMAGE: 25a, TAPE #: 01, 00:00:00
0FT, Debris silt (40%)



IMAGE: 26a, TAPE #: 01, 00:00:00
5.95FT, inspection abandoned (debris silt 50%)

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	5	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	310

STREET:	Lee st	MAP #1:		MH:	DMH-E4
CITY:	buffalo ny	MAP #2:		MH:	DMH-E5
LOCALE:	site	TAPE #:	01	TV'D LGTH:	2.95 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-E4	0.00	0	inspection begins at upstream manhole	0
DMH-E5	2.95	0	camera blocked, inspection abandoned, REMARK: NO FOWARD PROGRESS	0



0 FT // 00:00:00



2.95 FT // 00:00:00

NATIONAL VACUUM CORPORATION
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Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	5	



IMAGE: 27a, TAPE #: 01, 00:00:00
0FT, inspection begins at upstream manhole



IMAGE: 29a, TAPE #: 01, 00:00:00
2.95FT, camera blocked, inspection abandoned, REMARK: NO FOWARD PROGRESS

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	6	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	620

STREET:	Lee st	MAP #1:		MH:	DMH-E15
CITY:	buffalo ny	MAP #2:		MH:	DMH-E14
LOCALE:	site	TAPE #:	01	TV'D LGTH:	229.2 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:575 POSITION	CODE	OBSERVATION	RATE
DMH-E15 0.00	0	inspection begins at downstream manhole	0
36.50	0	service connection, at 09 o´clock	0
50.20	0	service connection, at 10 o´clock	0
58.50	0	service connection, at 03 o´clock	0
92.05	0	service connection, at 03 o´clock	0
98.30	0	service connection, at 10 o´clock	0
134.50	0	service connection, at 10 o´clock	0
137.50	0	service connection, at 03 o´clock	0
148.55	0	service connection, at 10 o´clock	0
166.55	0	service connection, at 03 o´clock	0
198.45	0	service connection, at 10 o´clock, REMARK: LIGHT FLOW	0
209.90	0	service connection, at 03 o´clock	0
DMH-E14 229.20	0	camera blocked, inspection abandoned, REMARK: APPROX 2 FEET FROM DMH-E14	0


6.25 FT // 00:00:00


58.5 FT // 00:00:00

NATIONAL VACUUM CORPORATION
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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	6	



IMAGE: 31a, TAPE #: 01, 00:00:00
6.25FT, debris

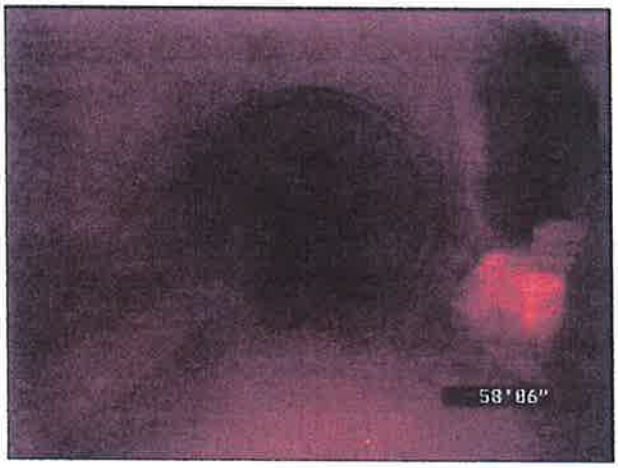


IMAGE: 34a, TAPE #: 01, 00:00:00
58.5FT, service connection, at 03 o´clock

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	7	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	310

STREET:	Lee st	MAP #1:		MH:	DMH-E14
CITY:	buffalo ny	MAP #2:		MH:	DMH-E13
LOCALE:	site	TAPE #:	01	TV'D LGTH:	64.95 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:175 POSITION	CODE	OBSERVATION	RATE
DMH-E14 0.00	0	inspection begins at downstream manhole	0
18.95	0	service connection, at 10 o´clock	0
26.90	0	service connection, at 09 o´clock	0
42.80	0	service connection, at 03 o´clock	0
64.95	0	camera blocked, inspection abandoned (NO FURTHER FOWARD PROGRESS)	0


18.95 FT // 00:00:00


62.9 FT // 00:00:00


64.95 FT // 00:00:00

NATIONAL VACUUM CORPORATION
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Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	7	

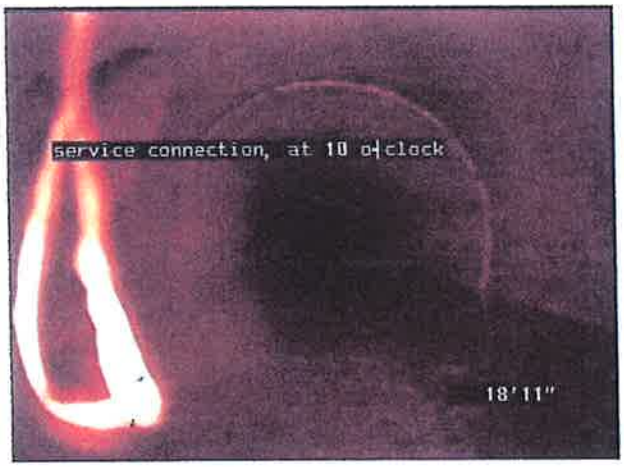


IMAGE: 46a, TAPE #: 01, 00:00:00
18.95FT, service connection, at 10 o´clock



IMAGE: 49a, TAPE #: 01, 00:00:00
62.9FT, Debris, from 04 to 08 o´clock



IMAGE: 50a, TAPE #: 01, 00:00:00
64.95FT, camera blocked, inspection abandoned (NO FURTHER FOWARD PROGRESS)

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	8	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	310

STREET:	Lee st	MAP #1:		MH:	DMH-13
CITY:	buffalo ny	MAP #2:		MH:	DMH-14
LOCALE:	site	TAPE #:	01	TV'D LGTH:	22.7 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:75	POSITION	CODE	OBSERVATION	RATE
DMH-13	0.00	0	inspection begins at upstream manhole	0
	22.70	0	camera blocked, inspection abandoned (DEBRIS IN LINE HEAVY)	0



20.2 FT // 00:00:00



22.7 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	8	



IMAGE: 52a, TAPE #: 01, 00:00:00
20.2FT, Debris silt, from 04 to 09 o´clock (PILE)



IMAGE: 53a, TAPE #: 01, 00:00:00
22.7FT, camera blocked, inspection abandoned (DEBRIS IN LINE HEAVY)

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Niagara Falls, New York 14304
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INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	9	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	0

STREET:	Lee st	MAP #1:		MH:	DMH-E13
CITY:	buffalo ny	MAP #2:		MH:	NORTH
LOCALE:	site	TAPE #:	01	TV'D LGTH:	4.6 ft

INSPECT REASON:		PIPE SIZE:	18"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-E13	0.00	0	inspection begins at downstream manhole	0
	3.55	0	service connection, at 03 o´clock	0
	4.60	0	inspection abandoned at bulkhead	0



3.55 FT // 00:00:00



4.6 FT // 00:00:00

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408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	9	



IMAGE: 55a, TAPE #: 01, 00:00:00
3.55FT, service connection, at 03 o´clock



IMAGE: 56a, TAPE #: 01, 00:00:00
4.6FT, inspection abandoned at bulkhead

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	10	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	0

STREET:	Lee st	MAP #1:		MH:	DMH-E23
CITY:	buffalo ny	MAP #2:		MH:	DMH-E26
LOCALE:	site	TAPE #:	01	TV'D LGTH:	9.1 ft

INSPECT REASON:		PIPE SIZE:	36"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-E23	0.00	0	inspection begins at upstream manhole	0
	9.10	0	inspection abandoned	0



9.1 FT // 00:00:00

NATIONAL VACUUM CORPORATION
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Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	10	



IMAGE: 58a, TAPE #: 01, 00:00:00
9.1FT, inspection abandoned

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax: 1-716-775-1213

INSPECTION REPORT

DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	11	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	0

STREET:	Lee st	MAP #1:		MH:	DMH-E23
CITY:	buffalo ny	MAP #2:		MH:	DMH-E20
LOCALE:	site	TAPE #:	01	TV'D LGTH:	144.85 ft

INSPECT REASON:		PIPE SIZE:	36"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:375	POSITION	CODE	OBSERVATION	RATE
DMH-E23	0.60	0	inspection begins at downstream manhole	0
DMH-E20	144.85	0	inspection ends at upstream manhole	0



0.6 FT // 00:00:00


144.85 FT // 00:00:00



144.85 FT // 00:00:00

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INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	11	



IMAGE: 60a, TAPE #: 01, 00:00:00
0.6FT, inspection begins at downstream manhole

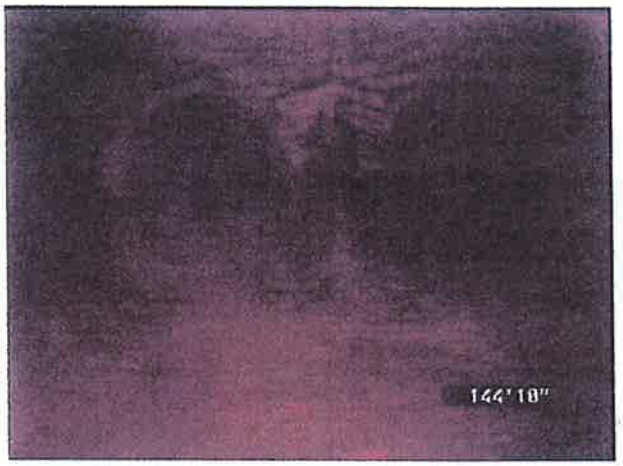


IMAGE: 61a, TAPE #: 01, 00:00:00
144.85FT, inspection ends at upstream manhole



IMAGE: 61b, TAPE #: 01, 00:00:00
144.85FT, inspection ends at upstream manhole

NATIONAL VACUUM CORPORATION
408 47 th street
Niagara Falls, New York 14304
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INSPECTION REPORT

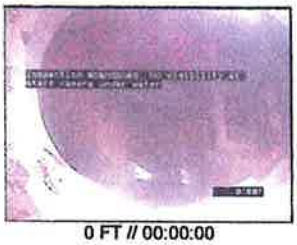
DATE:	WORK #:	WEATHER:	OPERATOR:	SECTION NR:	SECTION NAME:
06/10/2010		sunny, dry	J HEEB	12	
PRESENT:	**VEHICLE:**	**CAMERA:**	**PRESET:**	**CLEANED:**	**RATE:**
LIGHT FLOW	ROVER 900	MAIN LINE		No	0

STREET:	Lee st	MAP #1:		MH:	DMH-E19
CITY:	buffalo ny	MAP #2:		MH:	DMH-E20
LOCALE:	site	TAPE #:	01	TV'D LGTH:	0 ft

INSPECT REASON:		PIPE SIZE:	36"
SECTION TYPE:		MATERIAL:	CLAY TILE JT LGTH:
AREA:	AREA-E	LINING:	
		RSRVD:	

REMARK:

1:25	POSITION	CODE	OBSERVATION	RATE
DMH-E19	0.00	0	inspection begins at upstream manhole	0
	0.00		pipe over half full of water and debris, no visibility camera under water at strat	
	0.00	0	inspection abandoned no visibility at start camera under water	0



0 FT // 00:00:00

NATIONAL VACUUM CORPORATION
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Niagara Falls, New York 14304
Tel: 1-866-773-1167, Fax 1-716-775-1213

INSPECTION IMAGES

CITY:	STREET:	DATE:	SECTION NR:	SECTION NAME:
buffalo ny	Lee st	06/10/2010	12	

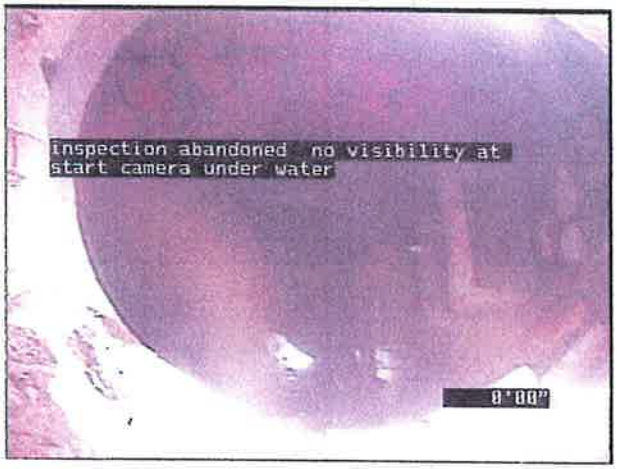


IMAGE: 64a, TAPE #: 01, 00:00:00
0FT, inspection abandoned no visibility at start camera under water

APPENDIX Q

GEOTECHNICAL SOIL ANALYTICAL REPORTS

Western New York Office
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 18, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

Attached are the results of laboratory testing conducted on various samples from the above referenced project. Mr. Travis Carpenter, representing MACTEC, chose samples contained in this report.

The testing conducted was as follows:

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock

ASTM D-4318: Liquid Limit, Plastic Limit, and Plasticity Index of Soil

ASTM C-136: Sieve Analysis of Fine and Coarse Aggregates

Samples were received at the SJB Services, Inc. laboratory on June 8, 2010 where they were processed for testing.

If the reviewer should have any questions concerning this report, please do not hesitate to contact our office at any time.

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

Western New York Office
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **July 15, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil &Rock

Boring GB-C01

SJB Sample Number	Sample Location	Moisture Content
10-757	SS-03: 8' – 10'	24.5 %
10-758	ST-06: 16' – 16.5'	30.5 %
10-759	SS-09: 20' – 22'	35.0 %
10-760	SS-13: 30' – 32'	38.6 %
10-761	SS-15: 35.5' – 37'	11.3 %

Boring GB-C02

SJB Sample Number	Sample Location	Moisture Content
10-762	SS-04: 8' – 10'	27.8 %
10-762A	SS-06: 15' – 17'	No recovery
10-762B	SS-07: 17' – 19'	30.1 %
10-763	VS-08: 18' – 19'	No sample available
10-764	VS-10: 22' – 23'	No sample available
10-764A	SS-11: 25' – 27'	38.1 %
10-765	SS-12: 30' – 32'	37.1 %

Western New York Office
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Hamburg, NY 14075
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Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 18, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil &Rock

Boring GB-C03

SJB Sample Number	Sample Location	Moisture Content
10-766	SS-02: 5' – 7'	18.7 %
10-767	SS-03: 8' – 10'	26.6 %
10-768	VS-07: 15' – 16'	35.1 %
10-769	SS-09: 20' – 22'	35.1 %
10-770	ST-13: 31' – 31.5'	37.8 %
10-771	SS-16: 35' – 37'	39.6 %

Boring GB-C04

SJB Sample Number	Sample Location	Moisture Content
10-772	SS-03: 8' – 10'	26.7 %
10-773	SS-04: 10' – 12'	29.8 %
10-774	ST-05: 13.25' – 13.75'	32.7 %
10-775	SS-08: 16' – 18'	29.7 %
10-776	VS-11: 23' – 24'	33.1 %
10-777	SS-16: 35' – 37'	40.5 %

Western New York Office
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Hamburg, NY 14075
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Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 18, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil &Rock

Boring GB-E01

SJB Sample Number	Sample Location	Moisture Content
10-778	SS-03: 7' – 9'	23.7 %
10-779	SS-06: 15' – 17'	32.7 %
10-780	ST-09: 26' – 26.5'	32.0 %
10-781	SS-12: 35' – 37'	37.6 %
10-782	SS-14: 40.5' – 42'	11.6 %

Boring GB-E02

SJB Sample Number	Sample Location	Moisture Content
10-783	SS-03: 7' – 9'	26.7 %
10-784	SS-04: 10' – 12'	34.8 %
10-785	ST-06: 16' – 16.5'	30.0 %
10-786	SS-09: 25' – 27'	34.8 %
10-787	SS-12: 35' – 37'	38.2 %

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Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 18, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil &Rock

Boring GB-E03

SJB Sample Number	Sample Location	Moisture Content
10-788	SS-03: 8' – 10'	26.4 %
10-789	SS-06: 15 – 17'	30.6 %
10-790	SS-08: 20' – 22'	36.2 %
10-791	SS-11: 30' – 32'	37.8 %

Boring GB-E04

SJB Sample Number	Sample Location	Moisture Content
10-792	SS-03: 8' – 10'	26.9 %
10-793	ST-04: 11.25' – 11.75'	27.8 %
10-794	SS-07: 20' – 22'	35.1 %
10-795	SS-10: 30' – 32'	38.6 %
10-796	SS-12: 35' – 37'	40.4 %

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Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 18, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil &Rock
ASTM D-4318: Liquid Limit, Plastic Limit, and Plasticity Index of Soil

Sample Number	Sample Location	Moisture Content	Liquid Limit	Plastic Limit	Plasticity Index
10-757	GB-C01, SS-03: 8' – 10'	24.5 %	36	17	19
10-765	GB-C02, SS-12: 30' – 32'	37.1 %	38	16	22
10-775	GB-C04, SS-08: 16' – 18'	29.7 %	37	14	23
10-778	GB-E01, SS-03: 7' – 9'	23.7 %	37	16	21
10-786	GB-E02, SS-09: 25' – 27'	34.8 %	38	16	22
10-796	GB-E04, SS-12: 35' – 37'	40.4 %	38	15	23

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Laboratory Test Report

PROJECT: **Buffalo Color**
CLIENT: **MACTEC**
DATE: **June 18, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-1

Sample Number: 10-761
Sample Identification: GB-C01, SS-15: 35.5' – 37'

ASTM C-136: Sieve Analysis of Fine and Coarse Aggregates

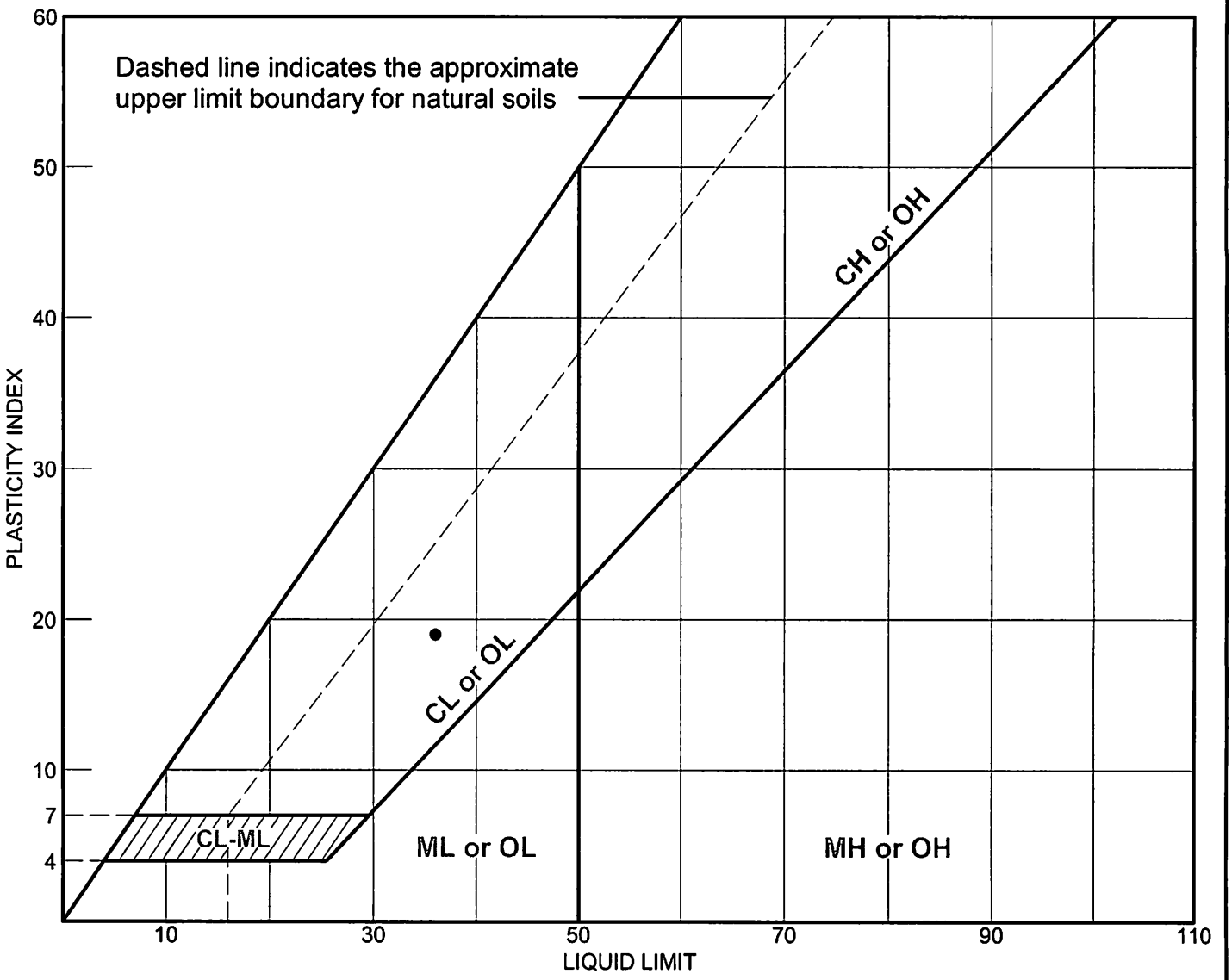
Sieve Size	*Percent Passing*
1"	100.0
¾"	93.4
½"	93.4
⅜"	87.5
¼"	82.3
#4	80.2
#10	72.4
#20	63.8
#40	59.6
#100	51.0
#200	44.3

Sample Number: 10-782
Sample Identification: GB-E01, SS-14: 40.5' – 42'

ASTM C-136: Sieve Analysis of Fine and Coarse Aggregates

Sieve Size	*Percent Passing*
¾"	100.0
½"	98.8
⅜"	96.1
¼"	89.2
#4	86.3
#10	77.1
#20	69.8
#40	64.3
#100	53.9
#200	46.5

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	GB-C01	SS-03	8' - 10'	24.5 %	17	36	19	

LIQUID AND PLASTIC LIMITS TEST REPORT

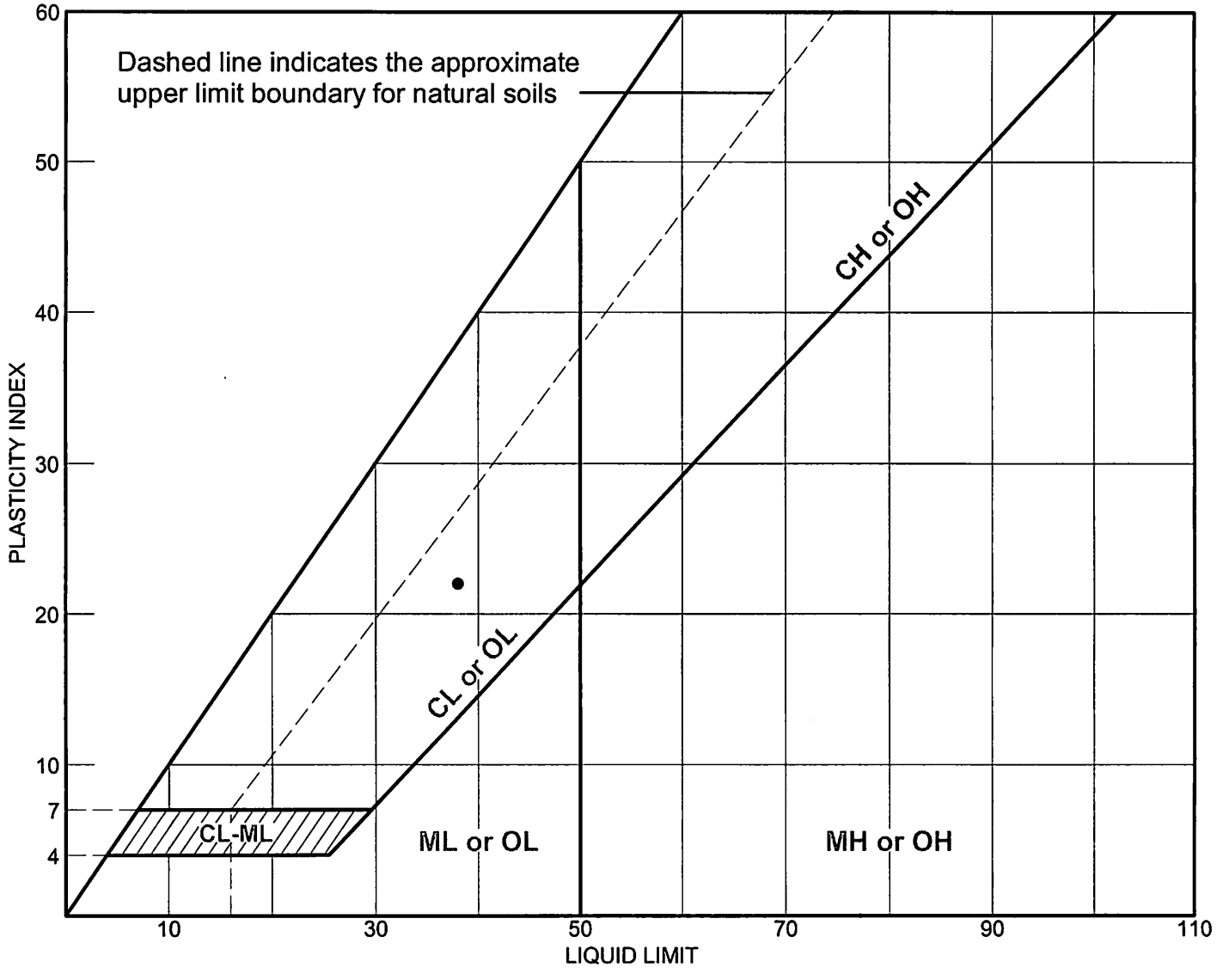
SJB SERVICES, INC.

Client: MACTEC

Project: BUFFALO COLOR

Project No.: BD-10-080-A

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	GB-C02	SS-12	30' - 32'	37.1 %	16	38	22	

LIQUID AND PLASTIC LIMITS TEST REPORT

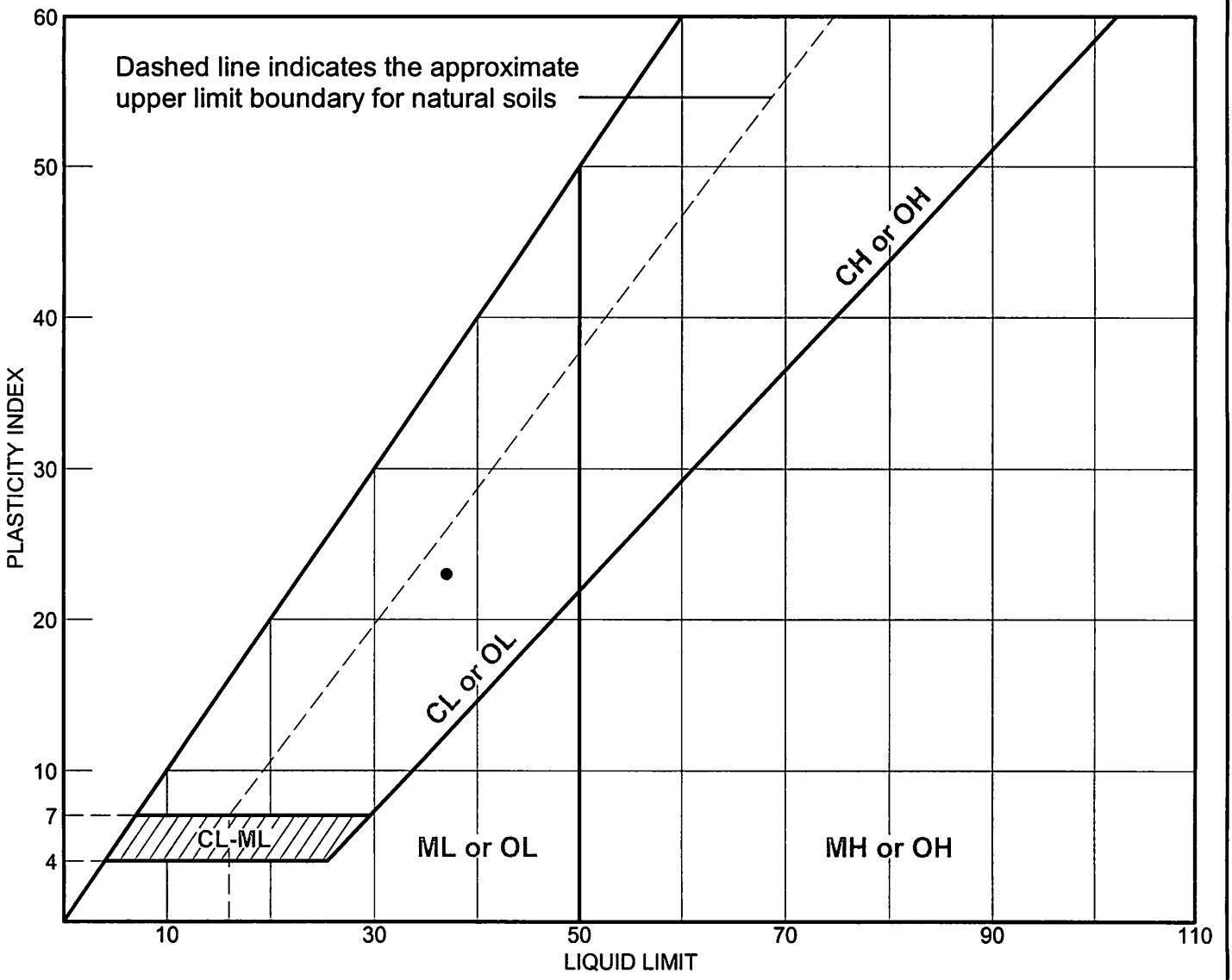
SJB SERVICES, INC.

Client: MACTEC

Project: BUFFALO COLOR

Project No.: BD-10-080-A

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	GB-C04	SS-08	16' - 18'	29.7 %	14	37	23	

LIQUID AND PLASTIC LIMITS TEST REPORT

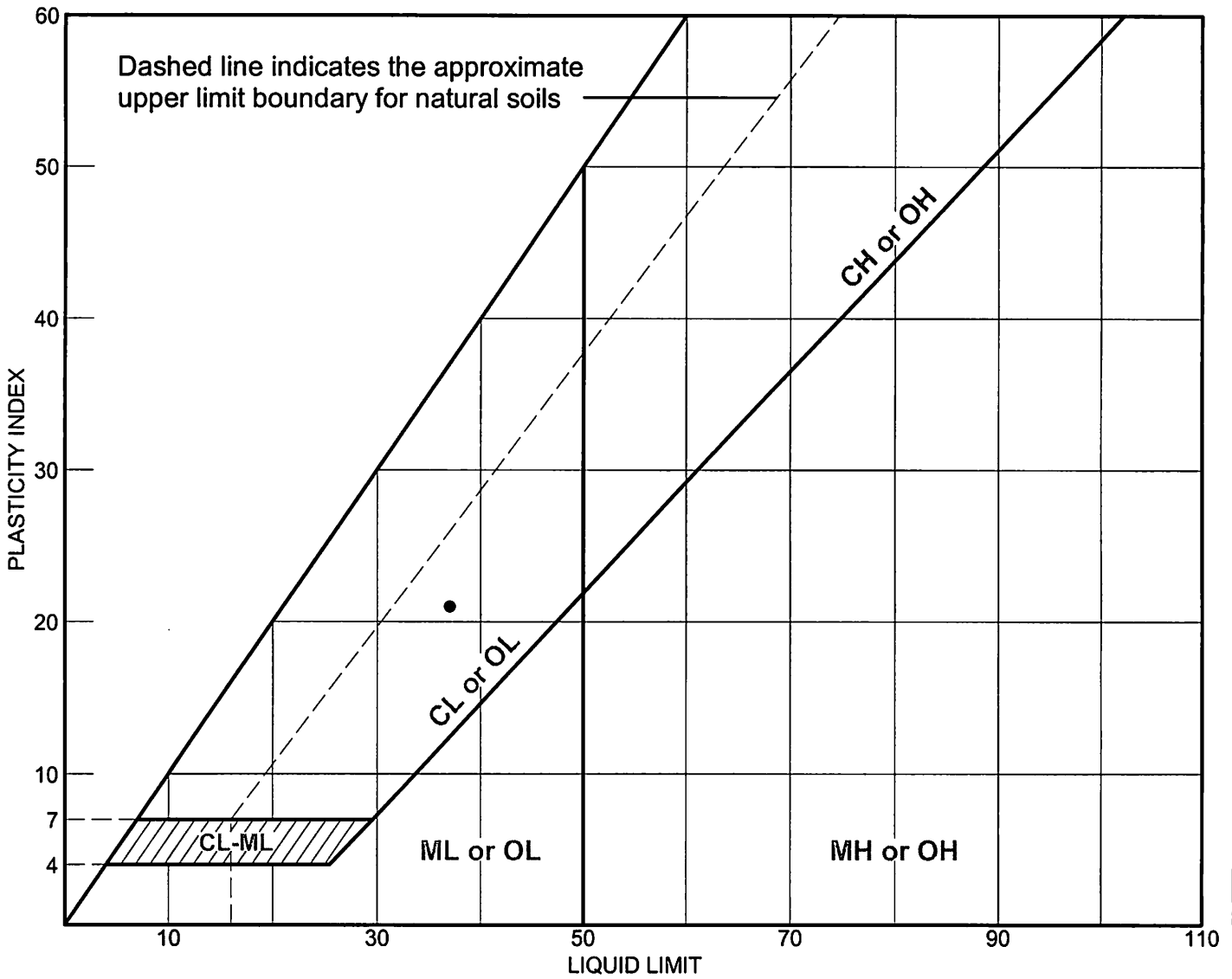
SJB SERVICES, INC.

Client: MACTEC

Project: BUFFALO COLOR

Project No.: BD-10-080-A

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	GB-E01	SS-03	7' - 9'	23.7 %	16	37	21	

LIQUID AND PLASTIC LIMITS TEST REPORT

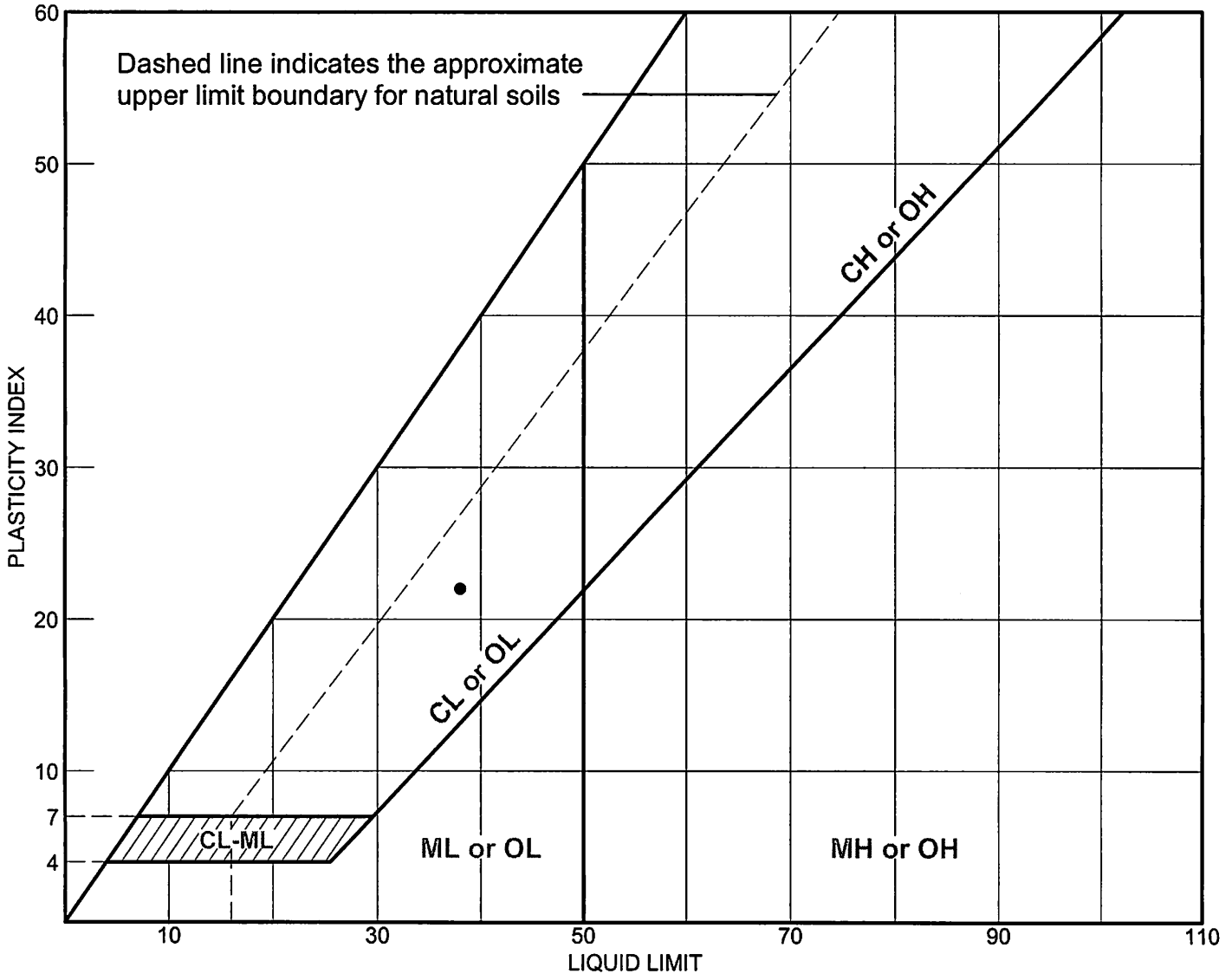
SJB SERVICES, INC.

Client: MACTEC

Project: BUFFALO COLOR

Project No.: BD-10-080-A

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	GB-E02	SS-09	25' - 27'	34.8 %	16	38	22	

LIQUID AND PLASTIC LIMITS TEST REPORT

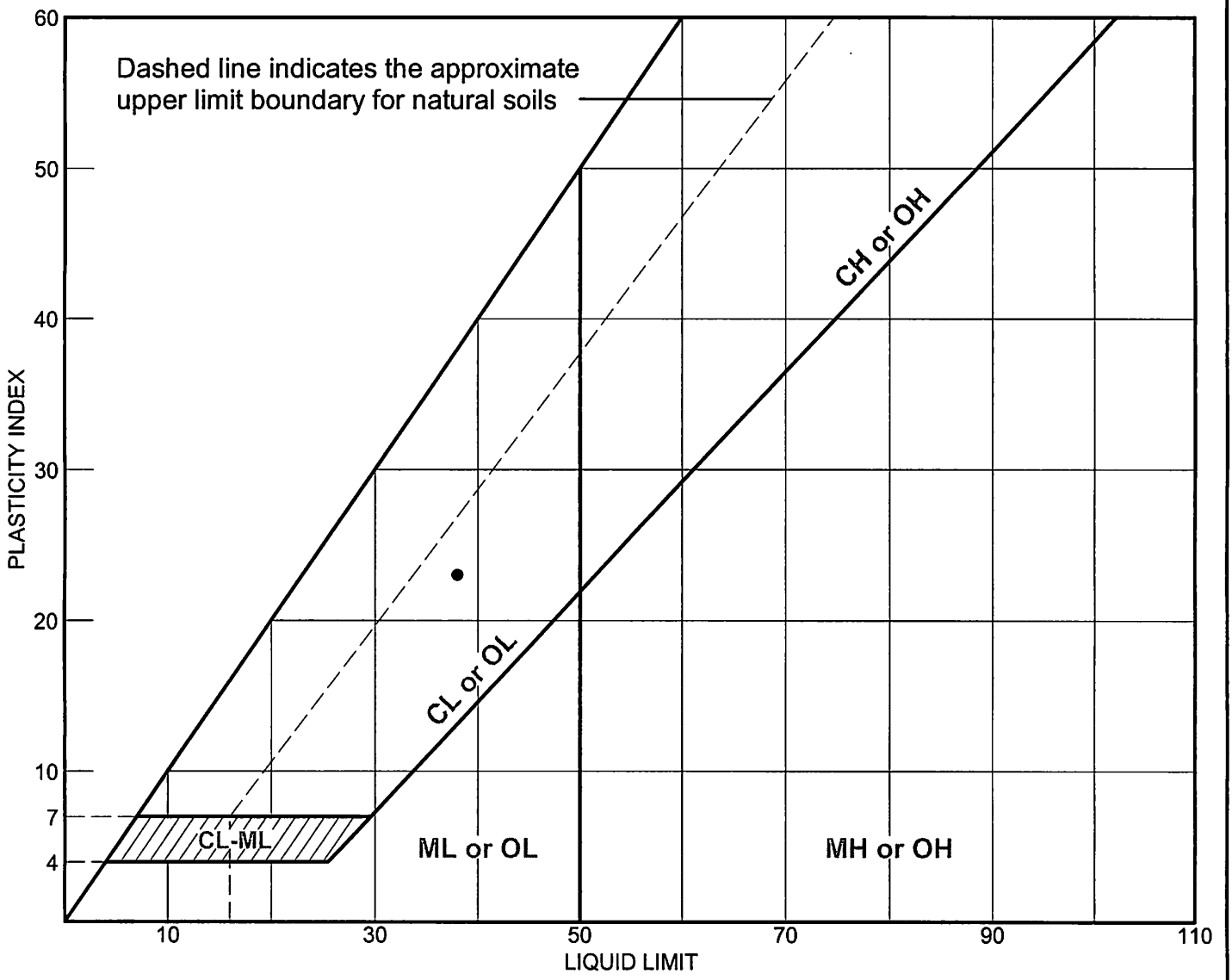
SJB SERVICES, INC.

Client: MACTEC

Project: BUFFALO COLOR

Project No.: BD-10-080-A

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	GB-E04	SS-12	35' - 37'	40.4 %	15	38	23	

LIQUID AND PLASTIC LIMITS TEST REPORT

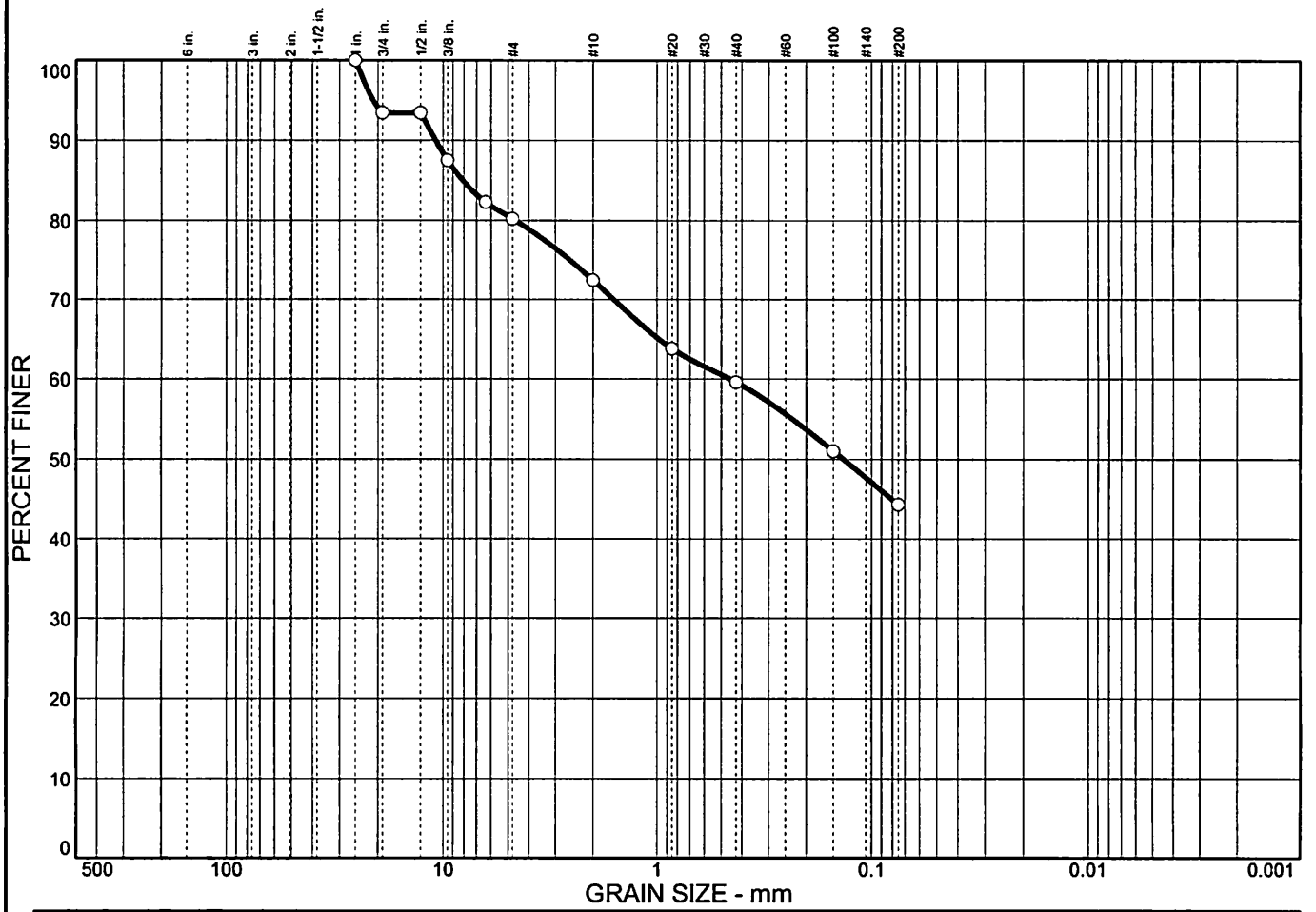
SJB SERVICES, INC.

Client: MACTEC

Project: BUFFALO COLOR

Project No.: BD-10-080-A

ASTM C-136: Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	19.8	35.9	44.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
.75 in.	93.4		
.5 in.	93.4		
.375 in.	87.5		
.25 in.	82.3		
#4	80.2		
#10	72.4		
#20	63.8		
#40	59.6		
#100	51.0		
#200	44.3		

* (no specification provided)

Soil Description

GB-C01, SS-15: 35.5' - 37'

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 8.12 D_{60}= 0.454 D_{50}= 0.135
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

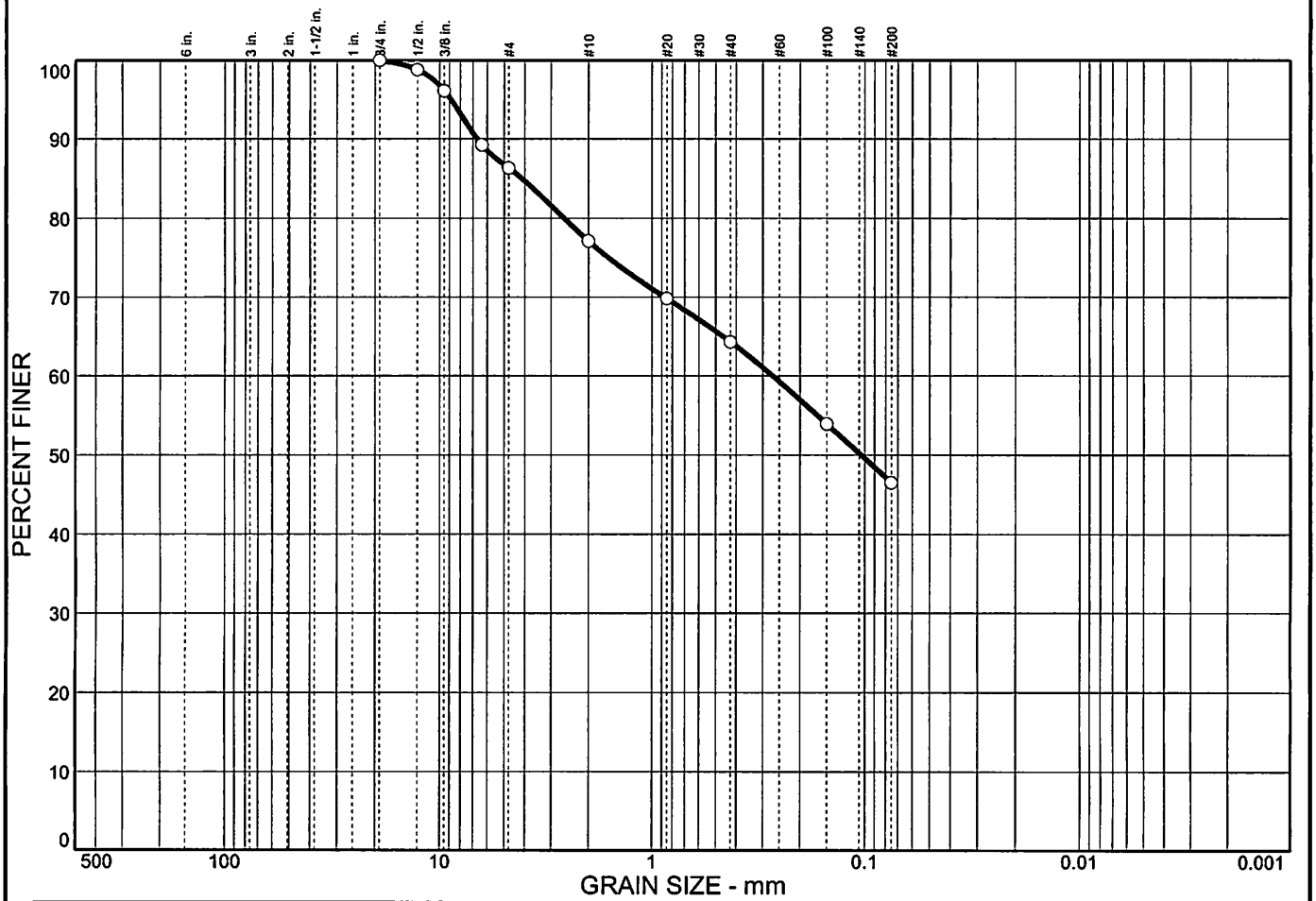
SAMPLE NUMBER: 10-761

Sample No.: SS-15 **Source of Sample:** GB-C01 **Date:** 6/18/10
Location: GB-C01, SS-15: 35.5' - 37' **Elev./Depth:** 35.5' - 37'

SJB SERVICES, INC.

Client: MACTEC
Project: BUFFALO COLOR
Project No: BD-10-080-A

ASTM C-136: Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	13.7	39.8	46.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.8		
.375 in.	96.1		
.25 in.	89.2		
#4	86.3		
#10	77.1		
#20	69.8		
#40	64.3		
#100	53.9		
#200	46.5		

* (no specification provided)

Soil Description

GB-E01, SS-14: 40.5' - 42'

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 4.13 D_{60}= 0.269 D_{50}= 0.104
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

SAMPLE NUMBER: 10-782

Sample No.: SS-14 **Source of Sample:** GB-E01 **Date:** 6/18/10
Location: GB-E01, SS-14: 40.5' - 42' **Elev./Depth:** 40.5' - 42'

SJB SERVICES, INC.

Client: MACTEC
Project: BUFFALO COLOR
Project No: BD-10-080-A

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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2

Attached are the results of laboratory testing conducted on various samples from the above referenced project. Mr. Travis Carpenter, representing MACTEC, chose samples contained in this report.

The testing conducted was as follows:

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock

ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

Samples were received at the SJB Services, Inc. laboratory on June 8, 2010 where they were processed for testing.

If the reviewer should have any questions concerning this report, please do not hesitate to contact our office at any time.

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2A

Sample Number: 10-758
Sample Identification: GB-C01, ST-06: 16' – 16.5'



GB-C01 - ST-06: 16'-16.5'
Extraction - Side 1

GB-C01 - ST-06: 16'-16.5'
Extraction - Side 2

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock
ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

Moisture Content = 30.5 %
Undrained Shear Strength = 0.33 tsf

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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2A

Sample Number: 10-758
Sample Identification: GB-C01, ST-06: 16' – 16.5'

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

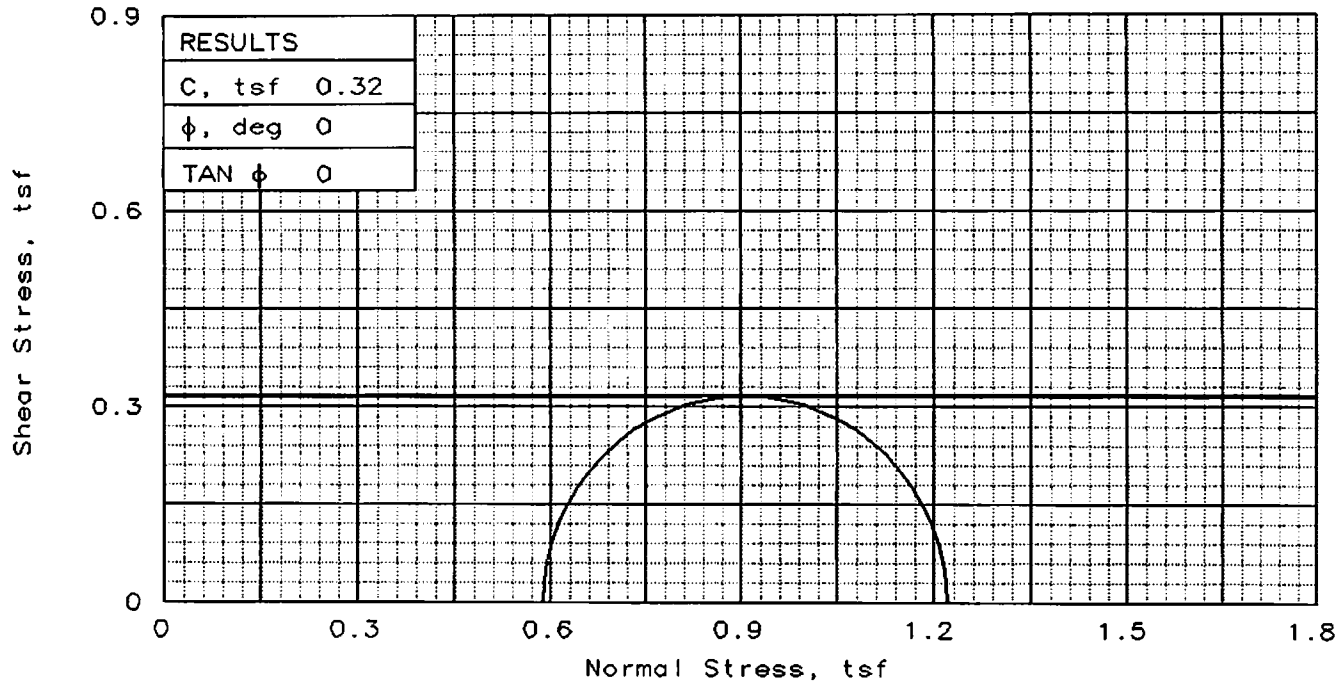
Refer to Page 3 for test results

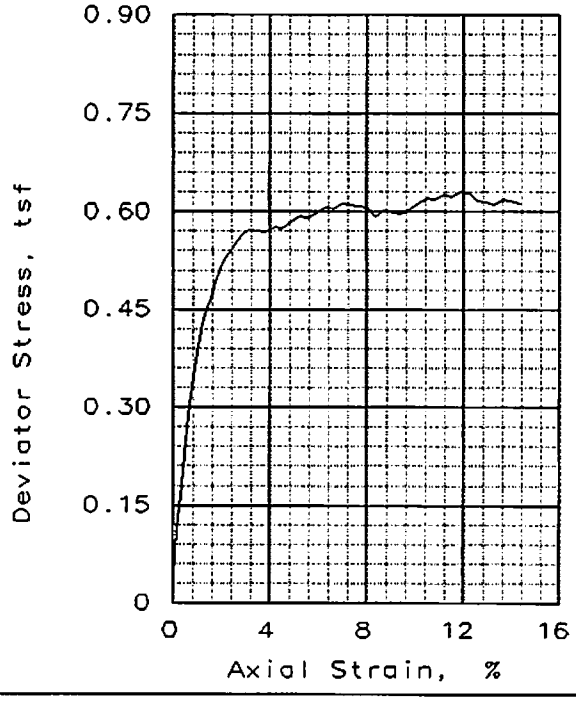


GB-C01 - ST-06: 16'-16.5'
Test Sample: Pre-test



GB-C01 - ST-06: 16'-16'5
Test Sample - Post-test





SAMPLE NO.:		1
INITIAL	WATER CONTENT, %	30.5
	DRY DENSITY, pcf	94.1
	SATURATION, %	106.6
	VOID RATIO	0.758
	DIAMETER, in	2.84
	HEIGHT, in	5.72
AT TEST	WATER CONTENT, %	30.0
	DRY DENSITY, pcf	94.1
	SATURATION, %	104.9
	VOID RATIO	0.758
	DIAMETER, in	2.84
	HEIGHT, in	5.72
Strain rate, %/min		0.05
BACK PRESSURE, tsf		0.00
CELL PRESSURE, tsf		0.59
FAIL. STRESS, tsf		0.63
ULT. STRESS, tsf		
σ_1 FAILURE, tsf		1.22
σ_3 FAILURE, tsf		0.59

TYPE OF TEST:
Unconsolidated Undrained
SAMPLE TYPE: UNDISTURBED
DESCRIPTION: GB-C01,ST-06:
16' - 16.5'

SPECIFIC GRAVITY= 2.65
REMARKS: LTR-2A

SAMPLE NUMBER: 10-758

Fig. No.: PAGE 3

CLIENT: MACTEC

PROJECT: BUFFALO COLOR

SAMPLE LOCATION: GB-C01,ST-06: 16'- 16.5'

PROJ. NO.: BD-10-80-A DATE: 6/18/10

TRIAXIAL SHEAR TEST REPORT

SJB SERVICES, INC.

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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2B

Sample Number: 10-770
Sample Identification: GB-C03, ST-13: 31' – 31.5'



GB-C03 - ST-13: 31'-31.5'
Extraction - Side 1



GB-C03 - ST-13: 31'-31.5'
Extraction - Side 2

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock
ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

Moisture Content = 37.8 %
Undrained Shear Strength = 0.29 tsf

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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2B

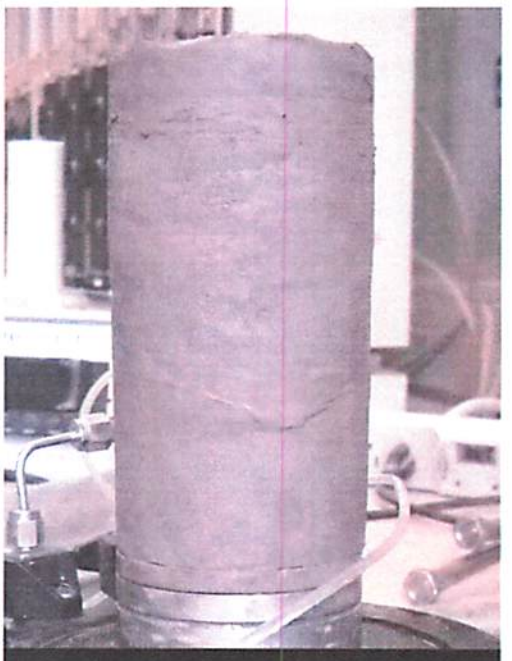
Sample Number: 10-770
Sample Identification: GB-C03, ST-13: 31' – 31.5'

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

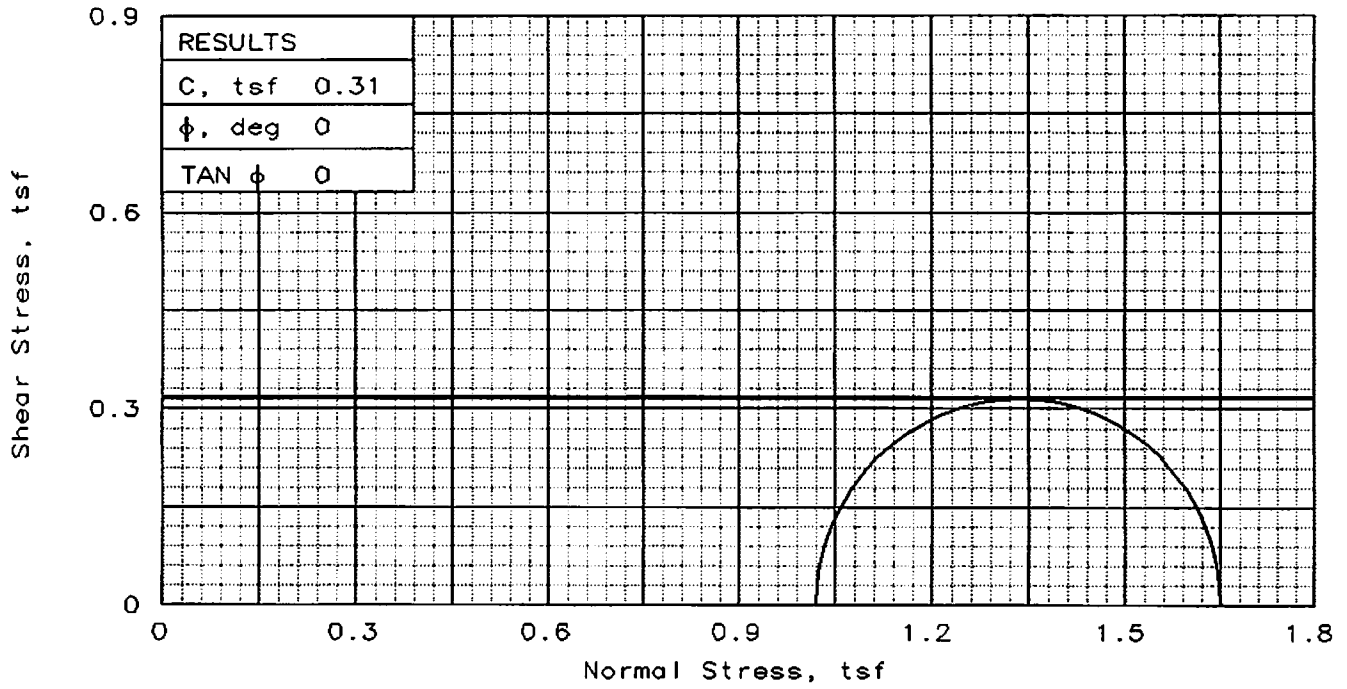
Refer to page 3 for test results

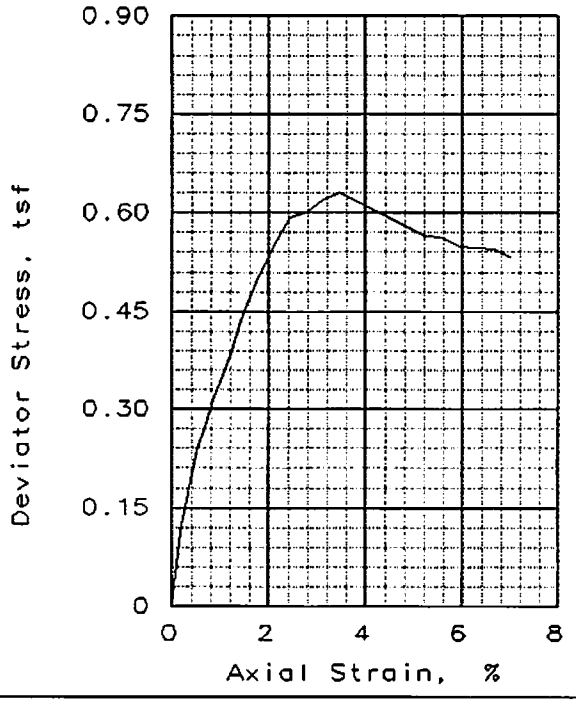


GB-C03 - ST-13: 31'-31.5
Test Sample - Pre-test



GB-C03 - ST-13: 31'-31.5'
Test Sample - Post-test





SAMPLE NO.:		1
INITIAL	WATER CONTENT, %	37.8
	DRY DENSITY, pcf	84.9
	SATURATION, %	105.7
	VOID RATIO	0.948
	DIAMETER, in	2.83
	HEIGHT, in	5.71
AT TEST	WATER CONTENT, %	37.1
	DRY DENSITY, pcf	84.9
	SATURATION, %	103.8
	VOID RATIO	0.948
	DIAMETER, in	2.83
	HEIGHT, in	5.71
Strain rate, %/min		0.05
BACK PRESSURE, tsf		0.00
CELL PRESSURE, tsf		1.02
FAIL. STRESS, tsf		0.63
ULT. STRESS, tsf		
σ_1 FAILURE, tsf		1.65
σ_3 FAILURE, tsf		1.02

TYPE OF TEST:
Unconsolidated Undrained
SAMPLE TYPE: UNDISTURBED
DESCRIPTION: GB-C03,ST-13:
31' - 31.5'

SPECIFIC GRAVITY= 2.65
REMARKS: LTR-2B

SAMPLE NUMBER: 10-770

Fig. No.: PAGE 3

CLIENT: MACTEC

PROJECT: BUFFALO COLOR

SAMPLE LOCATION: GB-C03,ST-13: 31'- 31.5'

PROJ. NO.: BD-10-80-A DATE: 6/18/10

TRIAXIAL SHEAR TEST REPORT

SJB SERVICES, INC.

Western New York Office
5167 South Park Avenue
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Phone: (716) 649-8110
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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2C

Sample Number: 10-774
Sample Identification: GB-C04, ST-05: 13.25' – 13.75'



GB-C04 - ST-05: 13.25'-13.75'
Extraction - Side 1



GB-C04 - ST-05: 13.25'-13.75'
Extraction - Side 2

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock
ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

Moisture Content = 32.7 %
Undrained Shear Strength = 0.33 tsf

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Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2C

Sample Number: 10-774
Sample Identification: GB-C04, ST-05: 13.25' – 13.75'

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

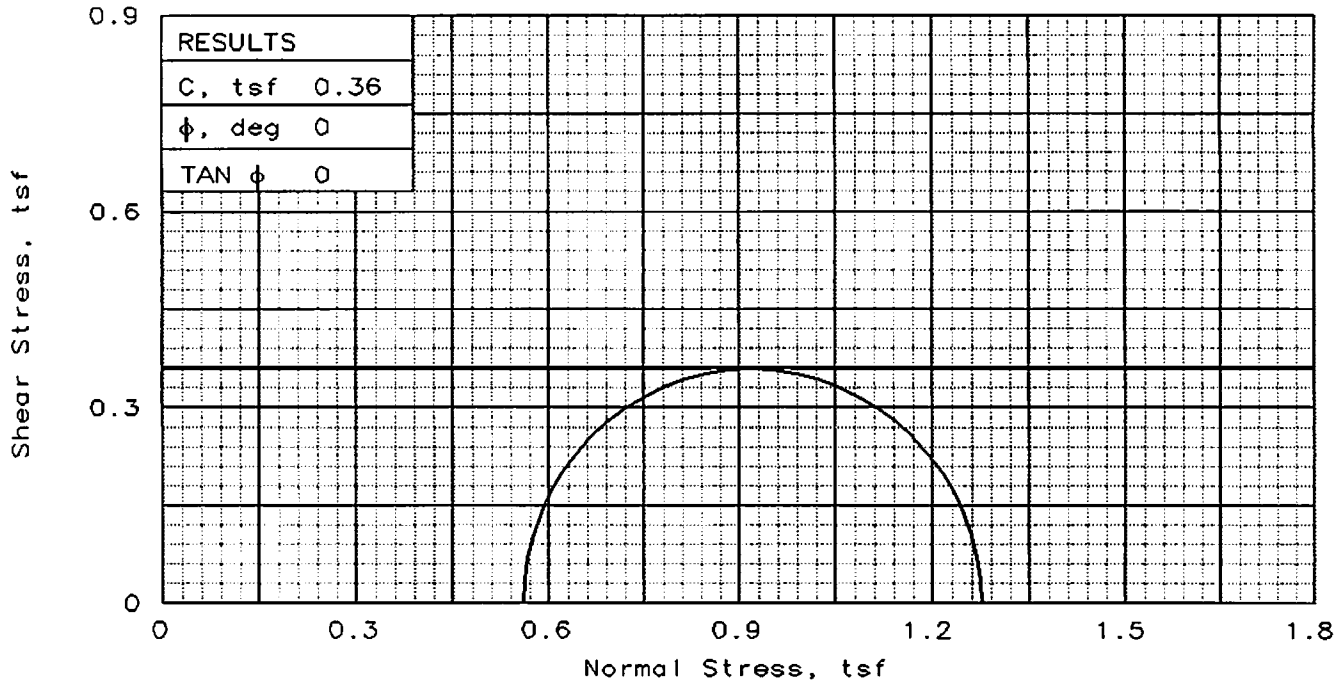
Refer to page 3 for test results

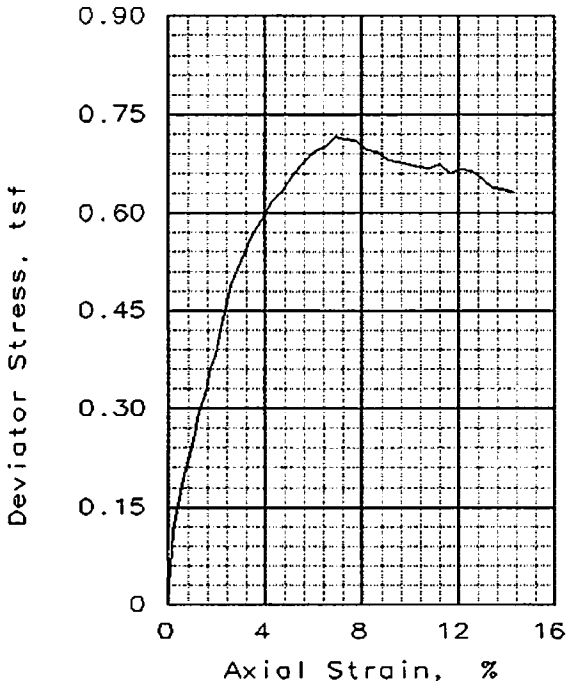


GB-C04 - ST-05: 13.25'-13.75'
Test Sample - Pre-test



GB-C04 - ST-05: 13.25'-13.75'
Test Sample - Post-test





SAMPLE NO.:		1
INITIAL	WATER CONTENT, %	32.7
	DRY DENSITY, pcf	82.9
	SATURATION, %	86.9
	VOID RATIO	0.996
	DIAMETER, in	2.99
	HEIGHT, in	4.62
AT TEST	WATER CONTENT, %	32.2
	DRY DENSITY, pcf	82.9
	SATURATION, %	85.8
	VOID RATIO	0.996
	DIAMETER, in	2.99
	HEIGHT, in	4.62
Strain rate, %/min		0.05
BACK PRESSURE, tsf		0.00
CELL PRESSURE, tsf		0.56
FAIL. STRESS, tsf		0.72
ULT. STRESS, tsf		
σ_1 FAILURE, tsf		1.28
σ_3 FAILURE, tsf		0.56

TYPE OF TEST:
Unconsolidated Undrained
SAMPLE TYPE: UNDISTURBED
DESCRIPTION: GB-C04, ST-05
13.25' - 13.75'

SPECIFIC GRAVITY= 2.65
REMARKS: LTR-2C

SAMPLE NUMBER: 10-774

Fig. No.: PAGE 3

CLIENT: MACTEC

PROJECT: BUFFALO COLOR

SAMPLE LOCATION: GB-C04,ST-05:13.25'-13.75

PROJ. NO.: BD-10-80-A DATE: 6/18/10

TRIAXIAL SHEAR TEST REPORT

SJB SERVICES, INC.

Western New York Office
5167 South Park Avenue
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Laboratory Test Report

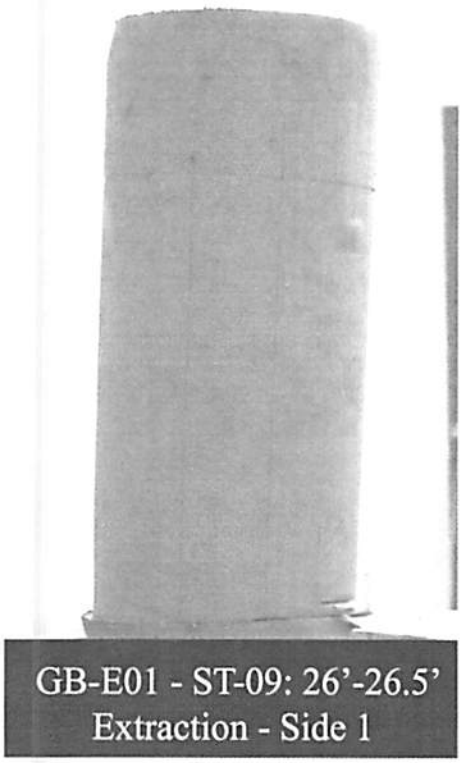
PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2D

Sample Number: 10-780
Sample Identification: GB-E01, ST-09: 26' – 26.5'



GB-E01 - ST-09: 26'-26.5'
Extraction - Side 1



GB-E01 - ST-09: 26'-26.5'
Extraction - Side 2

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock
ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

Moisture Content = 32.0 %
Undrained Shear Strength = 0.25 tsf

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5167 South Park Avenue
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Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2D

Sample Number: 10-780
Sample Identification: GB-E01, ST-09: 26' – 26.5'

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

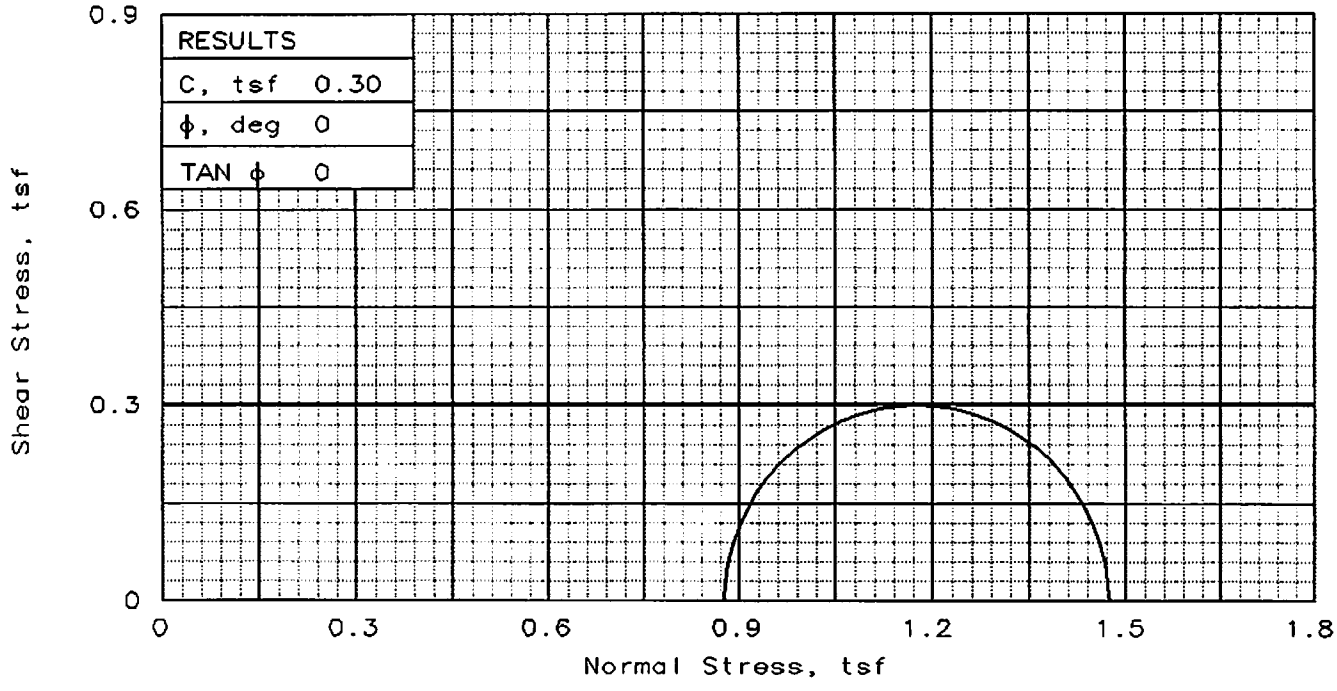
Refer to Page 3 for test results

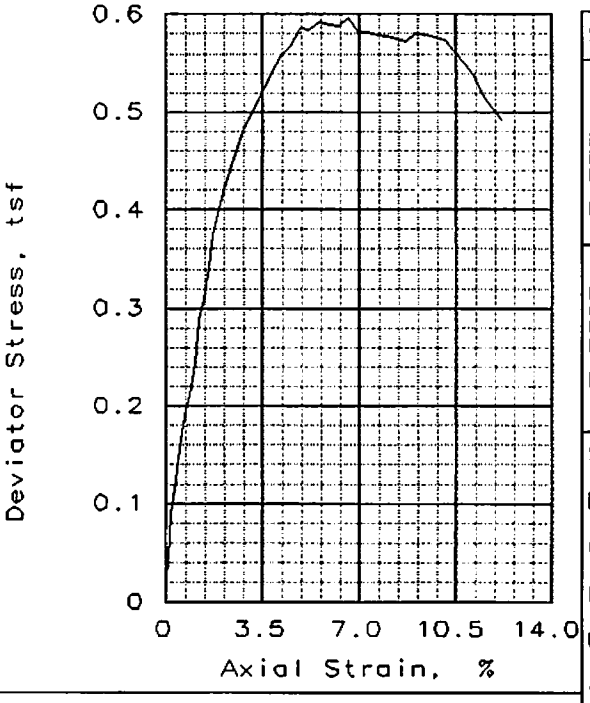


GB-E01 - ST-09: 26'-26.5'
Test Sample - Pre-test



GB-E01 - ST-09: 26'-26.5'
Test Sample - Post-test





SAMPLE NO.:		1
INITIAL	WATER CONTENT, %	32.0
	DRY DENSITY, pcf	90.0
	SATURATION, %	101.1
	VOID RATIO	0.838
	DIAMETER, in	2.86
	HEIGHT, in	5.74
AT TEST	WATER CONTENT, %	31.5
	DRY DENSITY, pcf	90.0
	SATURATION, %	99.6
	VOID RATIO	0.838
	DIAMETER, in	2.86
	HEIGHT, in	5.74
Strain rate, %/min		0.05
BACK PRESSURE, tsf		0.00
CELL PRESSURE, tsf		0.88
FAIL. STRESS, tsf		0.60
ULT. STRESS, tsf		
σ_1 FAILURE, tsf		1.47
σ_3 FAILURE, tsf		0.88

TYPE OF TEST:
Unconsolidated Undrained
SAMPLE TYPE: UNDISTURBED
DESCRIPTION: GB-E01, ST-09:
26' - 26.5'

SPECIFIC GRAVITY= 2.65
REMARKS: LTR-2D

SAMPLE NUMBER: 10-780

Fig. No.: PAGE 3

CLIENT: MACTEC

PROJECT: BUFFALO COLOR

SAMPLE LOCATION: GB-E01,ST-09: 26' - 26.5'

PROJ. NO.: BD-10-80-A DATE: 6/18/10

TRIAXIAL SHEAR TEST REPORT

SJB SERVICES, INC.

Western New York Office
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

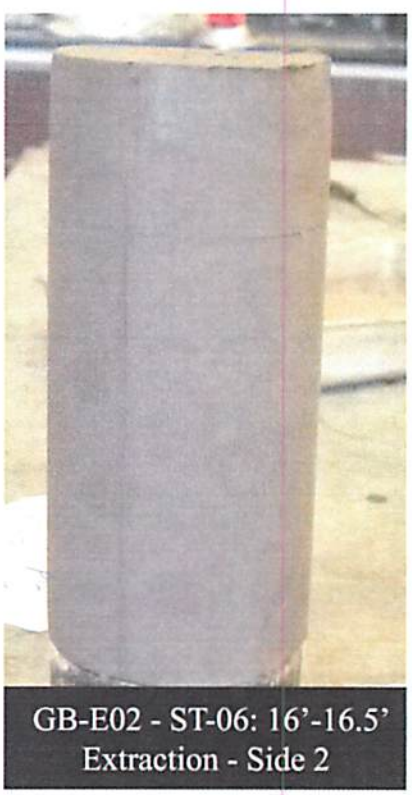
DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2E

Sample Number: 10-785
Sample Identification: GB-E02, ST-02: 16' – 16.5'



GB-E02 - ST-06: 16'-16.5'
Extraction - Side 1



GB-E02 - ST-06: 16'-16.5'
Extraction - Side 2

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock
ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

Moisture Content = 30.0 %
Undrained Shear Strength = 0.30 tsf

Western New York Office
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

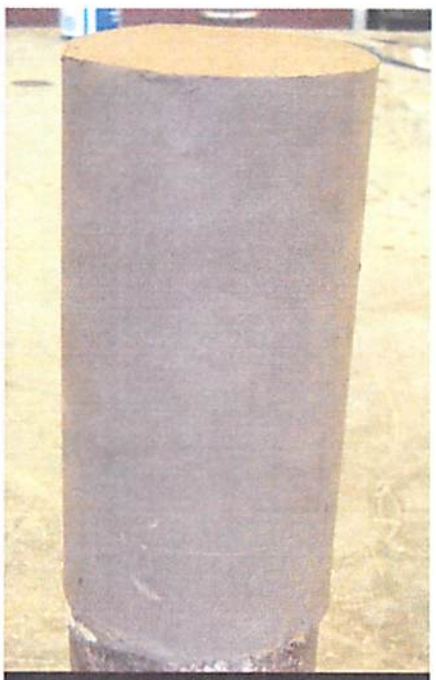
DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2E

Sample Number: 10-785
Sample Identification: GB-E02, ST-06: 16' – 16.5'

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

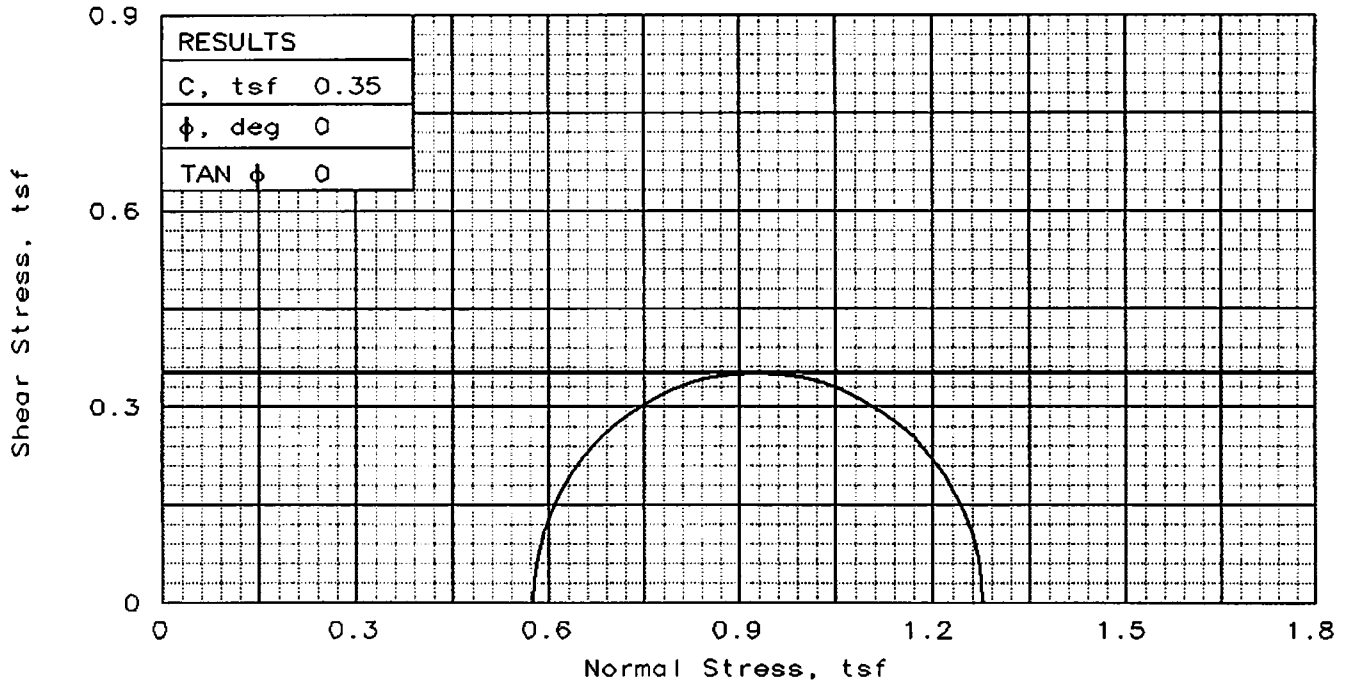
Refer to Page 3 for test results

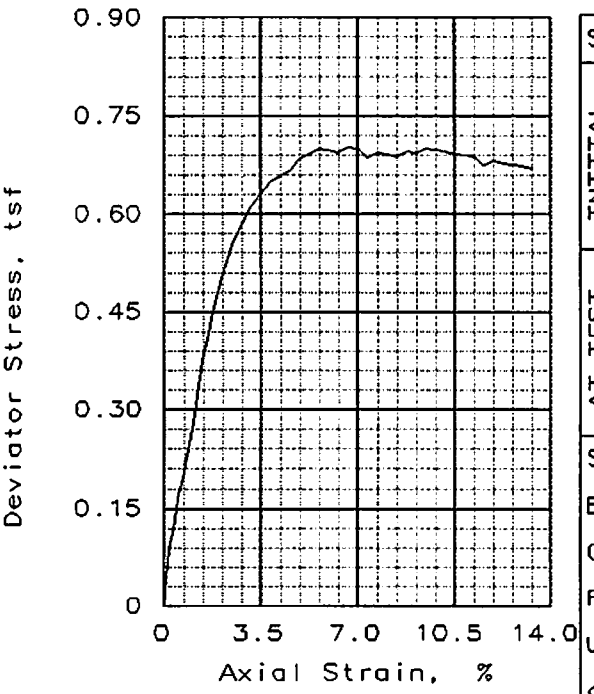


GB-E02 - ST-06: 16'-16.5'
Test Sample - Pre-test



GB-E02 - ST-06: 16'-16.5'
Test Sample - Post-test





SAMPLE NO.:		1
INITIAL	WATER CONTENT, %	30.0
	DRY DENSITY, pcf	91.0
	SATURATION, %	97.1
	VOID RATIO	0.819
	DIAMETER, in	2.90
	HEIGHT, in	5.70
AT TEST	WATER CONTENT, %	29.4
	DRY DENSITY, pcf	91.0
	SATURATION, %	95.0
	VOID RATIO	0.819
	DIAMETER, in	2.90
	HEIGHT, in	5.70
Strain rate, %/min		0.05
BACK PRESSURE, tsf		0.00
CELL PRESSURE, tsf		0.58
FAIL. STRESS, tsf		0.70
ULT. STRESS, tsf		
σ_1 FAILURE, tsf		1.28
σ_3 FAILURE, tsf		0.58

TYPE OF TEST:
Unconsolidated Undrained
SAMPLE TYPE: UNDISTURBED
DESCRIPTION: GB-E02, ST-06:
16' - 16.5'

SPECIFIC GRAVITY= 2.65
REMARKS: LTR-2E

SAMPLE NUMBER: 10-785

Fig. No.: PAGE 3

CLIENT: MACTEC

PROJECT: BUFFALO COLOR

SAMPLE LOCATION: GB-E02,ST-06: 16'- 16.5'

PROJ. NO.: BD-10-80-A DATE: 6/18/10

TRIAXIAL SHEAR TEST REPORT

SJB SERVICES, INC.

Western New York Office
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

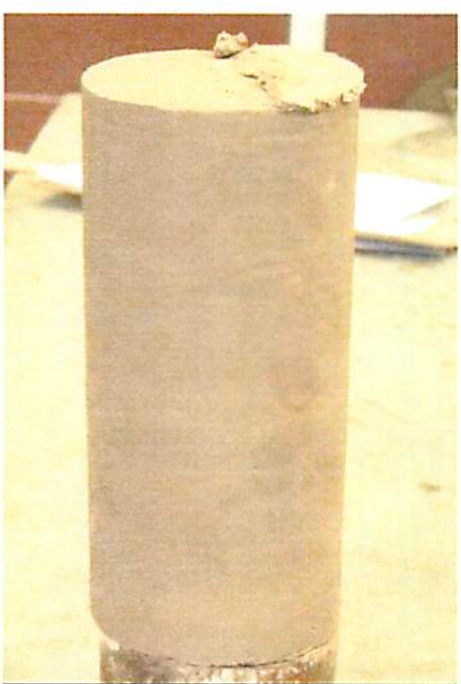
PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

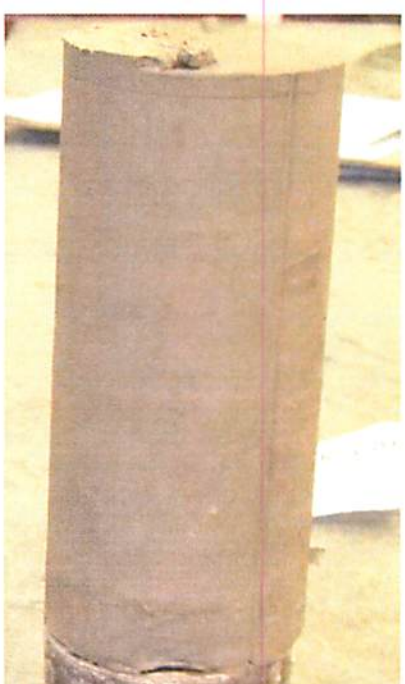
DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2F

Sample Number: 10-793
Sample Identification: GB-E04, ST-04: 11.25' – 11.75



GB-E04 - ST-04: 11.25'-11.75"
Extraction - Side 1



GB-E04 - ST-04: 11.25'-11.75'
Extraction - Side 2

ASTM D-2216: Laboratory Determination of Water (Moisture) Content of Soil & Rock
ASTM D 4648: Standard Test Method for Laboratory Miniature Vane Shear Test for Saturated Fine Grained Clayey Soil

Moisture Content = 27.8 %
Undrained Shear Strength = 0.30 tsf

Western New York Office
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: **Buffalo Color**

CLIENT: **MACTEC**

DATE: **June 22, 2010**

PROJECT NO.: BD-10-080-A
REPORT NO.: LTR-2F

Sample Number: 10-793
Sample Identification: GB-E04, ST-04: 11.25' – 11.75'

ASTM D-2850: Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils

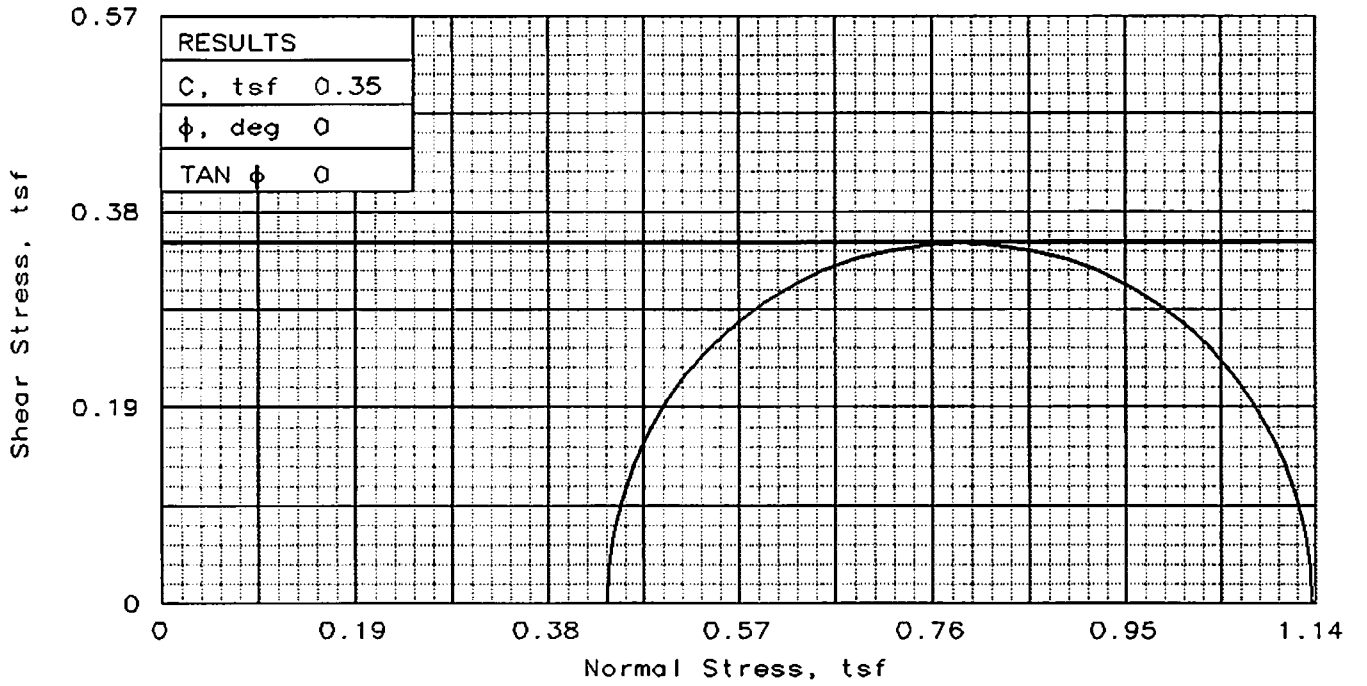
Refer to Page 3 for test results

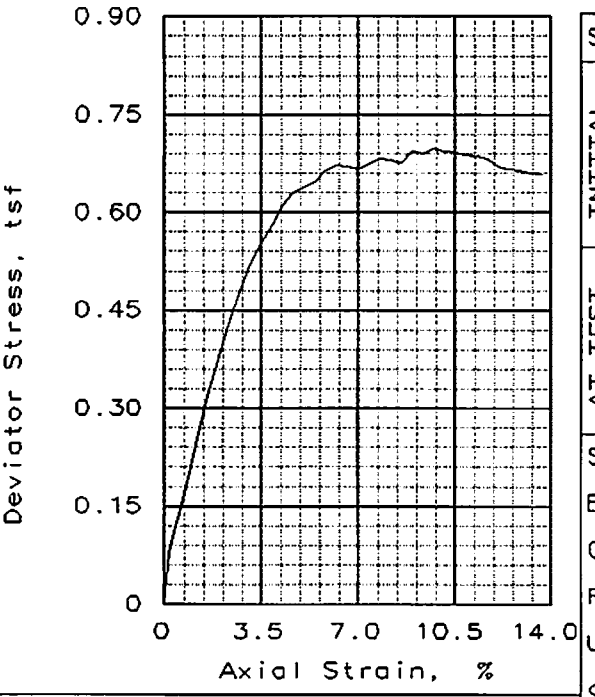


GB-E04 - ST-04: 11.25'-11.75'
Test Sample - Pre-test



GB-E04 - ST-04: 11.25'-11.75'
Test Sample - Post-test





SAMPLE NO.:		1
INITIAL	WATER CONTENT, %	27.8
	DRY DENSITY, pcf	100.8
	SATURATION, %	114.9
	VOID RATIO	0.641
	DIAMETER, in	2.86
	HEIGHT, in	5.13
AT TEST	WATER CONTENT, %	27.1
	DRY DENSITY, pcf	100.8
	SATURATION, %	112.1
	VOID RATIO	0.641
	DIAMETER, in	2.86
	HEIGHT, in	5.13
Strain rate, %/min		0.05
BACK PRESSURE, tsf		0.00
CELL PRESSURE, tsf		0.44
FAIL. STRESS, tsf		0.70
ULT. STRESS, tsf		
σ_1 FAILURE, tsf		1.14
σ_3 FAILURE, tsf		0.44

TYPE OF TEST:
Unconsolidated Undrained
SAMPLE TYPE: UNDISTURBED
DESCRIPTION: GB-E04, ST-04:
11.25' - 11.75'

SPECIFIC GRAVITY= 2.65
REMARKS: LTR-2F

SAMPLE NUMBER: 10-793

Fig. No.: PAGE 3

CLIENT: MACTEC

PROJECT: BUFFALO COLOR

SAMPLE LOCATION: GB-E04,ST-04:11.25'-11.75

PROJ. NO.: BD-10-80-A DATE: 6/18/10

TRIAXIAL SHEAR TEST REPORT

SJB SERVICES, INC.

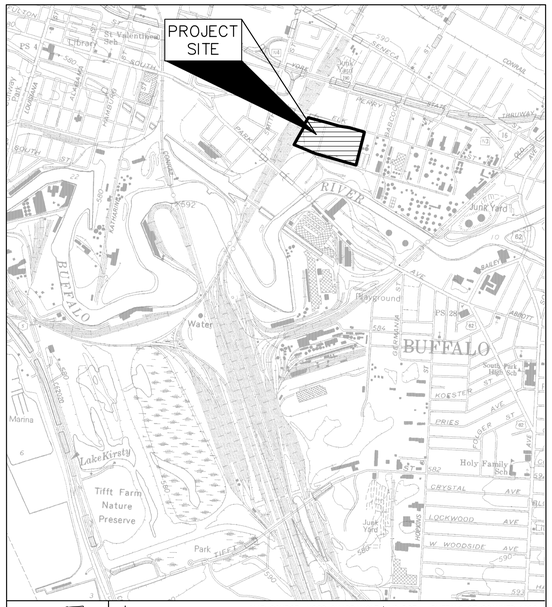
APPENDIX R (CD)

DATA VALIDATION REPORTS

APPENDIX S

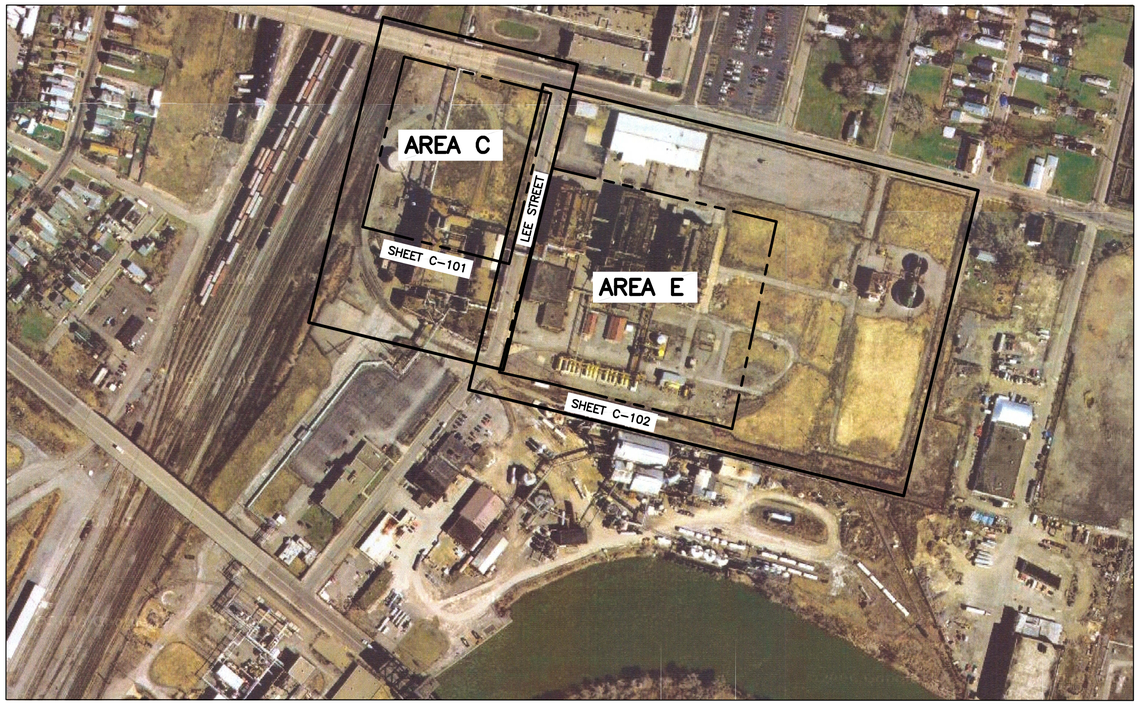
AREA C DESIGN DRAWINGS AND SPECIFICATIONS

SOUTH BUFFALO DEVELOPMENT, L.L.C.
REMEDIAL DESIGN FOR AREA C AND E EXCAVATIONS
FORMER BUFFALO COLOR CORPORATION SITE
BUFFALO, NEW YORK
SEPTEMBER 2010



LOCUS MAP

0 250 500 1000
SCALE IN FEET



MAP SOURCE: GIS COLOR ORTHO IMAGE OF ERIE COUNTY N.Y.

KEY

0 100 200 400
SCALE IN FEET

DRAWING INDEX

INCLUDED THIS SUBMITTAL	SHEET NUMBER	DRAWING TITLE	DISCIPLINE NUMBER
•	1	COVER SHEET	G–001
•	2	LEGEND, ABBREVIATIONS, AND GENERAL NOTES	G–002
•	3	AREA C EXCAVATION PLAN	C–101
•	4	AREA E EXCAVATION PLAN	C–102

NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD
B	09/07/10	100% DESIGN FOR CLIENT REVIEW	RJR	RTB
A	05/13/10	ISSUED 50% DESIGN FOR CLIENT REVIEW		

DSGN R.T. BELTCHER DR M.R.STACEY CHK SCP APVD JMS

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REMEDIAL DESIGN
FOR AREA C AND E EXCAVATIONS
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

MACTEC Engineering and Consulting, Inc.
P.O. Box 1062, 511 Congress Street
Portland, Maine 04112–7050
(207) 775–5401

MACTEC

GENERAL
COVER SHEET

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	09/07/10
PROJ	3410090701
DWG	G-001
SHEET	1 OF 4

FILE NAME: M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA C & E RD EXCAVATION\SBD-RMD G-001.dwg PLOT DATE: Fri, 03 Sep 2010 PLOT TIME: 3:06 PM

LEGEND

- PROPERTY LINE
- BUILDING/FORMER BUILDING (AREA E)
- TANK
- MAJOR CONTOUR (GRADE)
- MINOR CONTOUR (GRADE)
- GROUND SHOT (GRADE)
- FENCE LINE
- RAILROAD CENTER LINE
- DIKE
- SANITARY SEWER WITH FLOW DIRECTION
- STORM DRAIN WITH FLOW DIRECTION
- PROCESS SEWER WITH FLOW DIRECTION
- SPRINKLER
- WATER LINE
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- PROCESS SEWER MANHOLE
- SPRINKLER
- WATER VALVE
- FIRE HYDRANT
- RISER
- MONITORING WELL
- MONITORING WELL (PZ)
- MIP LOCATION (MIP)
- 2009 TEST BORING
- SOIL BORING/ SAMPLING LOCATIONS
- PDI BORING LOCATIONS
- MANHOLE SEDIMENT SAMPLE LOCATION
- CONFIRMATION SOIL SAMPLE
- STORM DRAIN INLET PROTECTION (NITC)
- STABILIZED CONSTRUCTION ENTRANCE (NITC)
- SILT FENCE (NITC)
- PROPOSED SHALLOW EXCAVATION
- PROPOSED DEEP EXCAVATION

REFERENCE LEGEND

- DETAIL LETTER
- WHERE DETAIL APPEARS
- WHERE DETAIL TAKEN
- SECTION NUMBER
- WHERE SECTION APPEARS
- WHERE SECTION TAKEN

ABBREVIATIONS:

ACOE	ARMY CORPS OF ENGINEER
AVE	AVENUE
BSA	BUFFALO SEWER AUTHORITY
BLDG	BUILDING
CAB	CATCH BASIN IN A CONCRETE PAD
CIP	CAST IRON PIPE
℄	CENTER LINE
CONC	CONCRETE
ø	DIAMETER
E	EASTING, EAST
EL	ELEVATION
Z	ELEVATION
EW	EXTRACTION WELL
FF	FINISH FLOOR
FE	FLOW ELEMENT
HDPE	HIGH DENSITY POLYETHYLENE
ID	IDENTIFICATION
INV	INVERT
MH	MANHOLE
MIN	MINIMUM
MW	MONITORING WELL
NE	NORTHEAST
N	NORTHING, NORTH
NW	NORTHWEST
PT	POINT
PVC	POLYVINYL CHLORIDE
PI	PRESSURE INDICATOR
PS	PROCESS SEWER
RCP	REINFORCED CONCRETE PIPE
S	SOUTH, SAMPLE PORT
SB	SOIL BORING
SD	STORM DRAIN
SE	SOUTHEAST
SP	SAMPLE PORT
SS	SANITARY SEWER
SW	SOUTHWEST
TYP	TYPICAL
VT	VITRIFIED CLAY TILE
W16	WATER VALVE AND NUMBER

GENERAL NOTES:

1. CONDITIONS BASE MAPPING WAS ESTABLISHED FROM A COMBINATION OF SEVERAL SURVEY AND DRAWING SOURCES. THOSE SOURCES INCLUDED:
   - TOPOGRAPHIC FIELD SURVEY OF AREAS A, B, C, AND E COMPLETED MARCH 2010 BY NIAGARA BOUNDARY & MAPPING SERVICES, 2475 MILITARY ROAD, NIAGARA FALLS, NY 14304.
   - LIMITED LOCATION AND TOPOGRAPHIC FIELD SURVEY OF AREA A AND AREA E COMPLETED BY LU ENGINEERS IN JULY 2005.
2. ABBREVIATIONS ON THIS SHEET ARE PROVIDED AS A CONSOLIDATED LIST AND SHOULD NOT BE PERCEIVED AS ALL INCLUSIVE.
3. KNOWN UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN ON THE DRAWINGS. THE LOCATION OF THESE EXISTING UNDERGROUND UTILITIES AND STRUCTURES SHOULD BE CONSIDERED APPROXIMATE. THEREFORE, PRIOR TO THE COMMENCEMENT OF SITE ACTIVITIES, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES OR STRUCTURES IN THE AREAS OF WORK. IF UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF PROTECTION. THE CONTRACTOR SHALL CONFIRM THAT ANY ABANDONED UTILITY LOCATED WITHIN THE LIMIT OF WORK HAS BEEN ABANDONED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY OWNER.
4. TEMPORARY CONTAMINATION REDUCTION ZONES WILL BE PLACED AT EGRESS POINTS FROM EXCLUSION ZONES AS DEEMED NECESSARY BY THE SITE H&S OFFICER TO PREVENT TRACKING OF CONTAMINATED SOILS INTO THE SUPPORT ZONE.
5. CONSTRUCTION WATER MANAGEMENT AND DEWATERING WILL BE REQUIRED DURING EXCAVATION ACTIVITIES. GROUNDWATER DEPTH VARIES FROM APPROXIMATELY 3 FEET TO 5 FEET BELOW GROUND SURFACE. SOIL EXCAVATION WILL BE CONDUCTED TO A MAXIMUM OF 13 FEET BELOW GROUND SURFACE. WATER THAT IS REMOVED FROM AN EXCAVATION BY THE CONSTRUCTION WATER MANAGEMENT AND DEWATERING SYSTEM WILL BE PROCESSED AT A TEMPORARY ON–SITE WATER TREATMENT SYSTEM AND DISCHARGED TO THE BSA SEWER SYSTEM. TREATMENT AND DISCHARGE OF CONSTRUCTION WATER WILL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE BSA PERMIT REQUIREMENTS.
6. DURING SOIL EXCAVATION ACTIVITIES ADJACENT TO AND AT ELEVATIONS BELOW ACTIVE/OCCUPIED EXISTING UTILITIES OR STRUCTURES, THE UTILITIES OR STRUCTURES SHALL BE CONSTANTLY MONITORED FOR SIGNS OF SOIL DISPLACEMENT OR MOVEMENT THAT WOULD INDICATE LOSS OF SOIL SUPPORT OR SETTLEMENT. MONITORING OF THE STRUCTURES SHOULD BE CONDUCTED BY INSTRUMENT SURVEY BY ESTABLISHING MONITORING POINTS THAT WOULD BE PERIODICALLY MEASURED DURING THE WORK.
7. EXCAVATION STABILITY IS THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
8. THE CONTRACTOR SHALL INSTALL AND MAINTAIN SEDIMENT AND EROSION CONTROL MEASURES AS DETAILED IN THE NYSDEC–APPROVED SITE STORMWATER POLLUTION PREVENTION PLANS (SWPPPS) FOR EACH AREA OF THE SITE.

EXCAVATION:

9. MAINTAIN EQUIPMENT AND STOCKPILE OFFSET DISTANCES AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
10. SEGREGATE UNSATURATED OVERBURDEN, NON–HAZARDOUS SOIL, AND HAZARDOUS SOIL AS SPECIFIED HEREIN.

EXCAVATION BACKFILL:

11. EXCAVATION BACKFILL MATERIALS SHALL BE PLACED IN MAXIMUM LIFTS OF 1–FOOT AND COMPACTED BY A MINIMUM OF THREE PASSES OF A 12,000 POUND VIBRATORY DRUM COMPACTOR.
12. APPLY OXYGEN RELEASING AMENDMENT MATERIALS AS SPECIFIED FOLLOWING PLACEMENT AND PRIOR TO COMPACTION OF EACH LIFT OF BACKFILL.

FINAL GRADING AND SITE RESTORATION:

13. BACKFILL EXCAVATIONS TO MATCH ADJACENT/EXISTING GRADES.
14. GRADE SMOOTH AND RELATIVELY LEVEL TO PREVENT PONDING OF SURFACE WATER.
15. FINAL GRADING, TOPSOIL, SEEDING, AND RESTORATION SHALL BE IN ACCORDANCE WITH ONGOING REMEDIAL CONSTRUCTION (I.E., CAPPING) AND THE NYSDEC–APPROVED SWPPPS.

NO.	DATE	REVISION	DR	CHK	APVD
0	09/16/10	ISSUED FOR CONSTRUCTION	M.R.STACEY	SCP	
B	09/07/10	100% DESIGN FOR CLIENT REVIEW		RJR	RTB
A	05/13/10	ISSUED 50% DESIGN FOR CLIENT REVIEW		BY	APVD
DSGN	R.T. BELTCHER				JMS

REMEDIAL DESIGN
FOR AREA C AND E EXCAVATIONS
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

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GENERAL

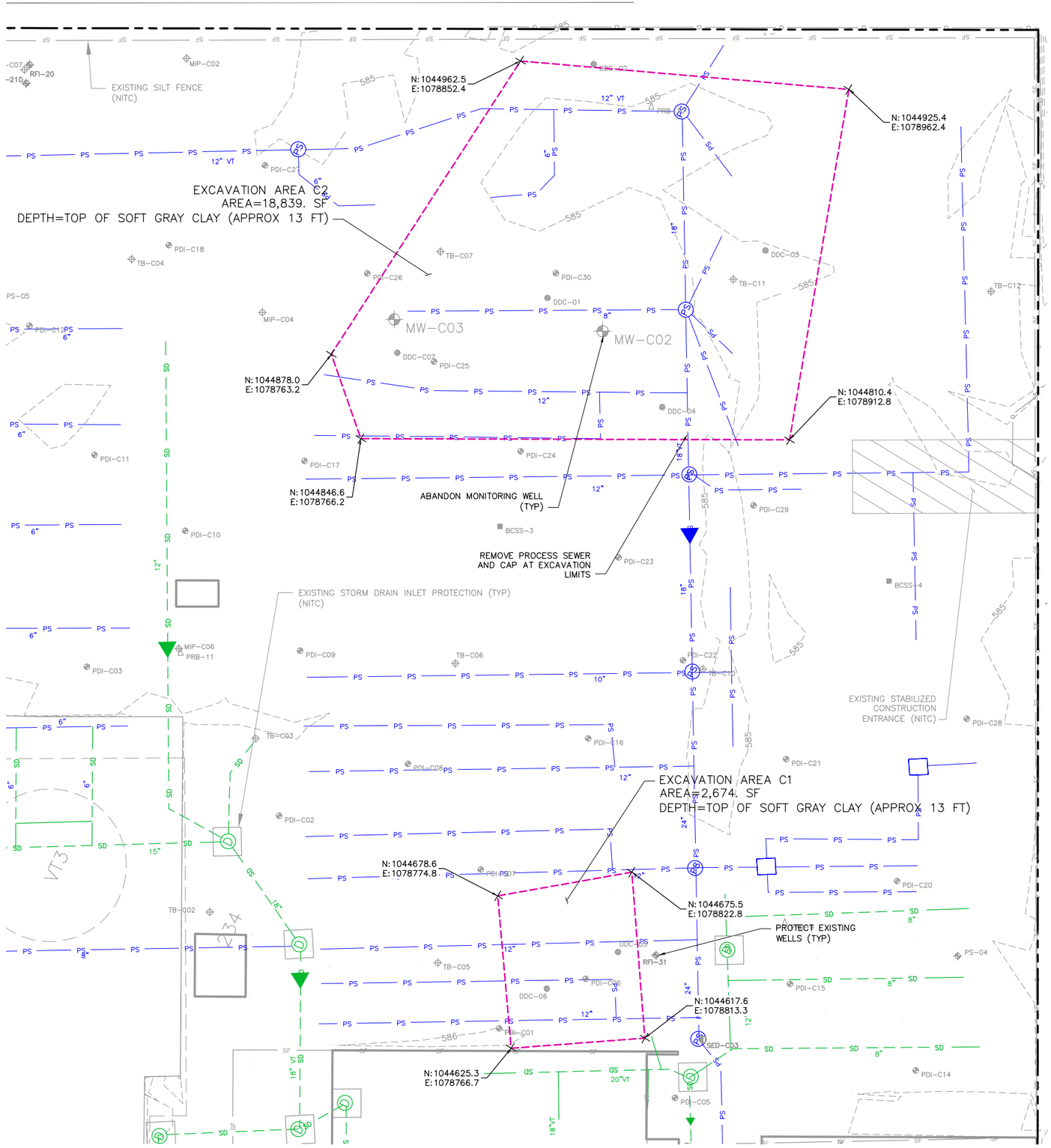
LEGEND, ABBREVIATIONS, AND GENERAL NOTES

VERIFY SCALE

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DATE	09/07/10
PROJ	3410090701
DWG	G-002
SHEET	2 OF 4

FILE NAME: M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA C & E RD EXCAVATION\SBD-RMD G-002.dwg PLOT DATE: Wed, 15 Sep 2010 PLOT TIME: 4:51 PM



NO.	DATE	DSGN	DR	CHK	APVD	BY
0	09/16/10	R.T. BELCHER	M.R.STACEY	SCP	APVD	JMS
B	09/07/10					RTB
A	05/13/10					RJR

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100% DESIGN FOR CLIENT REVIEW
ISSUED 50% DESIGN FOR CLIENT REVIEW

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REMEDIAL DESIGN
FOR AREA C AND E EXCAVATIONS
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

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(207) 775-5401

MACTEC

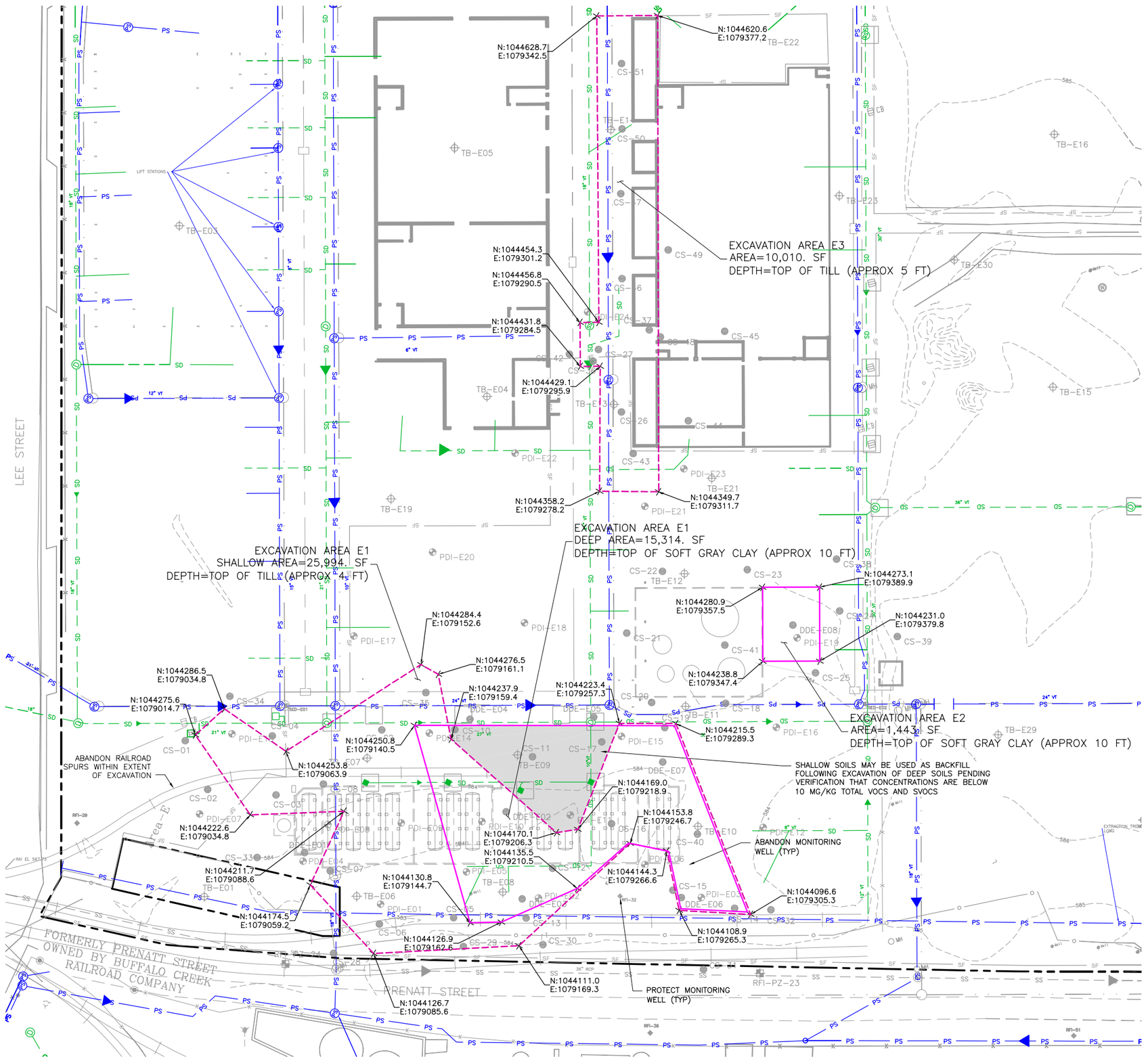
CIVIL
AREA C
EXCAVATION PLAN

0 10 20 40
SCALE IN FEET

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	09/07/10
PROJ	3410090701
DWG	C-101
SHEET	3 OF 4

FILE NAME: M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA C & E RD EXCAVATION\SBD-RMD C-101.dwg PLOT DATE: Wed, 15 Sep 2010 PLOT TIME: 5:14 PM



NO.	DATE	DSGN	DR	CHK	APVD
0	09/16/10	R.T. BELCHER	M.R.STACEY	SCP	MJS
B	09/07/10			RJR	RTB
A	05/13/10				

REVISION

ISSUED FOR CONSTRUCTION
100% DESIGN FOR CLIENT REVIEW
ISSUED 50% DESIGN FOR CLIENT REVIEW

REMEDIAL DESIGN
FOR AREA C AND E EXCAVATIONS
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

MACTEC Engineering and Consulting, Inc.
P.O. Box 1190, 511 Congress Street
Portland, Maine 04112-7050
(207) 775-5401

MACTEC

CIVIL
AREA E
EXCAVATION PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	09/07/10
PROJ	3410090701
DWG	C-102
SHEET	4 OF 4

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FILE NAME: M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA C & E RD EXCAVATION\SBD-RMD C-102.dwg PLOT DATE: Thu, 16 Sep 2010 PLOT TIME: 9:39 AM

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY

A. The scope of work for Area E at the Buffalo Color Site (Site) involves remedial activities to address VOC contaminated soils. The Alternatives Analysis Report (AAR) submitted by Mactec Engineering and Consulting, Inc. (Mactec) in February 2009, specified the removal unsaturatedsoil with greater than 10 mg/kg of site related VOCs or SVOCs. The proposed excavation areas are identified as Areas E1, E2, and E3. In addition to unsaturated soil with greater that 10 mg/kg of site-related VOCs or SVOCs, all or portions the E1 and E2 excavations will extend to the top of the soft, gray glacial clay unit (encountered at an approximate depth of 10 feet below existing grade). The third location, E3, will extend to a depth of approximately 5 feet. Portions of shallow soil at Area E1 are below the 10 mg/kg criteria but will have to be excavated to access the deeper contaminated saturated soil. These soils, as indicated on the drawings, may be temporarily stockpiled and returned to the excavation as backfill provided that results of laboratory testing meet criteria for reuse as fill beneath the cover system. The work at each area will be completed as open cut excavations (i.e., without sheeting, shoring or bracing). Sidewalls will be sloped back as determined necessary by the Contractor to maintain excavation stability and protect adjacent structures/utilities. The work will be completed in segments, as determined appropriate by the Contractor, to minimize water handling and prevent sidewall sloughing.

B. The following summarizes the primary actions and anticipated construction sequence:

1. Survey layout of the excavation areas with white paint and stakes.
2. Field markout of utilities with appropriately colored paint based on utility owner records (via Dig Safely New York) and available historical data.
3. Implementation of erosion and sedimentation control measures in accordance with applicable regulations, plans and specifications (see Section 02370).
4. Establishment of on-site areas for equipment decontamination, waste staging, and soil stockpiling as approved by the Engineer.
5. Removal of concrete slabs, foundations, railroad spurs, and other surface features within excavation areas.
6. Properly abandon monitoring any wells within the excavation limits PS-13 in accordance with NYSDEC well abandonment guidance, prior to excavation.
7. Excavation of VOC-impacted soil to the specified depths, as indicated on the drawings and determined by the Engineer.
8. Collection and laboratory testing of record samples from the excavation sidewalls and bottoms, as specified herein.
9. Staging, characterization and proper disposal of impacted soils.
10. Removal and proper disposal of water collected in excavation as necessary to facilitate the soil removal activities.
11. Survey of the final horizontal and vertical limits of excavation by a NY-licensed professional land surveyor.

12. Restoration of the excavated areas with backfilled lifts of suitable material derived from the site (i.e., approved crushed demolition concrete/brick) and/or approved clean borrow material to generally match existing grades.
13. Application of a biostimulant amendment (oxygen releasing material) to the backfill material, as specified herein and on the design drawings.
14. Placement of a one-foot (12 inch) soil cover system consisting of a minimum of 10 inches clean borrow and 2 inches of topsoil material seeded with a native grass seed mixture, or other suitable cover material as approved by the Engineer.

1.02 DOCUMENTATION

A. The Engineer will document the completion of the VOC source removal (excavation) activities in the Final Engineering Report (FER) that will be prepared for Area E. The FER will include:
   1. A narrative description of the work.
   2. A table that summarizes the weight of soil shipments, and total amount of soil removed.
   3. Tables and laboratory reports for sidewall samples and waste characterization samples.
   4. Photographs of the work.
   5. Figures that document the final surveyed vertical and horizontal limits of excavation and locations of confirmation samples, in plan view and cross-sections.
   6. Disposal records, including copies of manifests and disposal facility scale receipts.
   7. Cross sections that depict the vertical limits of excavation.
   8. Other information as necessary to meet the requirements of DER-10 and the BCA.

1.03 OTHER GENERAL REQUIREMENTS

A. Obtain all necessary construction permits prior to the commencement of work. The Contractor will be responsible for obtaining all required permits.
B. Make arrangements for temporary storage of materials and supplies and for timely delivery to the job site.
C. Maintain up-to-date records.
D. Maintain the Project Site in a neat and safe condition.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 DESCRIPTION

A. Required Submittals are identified in each technical specification section of the Contract Documents. A summary of Submittals is provided at the end of this section. Submittals shall be provided to the Engineer, as required, unless otherwise specified. Submittals may include:
   1. Data;
   2. Drawings;
   3. Instructions;
   4. Schedules;
   5. Statements;
   6. Reports;
   7. Plans;
   8. Certificates;
   9. Samples;
   10. Records; and
   11. Operation and Maintenance Manuals.

B. The Contractor shall make Submittals as required by the Contract and the individual specification sections but not limited to the summarized items in Table 01330-1: Submittal Summary provided at the end of this section.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

3.01 GENERAL

A. Submittals shall include items such as:
   1. Manufacturer's or fabricator's drawings;
   2. Descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves;
   3. Test reports;
   4. Samples;
   5. Operation and Maintenance Manuals (including parts list);
   6. Certifications;
   7. Warranties; and
   8. Other pertinent data.

3.02 SUBMITTAL REQUIREMENTS

A. Transmittal Form:
   1. A Transmittal form shall accompany all Submittals.
   2. The Transmittal form shall be developed and furnished by the Engineer.
   3. Transmittals shall include the following information, at a minimum:
      a. Submittal number in sequence, beginning with 1 (subsequent revised Submittals shall be identified with a number and letter);
      b. Date;
      c. Project title and project number;
      d. Contractor's name and address;
      e. Identification of each item submitted under the single Transmittal with a separate sequential number (e.g. 1.1, 1.2, etc.). Group only like items in a single Submittal;
      f. Reference to the specification section and sub-part number and/or Contract Drawing sheet and detail number (if applicable) pertinent to the data submitted.
      g. Notification of any deviations from Contract Documents;
      h. Return date required by Contractor; and
      i. Other pertinent data.

B. Contractor Certification: The Contractor's Certification that the Submittal meets contract requirements shall contain the following:
   1. Contractor firm name;
   2. Point of contact name, signature, and title;
   3. Date; and
   4. Contractor's corrections as noted on Submittal data and/or attached sheets(s).
   5. The certification may be provided as part of the Transmittal, on a separate sheet attached to the Transmittal, or as a stamp on the Submittal itself.

C. Procedures:
   1. The Contractor shall schedule submissions at least 14 days before Submittal approvals will be needed, except where different lead time is specified.
   2. The Contractor shall deliver to Engineer three copies of all Submittals and Transmittals that are sent in the mail. To expedite the review of smaller Submittals, the Contractor may provide a legible fax, if followed by the required number of original copies.
   3. The Contractor may deliver Submittals to the Engineer in electronic form by email. The Contractor-signed Transmittal shall be scanned and attached to the other electronic Submittal documents. The subject line of the email shall clearly note the project name and Submittal number.
   4. The Contractor shall maintain one copy of the Submittal and Transmittal on site.
   5. At the time of each submission, the Contractor shall call to the Engineer's attention, in writing, any deviations that the Submittal may have from the requirements of the Contract Documents.

D. Submittals shall include:
   1. Date and revision dates;
   2. Project title and number;
   3. The names of:
      a. Engineer;
      c. Subcontractor;
      d. Supplier;
      e. Manufacturer; and
      f. Separate detailer when pertinent.

4. Identification of product or material;
5. Field dimensions, clearly identified as such;
6. Specification section and sub-part number and/or Drawing sheet and detail number;
7. Applicable standards, such as ASTM or Federal Specification number;
8. For Submittals which include proposed deviations requested by the Contractor, "variation" shall be clearly indicated on the Transmittal. The Contractor shall state the reason for any deviations and annotate such deviations on the Submittal. The Engineer reserves the right to rescind inadvertent acceptance of Submittals containing unnoted deviations.

E. Submittals shall be of standardized sizes.
1. Approved standard sizes shall be:
   a. 24 inches by 36 inches;
   b. 11 inches by 17 inches; and
   c. 11 inches by 8 1/2 inches.
2. Provision shall be made in preparing Submittals to afford a binding margin on left hand side of sheet.
3. Submittals put forward other than as specified herein may be returned for resubmittal without being reviewed.

Table 01330-1: Ammended Submittal Summary

No.	Specification Section	Specification Part	Submittal Item	Schedule
1			Construction Work Plan (Plan of Operations)	5 days following Notice to Proceed
2			Copies of approved permits	Prior to commencing construction
3	01351	1.04.A.1	Site-Specific Health and Safety Plan (HASP)	5 days following Notice to Proceed
4	01351	1.04.A.2	Evidence of medical monitoring and 40-hour HAZMAT training	Prior to commencing construction
5	01450	1.04.A	Contractor Quality Control Plan (CQCP)	5 days following Notice to Proceed
6	01450	1.04.B	Weekly CQC Reports, Test Reports,, Deffiency Reports, Project Summaries	As soon as reports are complete
7	01560	1.02.A	Odor Control Foam and Application Equipment	Prior to commencing excavation
8	01720	1.03.A	Qualifications of Field Engineering and Surveying Personnel	At the request of the Engineer
9	01720	1.03.B	Documentation verifying accuracy of work	At the request of the Engineer
10	01720	1.03.C	Survey data supporting Record Documents	During construction at the request of the Engineer. All data within two weeks of completion of construction.
11	01780	1.04.A	Project Record Documents	Within two weeks of completion
12	02105	1.03.A.1.a	Quality Assurance Project Plan	7 days prior to construction
13	02105	1.03.A.1.b	Proposed Analytical Laboratory and Certifications	7 days prior to construction
14	02105	1.03.B.1	Sampling and Analysis Reports with field records and data usability summary report	As soon as reports are complete
15	02110	1.02.A	Work Plan - means and methods for management of waste material	Prior to commencing construction
16	02110	1.02.B	Waste Characterization Laboratory Reports	As soon as reports are complete
17	02120	1.02.A	Work Plan - means and methods for transporting and disposing of waste	Prior to commencing construction

18	02120	1.02.B	Profile of Treatment Storage and/or Disposal Facility	14 Days prior to required approval
19	02120	1.02.C	Bill of Lading and Manifests for all transported waste loads	Within 7 days of shipment
20	02120	1.02.D	Certified Weight Slips for each load transported	Within 7 days of shipment
21	02120	1.02.E	Survey data for excavation limits	As requested by Engineer or within 2 weeks of completion
22	02140	1.03.A	Analytical results of water samples	As soon as reports are complete
23	02315	1.04.A.1	Borrow Source and Test Reports	7 days following Notice to Proceed
24	02315	1.04.A.2	Name and Qualifications of Testing Laboratory	7 days following Notice to Proceed
25	02315	1.04.A.3	Topsoil Source and Test Reports	7 days following Notice to Proceed
26	02315	1.04.A.4	Grass Vendor's Seed Cerfificate	7 days following Notice to Proceed
27	02315	1.04.A.5	Fertilizer manufacturer's product data and chemical analysis	7 days following Notice to Proceed
28	02315	1.04.A.6	Biostimulant and proposed fertilizer	7 days following Notice to Proceed
28	02526	1.02.A.1	Well Abandonment Completion Form	Upon completion
29	02526	1.02.A.2	Well Abandonment Record	Upon completion

END OF SECTION

SECTION 01351

HEALTH AND SAFETY

PART 1 GENERAL

1.01 DESCRIPTION

A. This Section covers the health and safety requirements to be followed for cleanup construction activities at the excavation of contaminated soils in Area E of the former Buffalo Color site in Buffalo, NY as specified herein, and as shown on the drawings.
B. The cleanup construction activities will require excavation and handling of existing VOC-impacted material and contaminated soil.
C. Portions of the project will require Contractor's field personnel to have current Occupational Safety and Health Administration (OSHA) training and certification for working on hazardous waste sites. This training will be required for workers during any work associated with waste excavation and/or consolidation, and any work completed in waste materials.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330: Submittal Procedures
B. Section 02105: Chemical Sampling and Analysis
C. Section 02110: Waste Removal and Handling

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.
    1. CODE OF FEDERAL REGULATIONS (CFR)
        a. 29 CFR 1910 Occupational Safety and Health Standards
        b. 29 CFR 1926 Safety and Health Regulations for Construction

1.04 SUBMITTALS

A. Submit to the Engineer the following in accordance with Section 01330, "Submittal Procedures":
    1. HASP: The Site Specific Health and Safety Plan (HASP) shall detail the health and safety procedures to be followed during completion of the work and shall be developed in accordance with this specification. The Contractor shall periodically review the plan during work operations to keep it current and technically correct.
    2. Medical and Training Records. Upon request, submit records for construction personnel demonstrating compliance with medical monitoring and training requirements for work at hazardous waste sites under OSHA.

1.05 REGULATORY REQUIREMENTS

A. Work performed under this contract shall comply with applicable Federal, state, and local safety and occupational health laws and regulations. This includes, but is not limited to, OSHA standards, 29 CFR 1910, especially Section .120, "Hazardous Waste Site Operations and Emergency Response" and 29 CFR 1926 for specific site activities.

1.06 SAFETY AND HEALTH PROGRAM

A. OSHA Standards 29 CFR 1910, Section .120 (b) and 29 CFR 1926, Section .65 (b) require employers to develop and implement a written Safety and Health Program for employees involved in hazardous waste operations. The site-specific program requirements of the OSHA Standards shall be integrated into one site-specific document. The Contractor shall prepare a site-specific Health and Safety Plan (HASP) that shall interface with the employer's (Contractor's) overall Safety and Health Program. Any portions of the overall Safety and Health Program that are referenced in the HASP shall be included as appendices to the HASP.

1.07 HAZARD/RISK ANALYSIS

A. The HASP shall include a safety and health hazard/risk analysis for site tasks and operations to be performed as part of the contract. The hazard/risk analysis shall provide information necessary for determining safety and health procedures, equipment, and training to protect on-site personnel, the environment, and the public. The following elements, at a minimum, shall be addressed.

1. Site Tasks and Operations (Workplan). The HASP shall summarize the tasks and objectives of the site operations of this project, and the logistics and resources required to achieve those tasks and objectives safely.
2. Hazards. The following potential hazards may be encountered during site work. They are not complete lists; therefore, they shall be expanded and/or revised as necessary during preparation of the HASP.
    a. Safety Hazards. Potential safety hazards associated with the work on the Project could be related to, operation of construction equipment, safety hazards associated with working near open excavations, and safety hazards from scattered debris.
    b. Chemical Hazards. Potential chemical hazards that may be encountered during Site work will be discussed in the HASP. The Hazard/Risk Analysis section of the HASP shall describe the chemical, physical, and toxicological properties of contaminants, sources and pathways of employee exposures, anticipated on-site and off-site exposure level potentials, and regulatory (including Federal, state, and local) or recommended protective exposure standards. The HASP shall also address employee exposure to hazardous substances brought on site, and shall comply with the requirements of 29 CFR 1910, Section .1200 and 29 CFR 1926, Section .59, Hazard Communication. A copy of the Engineer's Health and Safety Plan will be provided to the Contractor to assist in determining the potential hazards/risks associated with VOCs.
    c. Physical Agents. Potential physical hazards during work on the Site could include, heat stress and cold stress, noise related hazards, physical

strain from heavy lifting, and slips, trips, and falls from scattered debris on the site.

d. Biological Hazards. Potential biological hazards associated with the work on the Site could include insect and animal bites.

3. Emergency Response Plan. Action levels shall be established in the HASP for potential emergency situations at the Site.

1.08 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

A. An organizational structure shall be developed that sets forth lines of authority (chain of command), responsibilities, and communication procedures concerning site safety, health, and emergency response.

1.09 TRAINING

A. Personnel shall receive training in accordance with the Contractor's written safety and health training program and 29 CFR 1910 Section .120, 29 CFR 1926 Section .65, and 29 CFR 1926 Section .21.

1.10 PERSONAL PROTECTIVE EQUIPMENT

A. PPE Program. In accordance with 29 CFR 1910 Section .120 (g)(5) and 29 CFR 1926 Section .65 (g)(5), a written Personal Protective Equipment (PPE) program which addresses the elements listed in that regulation, and which complies with respiratory protection program requirements of 29 CFR 1910 Section .134, is to be included in the Contractor's Safety and Health Program. The HASP shall detail the minimum PPE ensembles (including any necessary respiratory protection) and specific materials from which the PPE components are constructed for each site-specific task and operation to be performed. On-site personnel shall be provided with appropriate personal protective equipment. Protective equipment and clothing shall be kept clean and well maintained. The PPE Section of the HASP shall include site-specific procedures to determine PPE program effectiveness and storage of PPE.

B. Levels of Protection. The Site Safety and Health Officer (SSHO) shall establish appropriate levels of protection for each work activity based on review of historical site information, existing data, and an evaluation of the potential for exposure (inhalation, dermal, ingestion) during each phase of the work.

1.11 MEDICAL SURVEILLANCE

A. The Contractor's medical surveillance program shall be detailed in the HASP.

1.12 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

A. The HASP shall describe the emergency and first aid equipment to be available on site, the specific locations of the equipment and identification of individuals trained in the use of such equipment who are first aid and /or CPR certified by a recognized training organization (e.g., American Red Cross).

1.13 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

A. An Emergency Response Plan, that meets the requirements of 29 CFR 1910 Section .120 (l) and 29 CFR 1926 Section .65 (l), shall be developed and implemented as a Section of the HASP. This plan/Section shall be formatted as a stand alone document.

B. In the event of any emergency associated with remediation activities, the Contractor shall, without delay, alert all on-site employees that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the Owner and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency. Employees that are required to respond to hazardous emergency situations shall be trained in how to respond to such expected emergencies.

C. The Contractor shall meet and discuss with local emergency response personnel and dispatchers of the work in progress and provide documentation of such meetings.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION

SECTION 01450

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.01 DESCRIPTION

A. This section covers quality control (QC) procedures and testing to be completed by the Contractor during the Work. Prior to commencement of the Work, the Contractor shall comply with the QC procedures detailed in these specifications and elsewhere in the project Design Documents, as applicable. Quality control testing shall be executed as required in the Design Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330: Submittal Procedures
B. Section 01780: Project Record Documents

1.03 REFERENCES AND STANDARDS

A. Conform to referenced standards with date of issue current on the date of the bid, except where stated otherwise or referenced differently by code.

1.04 SUBMITTALS

A. Pre-Construction Submittals:
   1. Contractor shall identify personnel, procedures, instructions, records, and forms to be used in carrying out the requirements of the Work and meeting Quality Control for construction, sampling, and testing activities.
B. Weekly QC Reports, Test Reports, Deficiency Reports, and Project Summaries shall be prepared and submitted to the Engineer, as applicable.

1.05 DEFINITIONS

A. Quality Control: Activities undertaken by the Contractor including observing, measuring, sampling, and testing undertaken by the Contractor to determine that work performed and/or products/materials provided and installed meet the requirements of the Design Documents and the quality specified therein.

1.06 QUALITY CONTROL SAMPLING AND TESTING

A. The Contractor shall notify the Engineer a minimum of 72 hours prior to any quality control sampling and testing activities. The Engineer reserves the right to collect duplicate quality control samples.

PART 2 PRODUCTS

Not applicable.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. The quality of all Work shall be the responsibility of the Contractor.
B. Perform sufficient inspections and tests of all items of work, on a continuing basis, including that of subcontractors, to ensure conformance to applicable specifications and drawings with respect to the quality of materials, workmanship, construction, and functional performance.
C. Provide qualified personnel, appropriate facilities, instruments, and testing devices necessary for the performance of the quality control function.
D. Controls shall be adequate to cover all construction operations, shall be keyed to the proposed construction sequence, and shall be coordinated by the Contractor's quality control personnel.

3.02 QC DOCUMENTATION

A. The Contractor shall document, at a minimum, the following:
    1. A description of the Quality Control Organization, including charts showing lines of internal Contractor authority, and external Contractor, subcontractor, and Engineer relationships. The Quality Control Organization shall include the names, qualifications, duties, and responsibilities of each person assigned to a quality control function. The Quality Control Organization chart shall identify a Contractor's Quality Control Manager whose responsibilities and qualifications are described in Sub-Part 3.04 - Contractor Quality Control Organization.
    2. Method of performing, documenting, and enforcing quality control operations of both Contractor and subcontract work including inspection and testing.
    3. Inspections as described in the Sub-Part 3.05 – Inspections.
    4. Provide a list of analytical or testing laboratories to be used by the Contractor for testing required by the Specifications with listed test methods to be performed by each laboratory indicated.
    5. Protocol describing corrective actions to be taken by the Contractor with specifically defined feedback systems. The Engineer will then decide what further corrective action, if any, shall be taken by the Contractor. Personnel responsible for initiating and carrying out corrective action shall be indicated in the protocol.
E. Submit Weekly QC Reports, Test Reports, Deficiency Reports and Project Summaries as required by this Specification.

3.03 CONTRACTOR QUALITY CONTROL ORGANIZATION

A. QC Manager:
    1. Identify an individual, within the Contractor's organization at the Site who shall be responsible for overall project QC and have the authority to act in all QC matters for the Contractor.
    2. The QC Manager for this project shall be a qualified construction manager/engineer or comparable individual with a minimum of 2 years of applicable experience, at the Project Manager, Project Engineer, Superintendent, or QC Manager level, whose responsibility is to ensure compliance with the

Design Documents. The QC Manager shall be independent of the Project Superintendent.

3. The QC Manager shall be on-site whenever work is in progress so that he/she may be in charge of QC for the project.
4. All submittals for approval shall be reviewed and modified or corrected as needed by the QC Manager or authorized assigns prior to forwarding to the Engineer.

3.05 INSPECTIONS

A. The Contractor shall conduct the following inspections and tests:
   1. The Contractor shall perform preparatory inspections prior to beginning each feature of work on any on-site construction conducted by the Contractor or a subcontractor. Preparatory inspections for the applicable feature of work shall include:
      a. review of submittal requirements and all other Contract requirements with the performance of the work;
      b. check to assure that provisions have been made to provide required field quality control testing;
      c. examine the work area to ascertain that all preliminary work has been completed;
      d. verify all field dimensions and advise the Engineer of any discrepancies;
      e. perform a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all required materials and/or equipment are on hand and comply with the Contract requirements.
   2. Perform initial inspection as soon as work begins on a representative portion of the particular feature of work, and include examination of the quality of workmanship as well as review of quality control testing for compliance with the Design Document requirements.
   3. Perform follow-up inspections continuously as any particular feature of work progresses to ensure compliance with Contract requirements, including quality control testing, until completion of that feature of work.

3.06 TESTING

A. The Contractor shall be responsible for all required testing, documentation, and corrective measures. The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to Contract requirements.

3.07 CONSTRUCTION MONITORING

A. Prior to commencing invasive construction activities including but not limited to installing sheeting and shoring or excavating, complete an existing infrastructure assessment to record conditions of building and surrounding infrastructure. Record condition with video or photographs noting existing deficiencies or damage as observed prior to construction. The assessment shall at a minimum include the following components:
   1. Building façade;
   2. Building foundation wall;

3. Building doors and windows;
4. Building roof overhang, fascia, or general roofline;
5. Pavement and concrete surface treatments;
6. Prominent exterior site features within 50 feet of the limit of work including retaining walls, stairs, bollards, manhole frames and grates, etc.; and
7. Interior building finishes within 50 feet of the limit of work;

B. If directed by the Owner or Engineer, maintain continuous vibration monitoring (seismograph recording) during sheeting and shoring installation, excavation, backfilling and compaction, paving, and all other activities utilizing heavy construction equipment likely to cause strong vibrations.

END OF SECTION

SECTION 01560

DUST AND ODOR CONTROL

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contractor shall execute the Work by methods that minimize the generation of dust and nuisance odors. The Contractor shall employ dust control measures to minimize the creation of airborne dust during execution of the Work. At a minimum, standard dust control techniques shall be employed in areas of heavy equipment traffic such as watering down the site. The dust control measures will be such that, at a minimum, air quality is in compliance with applicable OSHA regulations.

B. The Contractor shall provide an odor control system to control odors as necessary to address complaints from property tenants and the local community. Odor control agents such as an odor-control foam, misting system, or other method selected by the Contractor and approved by the Engineer shall be available on site and shall be applied as needed to control nuisance odors. Other systems may be required as necessary to meet the project performance objectives.

C. The performance objective for odor control will be to control, eliminate, or mask any odors that generate complaints, from building tenants, neighboring residents, the public, state or local officials, or the Engineer.

D. If the initial emission controls are found to be inadequate, the Contractor shall provide additional measures.

E. Dust and odor control systems shall be implemented as necessary to meet local, state, and/or federal regulations for air emissions and dust and to control nuisance odors.

F. Sufficient volumes of water and/or odor control foam shall be readily available or stored on site to address continuous application as necessary.

1.02 SUBMITTALS

A. Submit proposed odor control foam and application equipment.

PART 2 PRODUCTS

2.01 MATERIALS

A. Water
   1. Water shall be free from oil, acid, and injurious alkali or vegetable matter, and other deleterious materials or contaminants.
   2. Water shall not be brackish or contain salts in concentrations greater than 500 mg/kg.

B. Odor control foam.
   1. Odor control foam shall be a biodegradable, non-flammable, and non-toxic water-based material designed for the control of VOCs, dust, and odor.
   2. It shall be capable of being spray applied to form a uniform encapsulating layer between contaminated materials and the environment, suppressing VOCs, dust, odors, and gas.

2.02 EQUIPMENT

A. Equipment for dust and odor control shall include appropriate measures (e.g., heat tape, tank heaters) to prevent freezing or impair operation due to temperatures below freezing.

PART 3 EXECUTION

3.01 SPRINKLING WATER

A. Apply by approved methods and with equipment including a tank with gauge-equipped pressure pump and a nozzle-equipped spray bar.
B. Disperse through the nozzle under a minimum pressure of 20 pounds per square inch, gauge pressure.
C. Apply water until the surface is wet, but avoid ponding, run off, or muddy conditions.

3.02 PAVEMENT SWEEPING

A. Maintain clean pavement surfaces within the designated work area and Site egress route. Do not permit construction equipment to track soil outside of the work area or on public roads.
B. Sweep pavement surfaces daily during construction to prevent migration of soil outside of the work area and to prevent the generation of dust.
C. Sweep all paved surfaces within the work area and truck ingress/egress routes at the end of construction as a final cleanup task to remove any residual construction debris and soils.

3.03 STOCKPILE MANAGEMENT

A. Maintain on-site stockpiles in a manner that prevents wind-blown dust generation. During active use, provide periodic water sprinkling and during inactive periods, cover stockpiles with weighted tarps.

END OF SECTION

SECTION 01720

FIELD ENGINEERING AND SURVEYING

PART 1 GENERAL

1.01 DESCRIPTION

A. Established survey control points are available on site for construction purposes. The Contractor shall verify locations of survey control points prior to starting work. The Contractor shall safeguard all survey control points. Should any of these points be damaged or destroyed, the Contractor shall replace the control point. The Contractor shall rectify work improperly constructed due to failure to maintain and protect such established survey control points.

B. The Contractor shall be responsible for the layout of the construction and any additional survey control points, grid coordinate locations, lines, grades, and levels necessary for the proper construction and testing of the work required in the Contract Documents. Survey control shall include, but not be limited to, maintaining appropriate slopes and specified thicknesses.

C. The Contractor shall employ a surveyor using standard practices and datum for the State of New York to provide the surveying functions necessary for the proper execution of the work, and to document and record the completed work.

D. The Contractor is responsible for scheduling the surveys to coincide with his construction activities. If the survey documentation shows improper slopes, elevations, locations, or layer thicknesses, the Contractor shall correct the deficiency and re-survey the re-work. Survey documentation may include, but not be limited to:

1. Initial excavation layout survey.
2. Excavation horizontal and vertical extents;
3. Location, rim elevation, and inverts of any encountered utilities.
4. Final constructed topography within the limit of disturbance based on a 10’ maximum grid pattern;
5. Location and elevation of Contractor established survey control points and/or benchmarks; and
6. Soil sample and monitoring well locations.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01110: Summary of Work
B. Section 01330: Submittal Procedures
C. Section 01450: Contractor Quality Control
D. Section 01770: Project Closeout Procedures

1.03 SUBMITTALS

A. On request, submit data demonstrating qualifications of persons providing field engineering and survey services.

B. On request, submit documentation verifying accuracy of survey work.

C. Survey data and measurements as the Work progresses for the project in support of establishing Record Documents as specified in Section 01770 - Project Closeout

1.04 FIELD ENGINEERING AND SURVEY REQUIREMENTS

A. Provide field engineering and survey services using appropriate construction practices. Use skilled persons, trained and experienced in the necessary tasks and techniques for the proper execution of the Work. Locate and layout the Work by survey instrumentation and similar appropriate means.

B. The Contractor shall sufficiently establish the existing ground elevations before earthwork is started.

C. The Contractor shall perform the layout and shall document completed construction on Record Drawings, including the features listed in Sub-part 1.01D.

D. Measure final excavated depth during construction to verify that excavation has occurred to the required limit.

F. Vertical and horizontal control shall be sufficient to assure work is constructed within 0.1 foot of proposed fill thickness requirements (or proposed grades as indicated where settlement is not a concern) and location. Project Record documentation shall be provided in electronic file format compatible with AutoCAD 2008 or later.

1.05 TECHNICAL REQUIREMENTS OF SURVEY

A. Horizontal ground control shall originate and terminate on New York State Plane North American Datum 1983 (NAD 83). Vertical control shall be tied to North American Vertical Datum 1988 (NAVD 88).

B. Map Accuracy - Ninety percent of the elevations determined from the solid-line contours for the topographic maps shall have accuracy with respect to true elevation of 0.5 contour interval (0.5 foot) or better, and the remaining 10 percent of such elevations shall not be in error by more than one contour interval (1 foot).

C. Vertical Control: Establish a permanent project benchmark for vertical control.

D. Horizontal Control: Each horizontal control point shall be plotted on the map within the coordinate grid in which it should lie to an accuracy of one one-hundredth foot (0.01 foot) of its true position as expressed by the plane coordinates computed for this point.

E. Spot Elevations: Survey shall be constructed to provide an accuracy of 0.1 feet vertically. No shots exceeding 500 feet shall be taken. Ninety percent of all spot elevations placed on the maps shall have an accuracy of at least 0.1 foot, and the remaining 10 percent shall not be in error by more than one-half (1/2) of the contour interval (0.5 foot).

F. Accuracies and accuracy tests apply to the stereo compilation scale of the original manuscript (i.e., if the manuscript is compiled at a scale of 1" = 100' and then reduced to 1"=200', then the accuracies will apply to the original 1"=100' scale). This is also true if the manuscript is enlarged to 1"=50' or some larger scale.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable

END OF SECTION

SECTION 01780

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contractor shall furnish all labor, equipment, and materials necessary to keep accurate record documents for additions, substitution of material, variations in Work, and other revisions to the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01010: Summary of Work
B. Section 01450: Contractor Quality Control
C. Section 01720: Field Engineering and Surveying
D. Section 02110: Chemical Sampling and Analysis
E. Section 02120: Off-Site Transportation and Disposal
F. Section 02315: Earthwork
G. Section 02526: Abandonment of Monitoring Wells

1.03 MAINTENANCE OF RECORD DOCUMENTS

A. The Contractor shall maintain one (1) copy of the following documents at the job site:
   1. Contract Drawings.
   2. Drawings showing progress of Work.
   3. Specifications.
   4. Addenda.
   5. Reviewed Submittals.
   6. Change Orders.
   7. Other modifications to the Contract.
   8. Health and Safety Plan.
   9. Contractor generated plans, as required by other Specification Sections or permits.
   10. Contractor's certifications.
   11. Progress payment quantity field notes and records.
   12. Deficiency reports.
   13. Contractor's daily reports, including:
      a. Records of site work.
      b. Inspection records.
      c. Reports on emergency response actions.
   14. Sampling documentation.
   15. Analytical laboratory data packages.
   16. Record drawings showing the Site as restored ("As-Builts"), including new aboveground and underground utilities, installed piping/conduit, the location of all soil/groundwater samples collected during construction, the final footprint and bottom elevation of all excavations, and the final limits of disturbance/restoration.

17. Remediation photographs.
18. Manifests and Bills of Lading.

B. The Contractor shall provide files and racks for storage of documents.
   1. Store documents in a dry, safe place available for inspection by the Engineer and/or Owner.

C. The record documents shall not be used for construction purposes.

D. Post-Excavation and Post-Construction Surveys shall be submitted to the Engineer in both printed and electronic form (AutoCAD 2010 format/compatible). The Surveys and As-Built Drawings shall correspond to the state plane coordinate system. Ground surface elevations shall be surveyed on a grid with points spaced no greater than 10 feet by 10 feet with suitable detail to provide one-foot elevation contours.

1.04 SUBMITTALS

A. At completion of field operations, the Contractor shall deliver the Project Record Documents to the Owner.

B. Accompany the Project Record Documents submittal with a transmittal letter containing:
   1. Date.
   2. Project title, project number, and Site name/location.
   3. Contractor's name and address.
   4. Title and number of each record.
   5. Certification that each document as submitted is complete and accurate.
   6. Signature of Contractor, or his/her authorized representative.

C. Documents must be submitted to Owner upon project completion.

1.05 RECORDING

A. Clearly label each document "PROJECT RECORD".

B. Keep record documents current.

C. Do not permanently conceal any Work until required information has been recorded.

D. Contract Drawings:
   1. Legibly mark to record actual construction as applicable:
      a. Depths of various elements of structure work in relation to survey datum.
      b. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
      c. Field changes of dimension and detail.
      d. Changes made by Change Order or Field Order.
      e. Details not on original Contract Drawings.

E. Specifications and Addenda shall be legibly marked up to record the Manufacturer, trade name, catalog number, and Supplier of each product; changes made by Change or Field Orders, or other matters not originally specified, shall also be recorded.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION

SECTION 02105

CHEMICAL SAMPLING AND ANALYSIS

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contractor shall provide all necessary personnel, equipment, materials, and subcontracting required to perform the following chemical sampling and analysis for the purpose of:
   1. Conducting post-excavation soil sampling of the excavation extents prior to backfilling.
   2. Conducting waste characterization sampling to fulfill disposal facility requirements.

B. The sampling and analysis shall be conducted in accordance with USEPA and NYSDEC standards and requirements for environmental sampling and analysis.

1.02 REFERENCES

A. New York State Department of Environmental Conservation "Analytical Services Protocol." June 2000 - revised July 2005.

B. New York State Department of Environmental Conservation "Technical Guidance for Site Investigation and Remediation"; DER-10; December 2010.

C. Guidance for the Development of Data Usability Reports; Division of Environmental Remediation; September 1997.

1.03 SUBMITTALS

A. Sampling and Analysis Reports:
   1. Submit the following reports:
      a. Field sampling data records including copies of completed field sheets, chain-of-custodies, and field log book entries;
      b. Laboratory Data Deliverable;
      c. Data Usability Summary Report.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

3.01 POST-EXCAVATION RECORD SOIL SAMPLES:

A. Prior to placement of backfill, soil samples shall be collected from the sidewalls and floor of each excavation for laboratory testing. The sample results will serve as a record of remaining contaminant levels in site soil.

B. Sidewall samples shall be collected at a frequency not to exceed one sample for approximately every 50 lineal feet (LF) of sidewall. The sidewall sample locations will be determined by the Engineer and will be biased to areas that display evidence of contamination based on highest photoionization detector (PID) readings and visual indicators.

C. Soil samples will be collected from the floor or bottom of the excavation. The locations of the bottom samples will be consistent with the spacing of the sidewall samples (i.e., one sample approximately every 50 LF) unless otherwise specified by the Engineer.

D The sidewall and bottom samples will be collected at the locations specified by the Engineer's representative. Soil from the specified locations shall be obtained by the Contractor via the excavator bucket (for safety reasons, personnel will not be permitted to enter the excavation). The excavator bucket containing soil from the designated sample location shall be brought to rest on the ground a safe distance from the excavation, where the Engineer's representative will inspect the soil and place a representative amount of the material in appropriate laboratory jars or containers.

E. The Engineer's representative will pack and label the samples, prepare the chain-of-custody form, and place the samples in ice-chilled coolers for pickup or shipment to the Contractor's designated analytical laboratory.

F. Where appropriate, soil samples collected during 2009-2010 Pre-Design Investigation (PDI) work will be used as record samples or to supplement the record sample data.

F. The horizontal and vertical locations of the samples shall be surveyed and shown on the record drawing(s) that will be included in the Final Engineering Report (FER) for Area E.

G. The analytical reports for the record samples shall be submitted by the Contractor to the Engineer for use in the FER.

3.02 WASTE CHARACTERIZATION SAMPLES – EXCAVATED MATERIALS:

A. At the Owner's direction, the Contractor shall collect samples of the excavated materials for waste characterization tests. The specific number, location, and analytical parameters will be determined based on direction provided by the Contractor's subcontracted waste disposal facility. It is anticipated that the waste characterization samples will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) VOCs, SVOCs and metals, as well as other tests specified by the disposal facility.

3.03 LABORATORY ANALYSIS

A. The post-excavation soil samples shall be analyzed by the laboratory for the following parameters:

1. Target Compound List (TCL) volatile organic compounds (VOCs) via EPA Method 8260.
2. TCL semi-volatile organic compounds (SVOCs), plus aniline, via EPA Method 8270; and

3. Target Analyte List (TAL) metals via the EPA 6000/7000 series.

B. Off-site laboratory analysis of soil samples shall include Category B deliverables as defined in the NYSDEC ASP. Off-site laboratory analysis of waste characterization samples shall include deliverables as necessary to satisfy the disposal facility.

C. Contractor shall prepare a Data Usability Summary Report (DUSR) in accordance with the "Guidance for the Development of Data Usability Reports" (NYSDEC, 1997).

3.04 DISPOSAL OF INVESTIGATION DERIVED WASTES

A. Excess soil from the bucket used to collect the sample may be returned to the excavation near the point of removal.

B. Store generated decontamination fluids in DOT approved containers supplied by the Contractor or combine directly with dewatering water for treatment or disposal.

END OF SECTION

SECTION 02110

WASTE REMOVAL AND HANDLING

PART 1 GENERAL

1.01 SUMMARY

A. This section includes a description of responsibilities for proper on-site handling and management of excavated soil and borrow soil, fill, bedding, etc.; liquid waste (contaminated stormwater, decontamination water, construction dewatering, etc.); Site trash; and remediation waste (disposable PPE, plastic sheeting and sampling equipment).

1.02 SUBMITTALS

A. Waste Management and Disposal: Consistent with other sections of these Specifications, the Contractor shall maintain and submit to the Engineer documents pertaining to waste management and disposal, including manifests and bills of lading.

B. Laboratory Reports: Provide laboratory reports of analytical testing performed as required by the waste characterization program.

1.03 WASTE CONTAINERS

A. The Contractor shall provide:

1. Trucks for the loading of indigenous contaminated soils, concrete, metal, and other debris for off-site disposal.
2. Appropriate containers and/or trucks for the management and off-site disposal/recycling of non-contaminated material and debris from the excavation areas (e.g., asphalt pavement) and all other non-contaminated debris removed during site preparation.
3. Plastic bags for disposable personnel protection equipment.
4. Portable, temporary storage tanks (FRAC tanks, etc.) for the storage/treatment of collected liquids (i.e. decontamination fluids, construction dewatering, and contaminated stormwater). The Contractor is responsible for the rental of FRAC tanks or similar containers.
5. Containers (e.g., roll-off containers) for non-hazardous municipal trash and debris. Roll-off containers shall be utilized for storage of wastes generated during the site preparation activities, construction activities and waste materials from site cleanup activities.
6. DOT-approved, steel drums (55-gallon capacity) for possible storage of residual contaminated material and/or water.
7. Soil stockpile areas as specified in Section 02315, “Earthwork”.

1.04 ON-SITE MANAGEMENT AND STORAGE OF MATERIALS

A. The Contractor shall be responsible for proper on-site management of wastes generated in compliance with all Federal, State and local regulations. Management shall include handling, segregating, testing and storing all wastes generated during the Work.
B. The Contractor shall be responsible for movement of the containers, trucks, etc. into positions required for proper loading and management of material.
C. The Contractor shall segregate known or suspected contaminated materials from material that is not contaminated and known or suspected hazardous from non-hazardous materials as required for proper off-site disposal.
D. The Contractor shall be responsible for loading all waste containers, trucks, etc. with all removed soil, material, and debris.
E. The Contractor shall limit stockpiling of indigenous contaminated soil or contaminated material (concrete/masonry, metal, and all other debris) from the excavation areas unless approved by the Engineer.
F. The Contractor shall use only clean or decontaminated containers, trucks, etc. for storing or transporting of non-contaminated materials.
G. The Contractor shall be responsible for coordinating the schedule for delivery and pickup of supplied waste containers. The Contractor shall also be responsible for movement and storage of containers within the Site to allow the progress of the Work.
H. The Contractor shall cover any stockpiles with plastic sheeting to prevent erosion of the stockpiles or uncontrolled runoff while promoting runoff of precipitation. The plastic sheeting shall be weighted down or anchored as necessary.

1.05 SAMPLING AND TESTING OF WASTES

A. Testing shall not be required for non-contaminated wastes including:
   1. Removed asphalt pavement within the top one foot of the excavation area.
   2. General trash and rubbish from outside the Work Area (e.g., office waste).
B. The Contractor shall be responsible for the sample collection and laboratory testing of the wastes for characterization purposes as specified in Section 02105, “Chemical Sampling and Analysis.”

1.03 SOIL/MATERIAL HANDLING AND STORAGE

A. Refer to Section 02315, “Earthwork.”

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION

SECTION 02120

OFF-SITE TRANSPORTATION AND DISPOSAL

PART 1 GENERAL

1.01 SUMMARY

A. This section includes a description of responsibilities for proper transportation and disposal of excavated contaminated soil and borrow soil, fill, bedding, etc.; liquid waste (contaminated stormwater, decontamination water, construction dewatering, etc.); Site trash; and remediation waste (disposable PPE, plastic sheeting and sampling equipment).

1.02 SUBMITTALS

A. The Contractor shall provide a description of planned means and methods for transporting and disposing of all waste materials removed or generated as a component of the Work.
B. Profile of the Treatment Storage and/or Disposal Facility
C. Bill of Lading and/or Manifests for all transported waste loads.
D. Certified weight slips for each load transported to the disposal facility.

1.03 WASTE CONTAINERS

A. The Contractor shall provide waste containers specific to the individual waste as described in Section 02110, “Waste Removal and Handling.”

1.04 TRANSPORTATION OF WASTES

A. The Contractor shall be responsible for the transportation of all solid wastes specified or generated as a result of the Work off site. This includes materials generated by final Site cleanup activities including the dismantling of the temporary facilities and controls.
B. The Contractor shall be responsible for the transportation of all collected contaminated liquids as specified or generated as a result of the Work.
C. The Contractor shall be responsible for coordinating the number and schedule of vehicles required for off-site transportation of waste materials generated during the execution of the specified work.
D. The Contractor shall be responsible to inspect the transportation vehicles before and after loading to ensure compliance with all local, State, and Federal regulations for the safe transport of wastes from the Site to the receiving facility. The Contractor shall provide the necessary labor and materials to insure all trucks, containers, etc. are lined with plastic prior to filling, foamed or stabilized with an agent, if necessary, and covered prior to departure. Each truck shall go through a decontamination pad to remove soil and other contamination from the exterior prior to leaving the site.
E. The Contractor shall insure that the transporters arriving at the Site for loading do not cause undue congestion to local streets, and shall stage trucks either within the perimeter of the Site or at an off-site staging area approved by the Engineer. Transporters shall not

be accepted at the site before 7:00 AM and after 5:00 PM, unless approved by SBD and Honeywell.

F. The Contractor's transporters shall proceed directly from the Site to the designated receiving facility. Temporary staging or storage of material at intermediate locations between the Site and the receiving facility is prohibited.

G. The Contractor shall originate, sign, maintain, and provide the Engineer with a copy of each executed Manifest or Bill of Lading for all loads shipped off-site. In addition, the Contractor shall provide the Engineer, documentation and records verifying receipt of each truck load by the receiving facility. Such documentation shall indicate the actual weight of each load shipped.

H. Transporters shall proceed from the Site along traffic routes established by the Contractor and approved by the local municipality. Transporters shall call back weights after each load and modify loads accordingly. The Contractor shall ensure that trucks leaving the Site are within appropriate weight limitations for the local roads along the designated route.

1.05 DISPOSAL OF WASTES

A. The Contractor shall be responsible for the proper disposal of all solid and liquid wastes that are specified as a component of the Work or that are generated during the execution of the Work in conformance with all Federal, State, and local regulations and requirements. Proper disposal requires that the facility accepting the waste be a Honeywell-approved state licensed disposal/recycling facility that is approved for acceptance of the waste based on the results of the characterization testing and analysis.

B. The disposal facilities shall be approved by the Engineer and Honeywell prior to the transporting of waste. The Contractor shall not change facilities without prior consent of the Engineer/Honeywell.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION

SECTION 02140

DEWATERING

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contractor shall furnish, operate, and maintain dewatering measures and/or equipment for the control, collection, and disposal of ground and surface water entering trenches, excavations, and proposed fill areas. Work activities will take place above the groundwater table. Water incurred during excavation activities that limits work will be pumped and containerized for sampling and proper disposal.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02110: Waste Removal and Handling
B. Section 02315: Earthwork

1.03 SUBMITTALS

A. Documentation of analytical results for collected water samples.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide, operate, and maintain a dewatering system to remove water from excavations and trenches using pumps, drains, well points, piping, and any other facilities necessary to keep the excavations free of water, as required by these Specifications or by the Engineer. Have spare units available for immediate use in the event of equipment breakdowns. All water collected from dewatering activities shall be containerized and sampled for proper disposal.

PART 3 EXECUTION

3.01 PERFORMANCE

A. General:
   1. Provide, operate, and maintain a dewatering system to remove water from excavations using pumps, drains, well points, piping, and any other facilities necessary to keep the excavations free of water, as required by these Specifications or by the Engineer. Have spare units available for immediate use in the event of equipment breakdowns. Groundwater will need to be handled to dewater the excavation area during removal of soils. Assume the water can be discharged to the BSA via the Site process water/sanitary sewer system (under permit held by the Contractor) after any necessary filtering, oil/water separation, and carbon treatment to remove VOCs and non-aqueous phase liquids (NAPL). Contractor will be responsible for collection and testing of samples to

characterize the groundwater prior to discharge. In no case shall water from the work area be discharged or allowed to run off to the Site storm sewer system.

B. Disposal of Water:

1. Sampling, Analysis, and Containment. All collected water shall be sampled and analyzed both prior to and after treatment. Analysis for contaminated water to be discharged to BSA via an on-site sewer or taken to an off-site treatment facility shall conform to the requirements of the treatment facility with documentation of all analyses performed furnished to the Engineer. Contaminated water shall be contained, stored on site, and analyzed prior to being transported to the approved treatment, storage, and disposal facility. The Contractor shall dispose of all water (non-contaminated or contaminated) in accordance with applicable Federal and state disposal regulations. The Contractor shall provide approved containers, vehicles, equipment, labor, signs, labels, placards, manifests and associated land disposal notices and notifications, necessary for accomplishment of the Work.
2. Treatment. On-site treatment of contaminated water shall be approved by the Engineer. If contaminated water is to be treated on site, the proposed treatment shall be specified in the Work Plan and submitted for approval. Temporary storage and treatment equipment shall be installed at a location approved by the Owner. Treated effluent shall be sampled and analyzed and the results approved by the Engineer before discharge, as required by the BSA. Contractor shall be responsible for obtaining and complying with the all necessary permits.

C. Damage:

1. All damage resulting from the dewatering operations or the failure of the Contractor to maintain the Work in a suitable dry condition shall be repaired by the Contractor, at no additional cost.
2. Take all necessary precautions to protect new work from flooding during storms or from other causes.

3.02 DEWATERING THE CONSTRUCTION SITE

A. Keep free of standing water or excessively muddy conditions as needed for proper execution of the construction work.

B. Furnish, install, operate, and maintain all drains, sumps, pumps, and other equipment needed to perform the dewatering as specified.

C. Discharge of water pumped from excavations shall be limited to appropriate on-site storage containers. Discharge to other storm drain systems, sewer systems, or over land is not allowed.

END OF SECTION

SECTION 02315

EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION

A. This Section covers excavation, filling/backfilling, compaction, and grading. The Work includes:
   1. Excavation of contaminated soils.
   2. Application of biostimulation amendments.
   2. Placement and compaction of backfill material:
   3. Finish grading of all disturbed areas;
   4. Placement of a 1-foot soil cover system over restored grade;
   5. Other miscellaneous earthwork activities.

B. Control of surface water run-off during construction shall be in accordance with Section 02370 - Erosion and Sedimentation Control.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330: Submittal Procedures
B. Section 01450: Contractor Quality Control
C. Section 01560: Dust and Odor Control
D. Section 01720: Field Engineering and Surveying
E. Section 02105: Chemical Sampling and Analysis
F. Section 02110: Waste Removal and Handling
G. Section 02120: Off-Site Transportation and Disposal
H. Section 02140: Dewatering
I. Section 02370: Erosion and Sedimentation Control

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. Unless otherwise noted, the latest edition of the publications shall be used. The publications are referred to within the text by the basic designation only.
   1. American Society for Testing and Materials (ASTM):
      a. ASTM C 136 Sieve Analysis of Fine and Coarse Aggregates;
      b. ASTM D 422 Standard Test Method for Particle-Size Analysis of Soils;
      c. ASTM D 1140 Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve;
      d. ASTM D2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System);
      e. ASTM D 2974 Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils;
      f. ASTM D 4318 Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils;
      g. ASTM D 4972 Standard Test Method for pH of Soils;
      h. ASTM D 5268 Specification for Topsoil Used for Landscaping Purposes;

1.04 SUBMITTALS

A. Submit to the Engineer for approval the following in accordance with Section 01330, "Submittal Procedures":
   1. Borrow Source: The Contractor shall provide the proposed source(s) for off-site borrow material and all available test reports prior to initiation of work. At minimum provide grain size distribution, soil classification, and a certification of clean fill.
   2. Contractor Quality Control Testing Laboratory: The name and qualifications of an independent third-party commercial testing laboratory to be used for borrow source testing shall be submitted as soon as possible, but no later than 7 days following notice to proceed.
   3. Topsoil Source: The Contractor shall provide the proposed source of off-site topsoil material and all required testing reports (See Sub-Part 2.03).
   4. Grass Seed Vendor's Certificate: The Contractor shall provide the seed vendor's certified statement for the grass seed mixture required, showing common name, percentage of seed mix by weight, percentages of purity and germination, year of production, date of packaging, and location of packaging.
   5. Fertilizer: The Contractor shall provide the fertilizer manufacturer's product data showing chemical analysis and percent composition.
   6. Biostimulant amendment and proposed fertilizer product data

1.05 JOB CONDITIONS:

A. Site Information:
   1. Subsurface soil boring information is included in Remedial Investigation Report (MACTEC, August 2008), Alternatives Analysis Report (MACTEC, February 2009), and Area E Design Report (MACTEC, September 2010). However, variations may exist in the subsurface conditions between boring locations.
   2. Data provided on subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood the Engineer will not be responsible for interpretations or conclusions drawn there from by Contractor. Data will be made available for the convenience and information of the Contractor.
   3. Cover material including common borrow and topsoil will be placed over backfill material as part of the Site-wide cover system to be installed.

B. Existing Utilities:
   1. The Contractor shall locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
   2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the Engineer immediately for directions. Cooperate with utility companies in keeping respective services and facilities in operation. The Contractor shall repair damaged utilities to satisfaction of the Utility Owner.
   3. Do not interrupt existing utilities serving facilities that are occupied and used, except when permitted in writing by the Owner and then only after acceptable temporary utility services have been provided.

C. Use of Explosives:
   1. Use of explosives shall not be allowed.

D. Protection of Persons and Property:

1. Barricade and mark open excavations occurring as part of this work in accordance with applicable standards.
2. Protect structures, utilities, sidewalks, pavements, manholes and other facilities designated to remain from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations and truck traffic.

1.06 DEFINITIONS

A. Contaminated Soil/Material:
   1. Contaminated soils/materials include but are not limited to materials that contain total VOC or SVOC concentrations greater than 10 mg/kg as noted by testing, and materials determined to be "grossly contaminated". "Grossly contaminated shall be defined as soil exihibiting one or more of the following characteristics:
      a. Visual indication of non-aqueous phase liquid (NAPL);
      b. Visual indication of other separate phase materials of concern, such as elemental mercury;
      c. Photoionization detector readings, as obtained in ambient air at the surface of the excavated material, of greater than 10 ppm and sustained for a minimum duration of 1 minute.
      d. Discolored soil will not be considered "grossly contaminated" if it does not exhibit any of the above characteristics.
   2. The proposed horizontal extent of materials to be removed was determined by a Pre-Design Investigation. The limits of excavation shown on the design drawings are based on that information.

B. Excavation Limits: The proposed horizontal and vertical limits are shown on the drawings. The final excavation limits may be modified based on conditions encountered in the field and as otherwise determined by the Engineer.

C. Unsatisfactory Soil/Material: Unsatisfactory soils/materials include but are not limited to peat and/or highly organic soils (classified as OL, OH, or PT by ASTM D 2487), stumps/brush, trash, refuse, debris, frozen soils, soils containing materials greater than the allowable size (see below), saturated soils, fine-grained soils above their liquid limit at the time of compaction, and soils which when left in place are either too wet or too dry to compact

D. Satisfactory Soil/Material: Satisfactory soils/materials shall meet the requirements specified in Part 2 of this Section and shall be used to backfill excavations for restoration activities in remediated areas.

1.07 QUALITY ASSURANCE:

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Comply with Quality Control provisions specified in Section 01450 – "Contractor Quality Control".

1.08 DISPOSAL OF EXCAVATED MATERIALS

A. Contaminated Soil/Material:
   1. All Contaminated soils/materials obtained from on-site excavations shall be characterized for off-site transportation and disposal in accordance with Section 02120, "Off-Site Transportation and Disposal."
   2. No material within the limit of the excavation may be re-used on site for backfill unless sampling and analytical testing indicates that it meets the criteria for reuse as backfill.

PART 2 PRODUCTS

2.01 SUBGRADE FILL

A. Subgrade Fill shall be used, as necessary, to backfill excavation areas to generally match pre-excavation grades. Subgrade Fill shall consist of granular borrow or other approved material such as crushed brick/concrete, suitable for backfill. It shall be free from frozen materials, perishable rubbish, peat, and other Unsatisfactory Soil/Material.

B. Subgrade fill shall conform to the following gradation requirements unless approved otherwise by the Owner/Engineer:

Sieve Designation	Percent Passing
4 inch	100
2 inch	80-100
1 inch	70-100
No. 4	50-100
No. 200	0-25

2.02 COMMON BORROW

A. Common Borrow shall be provided to construct a 1-foot soil cover system over backfilled excavation areas, as specified elsewhere in the Design Documents. The cover system shall consists of, at minimum, a 10-inch layer of common borrow covered by a 2-inch layer of topsoil. Common Borrow shall consist of the approved clay borrow material already stockpiled on the Site.

B. Common Borrow shall be free of trash, ice, snow, tree stumps, roots and excessive organic and deleterious materials.

C. Common Borrow shall not contain stones greater than 6 inches in any dimension. Oversized particles may be removed after placement as approved by the Engineer or Owner.

D. The moisture content shall be sufficient to provide a firm, compacted, and stable surface.

2.03 TOPSOIL

A. Topsoil shall consist of good quality friable soil consisting of a sandy loam, loam, or silty loam that is free of stones over 1-1/2-inches.
B. Topsoil shall have a minimum 15% and a maximum of 80% passing the No. 200 sieve and not more than 36% clay and not more than 5% gravel by volume.
C. Topsoil shall be reasonably free from subsoil, clay lumps, stones, brush, objectionable stumps, roots, litter, toxic substances, and other material or substances which may be harmful to plant growth or be a hindrance to grading, planting and maintenance operations.
D. The pH of the material is recommended to be between 5.5 and 7.6 as guidance.
E. The organic content shall be not less than 2 percent nor more than 10 percent.
F. Topsoil containing soluble salts greater than 500 ppm shall not be used.
G. Topsoil shall be certified clean from the borrow source of origin, based on analytical testing data.
H. Provide documentation proposed topsoil is a certified clean fill.

2.04 FERTILIZER(for topsoil application)

A. 10-20-20 grade containing at least 10 percent available nitrogen, 20 percent readily available phosphoric acid and 20 percent total available potash.
B. Supply in unopened bags with the weight, contents and guaranteed analysis shown thereon or on a securely attached tag.

2.05 SEED

A. Shall conform to the minimum requirements of the local Soil Erosion and Sediment Control Standards and the requirements specified in the Area E Storm Water Pollution Prevention Plan (MACTEC, February 2010).
B. The grass seed mixture shall include no "primary noxious weed seeds."
C. Furnish in fully-labeled, standard sealed containers.
D. Percentage and germination of each seed type in the mixture, purity, and weed seed content of the mixture shall be clearly stated on the label.
E. The weight of pure live seed (PLS) is computed by the labeled purity percent times the labeled germination percent times the weight.
    a. To illustrate the method of computing to PLS from the tag basis, the following example is given: Required: 20 pounds PLS of a particular variety--stock available is 99.41% pure and 92% germination--20 divided by the product of 0.9941 and 0.92 equals 21.8 pounds on the tag basis to furnish 20 pounds of PLS.
F. Subject to the testing provisions of the Association of Official Seed Analysis, with the month and year of test clearly stated on the label.
G. May be tested after it has been delivered to the project.
H. Seed which has become wet, moldy, or otherwise damaged will not be acceptable.

2.06 BIOSTIMULATION (OXYGEN RELEASING) AMENDMENT

A. The Contractor shall supply the oxygen releasing amendment.
B. The oxygen releasing amendment shall offer a controlled release technology with a documented track record for releasing oxygen into groundwater for period of time exceeding 12 months in environmental settings similar to the subject site.

B. The oxygen releasing amendment shall have a proven track record for stimulating in-situ aearobic bioremediation of contaminants and be acceptable for use in environmental remediation projects.

C. The specified product is Regenesis ORC-Advanced or approved equal. Note that alternative materials may require different application rates and total required pounds of reagent. Application rates and quantity calculation shall be submitted for alternate materials and shall be subject to approval by the Engineer.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the Engineer, in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 EXCAVATION

A. General:
   1. Excavation consists of removal and disposal of material as shown on the drawings. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times.

B. Site Excavation:
   1. Conform to dimensions shown on the drawings. Total depth of excavation will be until the targeted geologic strata are encountered as follows (unless otherwise determined by the Engineer):
      a. Shallow excavations shall extend to the bottom of the unsaturated zone which is interpreted to coincide with the bottom of the fill layer/top of the till layer.
      b. Deep excavations shall extend to the bottom of the till layer / top of the glaciolucustrine clay layer.
   2. The excavation may extend beyond the limits described herein and shown on the drawings in order to remove “grossly contaminated” material as the term is defined above in Subpart 1.06.A.1.

3.03 STABILITY OF EXCAVATIONS

A. Slope sides of excavations to comply with applicable codes and ordinances. It is anticipated that excavation stability will be provided by using sloped side walls in accordance with OSHA and other applicable standards. If Contractor requires shoring and bracing where sloping is not possible because of space restrictions or stability of material excavated, Contractor must submit plans prior to starting work activities. Any engineered shoring system plan submitted shall be stamped by a licensed New York State Professional Engineer.

B. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

3.04 SOIL/MATERIAL HANDLING AND STORAGE:

A. If appropriate, direct load-out of excavated material is preferable to stockpiling the material on site. If stockpiling is necessary, the following requirements will apply

1. During daily excavation activities, locate and retain soil materials away from edge of excavations. All temporary/daily stockpiles shall be maintained a sufficient distance from the excavation to prevent loading of the slope and to provide for stability of the slope.
2. The Contractor shall store/stockpile excavated materials within the limits of the Work Area. Designated storage/stockpile areas shall be established for the following soils/materials, at a minimum:
    a. Contaminated Soil/Material excavated during execution of the Work.
    b. Imported soils and aggregates as required.
    c. Satisfactory excavated material that is not contaminated (based on appropriate testing) and may be reused as backfill.
3. The Contractor shall place, grade, and shape stockpiles to provide for proper drainage. Furthermore, stockpiles shall incorporate appropriate erosion and sedimentation controls in accordance with Erosion and Sedimentation Control, to prevent the off-site migration of sediments.
4. Storage of Contaminated Soils/Materials:
    a. Stockpiles of Contaminated Soil/Material shall be constructed to isolate contaminated material from the environment. The maximum pile size shall be 1,000 cubic yards unless approved otherwise by the Engineer. Stockpiles shall be constructed to include:
        1) A chemically resistant geomembrane liner. Non-reinforced geomembrane liners shall have a minimum thickness of 20 mils. Scrim reinforced geomembrane liners shall have a minimum weight of 40 lbs. per 1,000 square feet. The ground surface on which the geomembrane is to be placed shall be free of rocks greater than 0.5 inches in diameter and any other object which could damage the membrane.
        2) Geomembrane cover to prevent precipitation from entering the stockpile. Non-reinforced geomembrane covers shall have a minimum thickness of 10 mils. Scrim reinforced geomembrane covers shall have a minimum weight of 26 lbs. per 1,000 square feet. The cover material shall be anchored to prevent it from being removed by wind.
        3) Berms surrounding the stockpile, a minimum of 12 inches in height. Vehicle access points shall also be bermed.
    e. Storage and removal of liquid which collects in the stockpile shall be in accordance with Sub-Part 3.04A.6.
    f. Inspection of the stockpile areas shall be conducted on a weekly basis (at a minimum), or following a significant precipitation event and/or as requested by the Engineer.
5. Roll-Off Units:
    a. Water-tight roll-off units may be used to temporarily store Contaminated Soil/Material.
    b. An impermeable cover shall be placed over the units to prevent precipitation from contacting the stored material.
    c. The units shall be located in the staging/storage area, as directed by the Engineer.
    d. Liquid which collects inside the units shall be removed and stored for sampling and disposal by the Contractor.

6. Liquid Storage
    a. Liquid collected from excavations and stockpiles shall be temporarily stored in 55-gallon barrels or portable tanks.
    b. Liquid storage containers shall be water-tight and shall be located in the staging/storage area, as directed by the Engineer.

B. Dispose of excess soil material and waste materials as specified herein and in accordance with Section 02120, "Off-Site Transportation and Disposal."

3.05 COLD WEATHER PROTECTION

A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F.

3.06 CLOSING ABANDONED UNDERGROUND UTILITIES

A. Close open ends of abandoned underground utilities, indicated to remain, permanently with closures sufficiently strong to withstand pressures which may result after closing.

B. Close open ends of metallic conduit and pipe with threaded galvanized metal caps or plastic plugs, or other suitable method for the type of material and size of pipe. Do not use wood plugs.

C. Close open ends of concrete and masonry utilities with not less than 8" thick brick masonry bulkheads, constructed to completely fill the opening.
    1. Wet brick before laying. Lay brick in mortar so as to form a full bed with ends and side joints in one operation. Joints shall not be more than three-eighths (3/8) of an inch wide. Protect fresh masonry from freezing or from rapid drying, as necessary, and maintain protection until mortar has set.

3.07 GRADING

A. The Contractor shall uniformly grade areas within the limits of work. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. Finish surfaces to be free from irregular surface changes.

3.08 APPLICATION OF BIOSTIMULANT AMENDMENT

A. The Contractor shall supply all necessary equipment and services to apply the oxygen releasing amendment during backfilling.

B. The Contractor shall spread a dry mix of oxygen releasing amendment and fertilizer evenly within each 12-inch backfill lift.

C. Use a broadcast spreader or other equipment approved by the Engineer to apply the amendment during the course of backfilling to maximize distribution within the backfill material.

D. Use appropriate equipment, application techniques, and (if necessary) water mist/spray to minimize the creation of dust during application and spreading of the amendment.

E. Apply the amendment at the following application rate unless otherwise directed by the Engineer:
    1. Area E1: 599 pounds (0.35 pounds per square yard) per one-foot lift of backfill, with two applications applied to the first (bottom) lift.

2. Area E2: 59 pounds (0.37 pounds per square yard) per one-foot lift of backfill, with two applications applied to the first (bottom) lift.
3. Area E3: 2,642 pounds (1.2 pounds per square yard) to the first (bottom) lift.

F. Include an approved fertilizer product in the biostimulant amendment to provide nutrients (nitrogen and phosphorus) at the following applications rates unless otherwised directed by the Engineer.
1. Area E1: 2.49 pounds nitrogen and 0.25 pounds phosphorus per one-foot lift of backfill, with two applications applied to the first (bottom) lift.
2. Area E2 0.24 pounds nitrogen and 0.02 pounds phosphorus per one-foot lift of backfill, with two applications applied to the first (bottom) lift.
3. Area E3 5.5 pounds nitrogen and 0.55 pounds phosphorus per one-foot lift of backfill, with two applications applied to the first (bottom) lift.

G. Apply biostimulant amendment to backfill lifts at and below the first (upper) zone of saturation (typically encountered at the base of the fill layer/top of till at a depth of four or five feet below original ground surface).

3.09 BACKFILL AND FILL

A. Place acceptable soil material of the type in layers to required elevations. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

B. Backfill excavations as promptly as work permits, but not until completion of the following:
1. Acceptance by Engineer of construction below finish grade and completion of post-excavation sampling.
2. Removal of trash and debris.

C. Fill/Backfill Placement:
1. Place subgrade fill in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment, unless otherwise specified.

D. Before compaction, moisten or aerate each layer as necessary to provide the necessary moisture content.

E. Place Common Borrow (clay) material, as directed by the Engineer, at locations of exposed sewer lines, to prevent preferential pathway groundwater flow along pipe bedding material.

3.10 COMPACTION

A. General:
1. Compact material in 12-inch lifts (maximum) using a minimum of three passes of a 12,000 pound vibratory drum compactor.
2. Compaction procedures must comply with City of Buffalo Building Department requirements, as applicable.

B. Moisture Control:
1. Where subgrade or a layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, in proper quantities to prevent free water appearing on surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit adequate compaction.
3. Backfill material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory level.

D. Method:

1. At depths greater than five (5) feet below final grade elevation, static methods of compaction may be employed using equipment capable of producing a kneading action applied with pressure (i.e. the bucket of the excavator may be used). The maximum compacted lift depth shall be 1 foot.

3.11 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

END OF SECTION

SECTION 02370

EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide and install all materials, equipment, and labor necessary for the control of storm runoff/surface water and to place erosion and sedimentation control measures in accordance with the applicable erosion and sediment control regulatory requirements and standards. At the completion of the construction, provide all materials, equipment, and labor necessary for the removal, transport and disposal of temporary erosion and sediment control structures not specified to remain. Downgradient from disturbed areas, remove, transport, and dispose of sediment resulting from erosion control measures in a manner consistent with overall intent of this specification and which does not result in additional erosion.

B Contractor to provide and install all erosion and sediment control measures in accordance with the Area E SWPPP and NOI (MACTEC, February 2010) and all applicable erosion and sediment control regulatory requirements, standards and specifications and as required by field conditions during the execution of the Work.

C. Temporary erosion and sediment control measures shall be installed as the first step in construction, shall be continuously maintained, and shall not be removed until permanent surface stabilization of all disturbed areas to the Engineer's satisfaction.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02110: Waste Removal and Handling
B. Section 02140: Dewatering
C. Section 02315: Earthwork

1.03 REFERENCES AND GUIDELINES

A. New York Guidelines for Urban Erosion and Sediment Control, April 1997 by the Urban Soil Erosion and Sediment Control Committee which includes the following contributors: New York State Soil & Water Conservation Committee; Agronomy Department, Cornell University; Agricultural Engineering Department, Cornell University; New York State Department of Environmental Conservation; New York State Department of Transportation; New York Chapter of Land Improvement Contractors of America; O'Brien and Gere Engineers, Inc.; and USDA-Natural Resources Conservation Service (formerly the Soil Conservation Service).

B. New York Standards and Specifications for Erosion and Sediment Control, August 2005 by the NYS Soil and Water Conservation Committee.

C. New York State SPDES General Permit for Stormwater Discharges from Construction Activity – GP-0-10-001 (latest version).

D. Standards Specifications, State of New York Department of Transportation, May 4, 2006 by the New York State Department of Transportation (NYSDOT).

PART 2 PRODUCTS

2.01 GENERAL

A. Silt fence, hay bales, and other materials used for erosion and sediment or stormwater runoff control shall be as specified in the Area E SWPPP (MACTEC, February 2010).

PART 3 EXECUTION

3.01 PERFORMANCE

A. It is the Contractor's responsibility to implement and maintain erosion and sedimentation control measures which effectively prevent accelerated erosion and sedimentation.

B. Earth moving activities shall be conducted in such a manner as to prevent accelerated erosion and sedimentation.

C. Land disturbance shall be kept to a minimum. Stabilization activities shall be scheduled immediately after any disturbance

D. Diverting Surface Water:

1. Build, maintain, and operate any temporary berms, ditches channels, flumes, sumps, and other temporary diversion and protection works needed to divert surface water through or around the work area and away from Work until surface stabilization has occurred.
2. Storm runoff from disturbed areas must discharge through temporary erosion control measures prior to discharge from the Site.

E. Erosion Control Provisions:

1. Protect areas where existing banks are to be disturbed by constructing straw/hay bale or earth dikes at the top of slope to divert storm runoff from the disturbed area or at the toe of the slope to retain sediments, as conditions permit.
2. All discharge from any necessary pumping operations during dewatering operations shall be conveyed to an on-site storage tank or treatment in accordance with Section 02140, “Dewatering.”
3. Prior to removal of sediment barriers, remove retained silt or other materials and dispose of appropriately at no additional cost to the Contract.

F. Silt Fence: Install silt fence if required as a supplementary measure. The silt fence shall be installed on a level line to avoid concentrated flow areas along the fence. The area below the fence must be undisturbed or stabilized.

G. Temporary Protective Sheeting: Soil stockpiles shall be protected with sheeting prior to the completion of daily work activities or as conditions require based on observed slope conditions. Overlap adjacent sheets by a minimum of 12 inches and securely anchor sheeting with sand bags and/or soil pegs, staples or stakes.

H. Filter Berms: Sediment barriers constructed from berms of erosion control mix, compost/bark, or compost-filled filter socks maybe used at locations suitable for their use and as approved by the Engineer.

3.02 MAINTENANCE

A. The Contractor shall be held responsible for the implementation and maintenance of all erosion control measures on the Site.

B. Throughout construction and until the Site has been stabilized upon completion of the Work, all erosion and sediment control measures will require periodic inspection and maintenance to ensure that such measures are providing effective service. At a minimum, the inspection and maintenance program must meet the requirements of the Area E SWPPP (MACTEC, February 2010).

C. Maintain the integrity of all erosion control measures throughout construction period.

3.03 SPECIAL CONDITIONS

A. Prohibited Construction Practices - Prohibited construction practices include but shall not be limited to the following:

1. Dumping of spoil material into any stream corridor, any wetlands, any surface waters, storm water collection system, or at any other unspecified locations.
2. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors, any wetlands, or any storm drain system.

3.04 ADJUSTMENT OF PRACTICES

A. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the regulatory agencies having jurisdiction over the project, the Contractor shall immediately adjust their program and/or institute additional measures so as to eliminate excessive erosion and sediment runoff.

B. If the Contractor fails or refuses to comply promptly, Owner or the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor.

3.05 REMOVAL OF TEMPORARY WORKS

A. Remove or level and grade to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

END OF SECTION

SECTION 02526

ABANDONMENT OF MONITORING WELLS

PART 1 GENERAL

1.01 DESCRIPTION

A. This specification establishes the requirements for monitoring well abandonment.

B. No existing monitoring wells are within the current limits of work. Should the excavation limits be revised to include locations with existing monitoring wells, such wells will be abandoned in accordance with the procedures specified in this Section.

1.02 SUBMITTALS

A. Submit the following in accordance with Section 01330 "Submittal Procedures":

1. Well Abandonment Completion Form: Upon completion of abandonment of each well a Well Abandonment Completion Form must be completed and submitted. The Abandonment Form shall detail the material types, quantities, and methods used and any components of the well removed.
2. Well Abandonment Record for each abandoned monitoring well.

PART 2 PRODUCTS

2.01 WELL PLUGGING MATERIALS

A. Type 1 cement/bentonite grout:
Type 1 cement/bentonite grout with 4% (by weight) powdered bentonite may be used in the riser pipe interval of screen and riser pipe wells.

B. Microfine cement grout:
Microfine cement grout will be used for screened sections of wells and may be used for riser sections. The microfine cement should be similar or equal to MC-500 microfine cement distributed by Geochemical Corporation, Ridgewood, New Jersey.

PART 3 EXECUTION

3.01 WELL PLUGGING AND ABANDONMENT REQUIREMENTS

A. Monitoring wells shall be abandoned according to the latest NYSDEC Groundwater Monitoring Well Decommissioning Policy. Well abandonment includes the placement of well plugging materials by tremie methods from the bottom of the well to within 3 feet of existing grades and removal of riser and well material within 3 feet of existing grades. Well plugging materials shall not be pressure injected. Well plugging materials shall continue to be added to fill gaps created by settlement within the riser until the plugging material sets. Following removal of the top 3 feet of the well the hole shall be backfilled as in accordance with Section 02315, "Earthwork."

B. The Subcontractor shall maintain a well abandonment record. Groundwater levels shall be measured in all wells prior to abandonment. These water levels shall be included in the well abandonment records.

C. Locations of abandoned wells shall be surveyed as a requirement of the record drawing submission.

D. If the well construction is completely within the material to be excavated (i.e., no part of the well extends deeper than the bottom of the excavation), the well may be physically removed during excavation without plugging.

END OF SECTION

SECTION 02720

STORM DRAIN AND PROCESS SEWER SYSTEMS

PART 1 GENERAL

1.01 DESCRIPTION

A. A portion of the work activities in the defined excavation area will take place around the main storm sewers and process sewer lines that must be preserved. Invert depths system lines reportedly range from less than 5 feet to more than 8 feet below ground surface within the vicinity of the three excavation areas. The system lines shall remain undisturbed during excavation activities. Excavation activities will not take place directly over the system lines without approval from the Engineer.

B. A 10 inch vitrified tile storm sewer line is located within the limits of excavation at Area E-1 as shown on the drawings. During excavation, if the storm sewer is encountered, the line shall be removed and managed for off-site disposal along with the excavated soil. Any exposed ends of the sewer at the limits of excavation shall be permanently plugged/sealed with cement.

D. During the course of excavation; take precautions to locate all manholes, grates, and, covers associated with the current storm and process sewer lines in the vicinity of the work. Following location of these manholes, care shall be taken to ensure that they are not damaged or destroyed by heavy equipment unless they are part of a system that can be removed. If these structures are damaged, the Contractor shall repair or replace as directed by the Owner to restore the sewer system to its original condition.

E. If confirmatory sample results indicate that the excavation of contaminated soils is required over the system lines, soil shall then be excavated over the top of the system lines with care to not damage the lines. Existing brick manholes shall remain in place and soils shall be sloped around the manholes to ensure that they are not disturbed.

PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION

APPENDIX T

AREA C DESIGN ORC-A
APPLICATION CALCULATIONS

Table 1 - Data Summary

Area C Northern Plume - C2 - Groundwater (ug/L, unless otherwise noted)

Location ID	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	COD (mg/L)	Location
PDI-C17	220	90				62.8	1 to 10 ppm
PDI-C23	2300	1500	29	420	150		1 to 10 ppm
PDI-C26	1600	9.4	30	29	7.9		1 to 10 ppm
PDI-C25	130000	42000	460	7700	10000	436	>10 ppm
PDI-C30	8100	3100	2000	1000	3200	44.8	>10 ppm
MW-C02	75000	24000	190	4900	5600		>10 ppm
MW-C03	94000	26000	240	5100	2700		>10 ppm

Area C Southern Plume - C1 - Groundwater (ug/L, unless otherwise noted)

Location ID	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	COD (mg/L)	Location
PDI-C01	970	160	290	530	190	47.8	1 to 10 ppm
PDI-C06	280	2300	1000	820	12000		>10 ppm
RFI-31	830	8.6	1600	110	1200		>10 ppm

Area E Plume (E1 and E2) - Groundwater (ug/L, unless otherwise noted)

Location ID	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	COD (mg/L)	Location
PDI-E05	2700						1 to 10 ppm
PDI-E06	4800	9		43			1 to 10 ppm
PDI-E07	3.9	5.9					1 to 10 ppm
PDI-E08	4.1						1 to 10 ppm
PDI-E09	4700	8.8	2.5	75			1 to 10 ppm
PDI-E11	1700	3.8				144	1 to 10 ppm
PDI-E12	330	15		2.4			1 to 10 ppm
PDI-E19	5600	59	130	34	3		1 to 10 ppm
PDI-E02	390000						>10 ppm
PDI-E03	190000						>10 ppm
PDI-E04	20000						>10 ppm
PDI-E10	31000					39.3	>10 ppm
PDI-E14	15000	7800	80	1300		130	>10 ppm
PDI-E15	97000	8900	59	1600			>10 ppm
RFI-32	28000			49			>10 ppm
MW-E01	130000						>10 ppm

Notes:
Units in parts per billion (micrograms per liter) unless otherwise noted.
COD - chemical oxidant demand

Prepared by/Date: RTB 9-1-2010 (Rev 1)
Checked by/Date: BPN 9-1-2010

Table 2 - Area C Northern Plume Contaminant Mass Calculations

lbs/gal	8.34
gal/cf	7.48
liters/gal	3.785
lb/kg	2.2

1 ppm contour

area	12864	sf		
thickness	8	ft		
porosity	0.3			
total volume	102914	cf	3812	cy
pore volume	30874	cf	1143	cy
bulk density	110	lb/cf		
fraction of carbon	0.005			

	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene
GW Conc. (mg/L)	1.37	0.53	0.03	0.22	0.08
Koc (L/Kg)	224	379	379	616	1659
Soil Conc. (mg/kg)	1.54	1.01	0.06	0.69	0.65
Diss. Mass (lbs)	2.65	1.03	0.06	0.43	0.15
Sorbed Mass (lbs)	17.41	11.44	0.63	7.83	7.41

Note: 1,3-Dichlorobenzene Koc based upon value for 1,2-Dichlorobenzene

10 ppm contour

area	5818	sf		
thickness	8	ft		
porosity	0.3			
total volume	46542	cf	1724	cy
pore volume	13962	cf	517	cy
bulk density	110	lb/cf		
fraction of carbon	0.005			

	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	Total	
GW Conc. (mg/L)	76.78	23.78	0.72	4.68	5.38	111.32	
Koc (L/Kg)	224	379	379	616	1659		Weighted Koc
Soil Conc. (mg/kg)	85.99	45.05	1.37	14.40	44.59	191.40	344
Diss. Mass (lbs)	67	21	1	4	5		
Sorbed Mass (lbs)	440.22	230.66	7.01	73.72	228.26		

Est. Contaminant Mass (lbs) 1 ppm Contour	49
Est. Contaminant Mass (lbs) 10 ppm Contour	1077

Prepared by/Date: BPN 5-6-2010
Checked by/Date: RTB 5-7-2010

Table 3 - Area C Southern Plume Contaminant Mass Calculations

lbs/gal	8.34
gal/cf	7.48
liters/gal	3.785
lb/kg	2.2

1 ppm contour

area	4828	sf		
thickness	8	ft		
porosity	0.3			
total volume	38625	cf	1431	cy
pore volume	11587	cf	429	cy
bulk density	110	lb/cf		
fraction of carbon	0.005			

	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene
GW Conc. (mg/L)	0.97	0.16	0.29	0.53	0.19
Koc (L/Kg)	224	379	379	616	1659
Soil Conc. (mg/kg)	1.09	0.30	0.55	1.63	1.58
Diss. Mass (lbs)	0.70	0.12	0.21	0.38	0.14
Sorbed Mass (lbs)	1.27	1.29	2.33	6.94	6.70

Note: 1,3-Dichlorobenzene Koc based upon value for 1,2-Dichlorobenzene

10 ppm contour

area	1332	sf		
thickness	8	ft		
porosity	0.3			
total volume	10655	cf	395	cy
pore volume	3197	cf	118	cy
bulk density	110	lb/cf		
fraction of carbon	0.005			

	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	Total	
GW Conc. (mg/L)	0.56	1.15	1.30	0.47	6.60	10.07	
Koc (L/Kg)	224	379	379	616	1659		Weighted Koc
Soil Conc. (mg/kg)	0.62	2.19	2.46	1.43	54.75	61.45	1220
Diss. Mass (lbs)	0	0	0	0	1		
Sorbed Mass (lbs)	0.73	2.56	2.89	1.68	64.17		

Est. Contaminant Mass (lbs) 1 ppm Contour	20
Est. Contaminant Mass (lbs) 10 ppm Contour	74

Prepared by/Date: BPN 5-6-2010
Checked by/Date: RTB 5-7-2010

Table 4 - Area E Plume Contaminant Mass Calculations

lbs/gal	8.34
gal/cf	7.48
liters/gal	3.785
lb/kg	2.2

1 ppm contour

area	43834	sf		
thickness	8	ft		
porosity	0.3			
total volume	350673	cf	12988	cy
pore volume	105202	cf	3896	cy
bulk density	110	lb/cf		
fraction of carbon	0.005			

	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene
GW Conc. (mg/L)	2.48	0.02	0.07	0.04	0.00
Koc (L/Kg)	224	379	379	616	1659
Soil Conc. (mg/kg)	2.78	0.03	0.13	0.12	0.02
Diss. Mass (lbs)	16.29	0.11	0.44	0.25	0.02
Sorbed Mass (lbs)	107.13	1.24	4.84	4.59	0.96

Note: 1,3-Dichlorobenzene Koc based upon value for 1,2-Dichlorobenzene

10 ppm contour

area	10010	sf		
thickness	8	ft		
porosity	0.3			
total volume	80084	cf	2966	cy
pore volume	24025	cf	890	cy
bulk density	110	lb/cf		
fraction of carbon	0.005			

	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	Total	
GW Conc. (mg/L)	112.63	8.35	0.07	0.98	0.00	122.03	
Koc (L/Kg)	224	379	379	616	1659		Weighted Koc
Soil Conc. (mg/kg)	126.14	15.82	0.13	3.03	0.00	145.12	238
Diss. Mass (lbs)	169	13	0	1	0		
Sorbed Mass (lbs)	1111.19	139.39	1.16	26.67	0.00		

Est. Contaminant Mass (lbs) 1 ppm Contour	136
Est. Contaminant Mass (lbs) 10 ppm Contour	1461

Prepared by/Date: BPN 5-6-2010
Checked by/Date: RTB 5-7-2010

Table 5 -Groundwater Data Statistical Evaluation

Area C Northern Plume: 1 to 10 ppm

Statistic/Contaminant	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	total chlorobenzenes	COD (mg/L)
Maximum	2300	1500	30	420	150	4400	63
Mean	1373	533	30	225	79	2239	63
Geometric Mean	932	108	29	110	34	1215	63

Area C Northern Plume: >10 ppm

Statistic/Contaminant	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	total chlorobenzenes	COD (mg/L)
Maximum	130000	42000	2000	7700	10000	191700	436
Mean	76775	23775	723	4675	5375	111323	240
Geometric Mean	52198	16883	453	3724	4690	77948	140

Area C Southern Plume: 1 to 10 ppm

Statistic/Contaminant	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	total chlorobenzenes	COD (mg/L)
Maximum	970	160	290	530	190	2140	48
Mean	970	160	290	530	190	2140	48
Geometric Mean	970	160	290	530	190	2140	48

Area C Southern Plume: >10 ppm

Statistic/Contaminant	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	total chlorobenzenes	COD (mg/L)
Maximum	830	2300	1600	820	12000	17550	
Mean	555	1154	1300	465	6600	10074	
Geometric Mean	482	141	1265	300	3795	5983	

Area E1/E2 Plume: 1 to 10 ppm

Statistic/Contaminant	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	total chlorobenzenes	COD (mg/L)
Maximum	5600	59	130	75	3	5867	144
Mean	2480	17	66	39	3	2605	144
Geometric Mean	485	11	18	23	3	539	144

Area E1/E2 Plume: >10 ppm

Statistic/Contaminant	chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2,4-trichlorobenzene	total chlorobenzenes	COD (mg/L)
Maximum	390000	8900	80	1600		400580	130
Mean	112625	8350	70	983		122028	85
Geometric Mean	62845	8332	69	467		71713	71

Notes:
Units in parts per billion (micrograms per liter) unless otherwise noted.

Prepared by/Date: RTB 9-1-2010 (Rev 1)
Checked by/Date: BPN 9-1-2010

Table 6 - Summary of ORC-A Design Parameters and Quantities

Area C North	Area (sf)	Target Zone Thickness (ft)	GW Conc. Input (mg/L) (see Note 1)	Assumed Porosity, n	GW Cont. Mass (lbs)	Koc Input (L/kg) (see Note 2)	Calc. Soil Conc. (mg/kg) (see Note 3)	Soil Cont. Mass (lbs) (see Note 4)	ORC-A (lbs) (see Note 5)	ORC-A Application Rate (lbs/sy/vert ft) (see Note 6)
Excavation Area	18392	9	1.2	0.4	5.0	344	assumed zero	assumed zero	118	
20-ft wide area around Excavation	10600	9	1.2	0.3	2.2	344	2.1	21.9	567	
1-ft Layer below Excavation	18392	1	78	0.4	35.8	344	134	271	7222	
TOTAL					**43.0**			**293**	**7907**	**0.39**

Area C South	Excavation Area (sf)	Target Zone Thickness (ft)	GW Conc. Input (mg/L)	Assumed Porosity, n	GW Cont. Mass (lbs)	Koc Input (L/kg) (see Note 2)	Calc. Soil Conc. (mg/kg) (see Note 3)	Soil Cont. Mass (lbs) (see Note 4)	ORC-A (lbs) (see Note 5)	ORC-A Application Rate (lbs/sy/vert ft) (see Note 6)
Excavation Area	2562	9	2.1	0.4	1.2	1220	assumed zero	assumed zero	29	
20-ft wide area around Excavation	3980	9	2.1	0.3	1.4	1220	13.1	51.4	1244	
1-ft Layer below Excavation	2562	1	6.0	0.4	0.4	1220	36	10	251	
TOTAL					**3.1**			**62**	**1524**	**0.54**

Area E1	Excavation Area (sf)	Target Zone Thickness (ft)	GW Conc. Input (mg/L)	Assumed Porosity, n	GW Cont. Mass (lbs)	Koc Input (L/kg) (see Note 2)	Calc. Soil Conc. (mg/kg) (see Note 3)	Soil Cont. Mass (lbs) (see Note 4)	ORC-A (lbs) (see Note 5)	ORC-A Application Rate (lbs/sy/vert ft) (see Note 6)
Excavation Area	15314	6	0.54	0.4	1.2	238	assumed zero	assumed zero	29	
20-ft wide area around Excavation	11860	6	0.54	0.3	0.7	238	0.6	5.0	135	
1-ft Layer below Excavation	15314	1	72	0.4	27.4	238	85	144	4026	
TOTAL					**29.4**			**149**	**4190**	**0.35**

Area E2	Excavation Area (sf)	Target Zone Thickness (ft)	GW Conc. Input (mg/L)	Assumed Porosity, n	GW Cont. Mass (lbs)	Koc Input (L/kg) (see Note 2)	Calc. Soil Conc. (mg/kg) (see Note 3)	Soil Cont. Mass (lbs) (see Note 4)	ORC-A (lbs) (see Note 5)	ORC-A Application Rate (lbs/sy/vert ft) (see Note 6)
Excavation Area	1421	6	0.54	0.4	0.1	238	assumed zero	assumed zero	3	
20-ft wide area around Excavation	3040	6	0.54	0.3	0.2	238	0.6	1.3	35	
1-ft Layer below Excavation	1421	1	72	0.4	2.5	238	85	13	374	
TOTAL					**2.8**			**15**	**411**	**0.37**

Area E3 (see Note 7)	Excavation Area (sf)	Target Zone Thickness (ft)	Calc. GW Conc. Input (mg/L)	Assumed Porosity, n	GW Cont. Mass (lbs)	Koc Input (L/kg)	Soil Conc. (mg/kg) (see Note 3)	Soil Cont. Mass (lbs) (see Note 4)	ORC-A (lbs) (see Note 5)	ORC-A Application Rate (lbs/sy/vert ft) (see Note 6)
Excavation Area	9946	1	0.54	0.4	0.1	238	assumed zero	assumed zero	3	
20-ft wide area around Excavation	12600	1	0.54	0.3	0.1	238	0.6	0.9	24	
1-ft Layer below Excavation	9946	1	72	0.4	17.8	238	85	93	2615	
TOTAL					**18.1**			**94**	**2642**	**1.20**

subtotal ORC-A	16,673	lbs.
Cntgncy (10%)	1,667	lbs.
Total ORC-A	**18,340**	lbs.

Notes:

1) Groundwater Concentration Input value based upon geometric mean for total chlorobenzenes. Excavation and surrounding 20-ft wide area based upon 1- 10 mg/L plume data; 1-ft layer below excavation based upon >10 mg/L plume data.

2) Koc input value calculated as contaminant concentration-weighted average for the >10 mg/L data.

3) Sorbed (soil) concentrations calculated as product of groundwater concentration, Koc input value, and fraction of organic carbon (design value = 0.005)

4) Sorbed soil mass calculated based upon soil bulk density of 110 lb/ft^3

5) ORC-A quantities calculated based upon the target zone contaminant mass, a stoichiometry of 2.0, a safety/additional demand factor of 2.0, and ORC-A provides 17% oxygen on a per weight basis.

6) Based upon applying two applications to the first (bottom) lift of backfill.

7) Area E3 calculations based upon GW Conc. Input values for Area E1 and E2.

Prepared by/Date: RTB 9-3-2010 (I
Checked by/Date: BPN 9-2-2010

Table 6 - Nutrient Amendment Application Calculations

	No. of Atoms				
	Carbon	Hydrogen	Chlorine	Total Mass	%Carbon wt/wt
Chlorobenzene	6	5	1	112.6	64%
Dichlorobenzene	6	4	2	147.0	49%
Trichlorobenzene	6	3	3	181.4	40%

	Atomic Mass
Carbon	12.01
Hydrogen	1.0079
Chlorine	35.453

	GW Cont. Mass (lbs)	GW Cont. Mass as Carbon (lbs)	Soil Cont. Mass (lbs)	Soil Cont. Mass as Carbon (lbs)	Total Cont. Mass as Carbon (lbs)	Nitrogen, lbs (see Note 2)	Phosphorus, lbs (see Note 2)	Nitrogen, mg/L (see Note 3)	Phosphorus, mg/L (see Note 3)	Nitrogen, lbs/vert ft	Phosphorus lbs/vert ft
Area C North	43.0	21.1	293.0	143.7	164.7	32.9	3.3	7.99	0.80	3.29	0.33
Area C South	3.05	1.5	61.7	30.3	31.8	6.4	0.6	11.05	1.11	0.64	0.06
Area E1	29.4	14.4	148.7	72.9	87.3	17.5	1.7	7.63	0.76	2.49	0.25
Area E2	2.8	1.4	14.6	7.2	8.6	1.7	0.2	8.06	0.81	0.24	0.02
Area E3	18.1	8.9	94.2	46.2	55.0	11.0	1.1	44.42	4.44	5.50	0.55

Notes:

1. Mass as Carbon calculated based upon %Carbon wt/wt for dichlorobenzene
2. Calculated based upon required Carbon:Nitrogen:Phosphorus ratio of 100:10:1 for biological growth with additional demand factor of 2.
3. Based upon pore volume of backfilled excavation area only (worst-case)

Prepared by/Date: RTB 9-3-2010 (Rev 3)
Checked by/Date: BPN 9-2-2010

Oxygen Release Compound – Advanced (ORC *Advanced*™)
MATERIAL SAFETY DATA SHEET (MSDS)

Last Revised: March 13, 2007

Section 1 - Material Identification

Supplier:



1011 Calle Sombra
San Clemente, CA 92673

Phone:	**949.366.8000**
Fax:	**949.366.8090**
E-mail:	**info@regenesis.com**

Chemical Description:	A mixture of Calcium OxyHydroxide [$CaO(OH)_2$] and Calcium Hydroxide [$Ca(OH)_2$].
Chemical Family:	Inorganic Chemical
Trade Name:	Advanced Formula Oxygen Release Compound (ORC *Advanced*™)
Chemical Synonyms	Calcium Hydroxide Oxide; Calcium Oxide Peroxide
Product Use:	Used to remediate contaminated soil and groundwater (environmental applications)

Section 2 – Composition

CAS No.	**Chemical**
682334-66-3	**Calcium Hydroxide Oxide [$CaO(OH)_2$]**
1305-62-0	**Calcium Hydroxide [$Ca(OH)_2$]**
7758-11-4	**Dipotassium Phosphate (HK_2O_4P)**
7778-77-0	**Monopotassium Phosphate (H_2KO_4P)**

Section 3 – Physical Data	
Form:	Powder
Color:	White to Pale Yellow
Odor:	Odorless
Melting Point:	527 °F (275 °C) – Decomposes
Boiling Point:	Not Applicable (NA)
Flammability/Flash Point:	NA
Auto- Flammability:	NA
Vapor Pressure:	NA
Self-Ignition Temperature:	NA
Thermal Decomposition:	527 °F (275 °C) – Decomposes
Bulk Density:	0.5 – 0.65 g/ml (Loose Method)
Solubility:	1.65 g/L @ 68° F (20° C) for calcium hydroxide.
Viscosity:	NA
pH:	11-13 (saturated solution)
Explosion Limits % by Volume:	Non-explosive
Hazardous Decomposition Products:	Oxygen, Hydrogen Peroxide, Steam, and Heat
Hazardous Reactions:	None

Section 4 – Reactivity Data

Stability:	Stable under certain conditions (see below).
Conditions to Avoid:	Heat and moisture.
Incompatibility:	Acids, bases, salts of heavy metals, reducing agents, and flammable substances.
Hazardous Polymerization:	Does not occur.

Section 5 – Regulations

TSCA Inventory List:	Listed

CERCLA Hazardous Substance (40 CFR Part 302)

Listed Substance:	No
Unlisted Substance:	Yes
Reportable Quantity (RQ):	100 pounds
Characteristic(s):	Ignitibility
RCRA Waste Number:	D001

SARA, Title III, Sections 302/303 (40 CFR Part 355 – Emergency Planning and Notification)

Extremely Hazardous Substance:	No

SARA, Title III, Sections 311/312 (40 CFR Part 370 – Hazardous Chemical Reporting: Community Right-To-Know

Hazard Category:	Immediate Health Hazard Fire Hazard
Threshold Planning Quantity:	10,000 pounds

Section 5 – Regulations (cont)

SARA, Title III, Section 313 (40 CFR Part 372 – Toxic Chemical Release Reporting: Community Right-To-Know

Extremely Hazardous Substance:	No	
WHMIS Classification:	C	Oxidizing Material Poisonous and Infectious Material
	D	Material Causing Other Toxic Effects – Eye and Skin Irritant
Canadian Domestic Substance List:	Not Listed	

Section 6 – Protective Measures, Storage and Handling

Technical Protective Measures

Storage:	Keep in tightly closed container. Store in dry area, protected from heat sources and direct sunlight.
Handling:	Clean and dry processing pipes and equipment before operation. Never return unused product to the storage container. Keep away from incompatible products. Containers and equipment used to handle this product should be used exclusively for this material. Avoid contact with water or humidity.

Section 6 – Protective Measures, Storage and Handling (cont)

Personal Protective Equipment (PPE)

Engineering Controls:	Calcium Hydroxide ACGIH® TLV® (2000) 5 mg/m^3 TWA OSHA PEL Total dust–15 mg/m^3 TWA Respirable fraction– 5 mg/m^3 TWA NIOSH REL (1994) 5 mg/m^3
Respiratory Protection:	For many conditions, no respiratory protection may be needed; however, in dusty or unknown atmospheres use a NIOSH approved dust respirator.
Hand Protection:	Impervious protective gloves made of nitrile, natural rubbber or neoprene.
Eye Protection:	Use chemical safety goggles (dust proof).
Skin Protection:	For brief contact, few precautions other than clean clothing are needed. Full body clothing impervious to this material should be used during prolonged exposure.
Other:	Safety shower and eyewash stations should be present. Consultation with an industrial hygienist or safety manager for the selection of PPE suitable for working conditions is suggested.
Industrial Hygiene:	Avoid contact with skin and eyes.
Protection Against Fire & Explosion:	NA

Section 7 – Hazards Identification

Emergency Overview:	Oxidizer – Contact with combustibles may cause a fire. This material decomposes and releases oxygen in a fire. The additional oxygen may intensify the fire.
Potential Health Effects:	Irritating to the mucous membrane and eyes. If the product splashes in ones face and eyes, treat the eyes first. Do not dry soiled clothing close to an open flame or heat source. Any

	clothing that has been contaminated with this product should be submerged in water prior to drying.
Inhalation:	High concentrations may cause slight nose and throat irritation with a cough. There is risk of sore throat and nose bleeds if one is exposed to this material for an extended period of time.
Eye Contact:	Severe eye irritation with watering and redness. There is also the risk of serious and/or permanent eye lesions.
Skin Contact:	Irritation may occur if one is exposed to this material for extended periods.
Ingestion:	Irritation of the mouth and throat with nausea and vomiting.

Section 8 – Measures in Case of Accidents and Fire

After Spillage/Leakage/Gas Leakage:	Collect in suitable containers. Wash remainder with copious quantities of water.
Extinguishing Media:	See next.
Suitable:	Large quantities of water or water spray. In case of fire in close proximity, all means of extinguishing are acceptable.
Further Information:	Self contained breathing apparatus or approved gas mask should be worn due to small particle size. Use extinguishing media appropriate for surrounding fire. Apply cooling water to sides of transport or storage vessels that are exposed to flames until the fire is extinguished. Do not approach hot vessels that contain this product.
First Aid:	After contact with skin, wash immediately with plenty of water and soap. In case of contact with eyes, rinse immediately with plenty of water and seek medical attention. Consult an opthalmologist in all cases.

Section 8 – Measures in Case of Accidents and Fire

Eye Contact:	Flush eyes with running water for 15 minutes, while keeping the eyelids wide open. Consult with an ophthalmologist in all cases.
Inhalation:	Remove subject from dusty environment. Consult with a physician in case of respiratory symptoms.

Ingestion:	If the victim is conscious, rinse mouth and admnister fresh water. DO NOT induce vomiting. Consult a physician in all cases.
Skin Contact:	Wash affected skin with running water. Remove and clean clothing. Consult with a physician in case of persistent pain or redness.
Special Precautions:	Evacuate all non-essential personnel. Intervention should only be done by capable personnel that are trained and aware of the hazards associated with this product. When it is safe, unaffected product should be moved to safe area.
Specific Hazards:	Oxidizing substance. Oxygen released on exothermic decomposition may support combustion. Confined spaces and/or containers may be subject to increased pressure. If product comes into contact with flammables, fire or explosion may occur.

Section 9 – Accidental Release Measures

Precautions:	Observe the protection methods cited in Section 3. Avoid materials and products that are incompatible with product. Immediately notify the appropriate authorities in case of reportable discharge (> 100 lbs).
Cleanup Methods:	Collect the product with a suitable means of avoiding dust formation. All receiving equipment should be clean, vented, dry, labeled and made of material that this product is compatible with. Because of the contamination risk, the collected material should be kept in a safe isolated place. Use large quantities of water to clean the impacted area. See Section 12 for disposal methods.

Section 10 – Information on Toxicology

Toxicity Data

Acute Toxicity:	Oral Route, LD_{50}, rat, > 2,000 mg/kg (powder 50%) Dermal Route, LD_{50}, rat, > 2,000 mg/kg (powder 50%) Inhalation, LD_{50}, rat, > 5,000 mg/m^3 (powder 35%)
Irritation:	Rabbit (eyes), severe irritant

Sensitization:	No data
Chronic Toxicity:	In vitro, no mutagenic effect (Powder 50%)
Target Organ Effects:	Eyes and respiratory passages.

Section 11 – Information on Ecology

Ecology Data	
	10 mg $Ca(OH)_2$/L: pH = 9.0
	100 mg $Ca(OH)_2$/L: pH = 10.6
Acute Exotoxicity:	Fishes, Cyprinus carpio, LC_{50}, 48 hrs, 160 mg/L
	Crustaceans, Daphnia sp., EC_{50}, 24 hours, 25.6 mg/L
	(Powder 16%)
Mobility:	Low Solubility and Mobility
Abiotic Degradation:	Water – Slow Hydrolysis.
	Degradation Products: Calcium Hydroxide
	Water/soil – complexation/precipitation. Carbonates/sulfates present at environmental concentrations.
	Degradation products: carbonates/sulfates sparingly soluble
Biotic Degradation:	NA (inorganic compound)
Potential for Bioaccumulation:	NA (ionizable inorganic compound)

Section 11 – Information on Ecology (cont)

Comments:	Observed effects are related to alkaline properties of the product. Hazard for the environment is limited due to the product properties of: • No bioaccumulation • Weak solubility and precipatation as carbonate or sulfate in an aquatic environment. Diluted product is rapidly neutralized at environmental pH.
Further Information:	NA

Section 12 – Disposal Considerations

Waste Disposal Method:	Consult current federal, state and local regulations regarding the proper disposal of this material and its emptied containers.

Section 13 – Shipping/Transport Information

D.O.T Shipping Name:	Oxidizing Solid, N.O.S [A mixture of Calcium OxyHydroxide [$CaO(OH)_2$] and Calcium Hydroxide [$Ca(OH)_2$].
UN Number:	1479
Hazard Class:	5.1
Label(s):	5.1 (Oxidizer)
Packaging Group:	II
STCC Number:	4918717

Section 14 – Other Information

HMIS® Rating	Health – 2 Flammability – 0	Reactivity – 1 PPE - Required

HMIS® is a registered trademark of the National Painting and Coating Association.

NFPA® Rating	Health – 2 Flammability – 0	Reactivity – 1 OX

NFPA® is a registered trademark of the National Fire Protection Association.

Reason for Issue: Update toxicological and ecological data

Section 15 – Further Information

The information contained in this document is the best available to the supplier at the time of writing, but is provided without warranty of any kind. Some possible hazards have been determined by analogy to similar classes of material. The items in this document are subject to change and clarification as more information become available.

APPENDIX U

QUALITY ASSURANCE/QUALITY CONTROL PLAN, DRAWINGS, AND DETAILS FOR SOIL COVER PLACEMENT

ENGINEERING AND INSTITUTIONAL CONTROLS

. Integrated cover system consist of 1 foot of soil /asphalt pavement/concrete pavement/building slabs

. Vapor mitigation/vapor intrusion evaluations must be carried out in new or re-occupied structures and or site redevelopment.

. Use of groundwater in the entire Easement Area is restricted without water quality treatment as may be required by the New York State Department of Health.

. Future Intrusive activities must adhere to the Site Management Plan and associated Site Excavation Plan.

. Evaluation for potential vapor intrusion of any buildings is required.

. Agricultural use in the entire Easement Area is prohibited.

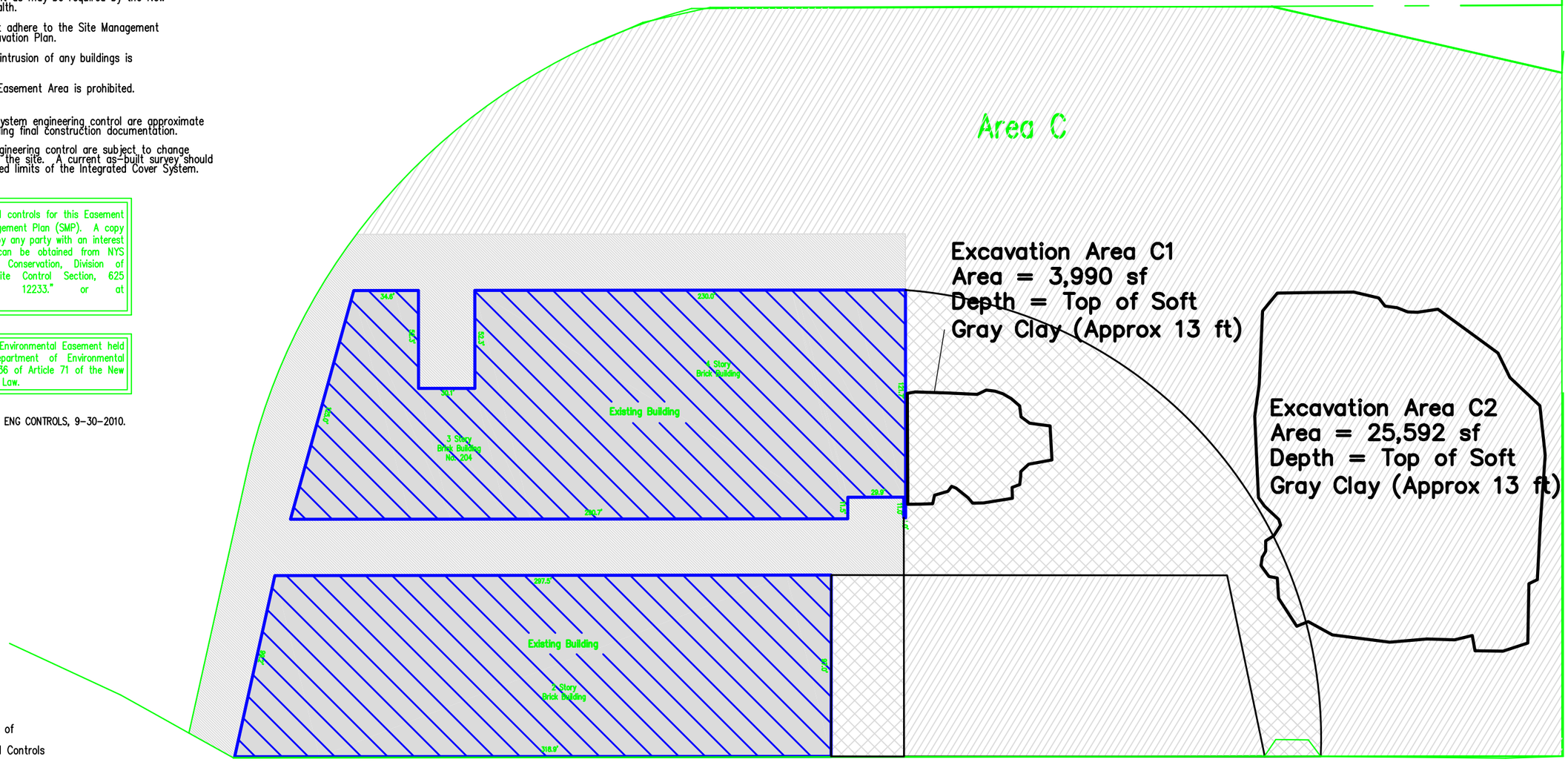
The limits of Integrated Cover System engineering control are approximate and are subject to change pending final construction documentation.

The Integrated Cover System engineering control are subject to change pending future redevelopment of the site. A current as-built survey should be referenced for the documented limits of the Integrated Cover System.

The engineering and institutional controls for this Easement are set forth in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233." or at derweb@gw.dec.state.ny.us

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law.

REF.: NIAGARA BOUNDARY, 6941 ENG CONTROLS, 9-30-2010.



SOUTH BUFFALO DEVELOPMENT, LLC BUFFALO, NEW YORK Project No.: 3410090701	MACTEC Engineering & Consulting Inc. 800 North Bell Avenue, Suite 200 Pittsburgh, PA 15106	RECORD DRAWING – AREA C FINAL COVER FIGURE: 5	5

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Final Engineering Reports\Figure 5 – Site Cover Areas.dwg Thu, 02 Dec 2010 – 1:35pm esweiler

Plan Notes

Area 1

1)All soils inside of property boundary shall be excavated to a depth of one (1) foot below existing grade.

2)Existing chain link fence within excavation area shall be removed as necessary to accomplish work. removed sections of fence shall be reinstalled at conclusion of work.

3)Backfill shall be placed and compacted to meet existing grade.

Area 2

1)Soils between curb and existing fence on either side of Maurice Street shall be excavated to a depth of one (1) foot below existing grade.

2)Backfill shall be placed and compacted to meet existing grade.

Area 3

1)Railroad (RR) tracks and ties for Spurs 1 and 2 shall be removed. Spur 3 shall not be disturbed.

2)Soils beneath spurs 1 and 2 shall be excavated to a depth of one (1) foot below existing grade. The lateral extents of the excavation shall extend laterally four (4) feet from ends of rail tie.

3)Limits of excavation shall be pre-marked prior to excavating soils or removing rail spurs.

4)In areas where RR tracks are to remain in place (western portions of Spurs 1 and 2 and all of Spur 3) the excavation shall extend from edge of rail tie to a horizontal distance of four (4) feet outside of rail tie or to the property boundary, whichever is closest.

5)All soils between Spurs 1 and 2 shall be removed to one (1) foot below existing grade. The existing chain link fence shall be removed as shown on drawings.

6)Chain link fence between Spurs 2 and 3 shall be reinstalled along the centerline between the spurs to a distance of ten (10) feet east of the Spur 3 termination. The fence line shall then extend to the property boundary along the southern border of the site. The fence line shall be extended along the southern property boundary until it intersects the existing fence.

7)Caution shall be used while excavating around Buffalo Sewer Authority (BSA) manholes and former utilities lines.

Detail Notes

Area 1

1)A woven geotextile demarcation layer shall be placed within the excavation envelope, along excavation bottom and sidewalls.

2)Gravel backfill shall be placed within the excavation envelope above the demarcation layer.

3)Gravel backfill shall be compacted by a minimum of three passes of a vibratory roller.

4)A post compacted backfill thickness of one (1) foot shall be achieved.

Area 2

1)A woven geotextile demarcation layer shall be placed within the excavation envelope, along excavation bottom and sidewalls.

2)Clay borrow shall be placed within the excavation envelope above the demarcation layer.

3)Clay backfill shall be compacted by a minimum of three passes of the tracks/tires of a bulldozer or frontend loader.

4)A post compacted thickness of clay backfill of ten (10) inches shall be achieved.

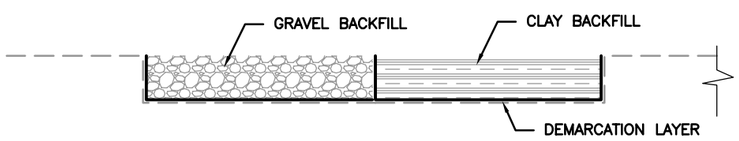
5)A minimum of two (2) inches of topsoil shall be placed and compacted by a minimum of one pass of a bulldozer or frontend loader over the clay backfill.

Area 3

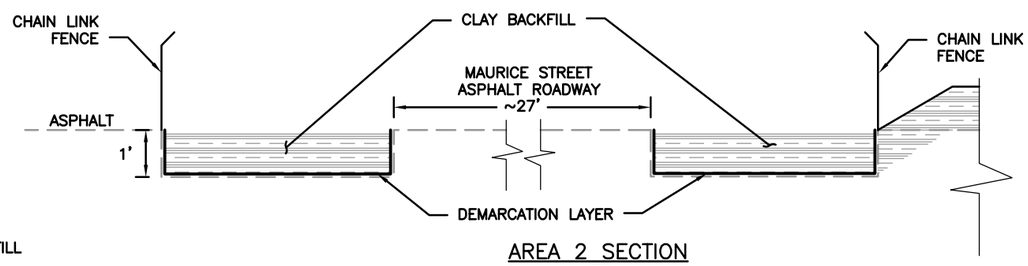
1)A woven geotextile demarcation layer shall be placed within the excavation envelope, along excavation bottom and sidewalls. At the interface between the clay and gravel backfills the demarcation layer installed beneath the clay shall be rolled up to provide filtration between the clay and gravel backfills.

2)For gravel backfill areas, gravel shall be placed within the excavation envelope above the demarcation layer and compacted by a minimum of three passes of a vibratory roller.

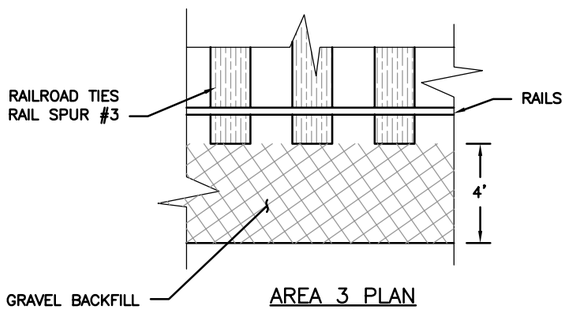
3)For clay borrow backfill areas clay borrow shall be placed within the excavation envelope above the demarcation layer and compacted a minimum of three passes of tracks/tires of a bulldozer or frontend loader.



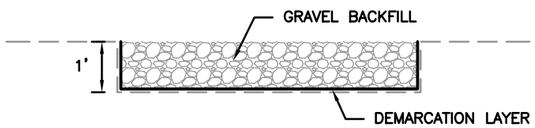
AREA 3 SECTION
NTS



AREA 2 SECTION
NTS



AREA 3 PLAN
NTS



AREA 1 SECTION
NTS

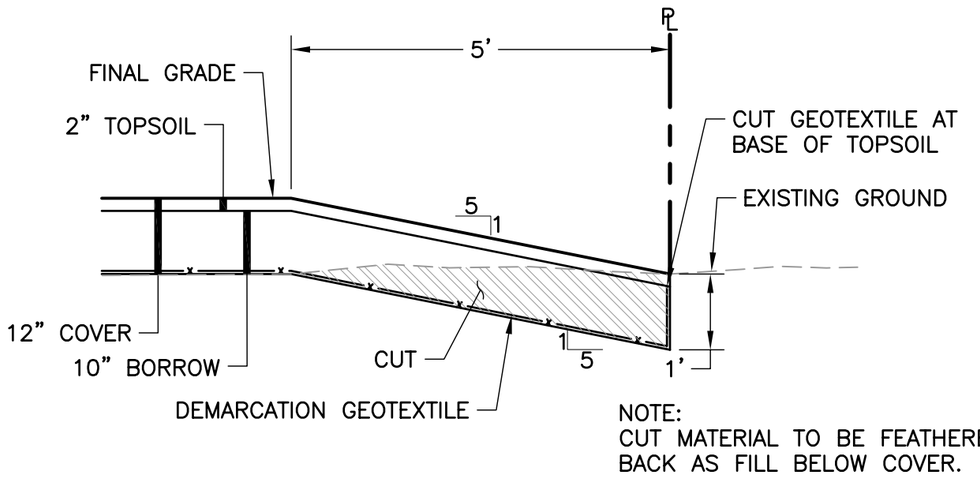
Prepared/Date: RJR 09/07/10
Checked/Date: RSE 09/07/10

AREA E COVER
FORMER BUFFALO COLOR CORP SITE
BUFFALO, NEW YORK

MACTEC

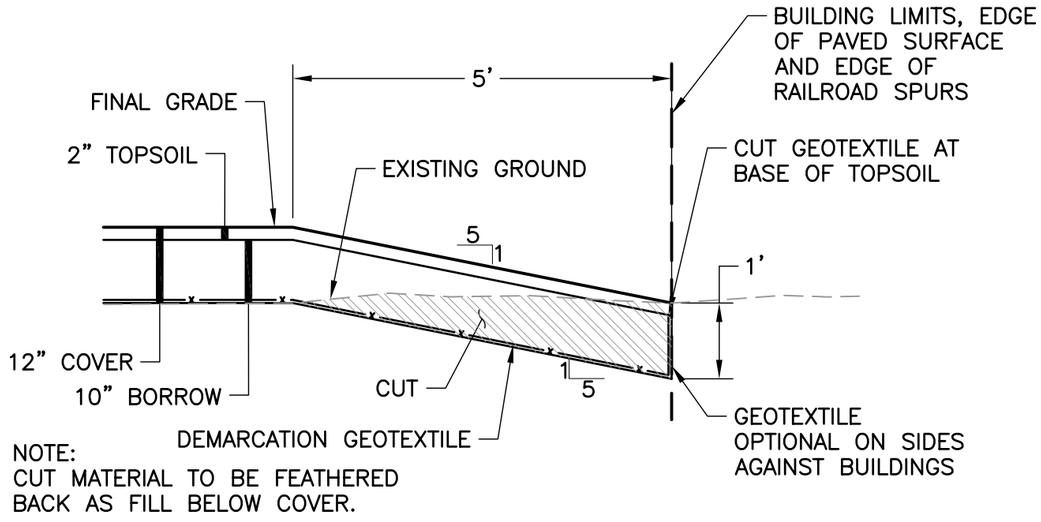
Project 3410-09-0701
Figure 2

M:\Projects\HONEYWELL\BUFFALO COLOR\SBD AREA E EXCAVATION\Figure 1 Area E Excavation.dwg Tue, 07 Sep 2010 - 2:22pm rjriquier



COVER DETAIL @ SITE/PROPERTY LIMITS

SCALE: 1" = 2'



COVER DETAIL @ BUILDING, PAVEMENT, AND RAILROAD LIMITS

SCALE: 1" = 2'

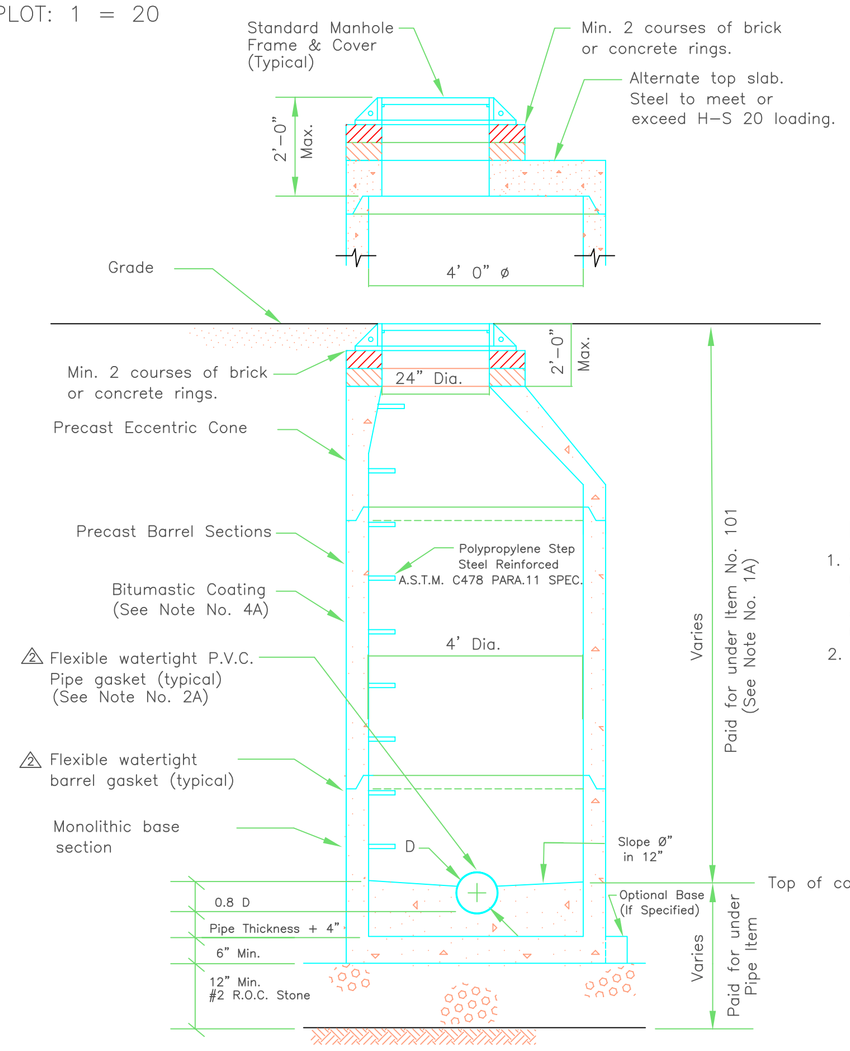
Prepared/Date: MRS 04/06/10
Checked/Date: LNT 04/06/10

AREA ABCE CAP FORMER BUFFALO COLOR CORP SITE BUFFALO, NEW YORK	MACTEC	COVER DETAILS Project 3410-09-0701 Figure 1

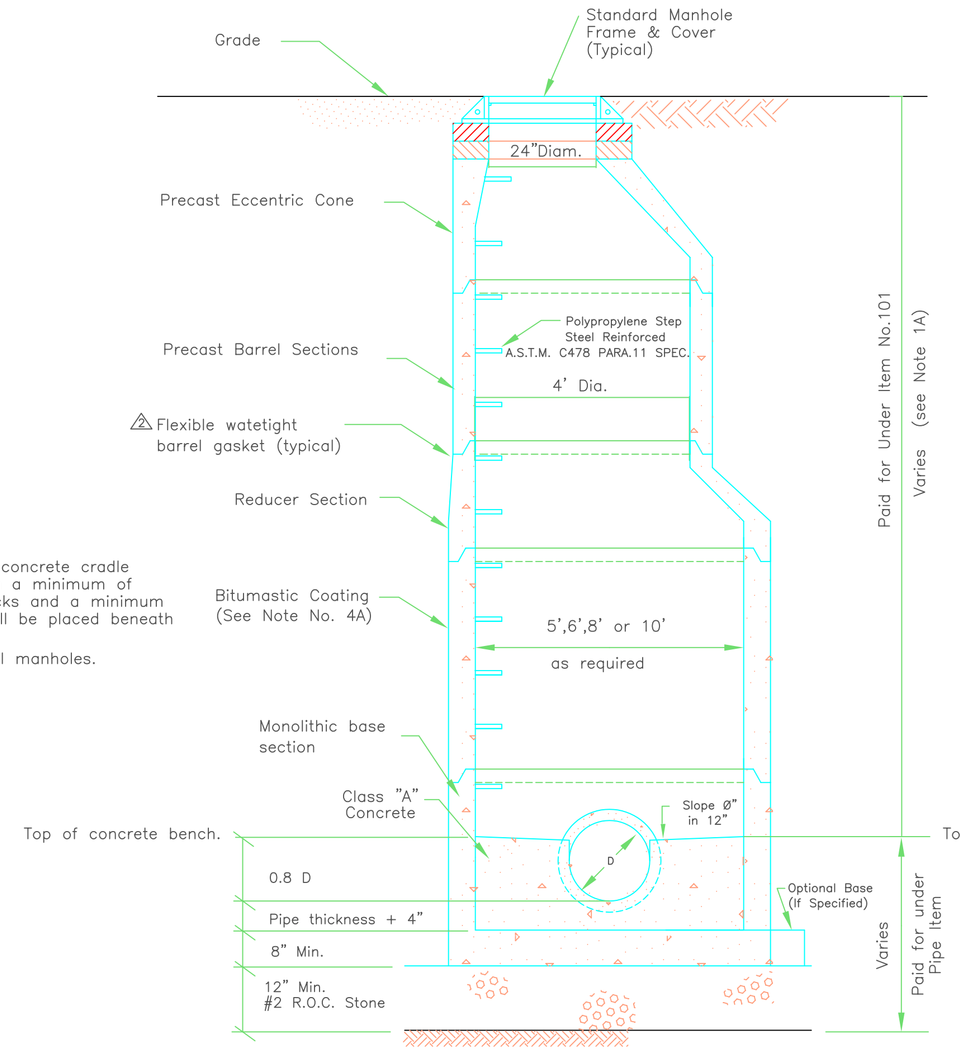
P:\Projects\CADD-PORT\Projects\HONEYWELL\BUFFALO COLOR\AREA ABCE 2010\DETAILS.dwg Wed, 07 Apr 2010 - 11:19am mrstacey

G:STDPCMH.DWG

PLOT: 1 = 20



PIPE SIZE TO 24"ø



PIPE SIZE 27"ØAND LARGER

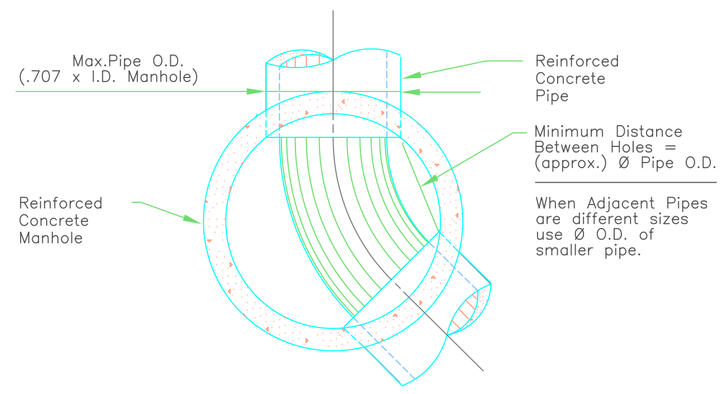
NOTE:

1. When pipe is installed with concrete cradle manhole shall be placed on a minimum of four (4) solid concrete blocks and a minimum of 8" concrete bedding shall be placed beneath manhole.
2. Pay limits shown are for all manholes.

STANDARD PRECAST MANHOLE

SCALE: Ø" = 1' - 0"

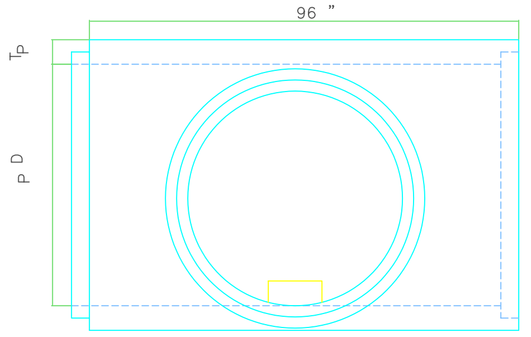
(Paid for under Item No. 101)
(See Note No. 1A)



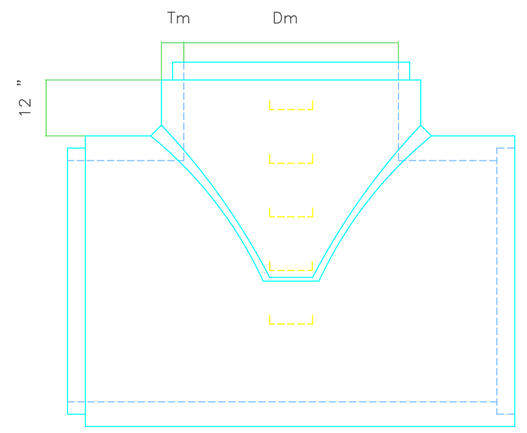
PLAN VIEW OF MANHOLE SHOWING 45° DEFLECTION

SCALE: Ø" = 1'-0"

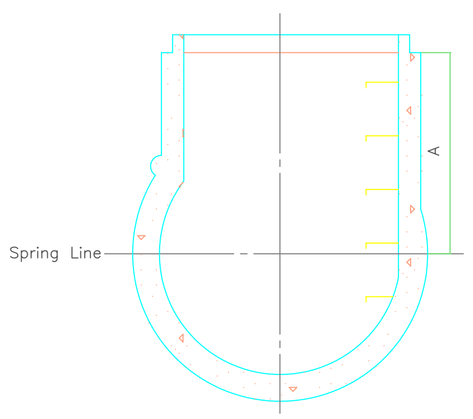
	4 FOOT MANHOLE 5" WALL	5 FOOT MANHOLE 6" WALL	6 FOOT MANHOLE 7" WALL	8 FOOT MANHOLE 9" WALL	10 FOOT MANHOLE 11" WALL
MAX. PIPE O.D. STRAIGHT THRU TO 45? DEFLECTION	30" O.D. 24" R.C. PIPE	44" O.D. 36" R.C. PIPE	51" O.D. 42" R.C. PIPE	72" O.D. 60" R.C. PIPE	86" O.D. 72" R.C. PIPE
MAX. PIPE O.D. 90 ? DEFLECTION	23" O.D. 18" R.C. PIPE	33.5" O.D. 27" R.C. PIPE	37" O.D. 30" R.C. PIPE	51" O.D. 42" R.C. PIPE	72" O.D. 60 " R.C. PIPE



TOP VIEW



SIDE VIEW



SECTIONAL END VIEW

CLASS IV REINFORCED CONCRETE PRECAST MANHOLE TEE

SCALE: Ø" = 1'-0"

(Paid for under Item No. 101 as per Standard Precast Manhole)

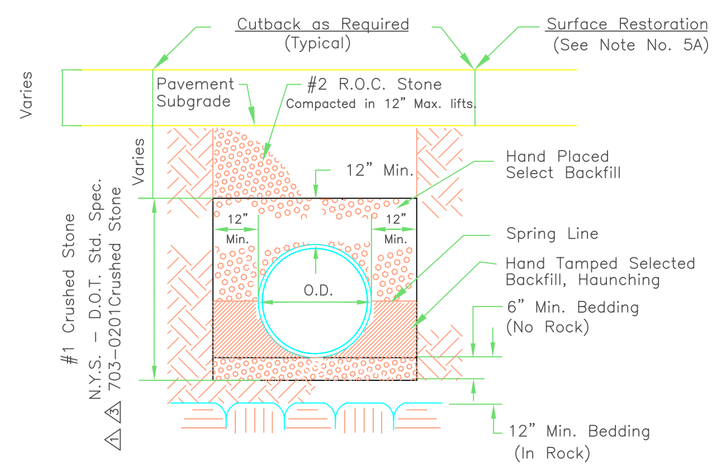
Notes:

1) Reinforced concrete pipe manufactured to A.S.T.M. C 478 specification.
2) Precast manhole riser manufactured to A.S.T.M. C 478 specification.
3) Precast manhole riser will be spigot end up.
   (Spigot end up illustrated.)
4) Manhole riser section reinforcing welded to pipe reinforcing. Additional reinforcing used in joint. Joint grouted with non-shrink mortar.
5) Rungs may be installed on left or right hand side looking at spigot end of pipe. (Right hand installation illustrated.)
6) Polypropylene Step Steel Reinforced A.S.T.M. C478 installed on 12" centers to spring line.
7) All M.H. tees to be eccentric as shown so that M.H. steps may be extended downward to the spring line of the pipe.

Precast Manhole Tee Dimensions

(inches)

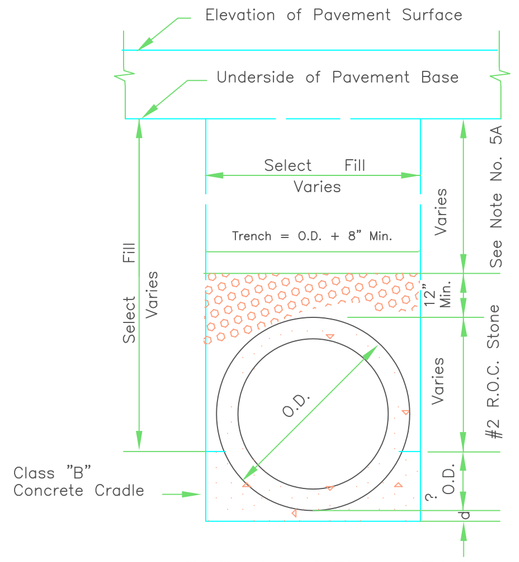
I.D. PIPE	I.D. M.H.	WALL PIPE	WALL M.H.	
Dp	Dm	Tp	Tm	A
48	48	5	5	41
54	48	5Ø	5	45
60	48	6	5	48
66	48	6Ø	5	52
72	48	7	5	55
78	48	7Ø	5	59
84	48	8	5	62
90	48	8Ø	5	66
96	48	9	5	69
102	48	9Ø	5	73
108	48	10	5	76
120	48	11	5	83



P.V.C. PIPE TRENCH DETAIL IN R.O.W.

N.T.S.

(Paid for under appropriate pipe item unless otherwise specified.)

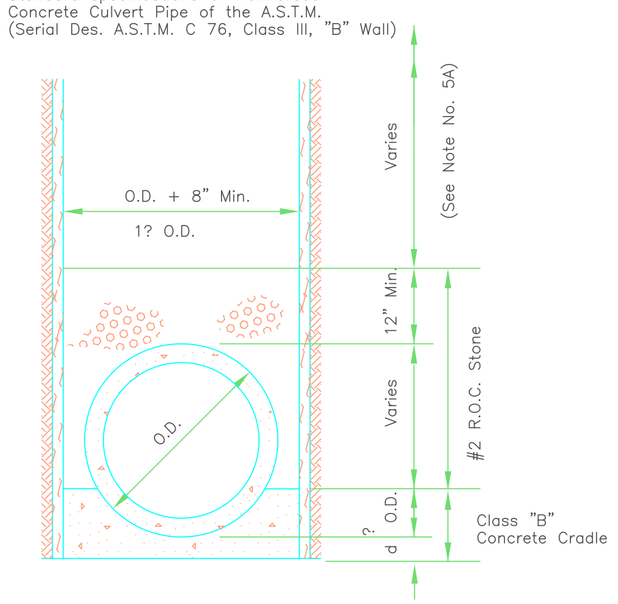


TRENCH DETAIL FOR CLASS III CONCRETE PIPE OR EXTRA STRENGTH VITRIFIED TILE PIPE

N.T.S.

(Paid for under appropriate pipe item unless otherwise specified.)

NOTE:
Pipe to comply with table 1 of the Standard specifications of Reinforced Concrete Culvert Pipe of the A.S.T.M. (Serial Des. A.S.T.M. C 76, Class III, "B" Wall)



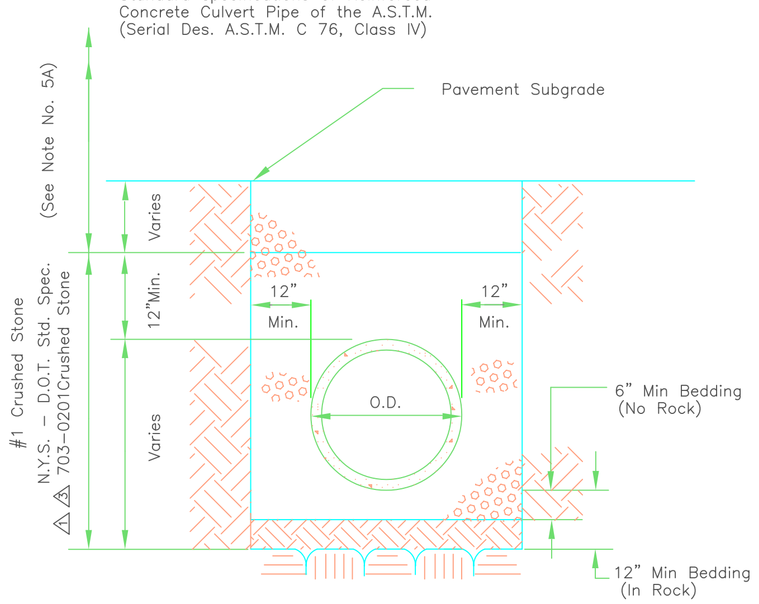
CONCRETE CRADLE FOR CLASS III R.C.P. OR EXTRA STRENGTH VITRIFIED TILE PIPE IN OPEN CUT

N.T.S.

Legend:
O.D.= Outside diameter
d = Depth of bedding material below pipe
D = Inside diameter
T = Wall thickness of pipe
R.O.C.= Run of Crusher

DEPTH OF CONCRETE BELOW PIPE	
D	d Min.
27 " & SMALLER	3 "
30 " TO 60 "	4 "
66 " & LARGER	6 "

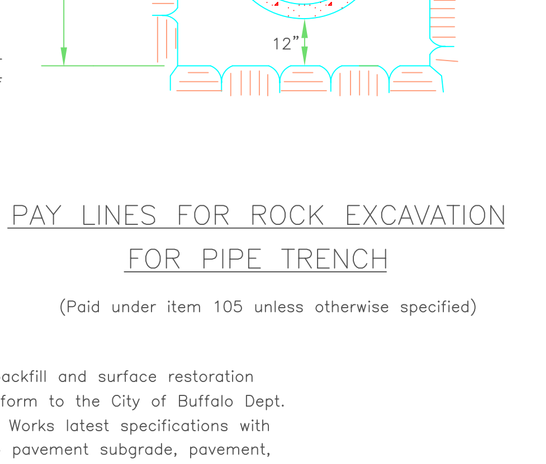
NOTE:
Pipe to comply with table 1 of the Standard specifications of Reinforced Concrete Culvert Pipe of the A.S.T.M. (Serial Des. A.S.T.M. C 76, Class IV)



CLASS IV R.C.P. TRENCH DETAIL IN STREET R.O.W.

N.T.S.

(Paid for under appropriate pipe item unless otherwise specified.)



PAY LINES FOR ROCK EXCAVATION FOR PIPE TRENCH

(Paid under item 105 unless otherwise specified)

Notes:

1A. To be paid for under Item No. 101, unless otherwise noted in Lump Sum Contracts.

2A. When P.V.C. pipe is used, the manhole will be supplied with a watertight boot seal(s) . Materials must meet or exceed A.S.T.M. C-923.

3A. This drawing represents, in general, a standard manhole in which the inlet/outlet connection is shown in a position to fit the particular condition. This drawing will accompany the location plan for each manhole and must be adjusted to fit that location. The general idea as to sizes, construction and minor details remains the same.

4A. All sanitary and combined sewer manholes to be coated on the outside with a bitumastic coating.

5A. Trench backfill and surface restoration shall conform to the City of Buffalo Dept. of Public Works latest specifications with regard to pavement subgrade, pavement, curbs, sidewalks, driveways and lawn areas except where otherwise noted.

REVISED ⚠ 3-00	
REVISED ⚠ 7-92	REVISED ⚠ 3-95
DESIGNED BY:	TRACED BY: CADD
DRAWN BY: R.V.V.	CHECKED BY: R.G.B.

STANDARD PRECAST CONCRETE MANHOLES AND VARIOUS STANDARD DETAILS

ENGINEERING DIVISION
BUFFALO SEWER AUTHORITY
JULY 1990 BUFFALO N.Y.
SCALE AS NOTED
SHEET OF SHEETS

20092 C

Quality Assurance/Quality Control Plan for Soil Cover Placement

SOUTH BUFFALO DEVELOPMENT AREAS A, B, C & E

BUFFALO, NEW YORK

Prepared for:
SOUTH BUFFALO DEVELOPMENT LLC
Buffalo, NY

Prepared by:

MACTEC Engineering and Consulting, Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA

March 2010

Project 3410-09-0701

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APPENDIX B: DEMARCATION LAYER SPECIFICATION SHEET

LIST OF FIGURES

Figure

Proposed Final Cover

LIST OF ACRONYMS

ASTM	American Society for Testing and Materials
MACTEC	MACTEC Engineering and Consulting, Inc.
NYSDEC	New York State Department of Environmental Conservation
QA/QC	Quality Assurance/Quality Control
Site	Buffalo Color Site Areas A, B, C and E
SWPPP	Storm Water Pollution Prevention Plan

1.0 INTRODUCTION

MACTEC Engineering and Consulting, Inc. (MACTEC) has prepared this Quality Assurance/Quality Control (QA/QC) Plan for the placement of cover soils at the locations shown on Figure 1, at the Buffalo Color Site Areas A, B, C and E (Site). The intent of this plan is to summarize QA/QC procedures that will be utilized by the project team to ensure that a Site-wide cover system will be placed to meet the design requirements as detailed in the Alternatives Analysis Report (MACTEC, February 2009). The final remedy specified in the AAR requires that Site be provided with a cover system that consists of a combination of 12 inches of clean soil (with underlying demarcation layer), pavement, concrete slabs from former structures and new or existing buildings. This cover system, once installed, will be maintained for the life of the property in accordance with the final Site Management Plan to be prepared for the site as required under the Brownfield Cleanup Agreements between SBD and the New York State Department of Environmental Conservation (NYSDEC).

The project team consists of the following:

OWNER: South Buffalo Development LLC (SBD)

CONTRACTOR: Ontario Specialty Contracting, Inc. (OSC)

ENGINEER: MACTEC Engineering and Consulting, Inc. (MACTEC)

REMEDIATION PARTNER: Honeywell

2.0 SPECIFICATIONS AND CONSTRUCTION METHODS

The following subsections provide descriptions of the soil cover systems and placement methods.

2.1 SOIL COVER SYSTEM MATERIALS

Locations of the soil cover systems are detailed on the attached Figure ("Proposed Final Cover"). The intent of the soil cover system is to provide a minimum of a 1-foot thick barrier between potential receptors and the existing site soils.

For areas that will not be covered by pavement, concrete or buildings, the cover system will consist of not less than 12-inches of clean soil. The Owner intends to meet this requirement by placing not less than 10-inches of clean borrow material and not less than 2-inches of topsoil. The borrow material is from a local source identified and tested by the owner and approved by the New York State Department of Environmental Conservation (NYSDEC). Copies of the gradation and chemical test results for the borrow material are provided in Appendix A.

The overall thickness of the cover system will not be less than 12-inches, although may be greater than 12-inches in some areas to achieve final grades. The cover system will be underlain by a demarcation layer. The intent of the demarcation layer is to create a visible separation between the cap materials and the existing site soils. The demarcation layer will consist of a woven geotextile that was selected by the Owner and has been approved by the Engineer and NYSDEC. The specification sheet for the selected material is in Appendix A.

2.2 PLACEMENT OF SOIL COVER SYSTEM MATERIALS

The Contractor will clear the existing surface of snow, ice and deleterious materials prior to the placement of the cover system. Rough grading of the existing ground surface will be conducted to minimize high and low points such that a more uniform cover system thickness may be placed. The demarcation layer will be placed by hand directly on top of the rough graded surface. The demarcation fabric will be overlapped by 1-foot at the joints and staples placed at a minimum of every 20 feet along the outer edges and at overlaps/joints. Prior to placement of cover soils, the demarcation layer will be visually inspected by the Contractor for tears. All tears, holes or

damaged geotextile will be repaired by placing a patch with a minimum of 1-foot overlap or by replacing the entire panel if damage is excessive.

Clean borrow material will be placed over the demarcation layer by bulldozer or front end loader. Care will be taken such that the equipment will not tear or otherwise damage the demarcation layer during installation of cover soils. If the demarcation layer is damaged it will be repaired as described above. Clean borrow will be placed to a post-compaction thickness of at least 10-inches. Compaction will be achieved via 2 to 3 passes made by a 12,000-lb. vibratory roller, with additional compaction achieved via passes by the dozer/front end loader. No quantitative compaction requirements (i.e. moisture-density tests) are required for the cover system soils. The final thickness of the topsoil layer will be at least 2-inches. Additional topsoil may be required in some areas to reach design grades for surficial drainage. Compaction of the topsoil layer will be achieved via the use of the 12,000-lb. vibratory roller, with additional compaction achieved via passes from the dozer/front end loader. After placement of the topsoil layer the cover system will be seeded in accordance with the Stormwater Pollution Prevention Plans (SWPPP) issued for Areas ABC and Area E.

Existing manholes and storm sewer structures within the soil cover areas will be raised by 12-inches to accommodate the cover system. Edges of the cover system will transition to meet existing pavement, buildings or property boundaries. Construction and post-construction soil erosion and sedimentation control measures will be implemented as described in the SWPPPs.

3.0 QA/QC METHODS

The primary components of the QA/QC Plan are described in the following subsections.

3.1 TOPOGRAPHIC SURVEYS

Prior to placement of cover soils a pre-construction topographic survey of the existing ground surface will be conducted. The survey will be conducted by recording elevations on a 50-foot on center grid. Elevations will also be recorded at defining features such as the top of ridges and the bottom of swales. Locations of pavement edges, fence lines, structures, manholes, and other features will also be surveyed. This existing conditions topographic survey will create a baseline survey for the cover system. A post-construction topographic survey of the cover system will be conducted on the same 50-foot on-center grid. The survey will be used to establish the horizontal limits of areas with soil cover, as well as the as-built cover thickness by comparison of elevations of the pre-construction and post-construction surveys. Both surveys will be conducted by a New York State licensed surveyor retained by the Contractor.

3.2 CONSTRUCTION MONITORING

During construction the contractor will place construction grade stakes on a 50-foot on center grid. Grade stakes will be marked showing the required top of the clean borrow layer and top of topsoil layer. Spot thicknesses will be checked at locations between grade stakes by the Contractor by hand digging or auguring to the demarcation layer and measuring thickness of cover system; the locations and results of the spot thickness checks will be documented in the Contractor's field notes. Spot thickness checks will be conducted at a rate of one test per 20,000 square feet and will be conducted by, or in the presence of, a representative of the Engineer or Honeywell. More frequent spot checks may be conducted at selected locations at the discretion of the Engineer.

Visual monitoring of the cover system installation will be conducted by a MACTEC site representative a minimum of twice daily. Visual monitoring will include photographs of work activities, and development of a daily log describing the location and progress of work activities including the extents of cover soils placed.

Additional monitoring of the cover system will include monthly monitoring of the system installation by an experienced MACTEC engineer, as well as, routine monitoring of the work by a Honeywell site representative. Discussions of the cover system installation will be added to the agenda of the weekly jobsite meetings attended by NYSDEC.

4.0 FINAL ENGINEERING REPORT/RECORD DRAWINGS

MACTEC will prepare Final Engineering Reports and record drawings to document the completion of the final remedy. This will include documentation for the installation of the soil cover system. Reports will be stamped by a New York State licensed professional engineer and will include the following:

- descriptions of the work, and record drawings showing the extent of cover system;
- pre/post-construction topographic survey data with contours;
- Operation, maintenance, and monitoring requirements;
- cover soils load receipts;
- copies of Contractor's and Engineer's field logs and photographs; and
- specifications for cover soil, topsoil, and seed mix

FIGURES

DRAWN BY: NEL 1-26-2010 APPROVED BY: -



LEGEND:

- APPROXIMATE PAVED AREAS TO REMAIN
- CONCRETE SLABS
- BUILDING TO REMAIN
- 12" SOIL COVER (PROPOSED)

200 0 200

SCALE: 1"= 200'

SOUTH BUFFALO DEVELOPMENT LLC
BUFFALO, NEW YORK
PROJECT NO.: 3410090701

MACTEC
Engineering & Consulting Inc.
800 North Bell Avenue, Suite 200
Pittsburgh, PA 15106

PROPOSED FINAL COVER

FIGURE: X

X

P:\PROJECTS\South Buffalo Development\3410090701\CADD\FINAL\Paved Areas.dwg Tue, 26 Jan 2010 - 2:36pm nelagattuta

APPENDIX A

BORROW SOIL GRADATION AND CHEMICAL ANALYSIS

CME Associates, Inc.

LABORATORY TEST REPORT

Client:	Ontario Specialty Contracting	**Page**	1 of 2	**Date:**	09/30/09
Project:	HKJJ, LLC Pond Excavation – Grand Island, NY			**Report No.:**	16113S-03-0909

On September 25, 2009 your representative delivered an on-site excavated Clay for laboratory testing.

Sample Identification as follows:

Sample No.:	Location:
BL2184	On-site, Excavated Pond Material – Grand Island, NY

MECHANICAL ANALYSIS (ASTM C-136, C-117)

Sieve Size	Percent Passing by Weight Sample BL 2184
1"	100
¾"	100
½"	100
¼"	98
No. 4	97
No. 10	96
No. 40	92
No. 200 (wash)	87.8

ATTERBURG LIMITS (ASTM D-4318)

Liquid Limit:	**36**
Plastic Limit:	**19**
Plasticity Index:	**17**

BURMISTER CLASSIFICATION & UNIFIED DESIGNATION

Classification: BROWN RED CLAY trace cmf SAND trace mf GRAVEL – (CL)

LABORATORY MOISTURE-DENSITY RELATIONSHIP ASTM D-1557

100% Maximum Dry Density	=	121.6	**pcf**
Optimum Moisture Content	=	12.8	**%**

The Laboratory Moisture Density Curve is attached.

Feel free to contact this office should you have any questions.

Respectfully Submitted,

CME ASSOCIATES, INC.

Ernest W. Kihl, Sr., CET
Laboratory Supervisor

Reviewed By:

CME ASSOCIATES, INC.

Norman Jurek, EIT
Staff Engineer

EWK/kak

CME Associates, Inc.

MATERIALS TESTING DIVISION

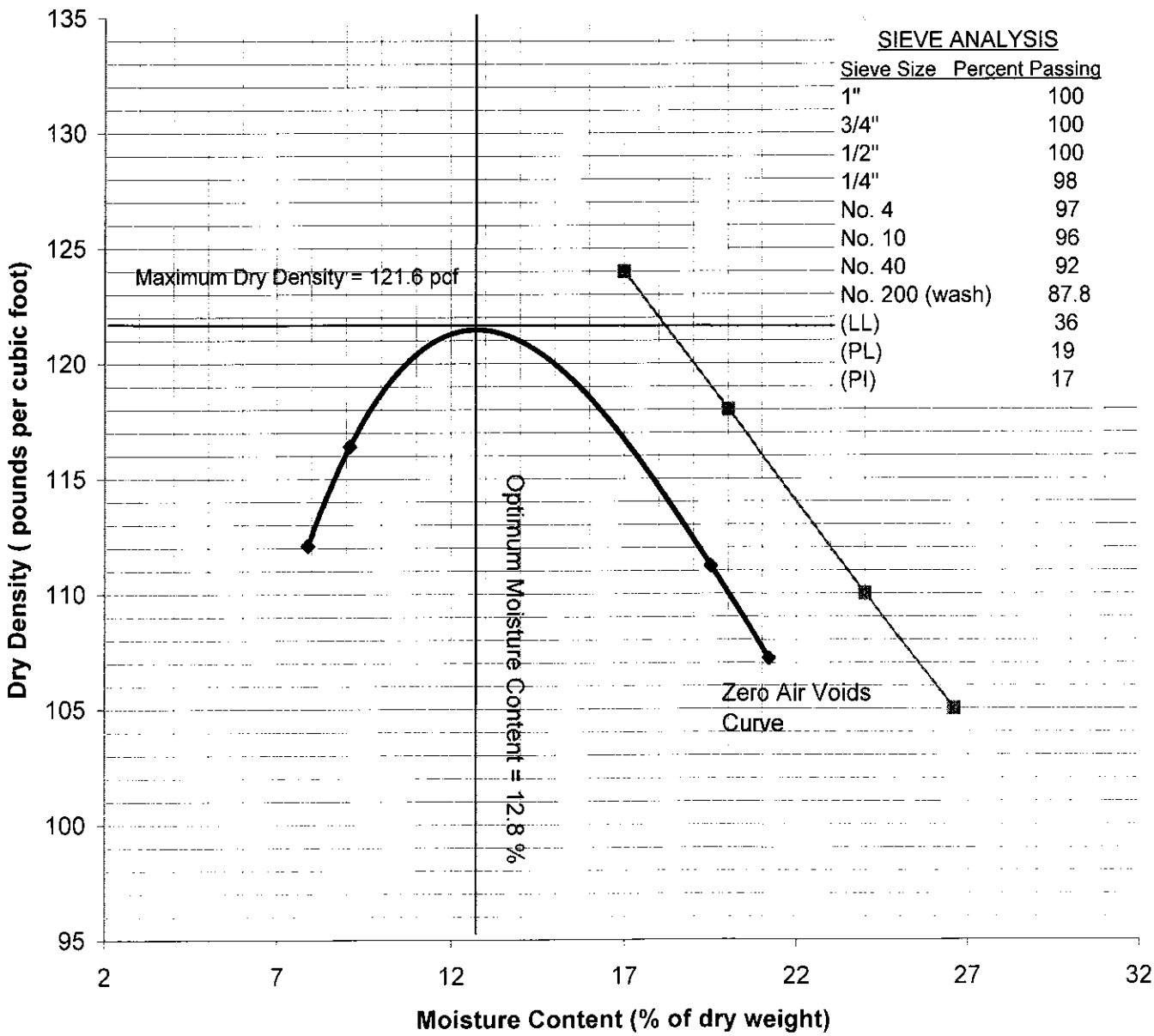
CLIENT: Ontario Specialty Contracting PROJECT: HKJJ, LLC Pond Excavation

REPORT NO: 16113S-03-0909 SAMPLE NO: BL 2184 DATE DELIVERED: 9/25/2009

SAMPLE LOCATION: On-Site Excavated Pond Material - Grand Island, NY

SOIL CLASSIFICATION: BROWN RED CLAY trace cmf SAND trace mf GRAVEL - (CL)

MOISTURE DENSITY RELATIONSHIP CURVE



SIEVE ANALYSIS

Sieve Size	Percent Passing
1"	100
3/4"	100
1/2"	100
1/4"	98
No. 4	97
No. 10	96
No. 40	92
No. 200 (wash)	87.8
(LL)	36
(PL)	19
(PI)	17

MAXIMUM DRY DENSITY 121.6 pcf **OPTIMUM MOISTURE CONTENT** 12.8 %

TESTED IN ACCORDANCE WITH ASTM **D1557** X D698 MIL STD 621 CE

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report Cover Page

Ontario Specialty Contracting, Inc.

For Lab Project # 09-3508
Issued October 2, 2009
This report contains a total of 24 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

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The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.
"E" = Result has been estimated, calibration limit exceeded.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

pH Analysis Report

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island	**Lab Project Number:**	09-3508
Client Job Number:	N/A	**Date Sampled:**	9/25/2009
		Time Sampled:	N/A
		Date Received:	9/25/2009
Sample Type:	Soil	**Time Received:**	4:25 PM
Location:	Laboratory	**Date Analyzed:**	9/28/2009
		Time Analyzed:	1:20 PM

Lab Sample Number	Field Number	Field Location	Result (pH)
10808	N/A	TP-1	8.08
10809	N/A	TP-2	8.25
10810	N/A	TP-3	7.91
10811	N/A	TP-4	7.94

ELAP Number 10958

Method: EPA 9045C

Comments:

Signature:

Bruce Hoogesteger: Technical Director

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PARADIGM
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Client:	Ontario Specialty Contracting, Inc.	**Lab Project No.:**	09-3508
Client Job Site:	HKJJ Clay Source Grand Island, NY	**Sample Type:**	Soil
Client Job No.:	N/A	**Date Sampled:**	9/25/2009
		Date Received:	9/25/2009
Analytical Method:	SW 9012	**Date Analyzed:**	10/1/2009

Laboratory Report for Total Cyanide

Lab Sample ID	Sample Location/Field ID	TCN (ug/g)
10808	TP-1	ND<0.57
10809	TP-2	ND<0.59
10810	TP-3	ND<0.59
10811	TP-4	ND<0.60

ELAP ID.No.: 10709

Comments: ND denotes Non Detect.

Approved By Technical Director: _____
Bruce Hoogesteger

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: Ontario Specialty Contracting, Inc.

Client Job Site: HKJJ Clay Source
Grand Island, NY

Client Job No.: N/A

Field Location: TP-1

Field ID No.: N/A

Lab Project No.: 09-3508

Lab Sample No.: 10808

Sample Type: Soil

Date Sampled: 09/25/2009

Date Received: 09/25/2009

Laboratory Report for TAL Metals Analysis in Solid

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Aluminum	10/02/2009	SW846 6010	16300
Antimony	10/02/2009	SW846 6010	<4.38
Arsenic	10/02/2009	SW846 6010	2.92
Barium	10/02/2009	SW846 6010	55.4
Beryllium	10/02/2009	SW846 6010	0.810
Cadmium	10/02/2009	SW846 6010	0.377
Calcium	10/02/2009	SW846 6010	61900
Chromium	10/02/2009	SW846 6010	22.1
Cobalt	10/02/2009	SW846 6010	10.6
Copper	10/02/2009	SW846 6010	22.1
Iron	10/02/2009	SW846 6010	23900
Lead	10/02/2009	SW846 6010	9.79
Magnesium	10/02/2009	SW846 6010	14000
Manganese	10/02/2009	SW846 6010	587
Mercury	09/28/2009	SW846 7471	0.0068
Nickel	10/02/2009	SW846 6010	23.9
Potassium	01/00/1900	SW846 6010	4600
Selenium	10/02/2009	SW846 6010	<0.364
Silver	10/02/2009	SW846 6010	<0.730
Sodium	10/02/2009	SW846 6010	258
Thallium	10/02/2009	SW846 6010	<0.438
Vanadium	10/02/2009	SW846 6010	31.6
Zinc	10/02/2009	SW846 6010	69.9

ELAP ID No.:10958

Comments:

Approved By: _____

Bruce Hoogesteger, Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: Ontario Specialty Contracting, Inc.

Client Job Site: HKJJ Clay Source
Grand Island, NY

Client Job No.: N/A

Field Location: TP-2
Field ID No.: N/A

Lab Project No.: 09-3508
Lab Sample No.: 10809

Sample Type: Soil

Date Sampled: 09/25/2009
Date Received: 09/25/2009

Laboratory Report for TAL Metals Analysis in Solid

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Aluminum	10/02/2009	SW846 6010	19100
Antimony	10/02/2009	SW846 6010	<4.75
Arsenic	10/02/2009	SW846 6010	3.51
Barium	10/02/2009	SW846 6010	127
Beryllium	10/02/2009	SW846 6010	0.936
Cadmium	10/02/2009	SW846 6010	<0.396
Calcium	10/02/2009	SW846 6010	57000
Chromium	10/02/2009	SW846 6010	25.4
Cobalt	10/02/2009	SW846 6010	13.0
Copper	10/02/2009	SW846 6010	23.5
Iron	10/02/2009	SW846 6010	27300
Lead	10/02/2009	SW846 6010	10.9
Magnesium	10/02/2009	SW846 6010	14900
Manganese	10/02/2009	SW846 6010	526
Mercury	09/28/2009	SW846 7471	0.0139
Nickel	10/02/2009	SW846 6010	26.8
Potassium	01/00/1900	SW846 6010	5170
Selenium	10/02/2009	SW846 6010	<0.396
Silver	10/02/2009	SW846 6010	<0.791
Sodium	10/02/2009	SW846 6010	299
Thallium	10/02/2009	SW846 6010	<0.475
Vanadium	10/02/2009	SW846 6010	37.2
Zinc	10/02/2009	SW846 6010	73.2

ELAP ID No.:10958

Comments:

Approved By: _____
Bruce Hoogesteger, Technical Director

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File ID:093508.xls

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Client: Ontario Specialty Contracting, Inc.

Client Job Site: HKJJ Clay Source
Grand Island, NY

Client Job No.: N/A

Field Location: TP-3

Field ID No.: N/A

Lab Project No.: 09-3508

Lab Sample No.: 10810

Sample Type: Soil

Date Sampled: 09/25/2009

Date Received: 09/25/2009

Laboratory Report for TAL Metals Analysis in Solid

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Aluminum	10/02/2009	SW846 6010	16000
Antimony	10/02/2009	SW846 6010	<5.50
Arsenic	10/02/2009	SW846 6010	3.28
Barium	10/02/2009	SW846 6010	133
Beryllium	10/02/2009	SW846 6010	0.809
Cadmium	10/02/2009	SW846 6010	<0.459
Calcium	10/02/2009	SW846 6010	67900
Chromium	10/02/2009	SW846 6010	21.3
Cobalt	10/02/2009	SW846 6010	12.1
Copper	10/02/2009	SW846 6010	21.7
Iron	10/02/2009	SW846 6010	24400
Lead	10/02/2009	SW846 6010	10.1
Magnesium	10/02/2009	SW846 6010	15400
Manganese	10/02/2009	SW846 6010	592
Mercury	09/28/2009	SW846 7471	0.0273
Nickel	10/02/2009	SW846 6010	23.5
Potassium	01/00/1900	SW846 6010	4270
Selenium	10/02/2009	SW846 6010	<0.459
Silver	10/02/2009	SW846 6010	<0.917
Sodium	10/02/2009	SW846 6010	241
Thallium	10/02/2009	SW846 6010	<0.550
Vanadium	10/02/2009	SW846 6010	32.5
Zinc	10/02/2009	SW846 6010	62.9

ELAP ID No.:10958

Comments:

Approved By: _____

Bruce Hoogesteger, Technical Director

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File ID:093508.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: Ontario Specialty Contracting, Inc.

Client Job Site: HKJJ Clay Source
Grand Island, NY

Client Job No.: N/A

Field Location: TP-4

Field ID No.: N/A

Lab Project No.: 09-3508
Lab Sample No.: 10811

Sample Type: Soil

Date Sampled: 09/25/2009
Date Received: 09/25/2009

Laboratory Report for TAL Metals Analysis in Solid

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Aluminum	10/02/2009	SW846 6010	18100
Antimony	10/02/2009	SW846 6010	<5.31
Arsenic	10/02/2009	SW846 6010	3.60
Barium	10/02/2009	SW846 6010	90.9
Beryllium	10/02/2009	SW846 6010	0.890
Cadmium	10/02/2009	SW846 6010	<0.443
Calcium	10/02/2009	SW846 6010	57800
Chromium	10/02/2009	SW846 6010	25.5
Cobalt	10/02/2009	SW846 6010	15.0
Copper	10/02/2009	SW846 6010	23.7
Iron	10/02/2009	SW846 6010	28200
Lead	10/02/2009	SW846 6010	10.1
Magnesium	10/02/2009	SW846 6010	13500
Manganese	10/02/2009	SW846 6010	623
Mercury	09/28/2009	SW846 7471	0.0143 D
Nickel	10/02/2009	SW846 6010	30.5
Potassium	01/00/1900	SW846 6010	4250
Selenium	10/02/2009	SW846 6010	<0.442
Silver	10/02/2009	SW846 6010	<0.885
Sodium	10/02/2009	SW846 6010	267
Thallium	10/02/2009	SW846 6010	<0.531
Vanadium	10/02/2009	SW846 6010	36.0
Zinc	10/02/2009	SW846 6010	69.5

ELAP ID No.:10958

Comments:

Approved By: _____

Bruce Hoogesteger, Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10808
Client Job Number:	N/A		
Field Location:	TP-1	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/28/2009

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.339
Aroclor 1221	ND< 0.339
Aroclor 1232	ND< 0.339
Aroclor 1242	ND< 0.339
Aroclor 1248	ND< 0.339
Aroclor 1254	ND< 0.339
Aroclor 1260	ND< 0.339

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10809
Client Job Number:	N/A		
Field Location:	TP-2	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/28/2009

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.346
Aroclor 1221	ND< 0.346
Aroclor 1232	ND< 0.346
Aroclor 1242	ND< 0.346
Aroclor 1248	ND< 0.346
Aroclor 1254	ND< 0.346
Aroclor 1260	ND< 0.346

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10810
Client Job Number:	N/A		
Field Location:	TP-3	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/28/2009

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.355
Aroclor 1221	ND< 0.355
Aroclor 1232	ND< 0.355
Aroclor 1242	ND< 0.355
Aroclor 1248	ND< 0.355
Aroclor 1254	ND< 0.355
Aroclor 1260	ND< 0.355

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

PCB Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10811
Client Job Number:	N/A		
Field Location:	TP-4	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/28/2009

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.353
Aroclor 1221	ND< 0.353
Aroclor 1232	ND< 0.353
Aroclor 1242	ND< 0.353
Aroclor 1248	ND< 0.353
Aroclor 1254	ND< 0.353
Aroclor 1260	ND< 0.353

ELAP Number 10958 Method: EPA 8082

Comments: ND denotes Non Detect
mg / Kg = milligram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Pesticide Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10808
Client Job Number:	N/A		
Field Location:	TP-1	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Pesticide Identification	Results in ug / Kg
Aldrin	ND< 4.00
alpha-BHC	ND< 4.00
beta-BHC	ND< 4.00
delta-BHC	ND< 4.00
gamma-BHC	ND< 4.00
alpha-Chlordane	ND< 4.00
gamma-Chlordane	ND< 4.00
4,4'-DDD	ND< 4.00
4,4'-DDE	ND< 4.00
4,4'-DDT	ND< 4.00
Dieldrin	ND< 4.00
Endosulfan I	ND< 4.00
Endosulfan II	ND< 4.00
Endosulfan Sulfate	ND< 4.00
Endrin	ND< 4.00
Endrin Aldehyde	ND< 4.00
Heptachlor	ND< 4.00
Heptachlor Epoxide	ND< 4.00
Methoxychlor	ND< 4.00
Toxaphene	ND< 200

ELAP Number 10709 Method: EPA 8081

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Pesticide Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10809
Client Job Number:	N/A		
Field Location:	TP-2	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Pesticide Identification	Results in ug / Kg
Aldrin	ND< 4.00
alpha-BHC	ND< 4.00
beta-BHC	ND< 4.00
delta-BHC	ND< 4.00
gamma-BHC	ND< 4.00
alpha-Chlordane	ND< 4.00
gamma-Chlordane	ND< 4.00
4,4'-DDD	ND< 4.00
4,4'-DDE	ND< 4.00
4,4'-DDT	ND< 4.00
Dieldrin	ND< 4.00
Endosulfan I	ND< 4.00
Endosulfan II	ND< 4.00
Endosulfan Sulfate	ND< 4.00
Endrin	ND< 4.00
Endrin Aldehyde	ND< 4.00
Heptachlor	ND< 4.00
Heptachlor Epoxide	ND< 4.00
Methoxychlor	ND< 4.00
Toxaphene	ND< 200

ELAP Number 10709 Method: EPA 8081

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger, Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Pesticide Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10810
Client Job Number:	N/A		
Field Location:	TP-3	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Pesticide Identification	Results in ug / Kg
Aldrin	ND< 4.00
alpha-BHC	ND< 4.00
beta-BHC	ND< 4.00
delta-BHC	ND< 4.00
gamma-BHC	ND< 4.00
alpha-Chlordane	ND< 4.00
gamma-Chlordane	ND< 4.00
4,4'-DDD	ND< 4.00
4,4'-DDE	ND< 4.00
4,4'-DDT	ND< 4.00
Dieldrin	ND< 4.00
Endosulfan I	ND< 4.00
Endosulfan II	ND< 4.00
Endosulfan Sulfate	ND< 4.00
Endrin	ND< 4.00
Endrin Aldehyde	ND< 4.00
Heptachlor	ND< 4.00
Heptachlor Epoxide	ND< 4.00
Methoxychlor	ND< 4.00
Toxaphene	ND< 200

ELAP Number 10709 Method: EPA 8081

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Pesticide Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10811
Client Job Number:	N/A		
Field Location:	TP-4	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Pesticide Identification	Results in ug / Kg
Aldrin	ND< 4.00
alpha-BHC	ND< 4.00
beta-BHC	ND< 4.00
delta-BHC	ND< 4.00
gamma-BHC	ND< 4.00
alpha-Chlordane	ND< 4.00
gamma-Chlordane	ND< 4.00
4,4'-DDD	ND< 4.00
4,4'-DDE	ND< 4.00
4,4'-DDT	ND< 4.00
Dieldrin	ND< 4.00
Endosulfan I	ND< 4.00
Endosulfan II	ND< 4.00
Endosulfan Sulfate	ND< 4.00
Endrin	ND< 4.00
Endrin Aldehyde	ND< 4.00
Heptachlor	ND< 4.00
Heptachlor Epoxide	ND< 4.00
Methoxychlor	ND< 4.00
Toxaphene	ND< 200

ELAP Number 10709 Method: EPA 8081

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger, Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10808
Client Job Number:	N/A		
Field Location:	TP-1	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 330	Dibenz (a,h) anthracene	ND< 330
Anthracene	ND< 330	Fluoranthene	ND< 330
Benzo (a) anthracene	ND< 330	Fluorene	ND< 330
Benzo (a) pyrene	ND< 330	Indeno (1,2,3-cd) pyrene	ND< 330
Benzo (b) fluoranthene	ND< 330	Naphthalene	ND< 330
Benzo (g,h,i) perylene	ND< 330	Phenanthrene	ND< 330
Benzo (k) fluoranthene	ND< 330	Pyrene	ND< 330
Chrysene	ND< 330	Acenaphthylene	ND< 330
Diethyl phthalate	ND< 330	1,2-Dichlorobenzene	ND< 330
Dimethyl phthalate	ND< 824	1,3-Dichlorobenzene	ND< 330
Butylbenzylphthalate	ND< 330	1,4-Dichlorobenzene	ND< 330
Di-n-butyl phthalate	ND< 330	1,2,4-Trichlorobenzene	ND< 330
Di-n-octylphthalate	ND< 330	Nitrobenzene	ND< 330
Bis (2-ethylhexyl) phthalate	ND< 330	2,4-Dinitrotoluene	ND< 330
2-Chloronaphthalene	ND< 330	2,6-Dinitrotoluene	ND< 330
Hexachlorobenzene	ND< 330	Bis (2-chloroethyl) ether	ND< 330
Hexachloroethane	ND< 330	Bis (2-chloroisopropyl) ether	ND< 330
Hexachlorocyclopentadiene	ND< 330	Bis (2-chloroethoxy) methan	ND< 330
Hexachlorobutadiene	ND< 330	4-Bromophenyl phenyl ether	ND< 330
N-Nitroso-di-n-propylamine	ND< 330	4-Chlorophenyl phenyl ether	ND< 330
N-Nitrosodiphenylamine	ND< 330	Benzidine	ND< 824
N-Nitrosodimethylamine	ND< 330	3,3'-Dichlorobenzidine	ND< 330
Isophorone	ND< 330	4-Chloroaniline	ND< 330
Benzyl alcohol	ND< 824	2-Nitroaniline	ND< 824
Dibenzofuran	ND< 330	3-Nitroaniline	ND< 824
2-Methylnapthalene	ND< 330	4-Nitroaniline	ND< 824

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 330	2-Methylphenol	ND< 330
2-Chlorophenol	ND< 330	3&4-Methylphenol	ND< 330
2,4-Dichlorophenol	ND< 330	2,4-Dimethylphenol	ND< 330
2,6-Dichlorophenol	ND< 330	2-Nitrophenol	ND< 330
2,4,5-Trichlorophenol	ND< 824	4-Nitrophenol	ND< 824
2,4,6-Trichlorophenol	ND< 330	2,4-Dinitrophenol	ND< 824
Pentachlorophenol	ND< 824	4,6-Dinitro-2-methylphenol	ND< 824
4-Chloro-3-methylphenol	ND< 330	Benzoic acid	ND< 824

ELAP Number 10958 Method: EPA 8270C Data File: S47069.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10809
Client Job Number:	N/A		
Field Location:	TP-2	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 333	Dibenz (a,h) anthracene	ND< 333
Anthracene	ND< 333	Fluoranthene	ND< 333
Benzo (a) anthracene	ND< 333	Fluorene	ND< 333
Benzo (a) pyrene	ND< 333	Indeno (1,2,3-cd) pyrene	ND< 333
Benzo (b) fluoranthene	ND< 333	Naphthalene	ND< 333
Benzo (g,h,i) perylene	ND< 333	Phenanthrene	ND< 333
Benzo (k) fluoranthene	ND< 333	Pyrene	ND< 333
Chrysene	ND< 333	Acenaphthylene	ND< 333
Diethyl phthalate	ND< 333	1,2-Dichlorobenzene	ND< 333
Dimethyl phthalate	ND< 833	1,3-Dichlorobenzene	ND< 333
Butylbenzylphthalate	ND< 333	1,4-Dichlorobenzene	ND< 333
Di-n-butyl phthalate	ND< 333	1,2,4-Trichlorobenzene	ND< 333
Di-n-octylphthalate	ND< 333	Nitrobenzene	ND< 333
Bis (2-ethylhexyl) phthalate	ND< 333	2,4-Dinitrotoluene	ND< 333
2-Chloronaphthalene	ND< 333	2,6-Dinitrotoluene	ND< 333
Hexachlorobenzene	ND< 333	Bis (2-chloroethyl) ether	ND< 333
Hexachloroethane	ND< 333	Bis (2-chloroisopropyl) ether	ND< 333
Hexachlorocyclopentadiene	ND< 333	Bis (2-chloroethoxy) methan	ND< 333
Hexachlorobutadiene	ND< 333	4-Bromophenyl phenyl ether	ND< 333
N-Nitroso-di-n-propylamine	ND< 333	4-Chlorophenyl phenyl ether	ND< 333
N-Nitrosodiphenylamine	ND< 333	Benzidine	ND< 833
N-Nitrosodimethylamine	ND< 333	3,3'-Dichlorobenzidine	ND< 333
Isophorone	ND< 333	4-Chloroaniline	ND< 333
Benzyl alcohol	ND< 833	2-Nitroaniline	ND< 833
Dibenzofuran	ND< 333	3-Nitroaniline	ND< 833
2-Methylnapthalene	ND< 333	4-Nitroaniline	ND< 833

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 333	2-Methylphenol	ND< 333
2-Chlorophenol	ND< 333	3&4-Methylphenol	ND< 333
2,4-Dichlorophenol	ND< 333	2,4-Dimethylphenol	ND< 333
2,6-Dichlorophenol	ND< 333	2-Nitrophenol	ND< 333
2,4,5-Trichlorophenol	ND< 833	4-Nitrophenol	ND< 833
2,4,6-Trichlorophenol	ND< 333	2,4-Dinitrophenol	ND< 833
Pentachlorophenol	ND< 833	4,6-Dinitro-2-methylphenol	ND< 833
4-Chloro-3-methylphenol	ND< 333	Benzoic acid	ND< 833

ELAP Number 10958 Method: EPA 8270C Data File: S47070.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10810
Client Job Number:	N/A		
Field Location:	TP-3	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 339	Dibenz (a,h) anthracene	ND< 339
Anthracene	ND< 339	Fluoranthene	ND< 339
Benzo (a) anthracene	ND< 339	Fluorene	ND< 339
Benzo (a) pyrene	ND< 339	Indeno (1,2,3-cd) pyrene	ND< 339
Benzo (b) fluoranthene	ND< 339	Naphthalene	ND< 339
Benzo (g,h,i) perylene	ND< 339	Phenanthrene	ND< 339
Benzo (k) fluoranthene	ND< 339	Pyrene	ND< 339
Chrysene	ND< 339	Acenaphthylene	ND< 339
Diethyl phthalate	ND< 339	1,2-Dichlorobenzene	ND< 339
Dimethyl phthalate	ND< 846	1,3-Dichlorobenzene	ND< 339
Butylbenzylphthalate	ND< 339	1,4-Dichlorobenzene	ND< 339
Di-n-butyl phthalate	ND< 339	1,2,4-Trichlorobenzene	ND< 339
Di-n-octylphthalate	ND< 339	Nitrobenzene	ND< 339
Bis (2-ethylhexyl) phthalate	ND< 339	2,4-Dinitrotoluene	ND< 339
2-Chloronaphthalene	ND< 339	2,6-Dinitrotoluene	ND< 339
Hexachlorobenzene	ND< 339	Bis (2-chloroethyl) ether	ND< 339
Hexachloroethane	ND< 339	Bis (2-chloroisopropyl) ether	ND< 339
Hexachlorocyclopentadiene	ND< 339	Bis (2-chloroethoxy) methan	ND< 339
Hexachlorobutadiene	ND< 339	4-Bromophenyl phenyl ether	ND< 339
N-Nitroso-di-n-propylamine	ND< 339	4-Chlorophenyl phenyl ether	ND< 339
N-Nitrosodiphenylamine	ND< 339	Benzidine	ND< 846
N-Nitrosodimethylamine	ND< 339	3,3'-Dichlorobenzidine	ND< 339
Isophorone	ND< 339	4-Chloroaniline	ND< 339
Benzyl alcohol	ND< 846	2-Nitroaniline	ND< 846
Dibenzofuran	ND< 339	3-Nitroaniline	ND< 846
2-Methylnapthalene	ND< 339	4-Nitroaniline	ND< 846

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 339	2-Methylphenol	ND< 339
2-Chlorophenol	ND< 339	3&4-Methylphenol	ND< 339
2,4-Dichlorophenol	ND< 339	2,4-Dimethylphenol	ND< 339
2,6-Dichlorophenol	ND< 339	2-Nitrophenol	ND< 339
2,4,5-Trichlorophenol	ND< 846	4-Nitrophenol	ND< 846
2,4,6-Trichlorophenol	ND< 339	2,4-Dinitrophenol	ND< 846
Pentachlorophenol	ND< 846	4,6-Dinitro-2-methylphenol	ND< 846
4-Chloro-3-methylphenol	ND< 339	Benzoic acid	ND< 846

ELAP Number 10958 Method: EPA 8270C Data File: S47071.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting

Client Job Site:	HKJJ Clay Source Grand Island, NY	**Lab Project Number:**	09-3508
		Lab Sample Number:	10811
Client Job Number:	N/A		
Field Location:	TP-4	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/29/2009

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 337	Dibenz (a,h) anthracene	ND< 337
Anthracene	ND< 337	Fluoranthene	ND< 337
Benzo (a) anthracene	ND< 337	Fluorene	ND< 337
Benzo (a) pyrene	ND< 337	Indeno (1,2,3-cd) pyrene	ND< 337
Benzo (b) fluoranthene	ND< 337	Naphthalene	ND< 337
Benzo (g,h,i) perylene	ND< 337	Phenanthrene	ND< 337
Benzo (k) fluoranthene	ND< 337	Pyrene	ND< 337
Chrysene	ND< 337	Acenaphthylene	ND< 337
Diethyl phthalate	ND< 337	1,2-Dichlorobenzene	ND< 337
Dimethyl phthalate	ND< 843	1,3-Dichlorobenzene	ND< 337
Butylbenzylphthalate	ND< 337	1,4-Dichlorobenzene	ND< 337
Di-n-butyl phthalate	ND< 337	1,2,4-Trichlorobenzene	ND< 337
Di-n-octylphthalate	ND< 337	Nitrobenzene	ND< 337
Bis (2-ethylhexyl) phthalate	ND< 337	2,4-Dinitrotoluene	ND< 337
2-Chloronaphthalene	ND< 337	2,6-Dinitrotoluene	ND< 337
Hexachlorobenzene	ND< 337	Bis (2-chloroethyl) ether	ND< 337
Hexachloroethane	ND< 337	Bis (2-chloroisopropyl) ether	ND< 337
Hexachlorocyclopentadiene	ND< 337	Bis (2-chloroethoxy) methan	ND< 337
Hexachlorobutadiene	ND< 337	4-Bromophenyl phenyl ether	ND< 337
N-Nitroso-di-n-propylamine	ND< 337	4-Chlorophenyl phenyl ether	ND< 337
N-Nitrosodiphenylamine	ND< 337	Benzidine	ND< 843
N-Nitrosodimethylamine	ND< 337	3,3'-Dichlorobenzidine	ND< 337
Isophorone	ND< 337	4-Chloroaniline	ND< 337
Benzyl alcohol	ND< 843	2-Nitroaniline	ND< 843
Dibenzofuran	ND< 337	3-Nitroaniline	ND< 843
2-Methylnapthalene	ND< 337	4-Nitroaniline	ND< 843

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 337	2-Methylphenol	ND< 337
2-Chlorophenol	ND< 337	3&4-Methylphenol	ND< 337
2,4-Dichlorophenol	ND< 337	2,4-Dimethylphenol	ND< 337
2,6-Dichlorophenol	ND< 337	2-Nitrophenol	ND< 337
2,4,5-Trichlorophenol	ND< 843	4-Nitrophenol	ND< 843
2,4,6-Trichlorophenol	ND< 337	2,4-Dinitrophenol	ND< 843
Pentachlorophenol	ND< 843	4,6-Dinitro-2-methylphenol	ND< 843
4-Chloro-3-methylphenol	ND< 337	Benzoic acid	ND< 843

ELAP Number 10958 Method: EPA 8270C Data File: S47072.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island	**Lab Project Number:**	09-3508
		Lab Sample Number:	10808
Client Job Number:	N/A		
Field Location:	TP-1	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/30/2009

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 9.30
Bromomethane	ND< 9.30
Bromoform	ND< 23.3
Carbon Tetrachloride	ND< 23.3
Chloroethane	ND< 9.30
Chloromethane	ND< 9.30
2-Chloroethyl vinyl Ether	ND< 46.5
Chloroform	ND< 9.30
Dibromochloromethane	ND< 9.30
1,1-Dichloroethane	ND< 9.30
1,2-Dichloroethane	ND< 9.30
1,1-Dichloroethene	ND< 9.30
cis-1,2-Dichloroethene	ND< 9.30
trans-1,2-Dichloroethene	ND< 9.30
1,2-Dichloropropane	ND< 9.30
cis-1,3-Dichloropropene	ND< 9.30
trans-1,3-Dichloropropene	ND< 9.30
Methylene chloride	ND< 23.3
1,1,2,2-Tetrachloroethane	ND< 9.30
Tetrachloroethene	ND< 9.30
1,1,1-Trichloroethane	ND< 9.30
1,1,2-Trichloroethane	ND< 9.30
Trichloroethene	ND< 9.30
Trichlorofluoromethane	ND< 9.30
Vinyl chloride	ND< 9.30

Aromatics	Results in ug / Kg
Benzene	ND< 9.30
Chlorobenzene	ND< 9.30
Ethylbenzene	ND< 9.30
Toluene	ND< 9.30
m,p-Xylene	11.3
o-Xylene	ND< 9.30
Styrene	ND< 23.3
1,2-Dichlorobenzene	ND< 23.3
1,3-Dichlorobenzene	ND< 23.3
1,4-Dichlorobenzene	ND< 9.30

Ketones	Results in ug / Kg
Acetone	ND< 46.5
2-Butanone	ND< 46.5
2-Hexanone	ND< 23.3
4-Methyl-2-pentanone	ND< 23.3

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 9.30
Vinyl acetate	ND< 23.3

ELAP Number 10958 Method: EPA 8260B Data File: V68992.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram
Surrogate outliers indicate probable matrix interference

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island	**Lab Project Number:**	09-3508
		Lab Sample Number:	10809
Client Job Number:	N/A		
Field Location:	TP-2	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/30/2009

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 7.73
Bromomethane	ND< 7.73
Bromoform	ND< 19.3
Carbon Tetrachloride	ND< 19.3
Chloroethane	ND< 7.73
Chloromethane	ND< 7.73
2-Chloroethyl vinyl Ether	ND< 38.6
Chloroform	ND< 7.73
Dibromochloromethane	ND< 7.73
1,1-Dichloroethane	ND< 7.73
1,2-Dichloroethane	ND< 7.73
1,1-Dichloroethene	ND< 7.73
cis-1,2-Dichloroethene	ND< 7.73
trans-1,2-Dichloroethene	ND< 7.73
1,2-Dichloropropane	ND< 7.73
cis-1,3-Dichloropropene	ND< 7.73
trans-1,3-Dichloropropene	ND< 7.73
Methylene chloride	ND< 19.3
1,1,2,2-Tetrachloroethane	ND< 7.73
Tetrachloroethene	ND< 7.73
1,1,1-Trichloroethane	ND< 7.73
1,1,2-Trichloroethane	ND< 7.73
Trichloroethene	ND< 7.73
Trichlorofluoromethane	ND< 7.73
Vinyl chloride	ND< 7.73

Aromatics	Results in ug / Kg
Benzene	ND< 7.73
Chlorobenzene	ND< 7.73
Ethylbenzene	ND< 7.73
Toluene	ND< 7.73
m,p-Xylene	ND< 7.73
o-Xylene	ND< 7.73
Styrene	ND< 19.3
1,2-Dichlorobenzene	ND< 19.3
1,3-Dichlorobenzene	ND< 19.3
1,4-Dichlorobenzene	ND< 7.73

Ketones	Results in ug / Kg
Acetone	ND< 38.6
2-Butanone	ND< 38.6
2-Hexanone	ND< 19.3
4-Methyl-2-pentanone	ND< 19.3

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 7.73
Vinyl acetate	ND< 19.3

ELAP Number 10958 Method: EPA 8260B Data File: V68993.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island	**Lab Project Number:**	09-3508
		Lab Sample Number:	10810
Client Job Number:	N/A		
Field Location:	TP-3	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/30/2009

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 6.73
Bromomethane	ND< 6.73
Bromoform	ND< 16.8
Carbon Tetrachloride	ND< 16.8
Chloroethane	ND< 6.73
Chloromethane	ND< 6.73
2-Chloroethyl vinyl Ether	ND< 33.7
Chloroform	ND< 6.73
Dibromochloromethane	ND< 6.73
1,1-Dichloroethane	ND< 6.73
1,2-Dichloroethane	ND< 6.73
1,1-Dichloroethene	ND< 6.73
cis-1,2-Dichloroethene	ND< 6.73
trans-1,2-Dichloroethene	ND< 6.73
1,2-Dichloropropane	ND< 6.73
cis-1,3-Dichloropropene	ND< 6.73
trans-1,3-Dichloropropene	ND< 6.73
Methylene chloride	ND< 16.8
1,1,2,2-Tetrachloroethane	ND< 6.73
Tetrachloroethene	ND< 6.73
1,1,1-Trichloroethane	ND< 6.73
1,1,2-Trichloroethane	ND< 6.73
Trichloroethene	ND< 6.73
Trichlorofluoromethane	ND< 6.73
Vinyl chloride	ND< 6.73

Aromatics	Results in ug / Kg
Benzene	ND< 6.73
Chlorobenzene	ND< 6.73
Ethylbenzene	ND< 6.73
Toluene	ND< 6.73
m,p-Xylene	ND< 6.73
o-Xylene	ND< 6.73
Styrene	ND< 16.8
1,2-Dichlorobenzene	ND< 16.8
1,3-Dichlorobenzene	ND< 16.8
1,4-Dichlorobenzene	ND< 6.73

Ketones	Results in ug / Kg
Acetone	ND< 33.7
2-Butanone	ND< 33.7
2-Hexanone	ND< 16.8
4-Methyl-2-pentanone	ND< 16.8

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 6.73
Vinyl acetate	ND< 16.8

ELAP Number 10958 Method: EPA 8260B Data File: V68994.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Ontario Specialty Contracting, Inc

Client Job Site:	HKJJ Clay Source Grand Island	**Lab Project Number:**	09-3508
		Lab Sample Number:	10811
Client Job Number:	N/A		
Field Location:	TP-4	**Date Sampled:**	09/25/2009
Field ID Number:	N/A	**Date Received:**	09/25/2009
Sample Type:	Soil	**Date Analyzed:**	09/30/2009

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 8.94
Bromomethane	ND< 8.94
Bromoform	ND< 22.4
Carbon Tetrachloride	ND< 22.4
Chloroethane	ND< 8.94
Chloromethane	ND< 8.94
2-Chloroethyl vinyl Ether	ND< 44.7
Chloroform	ND< 8.94
Dibromochloromethane	ND< 8.94
1,1-Dichloroethane	ND< 8.94
1,2-Dichloroethane	ND< 8.94
1,1-Dichloroethene	ND< 8.94
cis-1,2-Dichloroethene	ND< 8.94
trans-1,2-Dichloroethene	ND< 8.94
1,2-Dichloropropane	ND< 8.94
cis-1,3-Dichloropropene	ND< 8.94
trans-1,3-Dichloropropene	ND< 8.94
Methylene chloride	ND< 22.4
1,1,2,2-Tetrachloroethane	ND< 8.94
Tetrachloroethene	ND< 8.94
1,1,1-Trichloroethane	ND< 8.94
1,1,2-Trichloroethane	ND< 8.94
Trichloroethene	ND< 8.94
Trichlorofluoromethane	ND< 8.94
Vinyl chloride	ND< 8.94

Aromatics	Results in ug / Kg
Benzene	ND< 8.94
Chlorobenzene	ND< 8.94
Ethylbenzene	ND< 8.94
Toluene	ND< 8.94
m,p-Xylene	ND< 8.94
o-Xylene	ND< 8.94
Styrene	ND< 22.4
1,2-Dichlorobenzene	ND< 22.4
1,3-Dichlorobenzene	ND< 22.4
1,4-Dichlorobenzene	ND< 8.94

Ketones	Results in ug / Kg
Acetone	ND< 44.7
2-Butanone	ND< 44.7
2-Hexanone	ND< 22.4
4-Methyl-2-pentanone	ND< 22.4

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 8.94
Vinyl acetate	ND< 22.4

ELAP Number 10958 Method: EPA 8260B Data File: V68997.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram
Surrogate outliers indicate probable matrix interference

Signature: _____
Bruce Hoogesteger, Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(716) 647-2530 * (800) 724-1997

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:	
COMPANY:	Ontario Specialty Contracting, Inc.	COMPANY:	Same
ADDRESS:	333 Ganson Street	ADDRESS:	
CITY:	Buffalo STATE: NY ZIP: 14203	CITY:	STATE: ZIP:
PHONE:	716-856-3333 FAX: 716-842-1630	PHONE:	FAX:
ATTN:	John Yensan	ATTN:	

LAB PROJECT #: 09-3508
CLIENT PROJECT #:

TURNAROUND TIME: (WORKING DAYS)
STD OTHER
☐ 1 ☐ 2 ☐ 3 ☒ 5 ☐

PROJECT NAME/SITE NAME:
HKJJ Clay Source
Grand Island, NY

COMMENTS: PO # 28043
Please e-mail results to jyensan@ontariospecialty.com

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TAL Metals	VOC's TCL	SVOC's TCL	PCB's	Pesticides	Cyanide	pH				REMARKS	PARADIGM LAB SAMPLE NUMBER
1	9/25/09		X		TP-1	Soil	3	X	X	X	X	X	X	X					10808
2	9/25/09		X		TP-2	S↓	3	X	X	X	X	X	X	X					10809
3	9/25/09		X		TP-3	S	3	X	X	X	X	X	X	X					10810
4	9/25/09		X		TP-4	S↓	3	X	X	X	X	X	X	X					10811
5																		quote $825 per sample JH 9-25-09 gp	
6																			
7																			
8																			
9																			
10																			

****LAB USE ONLY****

SAMPLE CONDITION: Check box if acceptable or note deviation:
CONTAINER TYPE: ☒ PRESERVATIONS: ☐ N/A HOLDING TIME: ☒ TEMPERATURE: ☒ 18°C iced - pres. begun in field

Sampled By: Jason Yensan Date/Time: 9/25/09 10:45AM
Relinquished By: Jason Yensan Date/Time: 9/25/09
Received By: Date/Time: 9/25/09

Relinquished By: Date/Time:
Received By: Date/Time:
Received @ Lab By: Elizabeth A Honck Date/Time: 9/25/09 1625

Total Cost:
P.I.F.

APPENDIX B

DEMARCATION LAYER SPECIFICATION SHEET

HANES GEO COMPONENTS
A Leggett & Platt COMPANY

TerraTex GS

Woven Geotextile

TerraTex GS is a woven geotextile made up of polypropylene filaments. These filaments are woven to form a stable and durable network such that the filaments retain their relative position. It is non-biodegradable and resistant to most soil chemicals, acids, and alkali with a pH range of 3 to 12. TerraTex GS is manufactured to meet or exceed the following minimum average roll values:

Property	Test Method	Minimum Average Roll Value English	Minimum Average Roll Value Metric
Tensile Strength	ASTM D-4632	200 lb	0.8890 kN
Tensile Elongation	ASTM D-4632	15%	15%
Mullen Burst	ASTM D-3786	400 psi	2756 kPa
Puncture Strength	ASTM D-4833	90 lb	0.400 kN
Trapezoid Tear	ASTM D-4533	75 lb	0.333 kN
UV Resistance	ASTM D-4355	70% @ 500 hr	70% @ 500 hr
AOS	ASTM D-4751	50 US Sieve	0.300 mm
Permittivity	ASTM D-4491	0.05 sec-1	0.05 sec-1
Water Flow Rate	ASTM D-4491	5 gal/min/ft^2	203 l/min/m^2

1/2008

815 Buxton Street Winston Salem, NC 27101
888 - 239 - 4539 • Fax: 336 - 747 - 1652
www.hanesgeo.com info@hanesgeo.com

APPENDIX V

QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES FOR GENERAL CONSTRUCTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Required Submittals are identified in each technical specification section of the Contract Documents. A summary of Submittals is provided at the end of this section. Submittals shall be provided to the Engineer, as required, unless otherwise specified. Submittals may include:
   1. Data;
   2. Drawings;
   3. Instructions;
   4. Schedules;
   5. Statements;
   6. Reports;
   7. Plans;
   8. Certificates;
   9. Samples;
   10. Records; and
   11. Operation and Maintenance Manuals.

B. The Contractor shall make Submittals as required by the Contract and the individual specification sections but not limited to the summarized items in Table 01330-1: Submittal Summary provided at the end of this section.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.01 GENERAL

A. Submittals shall include items such as:
   1. Manufacturer's or fabricator's drawings;
   2. Descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves;
   3. Test reports;
   4. Samples;
   5. Operation and Maintenance Manuals (including parts list);
   6. Certifications;
   7. Warranties; and
   8. Other pertinent data.

3.02 SUBMITTAL REQUIREMENTS

A. Transmittal Form:

1. A Transmittal form shall accompany all Submittals.
2. The Transmittal form shall be developed and furnished by the Engineer.
3. Transmittals shall include the following information, at a minimum:
   a. Submittal number in sequence, beginning with 1 (subsequent revised Submittals shall be identified with a number and letter);
   b. Date;
   c. Project title and project number;
   d. Contractor's name and address;
   e. Identification of each item submitted under the single Transmittal with a separate sequential number (e.g. 1.1, 1.2, etc.). Group only like items in a single Submittal;
   f. Reference to the specification section and sub-part number and/or Contract Drawing sheet and detail number (if applicable) pertinent to the data submitted.
   g. Notification of any deviations from Contract Documents;
   h. Return date required by Contractor; and
   i. Other pertinent data.

B. Contractor Certification: The Contractor's Certification that the Submittal meets contract requirements shall contain the following:

1. Contractor firm name;
2. Point of contact name, signature, and title;
3. Date; and
4. Contractor's corrections as noted on Submittal data and/or attached sheets(s).
5. The certification may be provided as part of the Transmittal, on a separate sheet attached to the Transmittal, or as a stamp on the Submittal itself.

C. Procedures:

1. The Contractor shall schedule submissions at least 14 days before Submittal approvals will be needed, except where different lead time is specified.
2. The Contractor shall deliver to Engineer three copies of all Submittals and Transmittals that are sent in the mail. To expedite the review of smaller Submittals, the Contractor may provide a legible fax, if followed by the required number of original copies.
3. The Contractor may deliver Submittals to the Engineer in electronic form by email. The Contractor-signed Transmittal shall be scanned and attached to the other electronic Submittal documents. The subject line of the email shall clearly note the project name and Submittal number.
4. The Contractor shall maintain one copy of the Submittal and Transmittal on site.
4. At the time of each submission, the Contractor shall call to the Engineer's attention, in writing, any deviations that the Submittal may have from the requirements of the Contract Documents.

D. Submittals shall include:

1. Date and revision dates;
2. Project title and number;
3. The names of:
   a. Engineer;

b. Contractor;
c. Subcontractor;
d. Supplier;
e. Manufacturer; and
f. Separate detailer when pertinent.

4. Identification of product or material;
5. Field dimensions, clearly identified as such;
6. Specification section and sub-part number and/or Drawing sheet and detail number;
7. Applicable standards, such as ASTM or Federal Specification number;
8. For Submittals which include proposed deviations requested by the Contractor, "variation" shall be clearly indicated on the Transmittal. The Contractor shall state the reason for any deviations and annotate such deviations on the Submittal. The Engineer reserves the right to rescind inadvertent acceptance of Submittals containing unnoted deviations.

E. Submittals shall be of standardized sizes.

1. Approved standard sizes shall be:
   a. 24 inches by 36 inches;
   b. 11 inches by 17 inches; and
   c. 11 inches by 8 1/2 inches.
2. Provision shall be made in preparing Submittals to afford a binding margin on left hand side of sheet.
3. Submittals put forward other than as specified herein may be returned for resubmittal without being reviewed.

Table 01330-1: Submittal Summary

No.	Specification Section	Specification Part	Submittal Item	Schedule
1	00001	5b	Preliminary Critical Path Method (CPM) Diagram, Schedule of Values, and supporting narrative	Within 5 days of Apparent Low Bidder notification
2	00001	5c	Interim CPM Diagram, Schedule of Values, Schedule of Shop Drawing Submissions, and supporting narrative	Prior to commencing construction
3	00001	5d	Detailed CPM Diagram, Schedule of Values, Schedule of Shop Drawing Submissions, and supporting narrative	To accompany each request for progress payment
4	00001	5h	As-Built CPM Diagram and Schedule Reconciliation Report	To accompany request for final payment
5	00002	1.2b	Name and location of Precaster; Precaster Product Data/Shop Drawings for Precast Units; Certification of design loading; and Manufacturer's Product Data on manhole frames, covers, and grates	14 days prior to day approval is required
6	00003	1.01B	Health and Safety Plan (HASP)	Within 5 days of Apparent Low Bidder notification
7	01110	1.03C	Construction Work Plan (Plan of Operations)	Within 5 days of Apparent Low Bidder notification
8	01410	1.03A	Copies of approved permits	Prior to commencing construction associated with the permit
9	01450	1.03A	Construction Quality Control Plan (CQCP)	Within 5 days of Apparent Low Bidder notification
10	01450	1.03B	Weekly CQC Reports, Test Reports, Deficiency Reports, and/or Project Summaries	As soon as the report is available
11	01720	1.03A	Qualifications of persons providing field engineering and surveying services	At the request of the Engineer
12	01720	1.03B	Documentation verifying accuracy of survey work or instrumentation	At the request of the Engineer
13	01720	1.03C	Results of the field verification survey and results of the comparison with the Drawings	Prior to commencing excavation
14	01720	1.03D	Survey data in support of quantity measurements	Prior to or along with payment requisitions

Table 01330-1: Submittal Summary

No.	Specification Section	Specification Part	Submittal Item	Schedule
15	01720	1.03E	Survey data and measurements as the Work progresses in support of establishing Record Documents	At the request of the Engineer
16	01770	1.07	Project Record Documents including • As-built survey data • All outstanding submittals (documentation and test data)	At project completion along with request for final payment
17	02105	1.03A	Quality Assurance Project Plan	14 days prior to baseline groundwater sampling
18	02105	1.03B	Preliminary (verbal) laboratory analysis results	Within 15 days of sampling completion for each: • Pre-construction baseline groundwater sampling; • Post-construction groundwater sampling; and • Post-excavation soil sampling
19	02105	1.03C	Sampling and Analysis Reports	Within 30 days of post-excavation sampling completion
20	02110	1.02B	Waste characterization laboratory reports	14 days prior to day approval is required.
21	02120	1.02B	Permit profile of the Treatment Storage and/or Disposal Facility	14 days prior to day approval is required
22	02120	1.02C	Bill of Lading and Manifests for all transported waste loads	As work progresses and as an attachment in support of payment requisitions
23	02120	1.02D	Certified weight slips for each load transported to the disposal facility	As work progresses and as an attachment in support of payment requisitions
24	02221	1.03A	Waste characterization laboratory reports	14 days prior to day approval is required.
25	02240	1.03A	Dewatering methods	14 days prior to day approval is required
26	02250	1.03A	Engineered shoring system design, signed and sealed by a New York licensed professional engineer for informational purposes	10 days prior to commencing excavation
27	02250	1.03B	Vibration monitoring readings for the duration of the work	At the completion of the Work

Table 01330-1: Submittal Summary

No.	Specification Section	Specification Part	Submittal Item	Schedule
28	02300	1.04A	Borrow source information: • Name; and • Location	14 days prior to day approval is required
29	02300	1.04B	Subcontractor's Quality Control Testing Laboratory(ies) information: • Name; and • Qualifications	7 days following Notice to Proceed
30	02300	1.04C	Subgrade Fill Source Test Reports - Geotechnical	14 days prior to day approval is required
31	02300	1.04C	Crushed Stone Source Test Reports - Geotechnical	14 days prior to day approval is required
32	02300	1.04C	Subbase Course Source Test Reports - Geotechnical	14 days prior to day approval is required
33	02300	1.04C	Subgrade Fill Source Test Reports - Analytical	14 days prior to day approval is required
34	02300	1.04C	Subgrade Fill Field Moisture/Density (Compaction) Test Reports	As soon as the report is available
35	02300	1.04C	Subbase Course Field Moisture/Density (Compaction) Test Reports	As soon as the report is available
36	02370	1.05A	Manufacturer's Product Data for catchbasin inlet filters	14 days prior to day approval is required
37	02370	1.05A	Manufacturer's Product Data for filter berm material (if utilized)	14 days prior to day approval is required
38	02370	1.05A	Manufacturer's Product Data for silt fence (if utilized)	14 days prior to day approval is required
39	02522	1.03A	Information, including the following: • Drilling and well installation methodology; • Well development approach; • Water treatment plan and justification; • Recommended material for well housing and justification; • Number of personnel to be deployed during the field program; and • Proposed schedule/logistics for completing the Work.	14 days prior to day approval is required

Table 01330-1: Submittal Summary

No.	Specification Section	Specification Part	Submittal Item	Schedule
40	02522	1.03C	Field Test Reports including: • Written assurance each well meets the requirements specified in the Contract Documents for materials, depths, plumbness, and alignment; • Well development records; and • Drilling records including casings, cement grout, well screens, penetration, and filter sand.	As soon as possible after installation work is complete

END OF SECTION

SECTION 01450

CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

This section covers quality control procedures and testing to be completed by the Contractor during the Work. Prior to commencement of the Work, the Contractor shall prepare a Contractor Quality Control (CQC) Plan detailing the procedures to be followed and testing to be completed. Quality control testing shall be executed as required in the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330: Submittal Procedures
B. Section 01770: Project Closeout Procedures

1.03 REFERENCES AND STANDARDS

A. Conform to referenced standards with date of issue current on the date of the bid, except where stated otherwise or referenced differently by code.

1.04 SUBMITTALS

A. Pre-Construction Submittals:
    1. Contractor Quality Control (CQC) Plan shall identify personnel, procedures, instructions, records, and forms to be used in carrying out the requirements of the Work. The CQC Plan shall provide the Contractor with a means to provide and maintain effective Quality Control for construction, sampling, and testing activities. No work on-site shall be permitted until comments received are adequately addressed by the Contractor and the CQC Plan is approved by the Engineer.
B. Weekly CQC Reports, Test Reports, Deficiency Reports, and Project Summaries

1.05 DEFINITIONS

A. Quality Control: Activities undertaken by the Contractor including observing, measuring, sampling, and testing undertaken by the Contractor to determine that work performed and/or products/materials provided and installed meet the requirements of the Contract Documents and the quality specified therein.

1.06 QUALITY CONTROL SAMPLING AND TESTING

A. The Contractor shall notify the Engineer a minimum of 72 hours prior to any quality control sampling and testing activities. The Engineer and Department reserve the right to collect duplicate quality control samples.
B. All third party quality control test reports shall be reported/sent directly to the Engineer and shall not be routed through the Contractor. The Contractor shall give their subcontracted laboratory permission to send reports directly to the Engineer.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. The quality of all Work shall be the responsibility of the Contractor.

B. Perform sufficient inspections and tests of all items of work, on a continuing basis, including that of subcontractors, to ensure conformance to applicable specifications and drawings with respect to the quality of materials, workmanship, construction, and functional performance.

C. Provide qualified personnel, appropriate facilities, instruments, and testing devices necessary for the performance of the quality control function.

D. Controls shall be adequate to cover all construction operations, shall be keyed to the proposed construction sequence, and shall be coordinated by the Contractor's quality control personnel.

3.02 CONTRACTOR QUALITY CONTROL (CQC) PLAN

A. Prepare and submit a Contractor Quality Control Plan to the Engineer for approval.

B. Comments or approval from the Engineer will be submitted to the Contractor within 14 calendar days following receipt of the plan. The Contractor shall adequately respond to comments to the satisfaction of the Engineer within 14 calendar days following receipt of any comments from the Engineer.

C. No work on site shall be permitted until the comments received are adequately addressed by the Contractor and the CQC Plan is approved by the Engineer.

D. The CQC Plan, at a minimum, shall include the following:

1. A description of the Quality Control Organization, including charts showing lines of internal Contractor authority, and external Contractor, subcontractor, and Engineer relationships. The Quality Control Organization shall include the names, qualifications, duties, and responsibilities of each person assigned to a quality control function. The Quality Control Organization chart shall identify a Contractor's Quality Control Manager whose responsibilities and qualifications are described in Sub-Part 3.04 - Contractor Quality Control Organization.
2. Method of performing, documenting, and enforcing quality control operations of both Contractor and subcontract work including inspection and testing.
3. Inspections as described in the Sub-Part 3.05 – Inspections.
4. Provide a list of analytical or testing laboratories to be used by the Contractor for testing required by the Specifications with listed test methods to be performed by each laboratory indicated.
5. Protocol describing corrective actions to be taken by the Contractor with specifically defined feedback systems. The Engineer will then decide what further corrective action, if any, shall be taken by the Contractor. Personnel responsible for initiating and carrying out corrective action shall be indicated in the protocol.

E. Submit Weekly CQC Reports, Test Reports, Deficiency Reports and Project Summaries as required by this Specification.

3.03 NOTIFICATION OF CHANGE

A. After submittal and approval of the CQC Plan, the Engineer shall be notified in writing of any proposed changes to the CQC Plan.

3.04 CONTRACTOR QUALITY CONTROL ORGANIZATION

A. CQC Manager:

1. Identify an individual, within the Contractor's organization at the Site who shall be responsible for overall management of the CQC Plan and have the authority to act in all CQC matters for the Contractor.
2. The CQC Manager for this Contract shall be a qualified construction manager/engineer or comparable individual with a minimum of 2 years of applicable experience, at the Project Manager, Project Engineer, Superintendent, or CQC Manager level, whose responsibility is to ensure compliance with the Construction Documents.. The CQC Manager shall be independent of the Project Superintendent.
3. The CQC Manager shall be on-site whenever work is in progress so that he/she may be in charge of the CQC Plan for the project.
4. All submittals for approval shall be reviewed and modified or corrected as needed by the CQC Manager or authorized assigns prior to forwarding to the Engineer.

3.05 INSPECTIONS

A. The CQC Plan shall include the following inspections and tests:

1. The Contractor shall perform preparatory inspections prior to beginning each feature of work on any on-site construction conducted by the Contractor or a subcontractor. Preparatory inspections for the applicable feature of work shall include:
   a. review of submittal requirements and all other Contract requirements with the performance of the work;
   b. check to assure that provisions have been made to provide required field quality control testing;
   c. examine the work area to ascertain that all preliminary work has been completed;
   d. verify all field dimensions and advise the Engineer of any discrepancies;
   e. perform a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all required materials and/or equipment are on hand and comply with the Contract requirements.
2. Perform initial inspection as soon as work begins on a representative portion of the particular feature of work, and include examination of the quality of workmanship as well as review of quality control testing for compliance with the Construction Document requirements.
3. Perform follow-up inspections continuously as any particular feature of work progresses to ensure compliance with Contract requirements, including quality control testing, until completion of that feature of work.

3.06 TESTING

A. The Contractor shall be responsible for all required testing, documentation, and corrective measures. The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to Contract requirements.

3.07 CONSTRUCTION MONITORING

A. Prior to commencing invasive construction activities including but not limited to installing sheeting and shoring or excavating, complete an existing infrastructure assessment to record conditions of building and surrounding infrastructure. Record condition with video or photographs noting existing deficiencies or damage as observed prior to construction. The assessment shall at a minimum include the following components:
   1. Building façade;
   2. Building foundation wall;
   3. Building doors and windows;
   4. Building roof overhang, fascia, or general roofline;
   5. Pavement and concrete surface treatments;
   6. Prominent exterior site features within 50 feet of the limit of work including retaining walls, stairs, bollards, manhole frames and grates, etc.; and
   6. Interior building finishes within 50 feet of the limit of work;

B. Maintain continuous vibration monitoring (seismograph recording) during sheeting and shoring installation, excavation, backfilling and compaction, paving, and all other activities utilizing heavy construction equipment likely to cause strong vibrations.

END OF SECTION

SECTION 01720

FIELD ENGINEERING AND SURVEYING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Established survey control points are available on site for construction purposes. The Contractor shall verify locations of survey control points prior to starting work. The Contractor shall safeguard all survey control points. Should any of these points be damaged or destroyed, the Contractor shall replace the control point at no cost to the Department. The Contractor shall assume the entire expense of rectifying work improperly constructed due to failure to maintain and protect such established survey control points.

B. The Contractor shall be responsible for the layout of the construction and any additional survey control points, grid coordinate locations, lines, grades, and levels necessary for the proper construction and testing of the work required in the Contract Documents. Survey control shall include, but not be limited to, maintaining appropriate slopes and specified thicknesses.

C. The Contractor shall employ a surveyor using standard practices and datum for the State of New York to provide the surveying functions necessary for the proper execution of the work, and to document and record the completed work.

D. The Contractor is responsible for scheduling the surveys to coincide with his construction activities. If the survey documentation shows improper slopes, elevations, locations, or layer thicknesses, the Contractor shall correct the deficiency and re-survey the re-work at no additional cost to the Department. Survey documentation may include, but not be limited to:

1. Initial field verification survey, as described in Sub-part 1.03;
2. Depth and configuration of building footing as determined during the Contractor performed Existing Conditions Assessment;
3. Location and invert elevation of any and all utility penetrations of the building foundation wall as determined during the Contractor performed investigations;
4. Excavation horizontal and vertical extents;
5. Location, rim elevation, and inverts of new catchbasin (CB-1), new stormdrain manholes (SD-1, SD-2, SD-3, and SD-4), new stormdrain piping;
6. Location and elevation of chambers and bottom of stone for the subsurface stormdrain management systems (SSMS-1A, SSMS 1B, and SSMS 2);
7. Location, rim elevation, and inverts of re-installed (or new) sanitary sewer manhole and new sanitary sewer service;
8. Bottom of structure, rim, and invert elevations of existing DW-3
9. Limit of installed pavement;
10. Location, and top and bottom elevation of all sheet piling left in place;
11. Final constructed topography within the limit of disturbance based on a 10’ maximum grid pattern;

12. Location and elevation of Contractor established survey control points and/or benchmarks; and
13. Soil boring and monitoring well locations.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01110: Summary of Work
B. Section 01330: Submittal Procedures
C. Section 01450: Contractor Quality Control
D. Section 01770: Project Closeout Procedures

1.03 SUBMITTALS

A. On request, submit data demonstrating qualifications of persons providing field engineering and survey services.
B. On request, submit documentation verifying accuracy of survey work.
C. The Contractor shall perform a field verification of survey as part of the work prior to the start of construction activities to verify/establish current conditions. The Contractor shall then compare the existing condition information shown on the Construction Drawings to the current conditions determined during the field verification activities. Where discrepancies exist, the Contractor shall submit to the Engineer the results of the field verification survey and results of the comparison with the Construction Drawings. All discrepancies shall be resolved by the Engineer prior to initiation of construction activities affected by discrepancies.
D. Survey data in support of quantity measurements as required in Section 01270 – Measurement and Payment
E. Survey data and measurements as the Work progresses for the project in support of establishing Record Documents as specified in Section 01770 - Project Closeout

1.04 FIELD ENGINEERING AND SURVEY REQUIREMENTS

A. Provide field engineering and survey services using appropriate construction practices. Use skilled persons, trained and experienced in the necessary tasks and techniques for the proper execution of the Work. Locate and layout the Work by survey instrumentation and similar appropriate means.
B. The Contractor shall sufficiently establish the existing ground elevations before earthwork is started.
C. The Contractor shall perform the layout and shall document completed construction on Record Drawings, including the features listed in Sub-part 1.01D.
D. Measure final excavated depth during construction to verify that excavation has occurred to the required limit.
E. The Contractor shall sufficiently survey to verify quantities included in requests for payment as required in Section XII, Measurement for Payment.
F. Vertical and horizontal control shall be sufficient to assure work is constructed within 0.1 foot of proposed fill thickness requirements (or proposed grades as indicated where settlement is not a concern) and location.

G. Verification surveys, surveys for measurement and payment, and Project Record documentation shall be provided in electronic file format compatible with AutoCAD 2006 or later.

1.05 TECHNICAL REQUIREMENTS OF SURVEY

A. Horizontal ground control shall originate and terminate on New York State Plane North American Datum 1983 (NAD 83). Vertical control shall be tied to North American Vertical Datum 1988 (NAVD 88).

B. Map Accuracy - Ninety percent of the elevations determined from the solid-line contours for the topographic maps shall have accuracy with respect to true elevation of 0.5 contour interval (0.5 foot) or better, and the remaining 10 percent of such elevations shall not be in error by more than one contour interval (1 foot).

C. Vertical Control: Establish a permanent project benchmark for vertical control.

D. Horizontal Control: Each horizontal control point shall be plotted on the map within the coordinate grid in which it should lie to an accuracy of one one-hundredth foot (0.01 foot) of its true position as expressed by the plane coordinates computed for this point.

E. Spot Elevations: Survey shall be constructed to provide an accuracy of 0.1 feet vertically. No shots exceeding 500 feet shall be taken. Ninety percent of all spot elevations placed on the maps shall have an accuracy of at least 0.1 foot, and the remaining 10 percent shall not be in error by more than one-half (1/2) of the contour interval (0.5 foot).

F. Accuracies and accuracy tests apply to the stereo compilation scale of the original manuscript (i.e., if the manuscript is compiled at a scale of 1" = 100' and then reduced to 1"=200', then the accuracies will apply to the original 1"=100' scale). This is also true if the manuscript is enlarged to 1"=50' or some larger scale.

1.06 EXISTING CONDITIONS SURVEY

A. The existing conditions depicted on the Drawings are based on a survey prepared by YEC, Inc. (2006, 2007).

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

Not applicable.

END OF SECTION

SECTION 02105

CHEMICAL SAMPLING AND ANALYSIS

PART 1 – GENERAL

1.01 DESCRIPTION

A. The Contractor shall provide all necessary personnel, equipment, materials, and subcontracting required to perform the following chemical sampling and analysis associated with the remedial design at the Former Alsy Manufacturing Site (Site) in Hicksville, New York for the purpose of:
   1. Conducting pre-construction (baseline) and post-construction groundwater sampling and analysis of the on-site and off-site monitoring wells identified herein,
   2. Conducting post-excavation soil sampling of the excavation extents prior to backfilling.

B. The sampling and analysis shall be conducted in accordance with USEPA and NYSDEC standards and requirements for environmental sampling and analysis.

1.02 REFERENCES

A. United States Environmental Protection Agency Region 1 - New England Low Stress (low-flow) Purging and Sampling Procedures for the Collection of Ground Water Samples from Monitoring Wells. Revision 2, July 30, 1996.

B. New York State Department of Environmental Conservation "Analytical Services Protocol." June 2000 - revised July 2005.

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

D. Guidance for the Development of Data Usability Reports; Division of Environmental Remediation; September 1997.

1.03 SUBMITTALS

A. Quality Assurance Project Plan:
   1. Submit the following two weeks prior to start of the work:
      a. Site-specific Quality Assurance Project Plan (QAPP) prepared in accordance with New York State Department of Environmental Conservation "Technical Guidance for Site Investigation and Remediation"; Draft DER-10; December 2002.
      b. Proposed Project Analytical Laboratory and certifications. Documentation shall be provided that the analytical laboratory is New York State Department of Health certified for solid and hazardous waste analyses.

B. Health and Safety Items:
   1. Submit the following items within one week prior to start of the work:
      a. Site-specific Health and Safety Plan (HASP) along with evidence that all on-site personnel are enrolled in medical monitoring and are current with completed OSHA 40-hour HAZMAT training requirements.

C. Sampling and Analysis Reports:
   1. Submit the following reports:
      a. Field sampling data records including copies of completed field sheets, chain-of-custodies, and field log book entries;

b. Laboratory Data Deliverable;
c. Data Usability Summary Report.

PART 2 - PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 GROUNDWATER SAMPLE COLLECTION

A. Groundwater samples shall be collected from nine (9) on-site wells including ERM-1, LMS-4, AMS-2, MW-3, LMS-3, LMS-5, AMS-1, LMS-1, LMS-2, and one (1) off-site monitoring well, ERM-3. The monitoring well locations are shown on Drawing C-101.

B. Groundwater sampling shall be conducted in accordance with low-flow purging and sampling procedure as presented in the "USEPA Region 1 - New England Low Stress (low-flow) Purging and Sampling Procedures for the Collection of Ground Water Samples from Monitoring Wells", Revision 2, July 30, 1996 (USEPA, 1996).

C. Field equipment shall include:

1. Peristaltic, bladder or inertial pump capable of a flow rate between 50 and 500 ml/minute and appropriate power supply. The pump type will principally depend on the depth to water and well diameter. Bladder pumps are preferred; peristaltic pumps are acceptable only for wells where the depth to water is less than about 25 ft; Inertail pumps are only recommended for narrow diameter wells that cannot be sampled using a bladder or peristaltic pump.
2. Field probe and flow-through cell (e.g., Horiba) for measuring pH, temperature, conductance (and/or specific conductance), DO and ORP of groundwater, and a turbidity meter.
3. Calibration solutions for the field probes
4. Water level tape
5. Tubing, connections and tools as appropriate
6. Graduated cylinder and stopwatch
7. 5-gallon bucket and funnel for purge water
10. Decontamination supplies (e.g., DI water, Liquinox soap, paper towels)
11. Sample containers and cooler (provided by the laboratory)
12. Ice for sample preservation
13. Clean plastic sheeting, paper towels and miscellaneous supplies

D. Field parameter measurements shall be made using instrumentation and a commercially manufactured flow through cell.

E. Dedicated high density polyethylene (HDPE) tubing shall be used.

F. Sampling will be conducted using the following procedure:

1. Determine target depth for location of the pump intake. Target depth should be the portion of the screened interval that intersects the zone of highest conductivity (K). If the zone of highest K is unknown, or if the screen is placed within homogenous material, then the target depth shall be the midpoint of the saturated screen length. Primary flow zones should be identified in wells with screen lengths longer than 10 ft.

2. Measure and record the depth to water. Care should be taken to minimize disturbance of the water column within the well during pre-sample measurements.

3. Decontaminate pump prior to use (if pumps are dedicated then this applies to the initial effort only). Attach appropriate length of dedicated HDPE tubing or mark the tubing at the appropriate point so that when the pump and tubing are lowered into the well, and the mark is at the top of the well riser, the pump shall be located at the target depth within the screened interval.

4. Carefully lower the pump to the predetermined target depth. Start the pump at a purge rate low enough to achieve 0.3 ft of drawdown or less based on historical data. If sampling the well for the first time, start the pump at the lowest possible setting (or approximately 100-ml per minute) and slowly increase the speed until discharge occurs. Check water level. Adjust pump speed until there is little or no drawdown (less than 0.3 ft) if possible. If stabilized drawdown cannot be achieved, use the no-purge method described later in this section.

5. Monitor and record pumping rate and water levels every 3 to 5 minutes (or as appropriate) during purging. Record any adjustments to pumping rates.

6. During purging, monitor field parameters using a flow through cell (the flow through cell can not be used for turbidity measurements and the sample for turbidity measurement must be collected prior to entering the flow through cell). Purging is considered complete and sampling may begin when the field parameters have stabilized. Stabilization is considered to be achieved when three consecutive readings, taken at 3 to 5 minute intervals, are within the following limits:

    a. Turbidity (+/- 10% for values >10 NTU)
    b. DO (+/- 10%)
    c. Specific conductivity (+/- 3%)
    d. Temperature (+/- 10%)
    e. pH (± 0.1 unit)
    f. ORP (± 10 millivolts)

7. The final purge volume must be greater than the stabilized drawdown volume plus the tubing extraction volume.

8. During purging and sampling the tubing should remain filled with water.

9. Disconnect the tubing from the flow through cell to collect the analytical samples. Water samples for laboratory analyses must not be collected after water has passed through the flow through assembly. Fill sample containers directly from the tubing without alterations to the pumping rate.

10. The volatile organic compound (VOC) fraction sample shall be collected first. The VOC sample container shall be completely filled without air space within the container.

11. The total and dissolved (field-filtered) metals (Nickel and Zinc) shall then be collected. The dissolved metals sample shall consist of a groundwater sample filtered through a 0.45 micron filter.

12. For subsequent sampling efforts, duplicate the pump intake depth and final purge rate from the initial sampling event (use final pump dial setting information).

13. If using non-dedicated equipment, remove the pump and decontaminate by flushing with the decontamination fluid specified herein, or dispose. Obtain and record a depth to bottom of well measurement before closing the well.

14. Include any observations made during sampling such as color, odor, etc., in the field logbook and field sample data record.

15. Secure the well cap and lock.

3.02 POST-EXCAVATION SOIL SAMPLE COLLECTION

A. Post-excavation soil samples shall be collected from the excavation bottom prior to backfilling.

B. Samples shall be collected from the bottom of the excavation sidewalls at a rate of one per 30 linear feet of excavation sidewall and from the excavation bottom at a rate of one per 900 square feet of excavation bottom.

C. Samples shall be collected by using a hand auger, trowel, or spoon to obtain the necessary volume of soil for each sample.

D. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

3.03 LABORATORY ANALYSIS

A. Groundwater samples shall be analyzed by the Project Analytical Laboratory for analyses of total and dissolved (field-filtered) Nickel and Zinc using USEPA 6010 methods and target compound list (TCL) VOCs using USEPA OLM04.2 methods as described in the NYSDEC ASP.

B. Soil samples shall be analyzed by the Project Analytical Laboratory for total nickel and synthetic precipitation leaching procedure (SPLP) nickel using USEPA 6010 methods as described in the NYSDEC ASP.

C. Off-site laboratory analysis shall include Category B deliverables as defined in the NYSDEC ASP.

D. Contractor shall prepare a Data Usability Summary Report (DUSR) in accordance with the "Guidance for the Development of Data Usability Reports" (NYSDEC, 1997).

3.04 DISPOSAL OF INVESTIGATION DERIVED WASTES

A. Groundwater generated during groundwater sampling shall be containerized for characterization. Contractor shall transport the filled drums to a designated storage area at the Site for temporary storage and characterization. Contractor shall arrange for offsite disposal at an appropriate facility based upon the characterization results and at the direction of the Engineer, and as approved by the Department.

B. Store generated groundwater and decontamination fluids in DOT approved containers supplied by the Contractor. All wastewater shall be containerized and stored on the Site until the samples taken by the Contractor have been analyzed.

C. Waste characterization and disposal shall be done as specified in Section 02110 – Waste Removal and Handling and Section 02120 – Off-Site Transportation and Disposal.

3.06 DECONTAMINATION

A. Contaminated sampling equipment will be washed with a Liquinox ®, or equivalent soap and water solution, rinsed with clean potable water, and finally rinsed with deionized water.

3.07 HEALTH AND SAFETY

A. Field personnel will be required to utilize the personnel protection as defined in Specification Section 00003 – Minimum Requirements for Health and Safety.

B. Contractor personnel will be required to review the site or task-specific Health and Safety Plan prepared for this project and acknowledge that they have done so before initiating subsurface work.

END OF SECTION

SECTION 02110

WASTE REMOVAL AND HANDLING

PART 1 GENERAL

1.01 SUMMARY

A. This section includes a description of responsibilities for proper on-site handling and management of materials including, but not limited to, excavated contaminated indigenous and borrow soil, fill, bedding, etc; excavated contaminated concrete/masonry, metal, and all other debris; excavated non-contaminated concrete/masonry, metal, bituminous pavement, and all other debris; liquid waste (contaminated stormwater, decontamination water, construction dewatering, etc.); Site trash; soil boring cuttings; and remediation waste (disposable PPE, plastic sheeting and sampling equipment).

1.02 SUBMITTALS

A. The Contractor shall include as a component of the Work Plan (described in Section 01110 – Summary of Work) a description of planned means and methods for management of all waste materials removed or generated as a component of the Work.

B. Laboratory Reports: Provide laboratory reports of analytical testing performed as required by the waste characterization program.

1.03 WASTE CONTAINERS

A. The Contractor shall provide:

1. Trucks for the direct loading of indigenous contaminated soils, concrete, metal, and other debris for off-site disposal.
2. Appropriate containers and/or trucks for the management and off-site disposal/recycling of non-contaminated material and debris from the excavation areas (e.g., asphalt pavement) and all other non-contaminated debris removed during site preparation.
3. Plastic bags for disposable personnel protection equipment. Plastic bags shall have a minimum thickness of six (6) mils.
4. Portable, temporary storage tanks (FRAC tanks, etc.) for the storage/treatment of collected liquids (i.e. decontamination fluids, construction dewatering, and contaminated stormwater). The Contractor is responsible for the rental of FRAC tanks or similar containers.
5. Containers (e.g., roll-off containers) for non-hazardous municipal trash and debris. Roll-off containers shall be utilized for storage of wastes generated during the site preparation activities, construction activities and waste materials from site cleanup activities.
6. DOT-approved, steel drums (55-gallon capacity) for possible storage of residual contaminated material and/or water including soil boring cuttings extracted from the off-site Work.

1.04 ON-SITE MANAGEMENT AND STORAGE OF MATERIALS

A. The Contractor shall be responsible for proper on-site management of wastes generated in compliance with all Federal, State and local regulations. Management shall include handling, segregating, testing and storing all wastes generated during the Work.

B. The Contractor shall be responsible for movement of the containers, trucks, etc. into positions required for proper loading and management of material.

C. The Contractor shall segregate hazardous from non-hazardous materials as required for proper off-site disposal.

D. The Contractor shall be responsible for loading all waste containers, trucks, etc. with all removed soil, material, and debris.

E. The Contractor shall limit stockpiling of indigenous contaminated soil or contaminated material (concrete/masonry, metal, and all other debris) from the excavation areas.

F. The Contractor shall not load waste containers, trucks, etc. with non-contaminated materials prior to inspection and determination by the Engineer that decontamination of the waste containers has been achieved.

G. The Contractor shall be responsible for coordinating the schedule for delivery and pick-up of supplied waste containers. The Contractor shall also be responsible for movement and storage of containers within the Site to allow the progress of the Work.

H. The Contractor shall cover any stockpiles with plastic sheeting to prevent erosion of the stockpiles or uncontrolled runoff while promoting runoff of precipitation. The plastic sheeting shall be weighted down.

1.05 SAMPLING AND TESTING OF WASTES

A. Testing shall not be required for non-contaminated wastes including:
   1. Removed asphalt pavement within the top one foot of the excavation area.
   2. General trash and rubbish from outside the Work Area (e.g., office waste).

B. The Contractor shall be responsible for the sample collection and laboratory testing of the following wastes:
   1. Collected liquids (i.e. decontamination fluids, construction dewatering, and contaminated stormwater). Collected liquids that require off-site disposal shall be sampled and tested using the required methods and at the required frequency of the designated off-site disposal facility.
   2. Contaminated material (soil, masonry/concrete, metal, and all other debris). Solid wastes shall be sampled and tested using the required methods and at the required frequency of the designated off-site facility.

C. The Contractor shall collect samples and shall coordinate the sampling and testing with the Engineer.

D. Laboratory testing of wastes shall be performed by a certified laboratory as required by the selected disposal facility:
   1. Laboratory reports shall be prepared by the subcontracted laboratory to include all requirements of the State.
   2. All laboratory test methods and frequencies shall be in accordance with NYSDEC requirements.

PART 2 PRODUCTS

Not Applicable

PART 3 EXECUTION

Not Applicable

END OF SECTION

SECTION 02120

OFF-SITE TRANSPORTATION AND DISPOSAL

PART 1 GENERAL

1.01 SUMMARY

A. This section includes a description of responsibilities for proper transportation and disposal of excavated contaminated indigenous and borrow soil, fill, bedding, etc.; excavated contaminated concrete/masonry, metal, and all other debris; excavated non-contaminated concrete/masonry, metal, bituminous pavement, and all other debris; liquid waste (contaminated stormwater, decontamination water, construction dewatering, etc.); Site trash; soil boring cuttings, and remediation waste (disposable PPE, plastic sheeting and sampling equipment).

1.02 SUBMITTALS

A. The Contractor shall include as a component of the Work Plan (described in Section 01110 – Summary of Work) a description of planned means and methods for transporting and disposing of all waste materials removed or generated as a component of the Work.
B. Permit profile of the Treatment Storage and/or Disposal Facility
C. Bill of Lading and Manifests for all transported waste loads.
D. Certified weight slips for each load transported to the disposal facility.

1.03 WASTE CONTAINERS

A. The Contractor shall provide waste containers specific to the individual waste as described in Section 02110 – Waste Excavation, Removal, and Handling.

1.04 TRANSPORTATION OF WASTES

A. The Contractor shall be responsible for the transportation of all solid wastes specified or generated as a result of the Work off-site. This includes materials generated by final Site cleanup activities including the dismantling of the temporary facilities and controls.
B. The Contractor shall be responsible for the transportation of all collected contaminated liquids as specified or generated as a result of the Work.
C. The Contractor shall be responsible for coordinating the number and schedule of vehicles required for off-site transportation of waste materials generated during the execution of the specified work.
D. The Contractor shall be responsible to inspect the transportation vehicles before and after loading to ensure compliance with all local, State, and Federal regulations for the safe transport of wastes from the Site to the receiving facility. The Contractor shall provide the necessary labor and materials to insure all trucks, containers, etc. are lined with plastic prior to filling, foamed or stabilized with an agent, if necessary, and covered prior to departure.
E. The Contractor shall insure that the transporters arriving at the Site for loading do not cause undue congestion to local streets, and shall stage trucks either within the perimeter

of the Site or at an off-site staging area approved by the Engineer. Transporters shall not be accepted at the site before 7:00 AM and after 5:00 PM and shall not idle during queuing beneath the covered breezeway along the ingress route.

F. The Contractor's transporters shall proceed directly from the Site to the designated receiving facility. Temporary staging or storage of material at intermediate locations between the Site and the receiving facility is prohibited.

G. The Contractor shall originate, maintain, and provide the Engineer with a copy of each executed Bill of Lading for all loads shipped off-site. In addition, the Contractor shall provide the Engineer, documentation and records verifying receipt of each truck load by the receiving facility. Such documentation shall indicate the actual weight of each load shipped.

H. Transporters shall proceed from the Site along traffic routes established by the Contractor and approved by the local municipality. Transporters shall call back weights after each load and modify loads accordingly. The Contractor shall ensure that trucks leaving the Site are within appropriate weight limitations for the local roads along the designated route.

1.05 DISPOSAL OF WASTES

A. The Contractor shall be responsible for the proper disposal of all solid and liquid wastes that are specified as a component of the Work or that are generated during the execution of the Work in conformance with all Federal, State, and local regulations and requirements. Proper disposal requires that the facility accepting the waste be a state licensed disposal/recycling facility that is approved for acceptance of the waste based on the results of the characterization testing and analysis.

B. The disposal facilities shall be approved by the Engineer/Department prior to the transporting of waste. The Contractor shall not change facilities without prior consent of the Engineer/Department.

PART 2 PRODUCTS

Not Applicable

PART 3 EXECUTION

Not Applicable

END OF SECTION

APPENDIX W

QUALITY ASSURANCE PROJECT PLAN
ENVIRONMENTAL SAMPLING AND LABORATORY ANALYSIS

APPENDIX W – EXAMPLE PLAN - QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance/quality control (QA/QC) procedures will be utilized throughout the project as described in the following sections. The project QA/QC protocol will be consistent with NYSDEC's Draft Technical Guidance for Site Investigation and Remediation (DER-10, December 2002).

1. LABORATORY ANALYSES

The primary goal of this section is to provide a description of the laboratory analytical program and the analytical methods used to analyze soil and water samples collected during field investigation activities. The majority of the analytical data will be generated using USEPA analytical procedures. Analyses will be completed using USEPA SW-846 methods (USEPA, 1996). Samples will be analyzed by a subcontract laboratory with NYSDOH ELAP Certification.

At this time, the analytical laboratory has not been selected for the RI/FS. Laboratory information and contacts will be included provided to NYSDEC when a laboratory is selected.

Analytical methods and parameters for are described in Sections 5.1 and 5.2 and are summarized below:

- Volatile Organic Compounds (VOCs) by Method 8260B
- Semivolatile Organic Compounds (SVOCs) by Method 8270C
- Polychlorinated biphenyls (PCBs) by Method 8082
- Metals by Methods 6000/7000 including mercury by Methods 7470A and 7471A
- Cyanide by Method 9012A
- Alcohols by Method 8015
- Hydrocarbons (diesel fuel compounds) by methods specified in the STARS #1 Memo
- Other inorganics in groundwater by various EPA Methods
- VOCs by EPA Method TO-15 (soil gas/air samples only)

The laboratory testing will be performed in accordance with procedures specified in the NYSDEC Analytical Services Protocol (ASP) [NYSDEC, 2000] and the published EPA SW-846 methods.

2. RECORDKEEPING

Notes regarding field activities, observations, and measurements will be documented in ink in a bound project logbook. Information to be recorded will include the following:

- The names of personnel on site and their organizations
- A time log that records the events that occur during each day on site
- A list of equipment used
- A description of sampling methods and procedures
- Sample types, locations, collection times and required laboratory analyses
- Weather conditions
- Instrument calibration results
- Water levels
- Well purging data
- Other information as necessary

3. EQUIPMENT DECONTAMINATION

In order to minimize the potential for cross contamination during sampling, disposable sampling equipment will be used when possible. Decontamination of non-disposable equipment will be performed prior to use at a new location or for sample collection. Decontamination of non-disposable sampling equipment will include a soap/water wash, potable water rinse, distilled water rinse, and wipe-drying with a clean cloth or air drying. During groundwater sampling, new pump tubing will be used at each well location. The submersible pump, if used, will be cleaned with a soap/water wash and distilled water rinse prior to purging/sampling each well.

4. QUALITY CONTROL SAMPLES

Quality control samples will be collected and analyzed as follows:

- An aqueous trip blank prepared by the laboratory will accompany each sample shipment. The trip blanks will be analyzed for the same VOC parameters as the soil and groundwater samples.

- Aqueous field blank samples will be collected during the soil and groundwater sampling events. One aqueous field blank will be collected during the RI/FS soil sampling and one aqueous field blank will be collected for each groundwater monitoring event. The field blanks will be collected by pouring analyte-free water (provided by the laboratory) over the sampling equipment and containerizing the rinsate in the appropriate laboratory bottles. The field blanks will be analyzed for the same parameters as the soil and groundwater samples.

- One duplicate groundwater sample will be collected from a specific monitoring well during each groundwater sampling event. The duplicate will be collected at the same time, using the same procedures, and analyzed for the same parameters as the original groundwater sample.

- A matrix spike/matrix spike duplicate (MS/MSD) sample will be collected from a specific well during each groundwater monitoring event. MS/MSDs are known amounts of specific chemical constituents added by the laboratory to selected samples to evaluate the effect of the sample matrix on the preparation and analytical procedures. Matrix spikes are performed in duplicate and are referred to as MS/MSDs.

- One blank sample will be collected for analysis by EPA Method TO-15 during each sub-slab vapor and indoor/outdoor air sampling event completed at the Area B office building.

5. DATA REVIEW AND VALIDATION

Category B deliverables as defined in the NYSDEC ASP will be reported for all samples collected during remedial investigation activities. Analytical data will be validated by a MACTEC project chemist in accordance with NYSDEC Data Usability Summary Report (DUSR) guidelines (NYSDEC, 2002) and Honeywell Remediation program data validation procedures. Validation will be completed prior to use as final data in investigation reports. Three levels of validation are established for Honeywell projects. A data validation scope will be selected for each sample set based on the data quality goals and needs of that task.

5.1 Project Accuracy and Precision Goals

Accuracy and precision limits have been identified for the analytical quality control measurements that will be performed in association with the collection and analysis of field samples. A summary of project limits are summarized in Table 8-1. These limits were determined based on USEPA Region 2 data validation guidelines and the professional judgment of the project QAO. They represent QA/QC goals for the project to ensure that data meet a minimum quality standard for evaluation of site contamination and data use in remedial investigation reports. These limits will be used to review and evaluate data quality and data usability during data validation.

5.2 Data Validation Levels

Data validation will be completed for all remedial investigation samples and the data validation observations and actions will be summarized in a DUSR. Three general levels of data validation are described for data collected under the Honeywell Remediation Program. Validation Levels II, III, and IV have been established to provide standards for analytical data review and to allow projects to determine validation procedures that are appropriate for the data quality goals for each investigation task. Level II validation includes a review of basic QA/QC procedures and measurements that are associated with environmental laboratory analyses, and it represents a generic minimum review of data quality. Level II and Level IV are completed for investigation data that need more intensive validation to support additional data quality objectives or regulatory guidelines and to provide calculation and transcription. Remedial investigation samples will have Level II validation with 10 percent Level IV.

Level II includes the following data checks and evaluations:

- A review of the data set narrative to identify and issues that the lab reported in the data deliverable;
- A check of sample integrity (sample collection, preservation, and holding times);
- An evaluation of basic QC measurements used to assess the accuracy and precision of data including QC blanks, laboratory control samples (LCS), matrix spikes/matrix spike duplicates (MS/MSD), surrogate recovery when applicable, and field or lab duplicate results; and,
- A review of sample results, target compounds, and detection limits to verify that project analytical requirements are met.

Level III would include all of Level II plus some additional method-specific QC checks including instrument calibration, internal standard response for gas chromatography/mass spectrometry (GC/MS), and interference checks and serial dilutions data for inorganics.

Level IV would include all Level II and Level III checks with additional calculation and raw data checks to verify that no reporting errors have occurred. Data validation actions will be based on general USEPA National guidance documents (USEPA; 1999; USEPA, 2004) and the professional judgment of the project chemist and QAO.

MACTEC may use the EIM system to complete a computerized Level II validation of each data package to check that the project quality control requirements specified in subsections 4.2 and subsection 8.1. Data qualifiers will be applied to results that do not meet project goals. EIM will produce a summary of data validation actions for each sample set. The summaries will be reviewed and approved by the project chemist prior to finalization of the validated data. The data will be evaluated/qualified based on the following parameters (if available/applicable) and specified criteria:

A DUSR will be prepared for data sets reported from each distinct sample collection effort. The validation report will include a summary of analytical methods performed, listings of samples included in the review, and summaries of data validation actions or observations.